

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

**Preliminary Environmental Assessment
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MIDWAY GOLD ROCK PROJECT

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LIST OF APPENDICES**Appendix A:** Reclamation Plan**Appendix B:** Weed Risk Assessment

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1 **1.0 PURPOSE AND NEED**

2 **1.1 INTRODUCTION**

3 This environmental assessment (EA) has been prepared to analyze the potential impacts of
4 Midway Gold US Inc.'s (Midway's) proposed exploration drilling activities for the Gold Rock
5 Project, located on public lands managed by the U.S. Department of the Interior, Bureau of Land
6 Management (BLM) Egan Field Office (FO). Midway's exploration plan of operations (2011
7 PoO), which describes the proposed exploration drilling activities, was submitted to the BLM in
8 November 2011.

9 This EA is a site-specific analysis of potential impacts that could result from the implementation
10 of the Proposed Action or its alternatives. The EA assists the BLM in project planning, ensuring
11 compliance with the National Environmental Policy Act (NEPA), and determining whether any
12 "significant" impacts could result from the analyzed actions. ("Significance" is defined by
13 Council on Environmental Quality (CEQ) regulations for implementing NEPA and is found in
14 40 Code of Federal Regulations [CFR] 1508.27.) An EA provides evidence for determining
15 whether to prepare an environmental impact statement (EIS) or a Finding of No Significant
16 Impact (FONSI). A FONSI is a document that briefly presents the reasons why implementation
17 of the selected alternative would not result in "significant" environmental impacts (effects)
18 beyond those already addressed in the *2008 Ely Resource Management Plan* (RMP) and Record
19 of Decision (ROD) (BLM 2008a), hereafter referred to as the 2008 Ely RMP. If the decision
20 maker determines that this project would have "significant" impacts, then an EIS would be
21 prepared for the project. If not, a Decision Record may be signed for the EA that approves the
22 alternative selected.

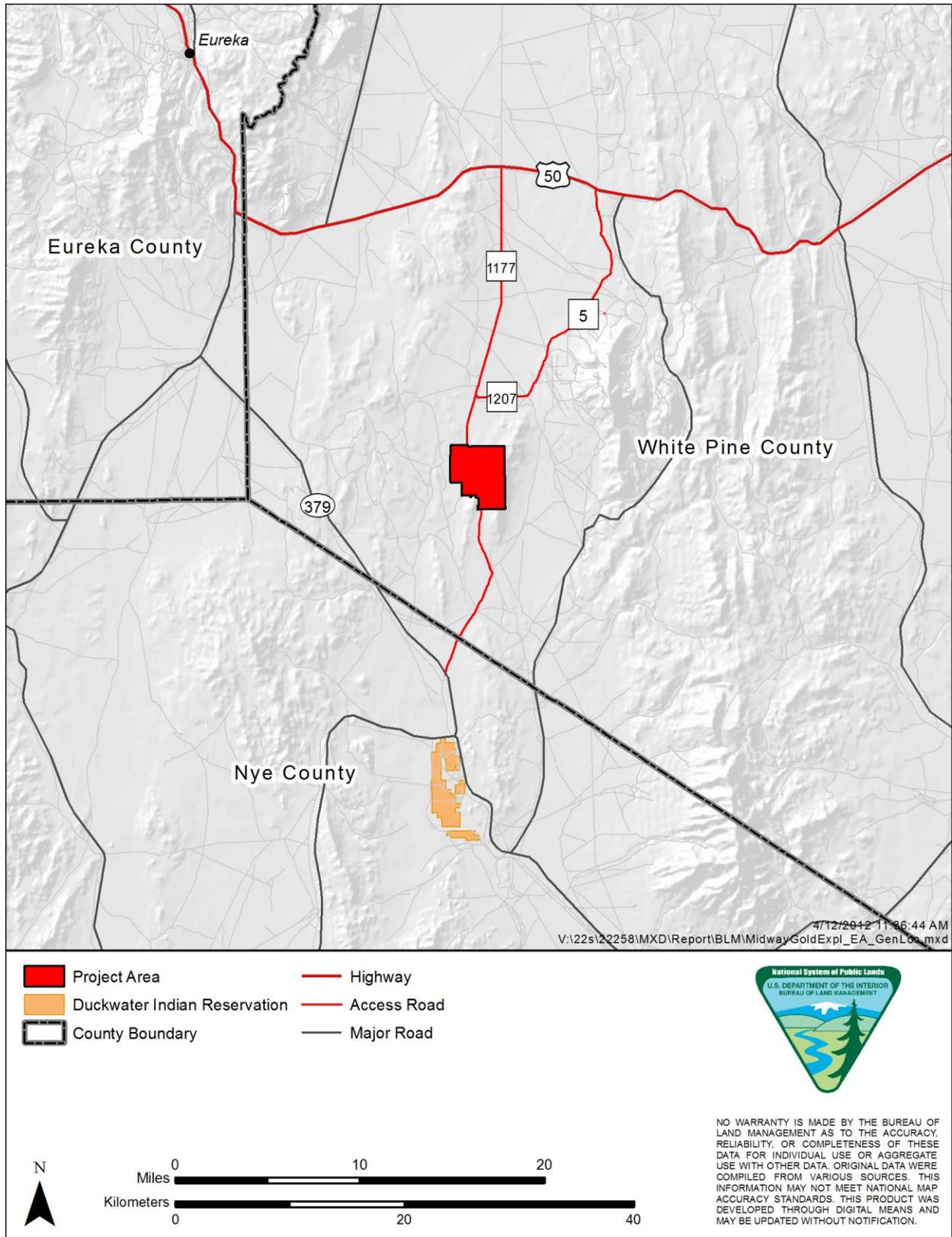
23 **1.2 BACKGROUND**

24 Midway is proposing an exploration and baseline data gathering program to determine whether
25 development of the Gold Rock Project area (project area) is economical and feasible. Midway is
26 currently conducting Notice of Intent (Notice)-level exploration activities of 5 acres in the
27 project area. Midway has prepared the 2011 PoO to expand the work and authorize additional
28 exploration drilling and ancillary exploration-related activities up to 137 acres, for a total of 142
29 acres.

30 The work would be conducted within a 5,528-acre project area, located approximately 15 miles
31 south of U.S. Highway 50, in Sections 3-5, 8-10, 15-17, 21, and 22, Township 15 North, Range
32 56 East (Figure 1-1).

33 Midway would conduct the following activities: 1) drilling reverse circulation (RC) and core
34 holes; 2) geologic mapping; 3) trenching and bulk sampling; 4) groundwater monitoring wells;
35 and 5) construction and maintenance of exploration roads, drill sites and sumps, and sediment
36 traps. Support facilities would include a laydown area and portable toilets. Ancillary facilities
37 would include a portable microwave tower for communications.

38



1
2 Figure 1-1. General project location.

1 **1.3 PURPOSE AND NEED FOR THE ACTION**

2 The BLM’s purpose is to provide Midway with the opportunity to explore their valid existing
3 mining claims on BLM lands. The need for the action is established by the BLM’s responsibility
4 under the Mining Law of 1872, Section 302 of the Federal Land Policy and Management Act
5 (FLPMA), and the BLM Surface Management Regulations at 43 CFR 3809. Under these
6 regulations, the BLM is required to review the 2011 PoO to ensure that Midway’s exploration
7 activities do not cause unnecessary or undue degradation of the public lands and include
8 appropriate reclamation.

9 **1.4 DECISION TO BE MADE**

10 The decision that BLM will make based on the NEPA analysis would be to approve the 2011
11 PoO with no modifications to authorize the exploration activities; approve the 2011 PoO with
12 additional mitigation measures to prevent unnecessary or undue degradation of public lands
13 and/or protect sensitive resource values and to provide for reclamation of disturbed areas; or not
14 approve the 2011 PoO if mitigation measures would not prevent unnecessary or undue
15 degradation of public lands.

16 **1.5 BLM RESPONSIBILITIES AND RELATIONSHIP TO PLANNING**

17 The BLM is responsible for the preparation of this EA, which was prepared in conformance with
18 the policy guidance provided in the BLM NEPA Handbook H-1790-1 (BLM 2008b) and CEQ
19 regulations for implementing NEPA (40 CFR 1500–1508). This EA will assist the BLM in
20 project planning and in determining whether the Proposed Action is consistent with BLM
21 policies. Pursuant to NEPA (40 CFR 1502.13), this EA has been prepared to provide sufficient
22 evidence and analysis for 1) determining whether to prepare a more detailed EIS or 2) issuing a
23 FONSI.

24 **1.6 CONFORMANCE WITH BLM LAND USE PLAN(S)**

25 The Proposed Action and the No Action Alternative described below are in conformance with
26 the 2008 Ely RMP (BLM 2008a). The Goals and Objectives within the ROD for the RMP for
27 Mineral Extraction are listed on pages 92-103 of the ROD. The goal listed on page 92 states,
28 “Allow development of solid leasable and locatable minerals in a manner to prevent unnecessary
29 or undue degradation” to the public lands. The objective and minerals decision (MIN-14) listed
30 on page 100 states, “Allow locatable mineral development on approximately 9.9 million acres of
31 federal mineral estate, subject to the prevention of unnecessary or undue degradation of the
32 public lands” (BLM 2008a).

33 The BLM is responsible for administering access to mineral rights on certain federal lands as
34 authorized by the General Mining Laws. Under the law, qualified prospectors are entitled to
35 reasonable access to mineral deposits on public domain lands that have not been withdrawn from
36 mineral entry. The BLM is also responsible for reviewing surface resources pursuant to the
37 FLPMA (43 United States Code [USC] 1701 *et seq.*) and the attendant regulations for surface
38 management of lands on mining claims under the General Mining Laws (43 CFR 3809). The
39 surface management regulations require the BLM to comply with the National Environmental
40 Policy Act of 1969, as amended (42 USC 4321 *et seq.*), and to ensure that the operator “conduct

1 all operations in a manner that complies with all pertinent federal and state laws (43 CFR
2 3809.420) and will not cause undue and unnecessary degradation of the public lands.”

3 **1.7 RELATIONSHIP TO STATUTES, REGULATIONS, OR OTHER PLANS**

4 NEPA is only one of many authorities that contain procedural requirements that pertain to
5 treatment of elements of the environment when the BLM is considering a federal action. The
6 Proposed Action and the No Action Alternative are consistent with federal, state, and local laws,
7 regulations, and plans and programs. Appendix 1 of the BLM NEPA Handbook (2008b) contains
8 a list of many of the supplemental authorities that may apply to BLM actions.

9 The Proposed Action and the No Action Alternative are consistent with these federal statutes and
10 regulations. The Proposed Action and the No Action Alternative are also consistent with state
11 plans and policies for the management of mineral and water resources, conservation of special-
12 status species, and cultural resource protection, as well as with the 2007 White Pine County
13 Public Land Policy Plan and the 2008 White Pine County Land Use Plan Element to the White
14 Pine County Master Plan.

15 **1.8 IDENTIFICATION OF ISSUES**

16 1.8.1 *Internal Scoping*

17 A BLM interdisciplinary (ID) team analyzed the potential consequences of the Proposed Action
18 during internal scoping held on November 16, 2011. The following resource issues are analyzed
19 and addressed in Chapter 3 of this EA:

- 20 • **Air Quality:** What impacts would the surface disturbance and operation of heavy
21 equipment and vehicles for drilling, trenching, and road building have on air quality and
22 National Ambient Air Quality Standards (NAAQS) attainment status for the area?
- 23 • **Soils:** What impacts would surface disturbance for drilling, trenching, and road building
24 have on soil productivity in the area, particularly with regard to compaction, reclamation,
25 and erosion?
- 26 • **Cultural Resources:** What impacts would surface disturbance for drilling, trenching, and
27 road building and use of overland travel vehicles have on identified cultural sites? How
28 would the project affect sites eligible for the National Register of Historic Places
29 (NRHP)? What impacts would the project have on unknown (buried) cultural sites?
- 30 • **Paleontological Resources:** What impacts would the surface disturbance associated with
31 drilling and trenching and road building have on fossils?
- 32 • **Socioeconomics:** What impacts would the project have on employment opportunities or
33 housing availability in the area?
- 34 • **Wildlife:** How would the surface disturbance associated with drilling, trenching, and road
35 building and the construction of sumps affect big game (deer and antelope) and big-game
36 habitat, and predator, small-mammal, reptile, and avian species? How would the human
37 activity and noise associated with the operation of heavy equipment and vehicles affect
38 these species?

39
40

- 1 • **Special-Status Species:**
- 2 ○ **Greater Sage-grouse** (*Centrocercus urophasianus*): What impacts would the
- 3 project's proposed access routes and associated vehicular traffic have on greater
- 4 sage-grouse leks in the area? How would project construction, noise, and human
- 5 activity affect greater sage-grouse and greater sage-grouse habitat?
- 6 ○ **Pygmy Rabbit** (*Brachylagus idahoensis*): What impacts would the surface
- 7 disturbance associated with drilling, trenching, and road building and the
- 8 construction of sumps have on pygmy rabbit and pygmy rabbit habitat?
- 9 ○ **Migratory Birds, including raptors:** What impacts would the surface
- 10 disturbance associated with drilling, trenching, and road building and the
- 11 construction of sumps have on migratory birds and migratory bird nests? How
- 12 would project construction, noise, and human activity affect these species?
- 13 ○ **Bats** What impacts would habitat reduction have on bat species?
- 14 • **Vegetation:** What impacts would the surface disturbance associated with drilling,
- 15 trenching, and road building or overland travel have on project area vegetation,
- 16 particularly with regard to species that do not recover well or that take a long time for
- 17 successful reclamation? What impacts would drilling, trenching, road building, and
- 18 overland travel have on the introduction or spread of noxious weeds?
- 19 • **Visual Resources:** What impacts would the drilling, trenching, and road building and the
- 20 construction of sumps have on the project area viewshed? What impacts would nighttime
- 21 drilling activities have on the night sky?
- 22 • **Recreation Resources:** How would the exploration project and the proposed
- 23 development of additional access roads affect motorized recreation and hunting in the
- 24 project area?
- 25 • **Transportation and Access:** How would the project area traffic affect the county or
- 26 state road system? What impacts would the project area activities and traffic have on
- 27 transportation and access to/from the nearby Duckwater Reservation? What impact would
- 28 the construction of new access roads have on transportation and access in and around the
- 29 project area?

30 1.8.2 *Public Scoping*

31 As required under NEPA, the BLM solicited public comments on the Proposed Action. The

32 BLM used comments received during the scoping period to determine the following:

- 33 • important issues to be addressed,
- 34 • possible data needs and sources,
- 35 • alternatives to be assessed, and
- 36 • potential effects of the alternatives on the human environment.

37 A public scoping letter was sent out on December 2, 2011, and comments were requested within

38 30 days of receipt of that letter. The mailing list can be found in the administrative record. No

39 comments were received.

40

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1 **2.0 DESCRIPTION OF ALTERNATIVES**

2 **2.1 INTRODUCTION**

3 This EA analyzes the Proposed Action and the No Action Alternative. The No Action
4 Alternative is considered and analyzed to provide a baseline against which to compare the
5 impacts of the Proposed Action. No other alternatives were brought forward for detailed analysis
6 (see Section 2.4 for further details and rationale concerning alternatives eliminated from detailed
7 analysis).

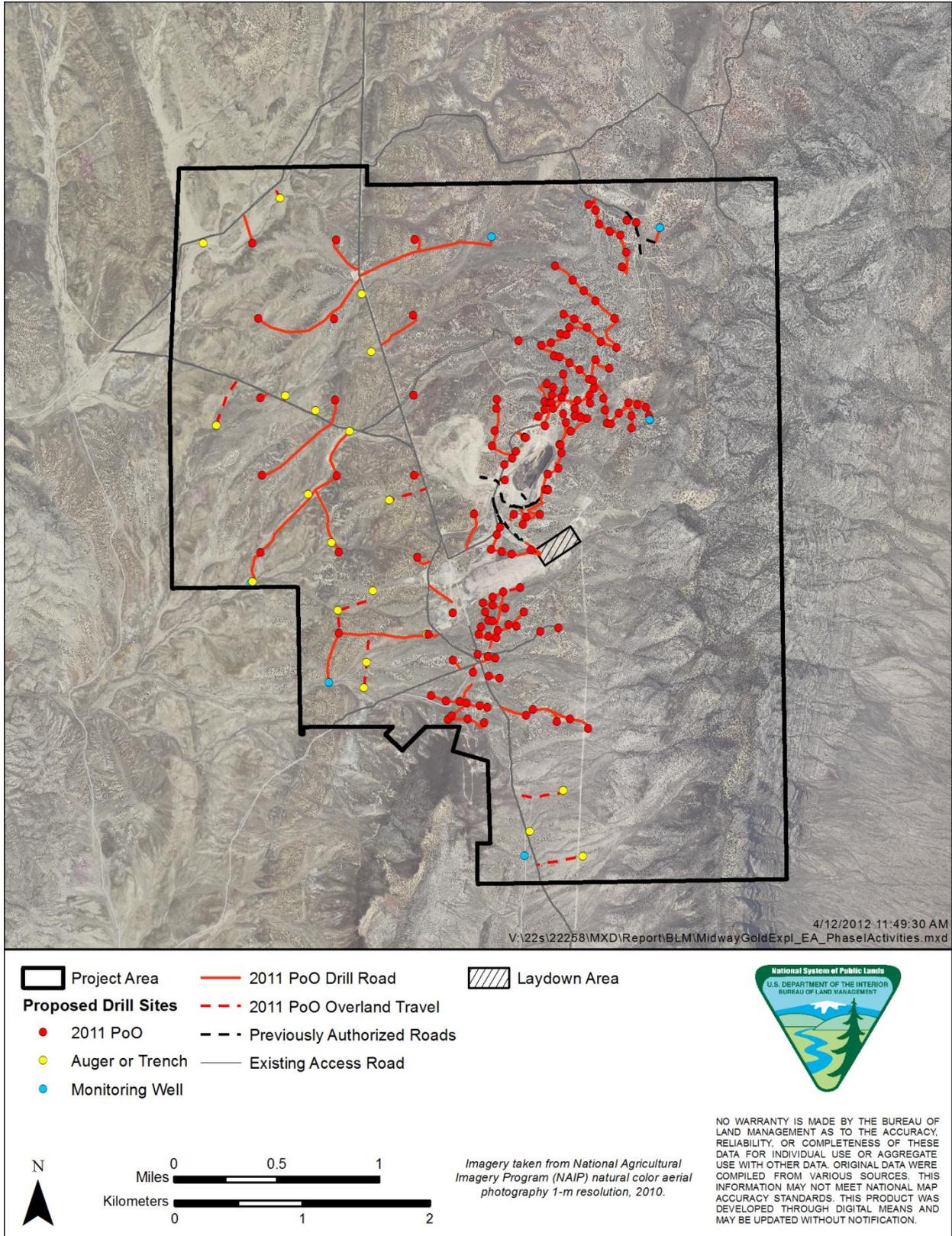
8 **2.2 ALTERNATIVE A: PROPOSED ACTION**

9 Midway is proposing a phased program of surface disturbance to authorize exploration drilling
10 and ancillary exploration-related activities on up to 137 acres. Midway is currently conducting
11 Notice-level exploration activities on 5 acres in the project area. Phase I surface disturbances
12 constitute approximately 64.6 acres, including the construction of 165 drill sites during the 2012
13 and 2013 drilling seasons (generally defined as spring/summer/fall). The remaining 72.4 acres
14 planned under the Proposed Action would be implemented in a phased manner over the
15 subsequent exploration seasons, until a mining PoO is submitted and authorized. The combined
16 Notice, Phase I, and subsequent phases of surface disturbance would total 142 acres.

17 The following activities constitute the Proposed Action:

- 18 • Using overland travel;
- 19 • Constructing drill roads;
- 20 • Constructing drill pads and sumps;
- 21 • Conducting geologic mapping;
- 22 • Performing surface hand sampling of rocks, soils and/or vegetation;
- 23 • Excavating trenches for activities such as geotechnical testing, geochemical analyses,
24 bulk samples, or metallurgical analyses;
- 25 • Drilling auger boreholes;
- 26 • Constructing groundwater monitoring wells and monitoring these wells;
- 27 • Installing a mobile microwave tower for communications; and
- 28 • Using one laydown area for temporary storage of drilling materials, equipment, and
29 support facilities.

30 Figure 2-1 shows the locations of these activities for Phase I. The specific locations for proposed
31 activities beyond Phase I would be based on the results of the phased exploration approach and
32 cannot be specified at this time. Prior to beginning each subsequent phase, Midway would
33 provide a work plan detailing specific locations and acreage of proposed disturbance. The plan
34 would include an as-built map of previous phase disturbances, a map of the new phase proposed
35 disturbance, and updated reclamation bonding. The location of the microwave tower is also not
36 yet determined, and therefore is not shown in Figure 2-1.



1
2 Figure 2-1. Location of project activities.

1 Table 2-1 lists the proposed surface disturbance. All of the proposed surface disturbance would
 2 be on public lands managed by the BLM Egan FO. The allocation of acreage by activity outlined
 3 in Table 2-1 is representative of the planned exploration; acreage may be redistributed within the
 4 limit of the total 137 acres included in the Proposed Action to accomplish the planned
 5 exploration.

Table 2-1. Proposed Surface Disturbance under the Proposed Action

	2011 PoO Phase I		2011 PoO Future Phases		Total	
		Acre ^s		Acre ^s [†]		Acre ^s
Drill roads	70,703 feet	32.5	TBD	41.3	TBD	73.8
Overland travel	10,762 feet	2.5	TBD	4.3	TBD	6.8
Drill sites (pads and sumps)	165 sites	15.6	TBD	22.4	TBD	38
Auger/trench sites	20 sites	2.0	TBD	4.3	TBD	6.3
Laydown area*	1 area	12.0	0	0	TBD	12
Total		64.6		72.4		136.9

* Located on area previously disturbed by Easy Junior mine operations. Midway would reclaim any area surface disturbance due to Midway activities, but would not be responsible for reclamation due to any previous activities on these acres.

[†] The acreage by activity type for future phases of exploration are estimated on the general proportion of each activity in Phase I, but may change, depending on results of Phase I exploration. However, total disturbance for future phases would not exceed 72.4 acres, regardless of the results of Phase I drilling.

6 2.2.1 *Project Area Location and Access*

7 The 5,528-acre project area is located on the east side of the Pancake Range in White Pine
 8 County, Nevada; approximately 30 miles southeast of Eureka, 50 miles west of Ely, and 15 miles
 9 south of U.S. Highway 50 (see Figure 1-1). The project area would have two access options from
 10 the north and one from the south.

- 11 • From the north, access would be provided by either Green Springs Road (White Pine
 12 County Road 5) or Easy Junior Road (White Pine County Road 1177), both of which are
 13 unpaved county roads that originate at U.S. Highway 50.
- 14 • From the south, access would be provided by an unmarked county road branching from
 15 the Duckwater Road (Nevada State Highway 379).

16 Road use agreements with White Pine and Nye counties would allow Midway to perform road
 17 maintenance and snow removal for year-round access to the site on all three roads. All access
 18 road maintenance would be done in accordance with the road use agreements and could include
 19 grading and watering. Where appropriate and necessary, road base, or gravel, would be placed on
 20 the road to reduce rutting. No other road modifications would occur.

21 2.2.2 *Drill Site Access and Drill Road Construction*

22 To access drill sites, existing roads or overland travel would be used to the extent possible¹. Drill
 23 roads would be constructed where necessary.

¹ "Overland travel" is used to refer to off-road travel by Midway construction vehicles to drill sites. Overland travel areas would be reclaimed.

1 Drill roads would be constructed using a bulldozer for areas of gentle sloping terrain (2.5:1 or
2 less) or a tracked excavator in areas of steep terrain. The proposed roads and spurs would be
3 bladed to an average width of 20 feet, including side cast material, with drainage control
4 installed as needed. The depth of the cut for newly constructed exploration roads would average
5 3 feet or less. The top foot of surface soil and plant materials would be moved or replaced upon
6 reclamation. Road grades would generally be 10% or less; however, steeper grades could be
7 necessary for short pitches. Balanced cut-and-fill construction would be used to the extent
8 possible to minimize the exposed cut slopes and the volume of fill material. Road construction
9 within drainages would be avoided where possible. When drainages must be crossed by a road,
10 best management practices (BMPs) would be followed to minimize the surface disturbance and
11 erosion potential (see Section 2.2.13 for more information on BMPs and standard operating
12 procedures [SOPs]). Temporary culverts may be used to minimize surface impacts. It is not
13 anticipated that blasting would be necessary to construct roadbeds. Rock outcrops and areas of
14 shallow soils on bedrock, where present, would be avoided whenever possible.

15 Locations for Phase I drill roads are shown in Figure 2-1. Total disturbance for Phase I drill
16 roads is estimated at 32.5 acres (see Table 2-1).

17 **2.2.3 Drill Site Construction**

18 Drilling would be conducted using truck-, track-, buggy-, or skid-mounted RC drill rigs and core
19 rigs. Drill pads, which require earth moving, would be located and constructed using standard
20 construction practices for temporary mineral exploration roads and pads to minimize surface
21 disturbance, erosion, and visual contrast, as well as to facilitate reclamation. Surface soil and
22 plant materials would be bladed or bulldozed to one side and returned during reclamation. The
23 surface area impacted by each drill site would vary, depending on the type of drill rig used.
24 Standard drill pads would be 80 feet long \times 50 feet wide, with sumps 35 feet long \times 15 feet wide
25 \times 6 feet deep, totaling 4,000 square feet for the pad and sump. This size sump would have a
26 capacity of approximately 25,000 gallons. Buggy- or track-mounted rigs would require smaller
27 sites and, depending on the site, may not require pad construction. Truck-mounted drills for
28 deeper drilling would require larger pads of 5,000 square feet, measuring approximately 100 \times
29 50 feet, with sumps up to 40 feet long \times 25 feet wide \times 10 feet deep to accommodate potential
30 groundwater, if encountered. The larger sumps would have a capacity of approximately 84,000
31 gallons. Drill sites for the truck-mounted rigs used on the deep wells would be the largest pads,
32 with a maximum dimension of 100 \times 50 feet. Ten percent of the pads (17) are likely to be of this
33 larger size.

34 A sump would be used at each drill site to contain drill cuttings and control drilling fluids.
35 Sumps would vary in depth from six to 10 feet, depending on pad size and available area at each
36 drill site. Sumps would be constructed to the shallowest depth possible given each particular site
37 to allow for maximum evaporation. At least one side of the sumps would be sloped for easy
38 access/egress. Sumps would be lined as needed to assure that there would be containment of
39 drilling fluids. Sumps would be fenced with safety netting to keep large animals out and provide
40 a warning for recreational traffic. Standard, nontoxic, drilling muds and additives such as Floc
41 360™, Abandonite™, Alcomer 120L™, bentonite, EZ-mud™, Polyplus™, and Super Plug™
42 would be used. To minimize surface disturbance, any trenches dug at the site would be partially
43 backfilled and used as the sump. When the sump is no longer needed, it would be allowed to dry
44 by infiltration or evaporation to prevent discharge of drilling fluids during reclamation. Per BLM

1 IM NVL0000-2011-008, sumps are required to be “liquid free” within 30 days of drilling
2 completion. If there are extenuating circumstances where a sump would need to be left open,
3 those would be handled on a case-by-case basis. If liners are used to hold fluids for core drilling,
4 the sumps will be pumped to an unlined sump and allowed to infiltrate/evaporate, and the liners
5 would be removed. Liners would either be removed, or ripped and buried in place, as determined
6 by the BLM. Once dry, the sumps would be backfilled and graded to the natural contour. The
7 area would then be seeded with the reclamation seed mix previously approved for the area (see
8 Appendix A, Reclamation Plan). A drill pad and sump may be used for more than one drill hole.

9 Locations for Phase I drill sites are shown in Figure 2-1. Total disturbance for Phase I drill sites
10 (pads and sumps) would be 15.6 acres (see Table 2-1).

11 **2.2.4 Drill Hole Completion**

12 Drill holes would be plugged immediately after completion of drilling in accordance with
13 Nevada Administrative Code (NAC) Chapters 534.421 and 534.425 except for those holes left
14 open as pre-collars or monitoring wells. About 10% of the holes would be up to 2,000 feet deep.
15 At any one time, a maximum of six RC holes, up to 700 feet deep, would remain open until the
16 deeper portion of the hole can be completed with a core drill. A temporary cap would be placed
17 on the surface casing until the core rig moves onto the site. Once core drilling is complete, the
18 hole would be plugged as described above. If any drill hole produces artesian flow, the drill hole
19 would be contained pursuant to Nevada Revised Statutes (NRS) 534.060 and NAC 534.378 and
20 would be sealed by the method described in Subsection 2 of NAC 534.4371. If casings are set in
21 a drill hole, either the drill hole must be completed as a well and plugged pursuant to NAC
22 534.420 or the casings would be completely removed from the drill hole and then be plugged in
23 accordance with NAC 534.4369 and NAC 534.4371.

24 **2.2.5 Trenches, Pits, and Auger Boreholes**

25 Trenches and pits would be excavated to acquire samples for a variety of purposes, including but
26 not limited to, geotechnical testing, geochemical analyses, bulk samples, or metallurgical
27 analyses. Trenches would typically be developed by side-casting the top foot of surface soil and
28 plant materials for later replacement, digging through surface soils to bedrock—6 to 15 feet
29 deep—depending on the range of the backhoe, or to refusal due to the presence of bedrock
30 conditions. Pits would be developed in the same manner, but would typically only be about 3 feet
31 deep, and may be dug by hand. Depending on depth and required benches, shallow trenches
32 would be 2 feet wide, while deeper trenches may be as wide as 6 feet. Deeper trenches would be
33 benched for safe access. Trenches dug to 4 feet deep would be 2 feet wide. Trenches dug from 4
34 to 8 feet deep would require at least one safety bench and would be at least 4 feet wide. Trenches
35 dug more than 8 feet deep would require at least two safety benches and would be at least 6 feet
36 wide. The total disturbance for the trenches would be up to 20 × 100 feet if dug to full depth.
37 When completed, trenches would be backfilled, the surface soil replaced, the area recontoured to
38 near the original contour, the top foot of surface soil and plant material would be spread back
39 over the area, and the area seeded. Where possible, trenches would be located at drill sites and
40 would be used afterward as a sump for the drill hole to reduce impacts. If used as a sump, the
41 trenches would be backfilled to a maximum depth of 5 feet and the sides sloped for egress prior
42 to use. With the exceptions of trenches that would be used as sumps, no more than one trench
43 would be open at any one time.

1 Auger drilling would be limited to those areas with relatively deep soil profiles, although in
2 general holes would be no more than 50 feet deep. Auger drill holes would be drilled with gas-
3 powered, hand-operated augers, or small auger drills mounted on small trucks, tracked vehicles,
4 or all-terrain vehicles (ATVs). The auger holes would be 4-inch-diameter holes drilled to a
5 maximum depth of 50 feet or to bedrock, whichever is shallower. Pickup trucks would be used to
6 transport the auger and crew to the location when the site is located on, or adjacent to, an existing
7 roadway. When the sites are in undisturbed areas, off-road travel via tracked drills and ATVs
8 would be used to access the drilling sites. A single tracked drill and ATV trip to the site would be
9 made, followed by one trip out along the same tracks. Support and sampling personnel would
10 travel to the location on foot from the nearest established road or on the initial trip of the ATV.
11 The hole would be augered, the samples taken, and information logged. After the sampling and
12 logging are completed, the hole would be backfilled by hand before personnel leave the site.

13 Locations for Phase I auger boreholes and trenches are shown in Figure 2-1. Total disturbance
14 for Phase I trenches and auger boreholes, including areas for sidecast materials, would be 2.0
15 acres (see Table 2-1). Off-road travel to auger borehole sites by tracked drills and ATVs would
16 not be reclaimed and is therefore not included in this acreage.

17 **2.2.6 Groundwater Monitoring Wells**

18 The Proposed Action includes development of six groundwater monitoring wells, to be sited on
19 drill pads. Where possible, overland travel would be used to access the drill sites to minimize
20 disturbance. The larger drill pad size of 50 × 100 feet would be used for monitoring wells.
21 If possible, the monitoring wells would be drilled during Phase I.

22 Prior to drilling the monitoring wells, Midway would obtain the appropriate monitoring well
23 waivers from the Nevada Division of Water Resources (NDWR). The wells would be designed
24 to meet Nevada Division of Environmental Protection, Bureau of Mining Regulation and
25 Reclamation (BMRR) design specifications and would be approved before construction.
26 Groundwater monitoring wells would be drilled and installed by a licensed water well driller.
27 The monitoring wells would be monitored on a monthly or quarterly basis, depending on data
28 needs. If no water were present, this would be noted.

29 Any groundwater monitoring wells would be plugged and abandoned according to NDWR
30 requirements when they are no longer needed for environmental baseline data collection.
31 Midway anticipates that monitoring and data collection would continue for a minimum of 4 years
32 following completion of the monitoring wells. All of the project monitoring wells would be
33 plugged and abandoned at the same time. Following well abandonment, the area would be
34 reclaimed by being graded, scarified, and seeded.

35 Locations for groundwater monitoring wells are shown in Figure 2-1. Total disturbance for
36 groundwater monitoring wells is part of the drill sites acreage (see Table 2-1).

37 **2.2.7 Laydown Area**

38 One laydown area would be used for temporary storage of drill pipe, drilling materials and
39 supplies, drill samples, and construction equipment. To facilitate and support year-round drilling
40 operations, Midway would place a temporary mobile office and portable sanitation facilities at
41 the laydown area. The trailer may also be used by project geologists as a logging facility for
42 examination of drill cuttings and cores.

1 The laydown area would be located on ground previously disturbed by the Easy Junior mine
2 operations. A fence encompassing the entire laydown area would be erected.

3 The laydown area would also contain a 15,000-gallon, aboveground diesel fuel tank with a self-
4 contained spill container that provides double containment for at least 1.5 times the tank size.

5 Temporary 2,000- to 6,000-gallon water storage tanks, used to minimize the number of water
6 truck trips, would be labeled as nonpotable water and stored in the laydown area. These
7 polypropylene tanks would be removed at project completion.

8 The location for the laydown area is shown in Figure 2-1. Total disturbance for the Phase I
9 laydown area would be 12.0 acres (see Table 2-1).

10 **2.2.8 Sanitation and Ancillary Facilities**

11 Up to four portable toilets would be located on-site during drilling activities. These toilets would
12 be supplied and serviced by a local supplier. They would be removed at the end of each field
13 season. The portable toilets would be placed on previously disturbed sites. Other materials,
14 including scrap, trash, and unusable equipment, would be removed on a weekly basis and
15 disposed of in accordance with federal and state regulations and laws.

16 A portable microwave tower for communications would be installed at a location yet to be
17 determined, but which would likely be on previously disturbed areas. The tower would be
18 designed to provide communication for the safety of on-site workers, contractors, and regulators.
19 The station would be solar powered if possible; if not, a generator would be used for power. An
20 existing access road would be used to transport the tower to the location. The tower would be
21 serviced periodically (typically on a quarterly basis) by a technician. The tower would be fenced
22 with three strands of smooth wire and T-posts to preclude wild horses and cattle from scratching
23 on the tower.

24 **2.2.9 Maintenance and/or Interim Reclamation**

25 Midway would monitor all drilling and road-building activities. Drill site monitoring would
26 include visual inspections of the drill sumps during drill operations to ensure that the drill
27 cuttings are contained. Should the observed condition indicate that the sump containment is
28 inadequate, additional sump capacity would be built and/or incorporated into the drilling fluid
29 management system. The constructed exploration drill roads, pads, and sumps would be
30 maintained in operating condition until reclamation to prevent washouts and to reduce erosion,
31 runoff, and sedimentation. All refuse generated by the project would be hauled off-site on a
32 regular basis and disposed of at an authorized landfill facility off-site, consistent with applicable
33 regulations.

34 Routine road maintenance may be required and would consist of smoothing ruts, filling holes
35 with fill material, grading, and reestablishing drainage control when necessary. Dust control on
36 the roads would be accomplished by watering the roads as necessary. It is currently anticipated
37 that this would require up to approximately four truckloads of water per day (approximately
38 8,000-12,000 gallons; see Section 2.2.12.3, Water Use, for additional details about water use and
39 sources) during active drilling periods in summer months. During less active drilling periods and
40 during wetter months, this amount would be less.

41 The activities described in the 2011 PoO would not be conducted during severe winter
42 conditions, in which case the project area would be stabilized using appropriate interim

1 reclamation and site management techniques. During extended periods of nonoperation or
2 seasonal closure of the exploration activities, all motorized equipment would be removed from
3 the project area. Trailers may be placed on the staging areas for storing drilling supplies and drill
4 samples.

5 Exploration activities would continue until the exploration and mine development potential of
6 the project has been fully evaluated. To a major extent, drilling success would determine the
7 duration of project activities and the initiation of reclamation. If drilling activities locate mineral
8 reserves that can be economically developed, disturbances would remain pending mine
9 permitting. Only those access roads and drill pads needed for future exploration would remain
10 open. Interim stabilization measures would be taken as necessary at these sites. Final reclamation
11 would commence within 2 years if and when drilling results indicate that no resource is present.

12 Periods of non-operation are also anticipated between drilling phases. Once sumps have dried
13 out, they would be backfilled and reclaimed as discussed in Section 2.2.10. No other issues
14 related to periods of nonoperation are anticipated. All drill sites would be patrolled at the end of
15 each drill period to ensure that all refuse and trash has been disposed of properly. In the event
16 that fines are present below the drill sumps, the area would be scarified using a hand rake.

17 **2.2.10 Final Reclamation**

18 Concurrent reclamation would take place to the degree possible by backfilling sumps,
19 recontouring, scarifying, and seeding drill sites when the sumps become dry enough to backfill
20 without causing a spill of drilling fluids.

21 Regrading and reshaping of all constructed drill sites and exploration roads would be completed
22 to approximate the original topography. Fill material enhanced with the side-casted surface soil
23 and plant material would be pulled onto the roadbeds to fill the road cuts and restore the slope to
24 natural-appearing contours. For overland travel roads, upgraded roads, or pads that do not require
25 replacement of sidecast material, reclamation would be accomplished with an excavator bucket,
26 ripper, or bulldozer to knock down and smooth any berms and relieve road compaction. Tire
27 tracks (trails created by overland travel) would be lightly scarified and left in a rough state as
28 necessary to relieve compaction, inhibit soil loss from runoff, and prepare the seed bed.

29 Reclaimed surfaces would be revegetated to control runoff, reduce erosion, provide forage for
30 wildlife, wild horses, and livestock, and reduce visual impacts. Seedbed preparation and seeding
31 would generally take place in the 3rd or 4th quarter of the year, after grading and replacing side-
32 casted surface soil and plant material on reclaimed areas. The preliminary reclamation seed
33 mixture and application rate is included in Appendix A, Reclamation Plan. All reclaimed areas
34 would be broadcast seeded with a cyclone-type bucket spreader. Broadcast seed would be
35 covered by harrowing, raking, or other site-specific appropriate methods as necessary to provide
36 seed cover and enhance germination.

37 Should any drainages be disturbed, any temporary culverts would be removed and the drainages
38 would be reshaped to approach the preconstruction contours. The resulting channels would be of
39 the same capacity as up- and downstream reaches, would be made nonerosive by use of surface
40 stabilization techniques (rip-rap) where necessary, and would ultimately be revegetated.
41 Following completion of earthwork, all disturbed areas would be broadcast seeded using the
42 same methods described above.

1 The fuel tank, temporary buildings/trailers, storage containers and fencing would be removed
2 from the laydown area when the exploration activities have been completed. All other equipment
3 and supplies—including the microwave tower—would also be removed following completion of
4 the project.

5 Appendix A, Midway's Reclamation Plan, includes a list of all measures to be taken to prevent
6 unnecessary and undue degradation per 43 CFR 3809 and Nevada Department of Environmental
7 Protection (NDEP) mining, reclamation, water quality, and air quality regulations.

8 **2.2.11 Post-reclamation Monitoring**

9 Post-closure management would commence on any reclaimed area following completion of the
10 reclamation work for the area and would extend until the reclamation of the site or component
11 has been accepted by the BLM and NDEP. For bonding purposes, a three-year post-closure
12 management period is assumed following completion of reclamation construction on any site.
13 For sites reclaimed early in the operations, management of the reclaimed sites would occur
14 concurrently with operational site management. Monitoring would be conducted for three
15 consecutive years in the third quarter of each year.

16 **2.2.12 Resource Requirements**

17 **2.2.12.1 Equipment**

18 Project personnel would access the site in four-wheel-drive vehicles. One or more truck-
19 mounted, track-mounted, skid-mounted, or articulated buggy-mounted RC or core drill rigs
20 would be used for drilling. Generally, a Caterpillar (Cat) D7 or D8 bulldozer or equivalent or a
21 track-mounted excavator would be used to construct the roads and drill sites where needed.
22 Roads and drill sites would be reclaimed using the same types of equipment. The following
23 vehicles and equipment would be used in conjunction with project activities:

- 24 • Up to 10 truck-mounted, track-mounted, skid-mounted, or articulated buggy-mounted
25 rotary RC or core drill rigs;
- 26 • 2,000- to 4,000-gallon water trucks; one per drill rig;
- 27 • One crew vehicle (4×4 pickup) per drill rig;
- 28 • One pipe truck per drill rig;
- 29 • One bulldozer for road construction;
- 30 • One excavator with pneumatic hammer;
- 31 • One auxiliary air compressor per drill rig;
- 32 • One booster truck per drill rig;
- 33 • One portable light plant/generator per drill rig;
- 34 • One pipe truck or trailer per drill rig;
- 35 • Up to two portable auger drills;
- 36 • Up to two down-hole survey trucks;
- 37 • Up to two ATVs, to be brought in by trailer as needed;
- 38 • Portable 2,000- to 6,000-gallon polypropylene tanks to store drill water; one per drill rig;
- 39 • One backhoe;
- 40 • One motor grader; and

- 1 • One skidsteer.

2 2.2.12.2 **Personnel and Travel**

3 The following personnel would be used in conjunction with project activities:

- 4 • Each drill rig would use a two- to four-person crew. The crew would carpool in one
5 pickup truck to minimize the number of trips per day. Drilling would occur throughout
6 the calendar year. Where multiple drill rigs are in use, a supervisor may also be present.
7 The supervisor may cover multiple rigs.
- 8 • Each drill rig would have a water truck, which is expected to make at least one trip to the
9 drill site for water each day. Depending on water needs for dust control, the water trucks
10 may need to make multiple trips to the water source per day. The water source would be
11 located within 10 miles of the project area (see Section 2.2.12.3, below).
- 12 • A pipe trailer truck would travel to the drill site at the beginning of work and back from
13 the site at the completion of the work.
- 14 • Drilling muds would be delivered periodically as needed. Whenever possible, the mud
15 would be delivered in bulk to minimize trips to the site.
- 16 • A down-hole survey truck would make one trip to and from each hole upon completion
17 of drilling.
- 18 • One or more Midway geologists would travel to the project each day to supervise
19 operations.

20 2.2.12.3 **Water Use**

21 Midway estimates that the drilling and dust control operations would require approximately
22 4,000 gallons per drill day per drill rig. Core drilling would require approximately 4,000 to 6,000
23 gallons per drill rig per drill day. In addition, dust control on drill roads would require up to
24 approximately four truckloads of water per day (approximately 8,000–12,000 gallons). This
25 water would be obtained from source(s) within 10 miles of the project area and would be brought
26 in to the project area using the same access roads. Sources could include the use of the old Easy
27 Junior mine well, located about 3 miles to the southeast of the project area. Midway would
28 acquire or verify that all necessary NDWR waivers for temporary use of ground water for
29 mineral exploration are in place.

30 2.2.12.4 **Hazardous Materials**

31 Hazardous materials used at the project area would include diesel fuel, gasoline, and lubricating
32 grease. Approximately 625 gallons of diesel fuel would be stored in fuel delivery systems on
33 vehicles and drill rigs. An aboveground diesel fuel tank of approximately 15,000 gallons,
34 provided with its own double containment system, would be located at the laydown area.
35 Approximately 125 gallons of gasoline would be stored in fuel delivery systems for light
36 vehicles. Approximately 125 pounds of lubricating grease would be stored on the drill rigs or
37 transported by drill trucks. All containers of hazardous substances would be labeled and handled
38 in accordance with Nevada Department of Transportation (NDOT) and Mine Safety and Health
39 Administration (MSHA) regulations.

1 **2.2.13 Applicant Committed Environmental Protection Measures**

2 The mineral exploration and reclamation activities proposed in the 2011 PoO have been
 3 specifically designed to prevent unnecessary or undue degradation and to comply with the
 4 environmental performance standards specified at 43 CFR 3809.420. Resource-specific
 5 environmental protection measures that Midway has committed to are described in Table 2-2,
 6 below.

Table 2-2. Applicant-committed Environmental Protection Measures (ACEPM)

Resource	Protection Measure
Cultural Resources	To prevent direct impacts to cultural resources, Midway would avoid all eligible or unevaluated cultural sites within the project area. As directed by the BLM all Phase 1 surface disturbance, as shown in Figure 2-1, would avoid all eligible cultural resource sites identified in the Class III cultural resources block study. Prior to beginning each subsequent phase, Midway would provide a work plan detailing specific locations and acreage of proposed disturbance. The plan would include an as-built map of previous phase disturbances, a map of the new phase proposed disturbance, and updated reclamation bonding. The BLM would review the proposed locations of the surface disturbance and notify Midway if the locations overlap an eligible or unevaluated cultural site identified in the Class III cultural resources block study. If an eligible or unevaluated cultural site is located within the area of proposed surface disturbance, the identified cultural site(s) would be avoided.
	Midway would ensure that all activities within 100 meters of a cultural discovery are halted and the discovery is appropriately protected, until the BLM Authorized Officer (AO) issues a Notice to Proceed. A Notice to Proceed may be issued by the BLM under any of the following conditions: <ul style="list-style-type: none"> • Evaluation of potentially eligible resource(s) results in a determination that the resource(s) are not eligible; • The fieldwork phase of the mitigation and treatment has been completed; and • The BLM has accepted a summary description of the fieldwork performed and a reporting schedule for that work.
	Archaeological monitors may be required in special cases as determined by BLM to avoid cultural resources in proximity to where mineral activities would be carried out. The BLM archaeologist would be informed prior to mineral activities in proximity to these cultural resources that require monitoring.
	Midway would inform all persons associated with the project that knowingly disturbing cultural resources (historic or archaeological) or collecting artifacts is illegal.
Paleontological Resources	In the event that paleontological resources of potential scientific interest are encountered (including all vertebrate fossils and deposits of petrified wood), are located during exploration or reclamation activities, the activities would be stopped within 100 feet of the discovery, and the BLM would be notified. Activity that might impact the identified paleontological find would be suspended until after the discovery has been evaluated, any necessary mitigation measures completed, and the AO has issued a written Notice to Proceed.
Solid and Hazardous Waste	Project-related trash, garbage, debris, and foreign matter would be hauled from the site on a regular basis for disposal at an off-site authorized facility; no refuse would be disposed on-site. Site would be maintained and left in a clean and safe condition. Burning would not be allowed at the project area.
	Employees would be instructed regarding the types and locations of on-site petroleum products, as well as the health effects, hazards (such as fire and explosion), and environmental impacts associated with the products. In accordance with 29 CFR 1910.1200, a material safety data sheet (MSDS) for every chemical or hazardous material brought on-site would be kept on file at the mobile office.
	Fuel would be transferred from the 15,000-gallon aboveground tank (located at the laydown area) to and from pickup truck tanks by electric transfer pumps. A portable generator would be used at the 15,000-gallon tank location. Pickup trucks would be equipped with pumps that operate off the vehicle's electric supply. Sorbent materials shall be immediately available to control fuel spills up to 50 gallons. The fuel delivery transport operator would be certified and is the individual

Table 2-2. Applicant-committed Environmental Protection Measures (ACEPM)

Resource	Protection Measure
	responsible for loading the fuel tank. Clean-up supplies would be stored on-site in conex containers.
	Midway would store petroleum products such as gasoline, diesel fuel, helicopter fuel, and lubricants or any other hazardous materials in approved containers to prevent mixing, drainage, or accidents. Midway would adequately fence, post, or cover mud and separation pits, and hazardous material storage areas.
	Midway would not drain oil or lubricants onto the ground surface.
	In the event hazardous or regulated materials, such as diesel fuel, are spilled, Midway would take immediate measures to control the spill. Midway would immediately clean up any spills under 25 gallons immediately and would clean up any spills over 25 gallons within 24 hours and report the incident to the BLM AO and Nevada Division of Environmental Protection. After clean up, the oil, toxic fluids, or chemicals and any contaminated material would be removed from the site and disposed of at an approved disposal facility.
	Midway would work with the AO on the containment of drilling fluids and drill hole cuttings.
	Mixing of herbicides and rinsing of herbicide containers and spray equipment would be conducted only in areas that are safe distance from environmentally sensitive areas and points of entry to bodies of water (storm drains, irrigation ditches, streams, lakes, or wells).
	All construction, operation, and maintenance activities would comply with all applicable Federal, State, and local laws and regulations regarding the use of hazardous substances and the protection of air and water quality.
Air Quality	Midway would use surface application of water from a water truck before and during surface clearing, and excavation activities to reduce fugitive dust emissions. Midway would use surface application of water and reduced speed limits on dirt access roads or other unpaved, unvegetated surfaces as needed (for example, during high-wind conditions) to reduce fugitive dust emissions. Dragging or grading may be utilized to reduce road wear and dust generation on drill access routes.
	Drill rigs would be equipped with a cyclone to collect/sample dust to the greatest extent practicable. Drilling would be conducted using water as a dust control measure. No dry or air drilling would be conducted during exploration.
	All internal combustion equipment would be kept in good working order.
	Midway would cover construction materials and stockpiled soils if they are a source of fugitive dust.
Erosion and Sediment Control (Soil and Water Resources)	Midway would construct a containment barrier around all pumps used within 100 feet of a stream channel. The containment barrier would be of sufficient size to contain all fuel being stored or used on site.
	Midway would plug all drill holes per Nevada State statute (<i>NDWR Regulations for Water Well and Related Drilling</i>), as waived. If artesian flow is encountered, the drill hole would be plugged immediately. The location, depth, and relative flow rate of any water intercepted would be reported to the Ely District Manager or the AO. Drill cuttings would be returned to the hole if possible, or at a minimum, raked and spread out so as not to impede regrowth of vegetation or to create erosion problems.
	Midway would use specialized low-surface impact equipment (e.g., balloon tired vehicles) or helicopters, as determined by the AO for activities in off-road areas where it is deemed necessary to protect fragile soils and other resource values.
	During periods of adverse soil moisture conditions caused by climatic factors such as thawing, heavy rains, snow, flooding, or drought, Midway would suspend activities on existing roads that could create excessive surface rutting. When adverse conditions exist, Midway would contact the AO for an evaluation and decision based on soil types, soil moisture, slope, vegetation, and cover.
	Midway would use BMPs for water management measures. These measures would include contour furrowing; terracing; reduction of steep cut and fill slopes; installing water bars in appropriate locations to control runoff and erosion; using sumps to manage drilling fluids; installing silt fences, weed-free hay bales, or other sediment control structures at appropriate

Table 2-2. Applicant-committed Environmental Protection Measures (ACEPM)

Resource	Protection Measure
	<p>locations; having suitable spill control and cleanup equipment and supplies readily available; and implementing concurrent reclamation measures. Appendix B contains Midway's Reclamation Plan. When drainages must be crossed with a road, BMPs would be followed to minimize the surface disturbance and erosion potential. Temporary culverts could also be installed within the drilling area and as necessary on the access road. Maintenance of the exploration roads would include seasonal regrading when necessary. Midway would inspect erosion controls in the spring and fall and after exceptional storm events.</p> <p>Midway's restoration requirements include reshaping, recontouring, and/or resurfacing with growth medium, installation of water bars, and seeding on the contour. Removal of structures such as culverts, concrete pads, cattle guards, and signs would usually be required. Additional erosion control measures (e.g., fiber matting and barriers) to discourage road travel may be required as required by BLM.</p> <p>Midway would employ additional protective measures, such as restrictions on surface entry during periods of excessive runoff, avoidance of selected areas, and special reclamation techniques, on lands containing unstable/highly erodible soils, as determined by the AO.</p> <p>Soil stockpiles and road berms, if scheduled to be left in place over the growing season, would be seeded with an approved site-specific interim seed mix to reduce erosion, preserve the biological flora and fauna, and prevent the establishment of noxious weeds and other undesirable plant species.</p> <p>To provide for effective rehabilitation of the disturbed area, all available growth medium, as practical, would be removed and stockpiled. Any trees removed would be separated from soils and stockpiled separately. Midway would cover stockpiled soils if needed to minimize wind and water erosion of these stockpiles.</p>
Vegetation Resources	<p>Midway would keep removal and disturbance of vegetation to a minimum through construction site management (e.g., using previously disturbed areas and existing easements, limiting equipment/materials storage and staging area sites, etc.).</p> <p>Midway would reclaim the disturbed area concurrently or at the earliest feasible time by recontouring to conform to pre-existing topography (including filling of trenches), to the extent possible, followed by redistribution of stockpiled growth medium over the reclaimed area. Compacted areas would be ripped to a depth of 12 inches unless in solid rock. Ripped areas may need further work to break up large clods and produce a fine-grained seed bed.</p> <p>Where seeding is required, Midway would use appropriate seed mixture and seeding techniques approved by the BLM AO. Midway would generally conduct reclamation with native seeds that are representative of the indigenous species present in the adjacent habitat, unless documenting rationale for potential seeding with selected non-native species. Possible exceptions would include use of non-native species for a temporary cover crop to out-compete weeds. In all cases, seed mixes would be approved by the BLM AO prior to planting. Midway would generally seed during the 3rd and 4th quarter of the year.</p> <p>Areas would be considered to be satisfactorily reclaimed when all disturbed areas have been recontoured to blend with the natural topography, erosion has been stabilized, and an acceptable vegetative cover has been established. Midway would use the Nevada Guidelines for Successful Revegetation prepared by the Nevada Division of Environmental Protection, the BLM, and the U.S. Department of Agriculture Forest Service (or most current revision or replacement of this document) to determine if revegetation is successful.</p> <p>Reclamation bond release criteria would consist of the following:</p> <ul style="list-style-type: none"> ○ The perennial plant cover of the reclaimed area would equal or exceed perennial cover of selected comparison areas (normally adjacent habitat). If the adjacent habitat is severely disturbed, an ecological site description may be used as a cover standard. Cover is normally canopy or foliar cover as estimated by the point intercept method. Selected cover can be determined using a method as described in Sampling Vegetation Attributes, Interagency Technical Reference, 1996, BLM/RS/ST- 96/002+1730. The Reclamation Plan for the project area would identify the site-specific release criteria and associated statistical methods in the Reclamation Plan or permit. <p>Midway would respread weed-free vegetation removed from the right-of-way to provide</p>

Table 2-2. Applicant-committed Environmental Protection Measures (ACEPM)

Resource	Protection Measure
	protection, nutrient recycling, and seed source.
Wildlife - general	Project-related traffic would observe prudent speed limits to protect wild horses, wildlife, and livestock.
Special-Status Species	<p>Actions which would adversely impact a special-status species (including federally listed, proposed, and candidate species, state protected species, and BLM sensitive species or its habitat), would be modified to prevent possible future listing of these species as threatened or endangered.</p> <p>Raptors: Midway would protect active raptor nests in undisturbed areas within 0.25 mile of areas proposed for vegetation conversion using species-specific protection measures. Midway would inventory areas containing suitable nesting habitat for active raptor nests prior to the initiation of any project activities.</p> <p>Migratory Birds: Where possible, land clearing and surface disturbance would be timed to prevent destruction of active bird nests or young birds during the avian breeding season (April 15 to July 15, annually) to comply with the Migratory Bird Treaty Act (MBTA). If surface-disturbing activities are unavoidable during this period, Midway would have a qualified biologist survey the areas proposed for immediate disturbance for the presence of active nests.</p> <p>If active nests are located, or if other evidence of nesting is observed (mating pairs, territorial defense, carrying of nesting material, transporting of food), the area would be avoided to prevent destruction or disturbance of nests until the birds are no longer present. Avian surveys would be conducted only during the avian breeding season and immediately prior (within 7 days) to Midway conducting exploration activities that would result in disturbance. After such surveys are performed and disturbance created (i.e., road construction and drill pad development), Midway would not conduct any additional disturbance during the avian breeding season without first conducting another avian survey. After July 15, exploration activities would continue; no further avian surveys, in compliance with MBTA, would be conducted until the next year.</p> <p>The following restrictions apply to the following species:</p> <ul style="list-style-type: none"> • Sage-grouse. No surface use would be allowed within ½ mile of an active sage-grouse lek from 5 a.m. until 10 a.m. during the period March 1 through May 15. • Ferruginous Hawk. Ferruginous Hawk nest sites would not be disturbed and no surface use would be allowed within ½ mile of an occupied Ferruginous Hawk nest during the period March 1 through June 30 or until the birds have fledged (left) the nest, as determined by a BLM biologist. • Buffers for other raptor species would be determined on a case-by-case basis. • Pygmy Rabbit. Within the Ely District, there are favorable habitats selected by pygmy rabbits as burrowing areas. Therefore, prior to entry into these areas, Midway would discuss the proposed activities with the AO who may require additional measures for the protection of pygmy rabbits and their habitats. Such measures may include: <ul style="list-style-type: none"> ○ Avoidance of selected areas ○ Restriction of activities near burrows during the months of April through June.
Invasive Nonnative Species	To eliminate the transport of vehicle-borne weed seeds, roots, or rhizomes, all vehicles and heavy equipment used for the completion, maintenance, inspection, or monitoring of ground disturbing activities; for emergency fire suppression; or for authorized off-road driving would be free of soil and debris capable of transporting weed propagules. All such vehicles and equipment would be cleaned with power or high pressure equipment prior to entering or leaving the work site or Project Area. Vehicles used for emergency fire suppression would be cleaned as a part of check-in and demobilization procedures. Cleaning efforts would concentrate on tracks, feet and tires, and on the undercarriage. Special emphasis would be applied to axels, frames, cross members, motor mounts, and on underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs would be swept out, and refuse would be disposed of in waste receptacles. Cleaning sites would be recorded using global positioning systems or other mutually acceptable equipment and provided to the BLM Ely District Weed Coordinator or designated contact person. Employees and contractors would be educated to identify weeds that could spread further in the project area.

Table 2-2. Applicant-committed Environmental Protection Measures (ACEPM)

Resource	Protection Measure
	<p>To eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes, infested soils or materials would not be moved and redistributed on weed-free or relatively weed-free areas. In areas where infestations are identified or noted and infested soils, rock, or overburden must be moved, these materials would be salvaged and stockpiled adjacent to the area from which they were stripped. During reclamation, the materials would be returned to the area from which they were stripped. Further, all source sites such as borrow pits, fill sources, or gravel pits used to supply inorganic materials used for construction, maintenance, or reclamation would be inspected and found to be free of plant species listed on the Nevada noxious weed list or specifically identified by the BLM Ely District. Inspections would be conducted by a BLM weed scientist or qualified biologist as needed.</p> <p>In areas of known noxious weed infestations, monitoring of noxious weeds would be conducted on an annual basis. Monitoring would be conducted until project release. If the spread of noxious weeds is noted, the infested areas would be further evaluated to determine the appropriate remedial action and appropriate treatment. Appropriate weed control procedures, including target species, timing of control, and method of control, would be determined in consultation with BLM personnel.</p> <p>No noxious weeds would be allowed on the site for reclamation release. Any noxious weeds that become established would be controlled. Bonds would be retained for weed control until the site is returned to desired vegetative conditions.</p> <p>To eliminate the introduction of noxious weed seeds, roots, or rhizomes, all interim and final seed mixes, hay, straw, or other organic products used for reclamation or stabilization activities, feed, bedding would be certified free of plant species listed on the Nevada noxious weed list or specifically identified by the BLM Ely District.</p> <p>Removal and disturbance of vegetation would be kept to a minimum through construction site management (e.g. using previously disturbed areas and existing easements, limiting equipment/materials storage and staging area sites, etc.)</p> <p>Reclamation would normally be accomplished with native seeds only. These would be representative of the indigenous species present in the adjacent habitat. Rationale for potential seeding with selected non-native species would be documented. Possible exceptions would include use of non-native species for a temporary cover crop to out-compete weeds. Where large acreages are burned by fires and seeding is required for erosion control, all native species could be cost prohibitive and/or unavailable. In all cases, seed mixes would be approved by the BLM AO prior to planting.</p>
Travel Management and Off-highway Vehicle Use	Midway would design access roads requiring construction with cut and fill to minimize surface disturbance and take into account the character of the landform, natural contours, cut material, depth of cut, where the fill material would be deposited, resource concerns, and visual contrast. Midway would avoid construction of access roads on steep hillsides and near watercourses where alternate routes provide adequate access.
Visual Resources	During the implementation of vegetation treatments, Midway would create irregular margins around treatment areas to better maintain and mimic the surrounding visual character of the landscape.
Fire Protection	<p>Mobile equipment would be properly muffled and equipped with suitable fire suppression equipment, such as fire extinguishers, hand tools, and portable water pumps. All applicable state and federal fire laws and regulations would be complied with, and all reasonable measures would be taken to prevent and suppress fires in the project area. Adequate fire protection/suppression equipment prescribed by the National Fire Protection Association (NFPA) Codes 10 and NFPA 30 for the quantity of fuel stored would be on-site whenever work is being conducted.</p> <p>Midway would report uncontrolled fires immediately to the BLM Ely District Manager or AO. The BLM Fire Dispatch telephone number is (775) 289-1925 or 1-800-633-6092. After working hours, staff would call 911, the White Pine County Sheriff's Office at (775) 289-8801, the Lincoln County Sheriff's Office at (775) 962-5151, or the Nye County Sheriff's Office at (775) 482-8101.</p>
Employee	Midway would train employees, contractors, and other related personnel regarding the

Table 2-2. Applicant-committed Environmental Protection Measures (ACEPM)

Resource	Protection Measure
Training	environmental and safety responsibilities required under the 2011 PoO.
Mineral Exploration and Extraction	Midway would notify the AO within 5 days of completion of reclamation work so that timely compliance inspections can be completed.
	Any change or amendment to the minerals operation would be brought to the attention of the Ely District Manager or an AO prior to implementation of the change on the ground.
	Existing access would be used whenever possible. Off-road vehicular travel would be held to an absolute minimum necessary to complete operations. Additional roads, if needed, would be kept to an absolute minimum. The location of all routes would be approved by the AO prior to construction.
	All survey monuments claim markers, witness corners, reference monuments, bearing trees, etc., would be protected against destruction, obliteration, or damage. When operations are concluded, Midway would remove all survey markers, stakes, flagging, etc., for which Midway has no further need.
	Removal or alteration of existing improvements (fences, cattle guards, etc.) would not be allowed without prior approval of the AO. Existing improvements would be maintained in a serviceable and safe condition. Upon completion of operations, any authorized facility alterations would be restored to the specifications of the AO.
Midway would work with the AO on the containment of drilling fluids and drill whole cuttings and would adequately fence, post, or cover mud and separation pits.	

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2.3 ALTERNATIVE B: NO ACTION ALTERNATIVE

Under the No Action Alternative, the Proposed Action would not be approved by the BLM; however, the area would remain available for other multiple use activities as approved by the BLM. Midway would continue to explore the project area under the approved Notice, which limits surface disturbance to a maximum of 5 acres. Activities associated with this disturbance would include maintenance of existing access roads, construction of exploration roads, and construction of drill pads. This acreage would be reclaimed and released by the BLM, based on compliance with the revegetation success release criteria. As a result, Midway would be able to create sequential acreage of disturbance with BLM approval.

2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS

Midway has chosen to resolve resource concerns surrounding proposed access through the development of route and timing options within the Proposed Action. No other alternatives or options were considered because 1) there is no redundancy with existing roads in the Proposed Action and 2) alternate exploration development configurations would not address unresolved conflicts concerning uses of available resources.

1 **3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL**
 2 **CONSEQUENCES**

3 **3.1 INTRODUCTION**

4 This section describes the existing environment of the area affected by the Proposed Action or
 5 alternatives under consideration, and discloses potential impacts of the Proposed Action and
 6 alternatives. Supplemental authorities that are subject to requirements specified by statute or
 7 executive order must be considered in all BLM environmental documents. The elements
 8 associated with the supplemental authorities listed in the NEPA Handbook (BLM 2008b,
 9 Appendix 1) and in the Nevada Instruction Memorandum 2009-030, Change 1, are listed in
 10 Appendix C. The appendix lists the elements and their status in the project area as well as the
 11 rationale to determine whether the element is present in the project area and would be affected by
 12 one or more elements of the Proposed Action. Supplemental authorities that may be affected by
 13 the Proposed Action are analyzed in this chapter. Those elements listed under the supplemental
 14 authorities that do not occur in the project area and would not be affected are summarized in
 15 Table 3-1 and eliminated from further discussion in this EA. The elimination of nonrelevant
 16 issues is consistent with 40 CFR 1500.4. Resources or uses that may be affected by the Proposed
 17 Action are analyzed in the remainder of this chapter.

Table 3-1. Resources Eliminated from Detailed Analysis in this Environmental Assessment

Resource	Rationale for Elimination
Wetland-riparian resources	Not present in the project area.
Prime and unique farmlands	Not present in the project area.
Livestock grazing	Due to the size of this project relative to the overall size of the grazing allotment, the phased nature of the project, and the concurrent rehabilitation, this exploration project would not affect livestock, designated animal unit months and/or BLM's Rangeland Health Standards.
Wild Horses	Due to the size of this project relative to the overall size of the herd management unit, the phased nature of the project, the concurrent rehabilitation, and the ACEPMs regarding road speed, this exploration project would not affect wild horse ability to forage, would cause minimal displacement, and minimal risk of mortality due to collisions with vehicles
Water rights	There is no project area water use associated with this project and therefore no project area water rights issues. Midway would purchase and transport all water to the project area.
Floodplains	Not present in the project area.
Forests and rangelands	No forests are present in the project area. BLM's Rangeland Health Standards would not be affected.
Wild and scenic rivers	Not present in the project area
Environmental justice	No adverse impacts that would disproportionately adversely impact minority or low-income populations.
Wilderness	Not present in the project area.
Lands with Wilderness Characteristics	An update to the Lands with Wilderness Characteristics inventory was completed. Resource is not present in the project area.
Special-status vegetation species	Site-specific surveys were conducted throughout the project area; no federally listed or BLM special-status species were identified in the project area.

1 The BLM has used environmental data collected in the project area to describe the affected
2 environment and predict environmental effects that could result from the Proposed Action and
3 alternatives. A level of uncertainty is associated with any set of data in terms of predicting
4 outcomes, especially when natural systems are involved. The predictions described in this
5 analysis are intended to allow comparison of alternatives to the Proposed Action, as well as
6 provide a method to determine whether activities proposed by the applicant would be expected to
7 comply with applicable federal, state, or local regulations.

8 **3.2 GENERAL SETTING**

9 The 5,528-acre project area is located on the eastern side of the Pancake Range in White Pine
10 County, Nevada, approximately 30 miles southeast of Eureka, 50 miles west of Ely, and 15 miles
11 south of U.S. Highway 50 (see Figure 1-1).

12 The climate and vegetation in the project area are typical of the higher elevation environment of
13 the northern Basin and Range Province. The average annual precipitation is 9 inches (White Pine
14 County Public Lands Policy Plan 2007). Temperatures during the winters are cool with periods
15 of very cold weather with an average temperature in January of 23.9 degrees Fahrenheit (°F).
16 The summers are dry, especially at the lower elevations, with an average high temperature in
17 August of 65.5°F (White Pine County Tourism and Recreation Board 2012). Elevation in the
18 project area ranges between 6,250 and 7,645 feet above mean sea level (amsl). The site
19 topography varies from gently sloping to nearly vertical (on small rock outcrops in the higher
20 elevations of the project area).

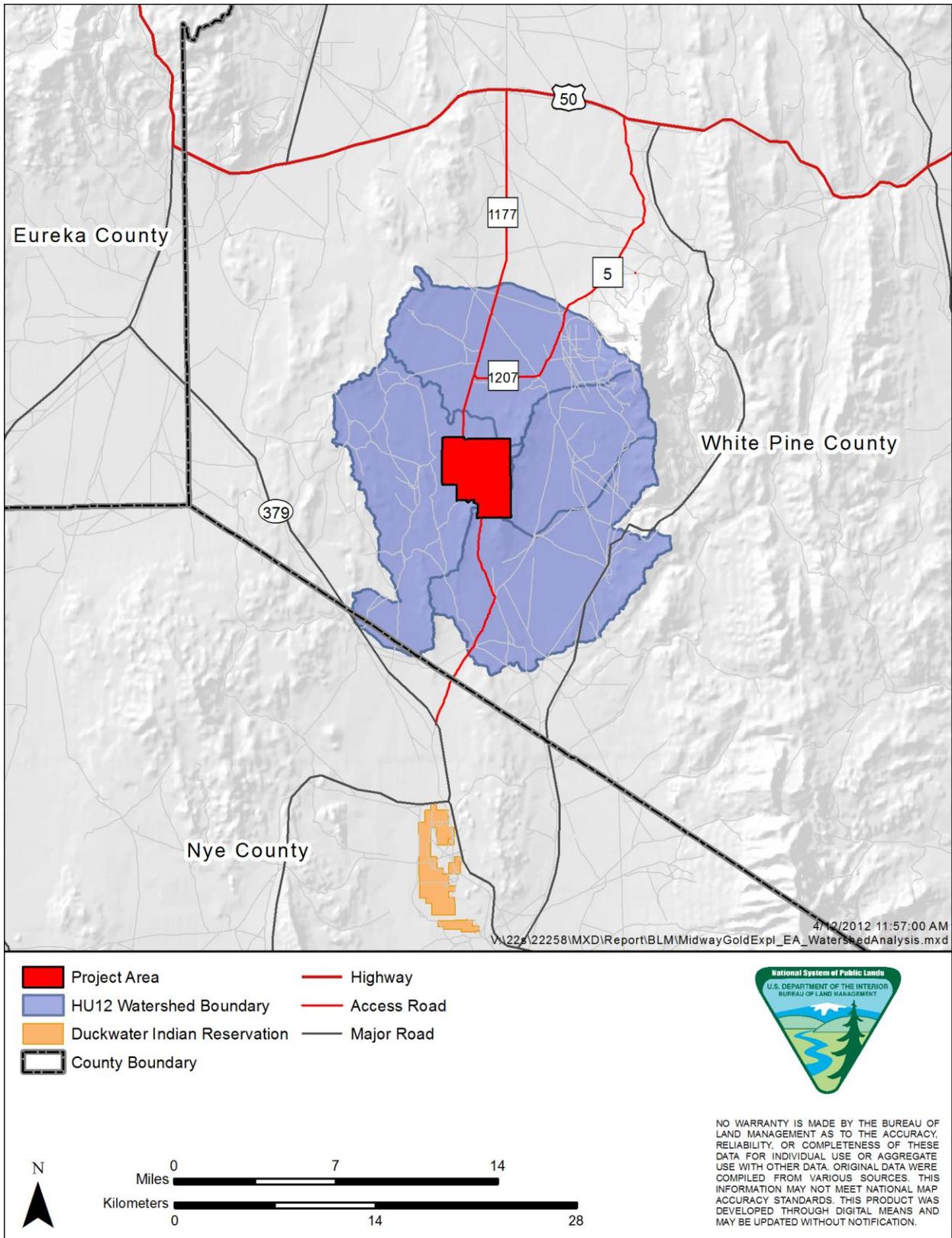
21 **3.2.1 Air Quality**

22 The analysis area for impacts to air quality comprises the following four 12-digit hydrologic unit
23 code (HU 12) subwatersheds²: Headwaters Duckwater Creek, Upper Bull Creek, Middle Bull
24 Creek, and Hoppe Spring. This area was chosen because it represents an ecologically connected
25 area with clear topographical boundaries against which to measure impacts to air quality and
26 visibility from activities located in the project area. The analysis area is 113,516 acres.

27 **3.2.1.1 Affected Environment**

28 As directed by the Clean Air Act, the Environmental Protection Agency (EPA) has established
29 National Ambient Air Quality Standards (NAAQS) to limit the amount of pollutants in the
30 atmosphere considered harmful to public health and the environment. The EPA uses six criteria
31 pollutants as indicators of air quality and has established for each a maximum concentration
32 above which adverse effects on human health could occur. The criteria pollutants are carbon
33 monoxide (CO), lead, nitrogen dioxide, ozone, sulfur dioxide, carbon dioxide (CO₂), and
34 particulate (solid) matter. The EPA also regulates 187 hazardous air pollutants that are known or
35 suspected to cause cancer or other serious health effects. States are required to adopt standards
36 that are at least as stringent as the NAAQS.

² Watersheds are classified into hydrologic units: first-field (region), second-field (sub-region), third-field (accounting unit), fourth-field (cataloguing unit), fifth-field (watershed), and sixth-field (subwatershed). Each hydrologic unit is identified by a unique hydrologic unit code (HU) consisting of two to twelve digits, based on the six levels of classification. A sixth-level watershed has a 12-digit HU code.



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2 Figure 3-1. Air quality analysis area (Headwaters Duckwater Creek, Upper Bull Creek, Middle
3 Bull Creek, and Hoppe Spring HU 12 subwatersheds).

1 Areas that do not meet the NAAQS standards (i.e., that are not in compliance) for criteria
2 pollutants are called *nonattainment areas* and are routinely monitored. A particular geographic
3 region may be designated an attainment area for some pollutants and a nonattainment area for
4 others. A *maintenance area* is an area once designated as nonattainment that has subsequently
5 demonstrated that it has attained and maintained a particular standard for 10 years. The analysis
6 area is currently in attainment with the NAAQS (State of Nevada 2003). No data are available
7 regarding emissions and concentrations of criteria pollutants within the analysis area.

8 Regional haze refers to haze that impairs visibility in all directions over a large area. In July
9 1999, the EPA announced a rule designed to protect and improve visibility in 156 national parks
10 and wilderness areas throughout the country. The Regional Haze Regulations affect only Class I
11 national parks and wilderness areas. There are no Class I areas in White Pine County subject to
12 the rule.

13 3.2.1.2 Environmental Consequences

14 3.2.1.2.1 Proposed Action

15 Under the Proposed Action, fugitive dust would result from clearing, excavation, earth-moving,
16 and grading activities associated with 137 acres of surface disturbance, including 13 miles of
17 vehicular travel on dirt and gravel drill roads and 2.2 miles of overland travel routes. This
18 comprises 0.12% of the analysis area. Fugitive dust would also result from vehicle travel along
19 the project's 10- to 15-mile-long access roads. This dust would have short-term, adverse impacts
20 on air quality and would temporarily reduce visibility in the local airshed. Wilderness areas,
21 wilderness study areas, and areas of critical concern would not be impacted by changes in the
22 local airshed due to their location more than 24 miles from the project area. Fugitive dust
23 impacts would be temporary and would end at the completion of the exploration drilling
24 activities. The phased nature of the project would reduce the severity of impacts on air quality
25 and visibility by 1) spreading out the 137 acres of planned surface disturbance over a five-year
26 time period and 2) conducting concurrent reclamation; however, it would therefore extend the
27 length of time of those impacts.

28 Fugitive dust control methods would consist of the surface application of water from a water
29 truck before and during surface clearing and excavation activities. In addition, surface
30 application of water and reduced speed limits would be used on dirt access roads or other
31 unpaved, unvegetated surfaces, as needed, to reduce fugitive dust emissions. Construction
32 materials and stockpiled soils would be covered if they become a source of fugitive dust. Final
33 reclamation activities, described in Section 2.2.10, would minimize long-term fugitive dust
34 emissions through revegetation, regrading, and recontouring activities that would return the area
35 to its existing condition.

36 The project would require up to 10 rotary RC or core drill rigs, up to 10 crew vehicles (4 × 4
37 pickups), up to 10 pipe trucks or trailers, one bulldozer, one excavator with a pneumatic hammer,
38 up to 10 auxiliary air compressors, up to 10 booster trucks, up to 10 portable light
39 plants/generators, up to two portable auger drills, up to two down-hole survey trucks, up to two
40 ATVs, and up to 10 water trucks (2,000- to 4,000-gallon). Vehicles and equipment used in
41 conjunction with project activities would emit both criteria pollutants and hazardous air
42 pollutants, including nitrogen oxides, CO, sulfur oxides, particulate matter with aerodynamic
43 diameter equal to or less than 10 micrometers (PM₁₀), CO₂, benzene, toluene, and xylenes.

1 Drill rigs would be equipped with a cyclone to collect/sample dust to the greatest extent
2 practicable, resulting in further reductions to fugitive dust emissions. All internal combustion
3 engines would be kept in good working order to limit criteria and hazardous air pollutant
4 emissions. Concentrations are not expected to exceed the NAAQS based on the current
5 attainment status of the area with relation to the number, and dispersed nature of the drill sites
6 (up to 10 drill rigs operating at one time) within the 5,528-acre project area), and the number and
7 type of vehicles and heavy equipment proposed.

8 *3.2.1.2.2 No Action Alternative*

9 Under the No Action Alternative, the Proposed Action would not be approved by the BLM, and
10 the area would remain available for multiple-use activities allowed under BLM regulations.
11 Midway would continue to explore the project area, which would include maintenance of
12 existing access roads, construction of exploration roads, and construction of drill pads. Current
13 air pollutant emissions from existing sources and Midway exploration activities would continue
14 but would be less than under the Proposed Action. The area would remain in attainment with the
15 NAAQS.

16 **3.2.2 Cultural Resources**

17 Cultural resources include archaeological resources, which are the material remains of past
18 human activity. Archaeological resources can be either prehistoric or historic in age (i.e., dating
19 to either before or after the time of Euro-American settlement), and they include artifacts
20 (portable objects of human manufacture); features such as firepits, houses, and other types of
21 structures; rock art; and archaeological sites where any of the above may be found. Cultural
22 resources can also include other types of places that are important to the heritage of
23 contemporary peoples (e.g., traditional cultural properties).

24 Cultural resources are managed under a variety of laws and regulations including Section 106 of
25 the National Historic Preservation Act of 1966 (NHPA) (36 CFR 800), which requires that
26 federal agencies take into account the effect that a federal undertaking (or Proposed Action) may
27 have on historic properties; i.e., any district, site, building, structure, or object that is included in
28 or eligible for inclusion in the National Register of Historic Places (NRHP). A finding under
29 Section 106 of the NHPA that an undertaking will adversely affect historic properties implies
30 that there may be an impact for purposes of NEPA (40 CFR 1508.27(b)).

31 The analysis area for impacts to cultural resources is the 5,528-acre project area. This is the area
32 of potential effect (APE) for purposes of review under Section 106 of the NHPA, all of which
33 has been inventoried for cultural resources by ASM Affiliates (Patsch et al. 2012).

34 **3.2.2.1 Affected Environment**

35 Cultural resources identified within the project area consist of a variety of types of
36 archaeological sites, including prehistoric lithic scatters, a prehistoric habitation site, a rock
37 shelter, prehistoric/ethnohistoric game traps, an ethnohistoric (i.e., dating to the period of early
38 Euro-American exploration and settlement) refuse scatter, historic habitation sites, charcoal
39 platforms, historic refuse scatters, and historic road segments (Patsch et al. 2012). Temporally
40 diagnostic artifacts (i.e., artifacts that provide an indication of the time at which sites were
41 occupied) reflect prehistoric occupations dating from the Early to Late Archaic time periods, as

1 well as historic use of the area from the early 1900s through post-1950. The project area contains
2 eight identified NRHP-eligible cultural resource sites (Table 3-2).

Table 3-2. NRHP-Eligible Sites within the Project Area

Site Number	NRHP Eligibility Criterion/a	Description	Time Period
26WP10386	D	historic habitation site that is likely associated with charcoal production	Historic period; late A.D. 1800s
26WP10388	D	prehistoric projectile point accumulation with an ethnohistoric locus	Middle and Late Archaic periods (3,500 BP-A.D. 1800s)
26WP10391	D	prehistoric habitation site	Late Archaic period (1,500 BP-A.D. 1800s)
26WP10394	D	prehistoric habitation site	Late Archaic period (1,500 BP-A.D. 1800s)
26WP10413	C and D	prehistoric/ethnohistoric antelope trap	Unknown
26WP10414	C and D	prehistoric/ethnohistoric antelope trap	Unknown
26WP10423	D	prehistoric rockshelter	Unknown
26WP10435	D	prehistoric lithic scatter	Middle Archaic period (3,500-1,500 BP)

3 The Early Archaic period corresponds to a time when the Great Basin experienced higher
4 temperatures and reduced precipitation relative to modern conditions (Grayson 1993). Human
5 lifeways during this period appear to have made use of both upland settings and valley bottoms.
6 Grinding stones, indicative of intensive processing of seed resources, become more common
7 throughout the region during this period than had previously been the case, and characteristic
8 projectile points include Pinto, Humboldt, and Gatecliff Series types. The Middle Archaic
9 period, marked by a return to the cooler and wetter climatic conditions of the late Holocene,
10 appears to have been a period of human population growth in the eastern Great Basin. Elko
11 Series projectile points comprise the most common point type of this period. The Late Archaic
12 period is marked by the introduction of the bow-and-arrow. The spread of Numic-speaking
13 peoples from southeastern California into the rest of the Great Basin may have occurred during
14 this period, and this spread may be reflected by the appearance of brownware ceramics and
15 Desert Series projectile points (e.g., Madsen and Rhode 1994). In the far eastern Great Basin,
16 human lifeways characteristic of the Formative period are evident during part of the span of time
17 that comprises the Late Archaic period elsewhere. Formative occupations in the far eastern Great
18 Basin are considered to be part of the Fremont archaeological complex (e.g., Madsen and Simms
19 1998) and are characterized by lifeways that included some degree of reliance on corn
20 agriculture (as opposed to the purely hunting and gathering subsistence practices of groups
21 described as Late Archaic) and use of primarily grayware ceramics. The project area lies at
22 approximately the westernmost extent of known Formative/Fremont sites.

23 The time of contact between Native Americans and Euro-Americans, sometimes called the
24 ethnohistoric period, began in the early 1800s in the vicinity of the project area. Western
25 Shoshone people occupied the area at this time, with settlements in northern Railroad Valley,
26 particularly around Duckwater (Steward 1997). By the mid-1800s, the traditional hunting and
27 gathering practices of these people began to be severely disrupted by Euro-American livestock
28 grazing and private property restrictions. This ultimately led to the incorporation of the Western

1 Shoshone into the Euro-American cash economy, and to the establishment of a reservation at
2 Duckwater in 1940.

3 Of the historic period Euro-American sites in the project area that can be associated with any
4 specific activity, most are related to mining. The project area is located along the western
5 periphery of the historically significant White Pine Mining District, which was organized in 1865
6 around Mt. Hamilton. This district was very productive for a time and had a population in the
7 1860s and 1870s of as high as 10,000 to 12,000. To the west of the project area is the historic
8 Pancake Mining District, which was organized in the 1870s but never produced significant
9 amounts of ore. In support of mines in districts such as White Pine and Pancake, charcoal was
10 produced throughout the region. This involved harvesting pinyon and other trees and burning
11 them on platforms or in kilns to produce charcoal for use in ore processing and other mining-
12 related activities. Charcoal production facilities, such as platforms and habitation sites, are
13 present within the project area; one NRHP-eligible site that appears to be associated with this
14 activity has been identified (see Table Cult-1).

15 Other activities with which cultural resources in the project area may be associated with
16 ranching, and the establishment of transportation routes such as early freight routes associated
17 with mining districts and the later Lincoln Highway (established in the 1910s). Cattle and sheep
18 ranching have been practiced in the general vicinity of the project area since the 1860s, though
19 this industry has frequently been subject to stresses in this region due to overgrazing, harsh
20 winters, and economic downturns. Historic transportation routes in the vicinity of the project
21 area include the Pritchard Fast Freight and Hamilton-Eureka freight routes, which were most
22 heavily used during the late 1800s. The Pony Express and Overland Stage routes pass to the
23 north of the project area in northern portion of Newark Valley. The Lincoln Highway route
24 generally corresponds to that of modern U.S. Hwy 50, which is located to the north of the project
25 area, and present-day U.S. Hwy 6, located to the southeast of the project area, follows the route
26 of the Midland Trail highway, construction of which was begun in 1913.

27 3.2.2.2 Environmental Consequences

28 3.2.2.2.1 Proposed Action

29 Under the Proposed Action, construction of drill roads, drill sites and sumps, auger holes or
30 trenches, the laydown area, and the use of overland travel would cause surface and subsurface
31 physical disturbance that could result in the destruction or inadvertent discovery of cultural
32 resources. There would be 137 acres of surface disturbance, which is 2% of the project area.

33 This disturbance could result in damage or destruction to cultural resource sites. Prehistoric
34 cultural resources in the project area could include those associated with the Early through Late
35 Archaic periods. Ethnohistoric sites could include cultural resources associated with traditional
36 hunting and gathering practices of the Western Shoshone. Historic resources in the project area
37 could be those associated with mining (such as charcoal production sites), ranching, exploration,
38 or the establishment of early transportation routes.

39 There are eight identified NRHP-eligible sites identified within the project area (Patsch et al.
40 2012; Humphrey, 2012; see Table 3-2). Potential for impacts to these sites or to previously
41 unidentified resources would be precluded though the ACEPMs identified in Section 2.2.13:

- 42 • All previously identified NRHP-eligible sites will be avoided by project activities if
43 possible, such that no direct impacts to them will occur. Prior to beginning each

1 subsequent phase, Midway would provide a work plan detailing specific locations and
2 acreage of proposed disturbance. The BLM would review the proposed locations of the
3 surface disturbance and notify Midway if the locations overlap an eligible or unevaluated
4 cultural site identified in the Class III cultural resources block study. If an eligible or
5 unevaluated cultural site is located within the area of proposed surface disturbance, the
6 identified cultural site(s) would be avoided.

- 7 • All project activities that occur within 100 meters of any previously identified NRHP-
8 eligible site would be monitored by a professional archaeologist who would stop
9 activities in the event that any previously unidentified cultural resources are discovered,
10 so that those resources can be evaluated.

11 If avoidance is not possible, a treatment plan for the affected sites would be prepared and
12 mitigation of impacts would occur through archaeological data recovery investigations. These
13 measures, stipulated by a Memorandum of Agreement signed by BLM, Egan FO and the Nevada
14 State Historic Preservation Office for purposes of completing the review of the project under
15 Section 106 of the NHPA, would ensure that no significant direct impacts to NRHP-eligible
16 cultural resource sites will occur, whether or not those sites have been previously discovered.

17 Cultural resources can also be impacted by environmental changes that affect their setting.
18 Within the project area, the addition of exploration activities would not be likely to change the
19 current setting appreciably, because the dominant visual features in the project area are already
20 mining-related (the heap leach pad and access roads associated with the former Easy Junior
21 mine, see Visual Resources, Section 3.2.10). In addition, all of the NRHP-eligible cultural
22 resource sites that have been identified within the project area are eligible for the NRHP under
23 eligibility criterion D (i.e., due to their potential to provide information important in history or
24 prehistory), and changes in setting would not affect the characteristics of these sites that make
25 them eligible under this criterion because changes to a site's setting do not generally change their
26 potential to supply information about the past. And finally, two of the previously identified
27 NRHP-eligible sites within the project area—both antelope traps—are eligible under criterion C
28 in addition to criterion D, but neither would changes in setting affect this aspect of the
29 significance of these sites: these sites have been judged specifically to display distinctive
30 characteristics and methods of construction, but changes in setting would not affect the
31 construction methods and characteristics of these sites.

32 It is also possible that indirect impacts to cultural resources could occur as a result of an
33 increased risk of discovery or damage through additional project area access available to
34 recreationists or others from the development of new drill roads. The risk of indirect impacts to
35 cultural resources would rise under the Proposed Action roughly in proportion to the ratio of
36 miles of new roads relative to miles of existing roads. There are approximately 7 miles of road
37 within the project area. Phase I activities would include the construction of 13.4 miles of new
38 road, an increase of approximately 186% to the existing roads within the project area. A similar
39 amount of road construction and overland travel is expected in Phase II activities. Midway
40 phasing and ongoing reclamation would minimize the total acreage of open drill roads available
41 for access; only those access roads needed for future exploration would remain open. Thus the
42 miles of roads open at any one time would likely be less than the total of Phase I and Phase II
43 activities. Midway would train its employees, contractors, and other related personnel regarding
44 its cultural resources responsibilities required under the 2011 PoO.

1 3.2.2.2.2 *No Action Alternative*

2 Under the No Action Alternative, the Proposed Action would not be approved by the BLM, and
3 the area would remain available for multiple-use activities allowed under BLM regulations.
4 Midway would continue to explore the project area under the approved Notice, which limits
5 surface disturbance to a maximum of 5 acres. As a result, Midway would be able to create
6 sequential acreage of disturbance with BLM approval.

7 3.2.3 *Paleontological Resources*

8 Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms
9 preserved in rocks and sediments. These include mineralized, partially mineralized, or
10 unmineralized bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows,
11 and microscopic remains. Fossils are considered nonrenewable resources because the organisms
12 they represent no longer exist. The analysis area for impacts to paleontological resources is the
13 5,528-acre project area, because it represents the entire area of potential surface disturbance and
14 therefore the entire area of potential impacts to paleontological resources.

15 3.2.3.1 **Affected Environment**

16 The BLM, in its General Procedural Guidance for Paleontological Resource Management H-
17 8270-1 (revised 1998), classifies public lands based on the potential for paleontological “areas”
18 to contain noteworthy occurrences of fossils.

19 Geologic units are defined based on physical characteristics and depositional environment, both
20 of which are also indicative of potential to contain preserved fossils. The presence of pertinent
21 geologic units at or near the surface can broadly predict the potential for finding important
22 paleontological resources.

23 The Potential Fossil Yield Classification (PFYC) system was originally developed by the U.S.
24 Forest Service's (USFS) Paleontology Center of Excellence, and the Region 2 (USFS) Paleo
25 Initiative (USFS 1996). PFYC is in the process of being formally adopted by the BLM to
26 promote consistency between agencies and throughout the BLM. Under the PFYC system,
27 geologic units are classified from 1 to 5 based on the relative abundance of vertebrate fossils or
28 uncommon invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher
29 class number indicating a higher potential. The classification is not an assessment of whether
30 important fossils are known to occur occasionally in these units; rather, it provides baseline
31 guidance to assess and mitigate impacts to paleontological resources. The PFYC is usually
32 consistent within a geologic unit.

33 The BLM has not currently designated PFYC classifications within the project area. In a
34 paleontological mitigation-monitoring plan prepared for the BLM Ely District Office (Murphey
35 and DeBusk 2011), PFYC classes were recommended for a number of geologic units identified
36 along a transmission line route corridor in Nevada. The BLM Ely FO concurred with the PFYC
37 recommendations for those geologic units. Although the PFYC recommendations in the
38 monitoring plan were site-specific, it is reasonable to assume that the geologic units along the
39 transmission line would have the same PFYC to those found in the project area, because of its
40 similar physical characteristics and depositional environment. Using the 2011 data from
41 Murphey and DeBusk, Table 3-3 describes the geologic units, the associated acreage within the
42 project area, and the recommended PFYC.

Table 3-3. Acreage and Percentage of Project Area with Potential Paleontological Sensitivities

Geologic Unit(s)	Map Symbol	Age	Description	Project Area Acreage (Percentage)	Potential PFYC
Chainman Shale, Joana Limestone, Pilot Shale	MDcl	Lower Mississippian and Upper Devonian	Siltstone, limestone, shale, and sandstone. Pilot Shale is generally recognized as carbonaceous shale, overlain by the cliff-forming Joana Limestone. Siliciclastic quartz-bearing grit, chert, quartz sand, and siltstone in a calcareous matrix are common in Chainman Shale.	3,046.67 (55.1%)	2
Sedimentary rocks	Qal	Holocene and Pleistocene	Alluvium, undifferentiated. Present throughout Nevada.	1,335.46 (24.2%)	3b
Diamond Peak Formation, White Pine Range and west	IPMcl	Middle Pennsylvanian to Lower Mississippian	Shale, siltstone, sandstone, and conglomerate. Crops out across all of eastern Nevada. Overlain by carbonate rocks or by Permian and Upper Pennsylvanian clastic rocks.	673.23 (12.2%)	2
Devils Gate Limestone	Dc	Upper and Middle Devonian	Limestone and minor dolomite. Generally cliff-forming, thin-to thick-bedded limestone. Mainly shallow-water subtidal, intertidal, and supratidal deposits formed on a broad inner carbonate shelf.	461.89 (8.4%)	2
Jasperoid breccia	br	Tertiary to Jurassic	Part of a mixed breccia unit that identifies locally disrupted rocks. Tectonic, volcanic, and metamorphic origins.	10.53 (0.2%)	1
Younger sedimentary and volcanic rocks	Ts3	Pliocene and Miocene	Tuffaceous and other young Tertiary sedimentary rocks. Most are sedimentary with a strong volcanic component.	0.55 (<0.1%)	3b

Sources: Crafford (2007) and Murphey and DeBusk (2011).

Notes:

PFYC 1: Unlikely to contain recognizable fossil remains

PFYC 2: Not likely to contain vertebrate fossils or scientifically significant nonvertebrate fossils

PFYC 3b: Geologic units where fossil content varies in significance, abundance, and predictable occurrence; also geologic units of unknown fossil potential

1 As show in Table 3-3, over 75% of the project area (4,192 acres) consists of geologic units that
 2 are not likely to contain recognizable fossil remains, vertebrate fossils, or scientifically
 3 significant nonvertebrate fossils (PFYC 1 or 2). The remaining 24% of the project area (1,336
 4 acres) consists of geologic units where fossil content varies in significance, abundance, and
 5 predictable occurrence, or geologic units of unknown fossil potential (PFYC 3b).

6 3.2.3.2 Environmental Consequences

7 3.2.3.2.1 Proposed Action

8 Under the Proposed Action, construction of drill roads, drill sites and sumps, augur holes or
 9 trenches, the laydown area, and the use of overland travel would cause surface and subsurface
 10 physical disturbance that could result in the destruction or discovery/recovery of paleontological
 11 resources. There would be 137 acres of surface disturbance. This is 2% of the project area. The

1 risk of these direct impacts depends on the disturbance in geological formations with the
2 potential to yield fossils. During Phase I, approximately 85% of all proposed surface disturbance
3 (55.54 acres) would be located in PFYC 1 or 2 areas; that is, areas unlikely to contain
4 recognizable fossil remains, vertebrate fossils, or scientifically significant nonvertebrate fossils.
5 The remaining 15% (9.67 acres) would be located in areas identified as PFYC 3b (fossil content
6 varies in significance, abundance, and predictable occurrence; also geologic units of unknown
7 fossil potential). These areas would comprise 0.17% of the total project area.

8 Indirect impacts to paleontological resources would include an increased risk of discovery or
9 damage through additional project area access available to recreationists or others from the
10 development of new drill roads. Under Phase I of the Proposed Action, there would be a
11 maximum of 2.2 miles of new road present within 200 feet of the two geologic units with a
12 potential PFYC of 3b. The percentage of Phase II proposed surface disturbance that would be
13 apportioned to new roads is not known. Midway phasing and ongoing reclamation would
14 minimize the total acreage of open drill roads available for access; only those access roads
15 needed for future exploration would remain open. Thus the miles of roads near PFYC 3b areas
16 that are open at any one time would likely be less than the 2.2 mile total. Midway would also
17 train its employees, contractors, and other related personnel regarding the environmental
18 responsibilities required under the 2011 PoO.

19 In the event that paleontological resources of potential scientific interest (including all vertebrate
20 fossils and deposits of petrified wood) are encountered during exploration or reclamation
21 activities, Midway would stop activities within 100 feet of the discovery and notify the BLM.
22 Activity that might impact the identified paleontological find would be suspended until after the
23 discovery has been evaluated, any necessary mitigation measures completed, and a BLM
24 Authorized Officer (AO) has issued a written Notice to Proceed.

25 3.2.3.2.2 *No Action Alternative*

26 Under the No Action Alternative, the Proposed Action would not be approved by the BLM, and
27 the area would remain available for multiple-use activities allowed under BLM regulations.
28 Midway would continue to explore the project area, which would include maintenance of
29 existing access roads, construction of exploration roads, and construction of drill pads. The
30 potential for disturbance of paleontological resources by Midway and other users would continue
31 to exist but would be less due to the reduced amount of surface disturbance.

32 3.2.4 **Soil Resources**

33 The 5,528-acre project area is used as the area of analysis for impacts to soil resources because
34 there is little hydrological connectivity to areas outside the project area. No surface water is
35 located within 0.5 mile down gradient from the project area, and the few ephemeral tributaries
36 that are present on-site contain water only a few days of the year. Therefore, the primary issues
37 related to soils are impacts to fragile soils in the project area itself and reclamation potential for
38 disturbed areas.

39 3.2.4.1 **Affected Environment**

40 3.2.4.1.1 *Soil Types*

41 Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) data
42 (NRCS 2006) were used to determine soil mapping units, soils series, and soil characteristics for

1 the project area. Ten soil types occur in the project area. Each soil series is rated as having a
 2 slight, moderate, high, or very high water and wind erosion hazards. These ratings were
 3 developed using soil erodibility, runoff factors, and the wind erodibility index, as defined in the
 4 National Soil Survey Handbook (NRCS 2003). Wind and water erosion hazards become critical
 5 issues when protective vegetation is removed during and following construction activities,
 6 including road construction. Typically, soils found on steeper slopes have a high water erosion
 7 hazard, and soils found on gentler slopes have a low water erosion hazard. Finer grained soils are
 8 at greater risk of wind erosion, and soils with more gravel and/or stones have a lower risk of
 9 wind erosion.

10 In addition, other factors may affect reclamation following surface disturbance. Reclamation-
 11 limiting factors within the ten soil types that would be impacted by the project consist of 1) soil
 12 drought susceptibility, 2) alkaline soils, and 3) rooting depth. Droughty soils are characterized by
 13 coarse texture, excessively rapid percolation rates (low water-holding capacity), and low organic
 14 matter content; as such, they are prone to soil erosion and have limited reclamation potential
 15 (BLM 2007). Alkaline soils (those with a high pH value) have a low water infiltration capacity
 16 and can also limit reclamation and revegetation potential due to reduced nutrient availability.
 17 Rooting depth, or depth to bedrock, is the soil depth to fixed rock; shallow soils are often not
 18 conducive to vegetation establishment and are prone to erosion. Table 3-4 contains a summary of
 19 the acres and characteristics of soil types within the project area.

Table 3-4. Acres and Characteristics of Soil Types within the Project Area

Soil Type	Acres in Project Area	Percentage of Project Area	Reclamation Limiting Factors
Bylo silt loam, 0%–2% slopes	89.64	1.6%	Highly restrictive: droughtiness and rooting depth Moderately restrictive: wind erosion and alkalinity
Palinor association	244.90	4.4%	Highly restrictive: water erosion and droughtiness Moderately restrictive: alkalinity
Palinor-Roden association	1,904.37	34.4%	Highly restrictive: droughtiness Moderately restrictive: alkalinity
Palinor-Urmafot-Urmafot, very shallow association	212.94	3.9%	Highly restrictive: water erosion and droughtiness Moderately restrictive: alkalinity
Roden-Haarvar association	353.26	6.4%	Highly restrictive: water erosion and droughtiness Moderately restrictive: alkalinity
Roden-Izar Association	1,262.50	22.8%	Highly restrictive: water erosion and droughtiness Moderately restrictive: alkalinity
Pookaloo-Hyzen association	689.58	12.5%	Highly restrictive: water erosion and droughtiness Moderately restrictive: alkalinity
Eaglepass-Kyeer-Rock outcrop association	12.51	0.2%	Highly restrictive: water erosion and droughtiness Moderately restrictive: alkalinity, rooting depth
Hyzen-Pookaloo-Tecomar association	127.18	2.3%	Highly restrictive: water erosion and droughtiness Moderately restrictive: alkalinity, rooting depth
Zimbob-Eaglepass association	631.47	11.4%	Highly restrictive: water erosion and droughtiness Moderately restrictive: alkalinity
Total	5,228.35	100%	

1 In summary, all 10 soil types (100% of project area) have features that could limit project
2 reclamation. All soil types found in the project area are also highly restrictive for droughtiness
3 and moderately restrictive for alkalinity. Eight of the ten soil types (64% of project area) are
4 highly restrictive for water erosion hazard. Three soils types (4.1% of project area) are highly or
5 moderatley restrictive for rooting depth. One soil type (1.6% of project area) is highly restrictive
6 for wind erosion hazard.

7 3.2.4.1.2 *Biological Soil Crusts*

8 Biological soil crusts (also referred to variously as cryptogamic, microbiotic, crytpobiotic, and
9 microphytic crusts) are found in the Great Basin and parts of the Mojave Desert. These
10 biological crusts contribute to important ecological functions such as soil stabilization, water
11 infiltration, and plant establishment (BLM 2001). No data exist on the distribution of biological
12 soil crusts within the subwatersheds; however, biological soil crusts were noted during 2011
13 vegetation surveys conducted in the project area, mostly in transects dominated by black
14 sagebrush (*Artemisia nova*) (EcoSynthesis and WRC 2012). In the project area, black sagebrush
15 is most closely associated with the Great Basin Xeric Mixed Sagebrush Shrubland ecological
16 system. There are approximately 1,970 acres of this ecological system in the project area (see
17 Section 3.2.6 Vegetation).

18 3.2.4.2 **Environmental Consequences**

19 3.2.4.2.1 *Proposed Action*

20 Construction activities could result in soil compaction, soil erosion (from wind and water), and
21 loss of soil productivity (ability to support vegetation). Under the Proposed Action, there would
22 be a total of approximately 137 acres of surface disturbance over the life of the project. This is
23 2% of the project area. During Phase I, there would be direct impacts to soils through surface
24 disturbance and vegetation removal on approximately 65 acres. As discussed in Section
25 3.2.4.1.2, most of these soils contain one or more characteristics that may limit the success of
26 reclamation following disturbance. All soils impacted by Phase I activities would be highly
27 restrictive to reclamation due to droughtiness and moderately restrictive due to alkalinity. In
28 addition, almost 42% of the soils impacted by Phase I activities (approximately 27 acres) would
29 be highly restrictive to reclamation due to water erosion hazards. Less than 1% of soils would
30 have rooting depths and wind erosion hazards that would further limit reclamation. There would
31 be a total of 72.4 acres of surface disturbance during Phase II activities. The exact locations of
32 drill sites, drill roads, and auger/trench sites for Phase II activities are not known, but because the
33 reclamation-limiting factors span across all soils types within the project area, it is expected that
34 soil disturbed during Phase II would also have one or more reclamation-limiting factors
35 regardless of location.

36 The acres of surface disturbance (and percentage of total disturbance) at risk for restricted
37 reclamation is summarized in Table 3-5.

Table 3-5. Acres of Surface Disturbance (and percentage of total disturbance) at Risk of Restricted Reclamation

	Highly Restrictive Water Erosion Hazard	Moderately Restrictive Wind Erosion Hazard	Highly Restrictive Droughtiness	Moderately Restrictive Excess Alkalinity	Highly Restrictive Rooting Depth
Phase I activities ¹	27.34 (41.9%)	0.61 (0.9%)	65.21 (100%)	65.21 (100%)	0.61 (0.9%)
Phase 2 activities ²	30.3 (41.9%)	0.65 (0.9%)	72.4 (100%)	72.4 (100%)	0.65 (0.9%)

¹ Phase I analysis is based on the drill site, access road, auger/trench size, overland travel areas, and laydown area location information provided in Map 2-1, and assumes the following:

- Weighted average drill pad/sump size
- 20-foot-wide drill roads
- 5-foot-wide overland travel route
- Maximum trench/auger sites, with additional buffer area as a conservative estimate

² Phase II analysis is based on application of the percentage of total disturbance identified for Phase I.

1 Biological soils crusts could also be disturbed, affecting soil stabilization, water infiltration, and
2 plant establishment. Under Phase I activities, there would be surface disturbance to
3 approximately 34 acres of the Great Basin Xeric Mixed Sagebrush Shrubland ecological system.
4 This is less than 2% of the total acreage of this ecological system within the project area. It is
5 expected that the Phase II soil disturbance would have a similar risk of restricted reclamation
6 and/or impact to biological soil crusts.

7 Midway's phasing and ongoing reclamation would minimize the total acreage of drill roads and
8 drill pads subject to wind or water erosion at any one time; only those access roads and drill pads
9 needed for future exploration would remain open. Midway would also cover any stockpiled soil,
10 if needed, to further minimize wind and water erosion. During periods of adverse soil moisture
11 conditions caused by climatic factors such as thawing, heavy rains, snow, flooding, or drought,
12 Midway would suspend activities on existing roads that could create excessive surface rutting.
13 Midway would employ additional protective measures, such as restrictions on surface entry
14 during periods of excessive runoff, avoidance of selected areas, and special reclamation
15 techniques, on lands containing unstable/highly erodible soils, as determined by the AO.
16 Maintenance of the exploration roads would include seasonal regrading when necessary. Midway
17 would inspect erosion controls in the spring and fall and after exceptional storm events.

18 All areas would be reclaimed pursuant to Midway's Reclamation Plan as described in Appendix
19 A which would also reduce impacts to soils in the project area. Per the ACEPMs described in
20 Section 2.2.13, Table 2-2, Midway would also use specialized low-impact surface equipment
21 (e.g., balloon-tired vehicles or helicopters) for activities in off-road areas where it is deemed
22 necessary to protect fragile soils (such as biological soil crusts) and other resource values.

23 3.2.4.2.2 No Action Alternative

24 Under the No Action Alternative, the Proposed Action would not be approved by the BLM, and
25 the area would remain available for multiple-use activities allowed under BLM regulations.
26 Midway would continue to explore the project area under the approved Notice, which limits
27 surface disturbance to a maximum of 5 acres. As a result, Midway would be able to create
28 sequential acreage of disturbance with BLM approval. Current impacts to soils would continue.

1 3.2.5 *Water Resources*

2 The analysis area for impacts to water resources is the 35,064-acre Headwaters Duckwater Creek
3 subwatershed (Figure 3-2). This area was chosen because the ephemeral tributaries within the
4 project area drain into Duckwater Creek, which is located within this subwatershed.

5 3.2.5.1 **Affected Environment**

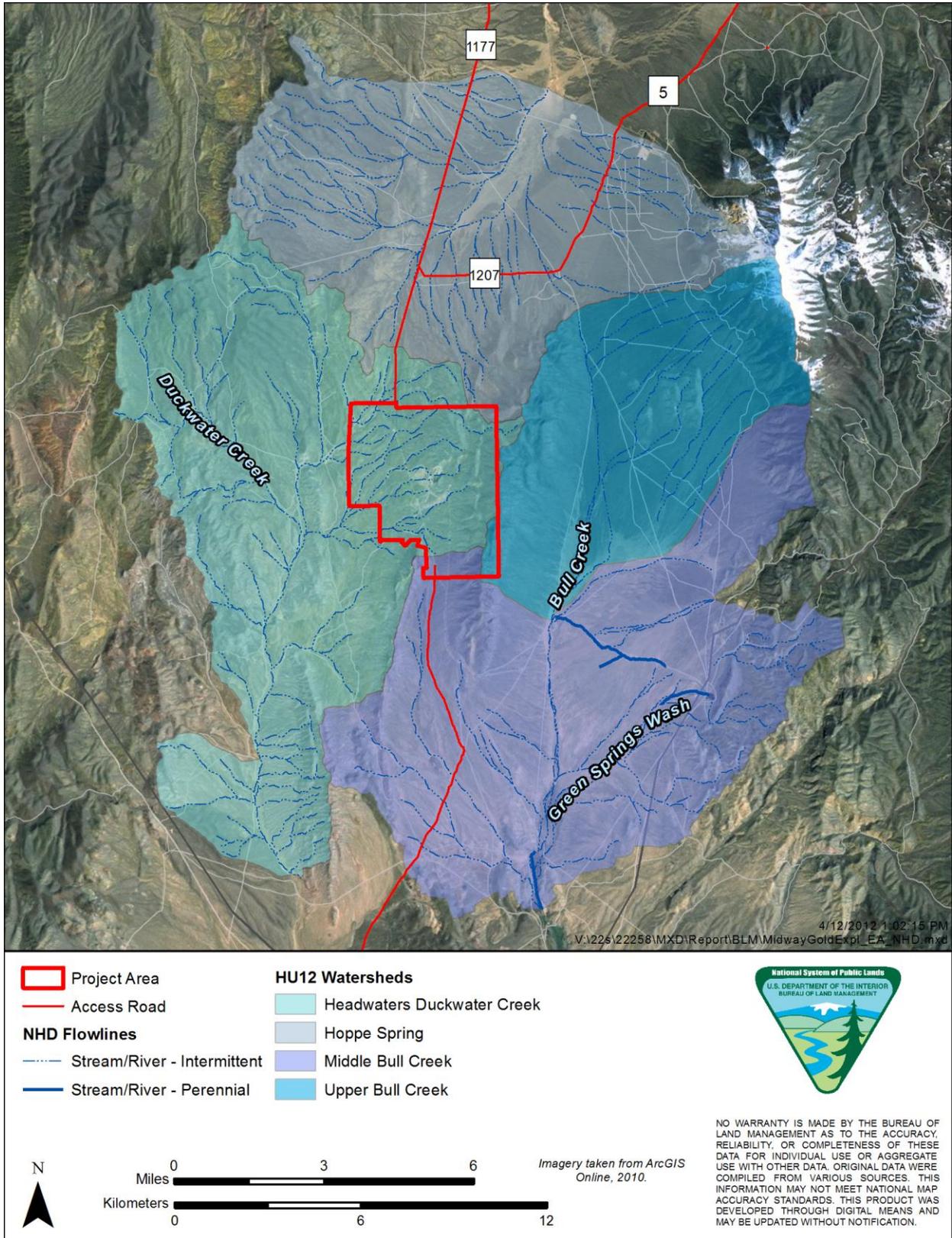
6 The Headwaters Duckwater Creek subwatershed is located within Hot Creek and Railroad
7 valleys. Under section 303(d) of the Clean Water Act, all states, territories, and authorized tribes
8 are required to identify any waterbody (including stream reaches, lakes, and waterbody
9 segments) within their jurisdiction with chronic and recurring monitored violations of the
10 applicable water quality criteria. No impaired waters have been reported to the EPA for either the
11 Hot Creek Valley watershed or the Railroad Valley watershed (2006 was the most recent
12 reporting year available). According to the 2006 *White Pine County Water Resources Plan*, the
13 county's surface water is in compliance with the 1972 Clean Water Act (White Pine County
14 2006).

15 National Wetlands Inventory show no wetlands in the project area and site-specific surveys
16 conducted in 2011 found no evidence of hydrophytic vegetation (Ecosynthesis and WRC 2012).
17 Several ephemeral tributaries are in the project area; however, these were determined not to be
18 jurisdictional (Ecosynthesis and WRC 2012). Field observations in all months of the year
19 indicate that these tributaries flow at most for a few days following heavy precipitation and not at
20 all otherwise. The tributaries generally run from the Pancake Mountains in a southeasterly
21 direction into Duckwater Creek. The connection to Duckwater Creek is approximately 2 miles
22 west of the project area. Duckwater Creek is classified as an intermittent stream. No seeps and
23 springs have been noted in the project area (EcoSynthesis and WRC 2012).

24 As part of a U.S. Geological Survey (USGS) study, water-level measurements in 418 wells were
25 used to develop a potentiometric surface map of the carbonate-rock aquifer and a water table
26 map of the basin-fill aquifer in the Basin and Range carbonate-rock aquifer system (analysis area
27 encompassing approximately 13,500 square miles and including most of White Pine County,
28 Nevada, and smaller areas of adjacent counties in Nevada and Utah. The map indicates that the
29 approximate altitude of the water-level surface in the project area is between 5,500 and 6,000
30 feet (Wilson 2007). The project area elevation ranges between 6,250 and 7,645 feet; therefore,
31 groundwater could be expected to be anywhere between 250 and 2,145 feet below the surface.
32 The USGS National Water Information System Web Interface lists 15 groundwater monitoring
33 well sites within the Hot Creek-Railroad and Little Smoky-Newark valleys. In 2011,
34 groundwater levels ranged from 45 to 490 feet below land surface. Well depths ranged from 56
35 to 6,514 feet below land surface. Wells were completed in the Basin and Range basin-fill aquifer
36 (national aquifer), Southern Nevada volcanic rock aquifer (national aquifer), Alluvial Fan
37 Deposits local aquifer, Valley Fill local aquifer, and Bedrock local aquifer (USGS 2011).

38 Previous exploration activities indicate that the depth to groundwater is greater than 1,200 feet.
39 During previous Midway Gold exploratory drilling near the project area (seven holes deeper than
40 1,000 feet), groundwater was encountered in one hole at an initial depth of 1,260 feet. No
41 groundwater was encountered in the remaining six holes (Williams 2012). The *White Pine*
42 *County Water Resources Plan* indicates that the general quality of groundwater in White Pine
43 County is suitable to marginally suitable, with limited exceptions based on specific locations and

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Figure 3-2. Project area hydrology, including the analysis area (the Headwater Duckwater Creek subwatershed).

1 proposed uses. In Newark Valley, total dissolved solids are elevated due to the natural process of
2 salt buildup through evaporation in areas of shallow groundwater. Otherwise, chemical
3 concentrations do not exceed the state or federal drinking water standards.

4 3.2.5.2 Environmental Consequences

5 3.2.5.2.1 Proposed Action

6 Under the Proposed Action, there would be approximately 137 acres of surface disturbance from
7 the construction of drill roads, drill sites (pads and sumps), auger/trench sites, the laydown area,
8 and the use of overland travel. This is 0.4% of the analysis area. These activities could
9 temporarily and/or permanently change topography and current patterns of surface drainage, or
10 degrade surface water quality due to erosion and increased sediment loading. However, there
11 would be no direct impacts to permanent surface water resources because no such features are
12 present in the project area. Phase I activities would disturb approximately 27 acres of soils
13 classified as having a high water erosion hazard; a similar amount of disturbance is expected
14 under Phase II activities (see Section 3.4.2.1.). Ephemeral tributaries in the project area generally
15 run in a southeasterly direction into Duckwater Creek, an intermittent stream located
16 approximately 2 miles from the project area. Based on field observations, these tributaries are
17 expected to flow only for a few days following heavy precipitation. To reduce impacts to surface
18 water resources, Midway would use the following BMPs and ACEPMs:

- 19 • Contour furrowing
- 20 • Terracing
- 21 • Reduction of steep cut and fill slopes
- 22 • Installation of water bars in appropriate locations to control runoff and erosion
- 23 • Use of sumps to manage drilling fluids
- 24 • Installation of silt fences, weed-free hay bales, or other sediment control structures

25 When drainages must be crossed with a road, BMPs such as the installation of temporary
26 culverts would be followed to minimize surface disturbance and erosion potential. Maintenance
27 of the exploration roads would include seasonal regrading when necessary. Midway would
28 inspect erosion controls in the spring and fall and after exceptional storm events (see Section
29 2.2.2.13 and Appendix B, Midway's Reclamation Plan for additional detail).

30 Impacts to groundwater quality could occur if groundwater is encountered during drilling
31 activities. Up to 165 drill holes are included in the Proposed Action. The average drill hole depth
32 would be 700 feet and therefore not be expected to encounter groundwater; however;
33 approximately 10% of the holes would be drilled up to 2,000 feet deep. Impacts would
34 effectively be eliminated, reduced, or mitigated through the application of required stipulations
35 and through the Nevada State statute and BLM regulations and conditions of approval. Midway
36 would use only approved drilling fluids and would plug all drill holes per Nevada State statute
37 (see NDWR's *Regulations for Water Well and Related Drilling* [NDWR 2010]), as waived. If
38 artesian flow is encountered, the drill hole would be plugged immediately. In all cases, the
39 location, depth, and relative flow rate of any water intercepted would be reported to the Ely
40 District Manager or the AO. In addition, six groundwater monitoring wells would be drilled to a
41 depth of 1,200 feet and monitored on a monthly or quarterly basis. Midway anticipates a
42 minimum four-year monitoring period. Monitoring wells would be properly plugged and
43 abandoned at the end of the monitoring period.

1 A sump would be used at each drill site (165 sumps) to contain drill cuttings and control drilling
2 fluids. Surface water or groundwater contamination could occur due to leaching from the sumps.
3 Depending on the type of drill site, sumps would be sized to contain either 25,000 or 84,000
4 gallons, which previous drilling experience at the project area has shown to be adequate for
5 surface containment of drilling fluids and groundwater flow. Sumps would be lined, as needed,
6 to assure that drilling fluids are contained. Standard, nontoxic drilling muds and additives such as
7 Floc 360™, Abandonite™, Alcomer 120L™, bentonite, EZ-mud™, Polyplus™, and Super
8 Plug™ would be used. Drill site monitoring would include visual inspections of the drill sumps
9 to ensure that the drill cuttings are contained. When sumps are no longer needed, they would be
10 allowed to dry by infiltration or evaporation to prevent discharge of drilling fluids during
11 reclamation. Sumps would be constructed to the shallowest depth possible given each particular
12 site to allow for maximum evaporation. Per BLM IM NVL0000-2011-008, sumps are required to
13 be “liquid free” within 30 days of drilling completion. If extenuating circumstances exist where a
14 sump would need to be left open, it would be handled on a case-by-case basis. Liners would
15 either be removed, or ripped and buried in place, as determined by the BLM. Once dry, the
16 sumps would be backfilled and graded to near original contour.

17 Surface and groundwater quality could also be impacted by potential spills of hazardous
18 materials. Diesel fuel, gasoline, and lubricating grease would be stored on-site (quantities are
19 described in Section 3.2.14.2). This risk would be minimized through application of the
20 ACEPMs discussed in Section 2.2.13. Petroleum products or other hazardous materials would be
21 stored in approved containers to prevent mixing, drainage, or accidents. All containers of
22 hazardous substances would be handled in accordance with appropriate regulations.

23 3.2.5.2.2 *No Action Alternative*

24 Under the No Action Alternative, the Proposed Action would not be approved by the BLM, and
25 the area would remain available for multiple-use activities allowed under BLM regulations.
26 Midway would continue to explore the project area under the approved Notice, which limits
27 surface disturbance to a maximum of 5 acres. The risk of impacts to water resources from
28 construction and drilling activities and from potential spills of hazardous materials would be
29 present, but to a lesser degree because there would be less drilling and fewer hazardous materials
30 present.

31 3.2.6 *Vegetation Resources*

32 The analysis area for impacts to vegetation resources is the project area, because it represents a
33 geographical area with identified similar vegetation against which to measure impacts from
34 exploration activities. The project area is located near the geographic center of the Central Basin
35 and Range ecoregion and includes areas of the Carbonate Sagebrush Valleys and Carbonate
36 Woodland Zone ecoregions. The project area includes areas of undisturbed (or moderately
37 disturbed) vegetation, areas of developed habitat (reclaimed mining disturbance and roads), and
38 barren areas such as small outcrops, dirt roads, and portions of the inactive Easy Junior mine.

39 3.2.6.1 **Affected Environment**

40 3.2.6.1.1 *Land Cover Mapping and Field Observations*

41 Nine ecological systems were identified and mapped using Southwest Regional Landcover Data
42 (SWReGAP; USGS 2005). Specific mapped ecological systems include Great Basin Pinyon-

1 Juniper Woodland and several types of Inter-Mountain Basin shrublands. The nine ecological
 2 systems mapped through SWReGAP can be grouped into five general national land cover classes
 3 (Table 3-6). In order of abundance, they are Shrub/Scrub, Evergreen Forest/Woodland, Sparsely
 4 Vegetated/Barren, Grassland/Herbaceous, and Altered or Disturbed. These general land covers
 5 are derived from the SWReGAP Land Cover Descriptions (USGS 2005) and augmented with
 6 site-specific data from 2011 biological baseline studies (EcoSynthesis and WRC 2012) and are
 7 further described in the sections below.

Table 3-6. Land Cover Classes and Acreages in the Project Area

National Land Cover Class	Ecological System	Acres (%) in Project Area
Shrub/Scrub	Great Basin Xeric Mixed Sagebrush Shrubland	1,968.76
	Inter-Mountain Basins Big Sagebrush Shrubland	1,624.55
	Inter-Mountain Basins Mixed Salt Desert Scrub	144.07
	Subtotal and percentage of project area	3,737.38 (68%)
Evergreen Forest/Woodland	Great Basin Pinyon-Juniper Woodland	1,710.67
	Subtotal and percentage of project area	1,710.67 (31%)
Sparsely Vegetated/Barren	Inter-Mountain Basins Cliff and Canyon	43.26
	Subtotal and percentage of project area	43.26 (1%)
Grassland/Herbaceous	Inter-Mountain Basins Montane Sagebrush Steppe	13.79
	Inter-Mountain Basins Semi-Desert Grassland	7.34
	Subtotal and percentage of project area	21.13 (<1%)
Altered or Disturbed	Invasive Annual Grassland	0.35
	Invasive Perennial Grassland	15.54
	Subtotal and percentage of project area	15.89 (<1%)
Total		5,528.34

8 As shown in Table 3-6, SWReGAP data show that project area vegetation consists of two main
 9 cover classes (Evergreen Forest/Woodland and Shrub/Scrub) with small amounts of barren lands,
 10 grasslands, and disturbed areas. Although the biological baseline studies used the SWReGAP
 11 land cover class data system of categorizing cover classes and ecological systems, the report also
 12 concluded that the SWReGAP mapping, which was made from remote sensing imagery, under-
 13 represents the extent of Great Basin Pinyon-Juniper Woodland and does not accurately
 14 discriminate between different sagebrush ecological systems and between shrubland (with little
 15 herbaceous cover) and steppe (with significant grass cover) (EcoSynthesis and WRC 2012).
 16 However, it does provide an overview of the basic land cover types, and a mapped baseline
 17 against which to compare impacts from the Proposed Action.

18 During vegetation baseline surveys, a total of 152 plant species were identified in the project
 19 area, none of which are federally listed or candidate species, BLM sensitive species, or other
 20 special-status plant species. No uncommon plant communities or wetlands were found in the
 21 project area (EcoSynthesis and WRC 2012).

1 Scrub/Shrub

2 The Scrub/Shrub class accounts for over half of the SWReGAP-identified vegetation (3,737
3 acres; 68%) in the project area. This class also comprises 68% of the entire BLM Ely District.
4 Dominant shrub species include basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*),
5 Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*), black sagebrush, Bigelow
6 sage (*Artemisia bigelovii*), antelope bitterbrush (*Purshia tridentata*), shadscale (*Atriplex*
7 *confertifolia*), rabbitbrush (*Chrysothamnus viscidiflorus* and *Ericameria nauseosa*), horsebrush
8 (*Tetradymia* spp.), and sagewort (*Artemisia frigida*). This land cover class may be codominated
9 by semiarid grasses. This land cover class comprises three ecological systems:

- 10 • Great Basin Xeric Mixed Sagebrush Shrubland: Survey work conducted by EcoSynthesis
11 and WRC indicates that this ecological system covers by far the most acreage within
12 surveyed transect areas. It is consistently dominated by black sagebrush with virtually no
13 other shrub cover. The herbaceous layer is split roughly evenly between squirrel tail
14 (*Elymus elymoides*), one-sided blue grass (also known as Sandberg's bluegrass; *Poa*
15 *secunda*), and Indian ricegrass (*Achnatherum hymenoides*) (EcoSynthesis and WRC
16 2012).
- 17 • Inter-Mountain Basins Big Sagebrush Shrubland: Survey work conducted by
18 EcoSynthesis and WRC indicates that this ecological system is dominated by big
19 sagebrush and occurs in the lower parts of the small valleys within the project area,
20 perhaps associated with deeper soils where the slopes flatten out. Other species providing
21 shrub cover include minor amounts of spiny hopsage (*Grayia spinosa*) and rabbitbrush
22 species (yellow rabbitbrush and, very rarely, rubber rabbitbrush). The herbaceous layer is
23 sparse and includes one-sided bluegrass and squirreltail, but also some Indian ricegrass
24 (EcoSynthesis and WRC 2012).
- 25 • Inter-Mountain Basins Mixed Salt Desert Scrub: This ecological system is typically
26 characterized by an open to moderately dense shrubland of one or more saltbush species.
27 Other shrubs present may include Wyoming big sage, yellow rabbitbrush, rubber
28 rabbitbrush, Mormon tea (*Ephedra nevadensis*), spiny hopsage, winterfat
29 (*Krascheninnikovia lanata*), bud sage, or shortspine horsebrush. The herbaceous layer
30 varies from sparse to moderately dense. Project area surveys conducted by EcoSynthesis
31 and WRC were not able to identify the specific associations applicable to this ecological
32 system because the expressions of this ecological system are scattered, small, and
33 intergrade with surrounding vegetation, making composition and dominance
34 determinations uncertain (EcoSynthesis and WRC 2012).

35 Evergreen Forest/Woodland

36 The Evergreen Forest/Woodland land cover class accounts for approximately 1,711 acres (31%)
37 of SWReGAP-identified vegetation in the project area. This land cover class occurs where
38 rainfall averages less than 30 inches per year, with summer thundershowers during the growing
39 season contributing substantial moisture. All acreage is classified as the Great Basin Pinyon-
40 Juniper Woodland ecological system. This ecological system is typically found on warm, dry
41 sites on mountain slopes, mesas, plateaus, and ridges of dry mountain ranges of the Great Basin
42 region and eastern foothills of the Sierra Nevada, at elevations ranging from 5,249 to 8,530 feet.
43 Survey work conducted by EcoSynthesis and WRC indicates that the Great Basin Pinyon-Juniper
44 Woodland ecological system is underrepresented by SWReGAP data and covers a greater

1 portion of the project area than any other ecological system. Within the project area, this system
2 is characterized by a predominance of Utah juniper (*Juniperus osteosperma*), with a total tree
3 canopy cover of approximately 30%–35%, and almost no woody or herbaceous understory,
4 except near the edges of where the mapped system abuts other vegetation. Where present, the
5 subshrub cover includes sulphur-flower buckwheat (*Eriogonum umbellatum* var.
6 *dichrocephalum*) and Simpson's buckwheat (*E. microthecum* var. *simpsonii*). Herbaceous species
7 comprise less than 1% cover, and local dominance varies. In some areas, the most abundant
8 species is Steptoe Valley beardtongue (*Penstemon immanifestus*) and potentially thickleaf
9 beardtongue (*P. pachyphyllus*); in others, stemless mock goldenweed (*Stenotus acaulis*). Many
10 other species are locally common, including twinpod (*Physaria chambersii*), thickstem wild
11 cabbage (*Caulanthus crassicaulis*), heartleaf twistflower (*Streptanthus cordatus*), and desert
12 fraseria (*Frasera albomarginata*) (EcoSynthesis and WRC 2012).

13 Barren Lands

14 The Barren Lands land cover class accounts for approximately 43 acres (1%) of SWReGAP-
15 identified vegetation cover in the project area. All acreage is classified as the Inter-Mountain
16 Basins Cliff and Canyon ecological system. This ecological system is found from foothill to
17 subalpine elevations and includes barren and sparsely vegetated landscapes (generally <10%
18 plant cover) of steep cliff faces, narrow canyons, and smaller rock outcrops of various igneous,
19 sedimentary, and metamorphic bedrock types. Vegetation of unstable scree and talus slopes
20 typically occur below cliff faces of this system. Widely scattered trees and shrubs may include
21 species often common in adjacent ecological systems (USGS 2005). This class was noted and
22 mapped during site-specific surveys (EcoSynthesis and WRC 2012).

23 Grasslands/Herbaceous

24 The Grasslands/Herbaceous land cover class accounts for approximately 21 acres (<1%) of
25 SWReGAP-identified vegetation in the project area. Dominant species include saltbush, big
26 sagebrush, rabbitbrush, Mormon tea, hopsage, winterfat, bud sagebrush (*Picrothamnus*
27 *desertorum*), and horsebrush. The herbaceous layer varies from sparse to moderately dense and
28 is dominated by perennial graminoids including Indian ricegrass, blue grama, thickspike
29 wheatgrass (*Elymus lanceolatus* ssp. *lanceolatus*), galleta (*Pleuraphis* spp.), threeawn, needle-
30 and-thread (*Hesperostipa comata*), fescue (*Festuca* spp.), pinegrass (*Calamagrostis rubescens*),
31 oatgrass (*Danthonia* spp.), and bluebunch wheatgrass (USGS 2005). This land cover class
32 comprises two ecological systems:

- 33 • Inter-Mountain Basins Montane Sagebrush Steppe: This ecological system is composed
34 primarily of mountain sagebrush (*Artemisia tridentata* ssp. *vaseyana*) and related taxa.
35 This system was noted and mapped during site-specific surveys (EcoSynthesis and WRC
36 2012).
- 37 • Inter-Mountain Basins Semi-Desert Grassland: This ecological system typically occurs in
38 lowland and upland areas and may occupy swales, playas, mesatops, plateau parks,
39 alluvial flats, and plains. Although this system is included in SWReGAP data, it was not
40 identified and mapped during site-specific surveys (EcoSynthesis and WRC 2012).

41 Disturbed/Altered Land

42 The Disturbed/Altered Land cover class accounts for approximately 16 acres (<1%) of
43 SWReGAP-identified vegetation in the project area. These areas are typically dominated by

1 introduced annual grass species such as cheatgrass (*Bromus tectorum*) and California brome.
2 This land cover class comprises two ecological systems:

- 3 • Invasive Annual Grasslands: This ecological system is dominated by introduced annual
4 grass species such as wild oats (*Avena* spp.), brome grasses (*Bromus* spp.), and
5 Mediterranean grasses (*Schismus* spp.) (USGS 2005).
- 6 • Invasive Perennial Grassland: This ecological system is dominated by introduced
7 perennial grass species such as crested wheatgrass (*Agropyron cristatum*), smooth brome
8 (*Bromus inermis*), Lehmann lovegrass (*Eragrostis lehmanniana*), fountain grasses
9 (*Pennisetum* spp.), bulbous bluegrass (*Poa bulbosa*), Kentucky bluegrass (*P. pratensis*)
10 and intermediate wheatgrass (*Thinopyrum intermedium*) (USGS 2005).

11 Project-area surveys conducted by EcoSynthesis and WRC classified altered vegetation as
12 follows:

- 13 • Reclamation Vegetation: This vegetation, occurring on reclaimed Easy Junior mine
14 facilities, reflects the applied seed mix: bluebunch wheatgrass, creeping wild-rye (*Leymus*
15 *triticoides*), and a few plants of four-wing saltbush (*Atriplex canescens*). The reclaimed
16 roads also support Great Basin wild-rye (*L. cinereus*). These reclaimed areas are
17 remarkably weed-free, but the roads support various densities of invasive species (usually
18 low, but a few dense patches of tumble mustard [*Sisymbrium altissimum*] were found)
19 (EcoSynthesis and WRC 2012).
- 20 • Ruderal Vegetation: This term refers to the patches of non-native species within the Easy
21 Junior operations area and along existing county and other dirt roads that are usually too
22 small to be mapped. In general, they consist of monocultures of clasping pepperweed
23 (*Lepidium perfoliatum*), blue mustard (*Chorispora tenella*), halogeton (*Halogeton*
24 *glomeratus*), or tumble mustard. Several other moderately invasive weeds are present, but
25 usually only as scattered individuals (EcoSynthesis and WRC 2012).

26 3.2.6.1.2 Invasive and Noxious Weeds

27 The BLM defines a weed as a non-native plant that disrupts or has the potential to disrupt or alter
28 the natural ecosystem function, composition, and diversity of the site it occupies. A weed's
29 presence deteriorates the health of the site, makes efficient use of natural resources difficult, and
30 may interfere with management objectives for that site, because its invasiveness requires
31 concerted efforts of manpower and resources to achieve removal. Noxious weed designation in
32 the project area can come from the Nevada Department of Agriculture or from the U.S.
33 Department of Agriculture Animal and Plant Health Inspection Service. Both noxious weed
34 species and invasive weed species are found in the project area. The weed inventory conducted
35 by the BLM Ely District in 2008 documented the following two weeds in the project area and
36 along roads and drainages leading to the project area (see Appendix B, BLM Weed Assessment):

- 37 • Hoary cress (*Lepidium draba*): Located in the project area and along roads and drainages
38 leading to the project area
- 39 • Russian Knapweed (*Acroptilon repens*): Located along roads and drainages leading to the
40 project area

41 The weed assessment also noted the presence of invasive annual grasslands near the Easy
42 Junior mine well (one potential water source).

1 BLM also noted that there was cheatgrass and halogeton scattered throughout the project area,
2 but mainly along roads in and to the project area. Project area surveys conducted by
3 EcoSynthesis and WRC identified some populations of tumble mustard, clasping pepperweed,
4 and blue mustard.

5 3.2.6.2 Environmental Consequences

6 3.2.6.2.1 Proposed Action

7 Under the Proposed Action, direct impacts to vegetation would occur through surface
8 disturbance and vegetation removal on approximately 65 acres of the 5,528-acre project area
9 during Phase I activities. This comprises approximately 1% of the project area. Exact locations
10 of drill sites, drill roads, and auger/trench sites for Phase II activities are not known, but would
11 comprise approximately 72 acres of additional surface disturbance. It is assumed that the
12 proportion of disturbance by ecological system would be similar to Phase I because the
13 vegetation is relatively consistent throughout the project area. Table 3-7 identifies Phase I and
14 Phase II impacts by ecological system.

Table 3-7. Phase I and Phase II Impacts by Ecological System

National Land Cover Class	Ecological System	Phase I Activities ¹		Phase II Activities ²	
		Acreeage	Percentage Disturbance to Ecological System in Project Area	Acreeage	Percentage Disturbance to Ecological System in Project Area
Shrub/ Scrub	Great Basin Xeric Mixed Sagebrush Shrubland	34.20	1.7%	37.97	1.9%
	Inter-Mountain Basins Big Sagebrush Shrubland	14.60	0.9%	16.21	1.0%
	Inter-Mountain Basins Mixed Salt Desert Scrub	5.35	3.7%	5.94	4.1%
	Subtotal	54.15	1.4%	60.12	1.6%
Evergreen Forest/ Woodland	Great Basin Pinyon-Juniper Woodland	10.92	0.6%	12.13	0.7%
	Subtotal	10.92	0.6%	12.13	0.7%
Sparsely Vegetated/ Barren	Inter-Mountain Basins Cliff and Canyon	0.13	0.3%	0.15	0.3%
	Subtotal	0.13	0.3%	0.15	0.3%
Total³		65.21		72.4	

¹ Phase I analysis is based on the drill site, access road, auger/trench size, overland travel areas, and laydown area location information provided in Figure 2-1, and assumes the following:

- Weighted average drill pad/sump size
- 20-foot-wide drill roads
- 5-foot-wide overland travel route
- Maximum trench/auger sites, with additional buffer area as a conservative estimate

² Phase II analysis is based on application of the percentage of total disturbance identified for Phase I.

³ Because of the phased nature of the project, only those access roads and drill pads needed for future exploration would remain open. Reclamation of some Phase I areas may be completed before Phase II activities are conducted; thus the total acreage of ongoing surface disturbance would not necessarily include all Phase I and Phase II activities.

15 Over 83% of the Phase I activities would occur in the Shrub/Scrub land cover class. Surface
16 disturbance would impact approximately 1.7% of all available acres of this land cover class in

1 the project area. The remaining surface disturbance would occur primarily in the Great Basin
 2 Pinyon-Juniper Woodland ecological system; proposed disturbance would impact less than 1%
 3 of all available acres of this ecological system in the project area. As discussed in Section
 4 3.2.6.1.1, site-specific surveys indicate that the Pinyon-Juniper Woodland ecological system is
 5 underrepresented in SWReGAP data for the project area; thus, it is likely that it is also
 6 underrepresented in disturbance acreages listed above.

7 Midway would reclaim all areas within two years if drilling results indicate that no resource is
 8 present. Per the ACEPMs described in Section 2.2.13, Table 2-2, Midway would generally
 9 conduct reclamation with native seeds that are representative of the indigenous species present in
 10 the adjacent habitat. Areas would be satisfactorily reclaimed when all disturbed areas have been
 11 recontoured to blend with the natural topography, erosion has been stabilized, and an acceptable
 12 vegetative cover has been established.

13 Indirect impacts to vegetation during Phase I and II activities could include the introduction or
 14 spread of noxious or invasive weeds to adjacent vegetation. Clearing of vegetation during
 15 construction could allow the establishment of undesirable plants that could compete with native
 16 plants for soil and water resources and ultimately reduce foraging habitat for herbivores. High
 17 growth rate and flammability of noxious or invasive weeds also tend to increase the risk of
 18 wildfire, because the weeds provide flammable fuels in the interspecies among shrubs, making
 19 them more susceptible to large, frequent, and uncharacteristic fires (BLM 2009). Roads, pull-
 20 offs, and other areas where vehicles may travel may result in vehicle tires and undercarriages
 21 transporting weed seeds to undisturbed locations. The area of risk for weed invasion is at least
 22 equal to the total area of Phase I and II disturbance, because these areas would be highly
 23 disturbed and devoid of vegetation prior to reclamation. However, because invasive weeds are
 24 frequently established along vehicle corridors, the area impacted by weeds could become larger
 25 than the area of direct disturbance. Cheatgrass is an invasive grass with a high potential to spread
 26 from disturbed areas. Bradley and Mustard (2006) found an increased probability of cheatgrass
 27 within approximately 22,500 feet of roads, with up to 13% greater probability of cheatgrass
 28 occurrence within 200 feet. Assuming a 200-foot buffer from all new project-related drill roads
 29 and overland travel routes, approximately 830 additional acres could be subject to invasive weed
 30 spread.

31 This risk would be minimized by the ACEPMs presented in Section 2.2.13, Table 2-2, which
 32 include measures to 1) educate personnel about invasive and noxious weeds; 2) minimize
 33 transport of soil-borne noxious weed seeds, roots, or rhizomes, infested soils or materials; 3)
 34 monitor and control noxious weeds; and 4) reclaim areas with native seed representative of the
 35 indigenous species present in adjacent habitat. Midway would also use onsite water storage to
 36 reduce the number of vehicle trips to water sources and potential encounters with noxious weeds
 37 found in those areas.

38 Appendix B contains the BLM weed risk assessment conducted for the project area. The BLM
 39 risk assessment estimates the overall risk of impact from invasive and noxious weeds using the
 40 following formula:

$$\begin{array}{l} \text{Likelihood of} \\ \text{noxious/invasive weed} \\ \text{species spreading to the} \\ \text{project area} \end{array} \times \begin{array}{l} \text{Consequences of} \\ \text{noxious/invasive weed} \\ \text{establishment in the project} \\ \text{area} \end{array}$$

1 The BLM risk assessment (Appendix B) rates the project activities as “moderate” in their
2 potential for introducing or spreading noxious weeds, and “high” for the consequences of
3 noxious weed establishment. This is because the area currently has very few weeds; therefore,
4 any new infestations would impact nearby native plant communities and could alter the fire
5 regime in the area. Based on an overall risk rating of “moderate,” the BLM has included required
6 mitigation, all of which is consistent with the ACEPMs contained in Chapter 2 (see Appendix B
7 for a list of mitigation measures).

8 *3.2.6.2.2 No Action Alternative*

9 Under the No Action Alternative, the area would remain available for other multiple use
10 activities as approved by the BLM. Midway would continue to explore the project area under the
11 approved Notice, which limits surface disturbance to a maximum of 5 acres. As a result, Midway
12 would be able to create sequential acreage of disturbance with BLM approval. Impacts to
13 vegetation would be similar to those described under the Proposed Action but would affect less
14 acreage and be of a shorter duration.

15 *3.2.7 Wildlife , including Migratory Birds, Raptors and other Special-status Species*

16 The analysis area for impacts to wildlife and special-status species from surface disturbances is
17 the 5,528 acre-project area. This area was chosen because it represents an area with continuity in
18 habitat for which extensive survey work has been done. Proposed access roads are considered in
19 the wildlife analysis because of their proximity to known sage-grouse leks and potential for
20 wildlife-vehicular collisions. A detailed description of the vegetation in the project area is
21 included in Section 3.2.6. In general, the project area is dominated by two land cover classes:
22 Shrub/Scrub and Evergreen Forest/Woodland (i.e, the Great Basin Pinyon-Juniper Woodland
23 ecological system).

24 The wildlife species in the project area are typical of the arid/semiarid environment in the central
25 Great Basin and were identified by EcoSynthesis and WRC during wildlife surveys conducted
26 from April through December 2011 (EcoSynthesis and WRC 2012).The study area included a
27 loosely circumscribed geographic region extending approximately 10–20 miles from the project
28 area in various directions, which was deemed pertinent to the understanding of biological
29 resources that might be present in the project area. A total of 29 bird, 14 mammal, and two
30 reptile species were directly observed, detected by sign (tracks, burrows, scat, feathers, bones, or
31 vocalizations), or recorded by bat detectors in the project area during the baseline biological
32 studies (EcoSynthesis and WRC 2012). No amphibians were identified and no fish or aquatic
33 habitat is present in or within 1 mile of the project area.

34 On January 23, 2012, the Nevada Department of Wildlife (NDOW) provided information
35 regarding known or potential occurrence of wildlife resources near the project area based on best
36 available data from the NDOW’s wildlife sight records, commercial reptile collections, scientific
37 collections, raptor nest sites and ranges, greater sage-grouse leks and habitat, and big-game
38 distributions databases. The results of that inquiry were summarized in a letter and series of maps
39 (NDOW 2012). The NDOW response letter focuses on the project area plus a 3-mile buffer area
40 for general wildlife; the migratory birds analysis includes all known nest data within 10 miles of
41 the project area. Information from the biological studies and NDOW report is summarized
42 below.

1 3.2.7.1 Affected Environment

2 3.2.7.1.1 Wildlife

3 Six of the bird species identified during the 2011 baseline surveys are migratory birds or
4 designated special-status species. Seven of the bird species are raptors. These species are
5 discussed in Section 3.2.7.2. The mourning dove (*Zenaida macroura*) was the only game bird
6 observed in the project area; several roost and foraging sites for this species were identified
7 based on the presence of scat. NDOW's response letter regarding known or potential occurrence
8 of wildlife resources indicate that chukar (*Alectoris chukar*) have also been observed near the
9 project area; however, chukar or chukar sign were not observed in the project area during the
10 surveys. No aquatic habitat, waterfowl species, shorebirds, or colony nesting bird species were
11 present in or within 1 mile of the project area (EcoSynthesis and WRC 2012).

12 The most commonly recorded species of small mammals, though seldom observed, were the
13 black tailed hare (*Lepus californicus*) and the white-tailed antelope ground squirrel
14 (*Ammospermophilus leucurus*). Kangaroo rat (*Dipodomys* sp.) burrows were common in the
15 lower elevations of the project area. Desert cottontail (*Sylvilagus audubonii*) was also observed.
16 Woodrat (*Neotoma spp.*) nests were relatively uncommon, but were found on rocky outcrops in
17 the eastern portion of the project area. Coyote (*Canis latrans*) scat was noted throughout the
18 project area, though no active or inactive den sites were found. No kit foxes (*Vulpes macrotis*) or
19 badgers (*Taxidea taxus*) were observed, nor were any kit fox or badger signs found
20 (EcoSynthesis and WRC 2012)

21 Using ultrasonic detectors, acoustic surveys were conducted for bat species on August 29 and 30,
22 2011. Detectors were placed in locations conducive to flight paths and roosting, primarily
23 drainages with scattered areas in the Great Basin Pinyon-Juniper Woodland ecological system.
24 Five species of bats were identified through these surveys: the big brown bat (*Eptesicus fuscus*),
25 Brazilian free-tailed bat (*Tadarida brasiliensis*), little brown bat (*Myotis lucifugus*), long-eared
26 myotis (*Myotis evotis*), and small-footed myotis (*Myotis ciliolabrum*) (EcoSynthesis and WRC
27 2012). All five bat species are listed as BLM sensitive species.

28 NDOW's response letter regarding known or potential occurrence of wildlife resources near the
29 project area indicates that occupied pronghorn antelope (*Antilocapra americana*) distribution
30 exists throughout the entire project area and a 3-mile buffer area. Mule deer (*Odocoileus*
31 *hemionus*) distribution exists in the Pancake Range in the eastern part of the project area and the
32 3-mile buffer area. Mule deer are also found west of the project area within the 3-mile buffer
33 area (NDOW 2012). Consultation with NDOW indicates that mule deer use the project area
34 primarily in winter, but may be found year-round. Mule deer movement corridors traverse in a
35 northwest and northeast direction toward the project area (EcoSynthesis and WRC 2012). Elk
36 occupy the White Pine Mountains to the east of the project area within the 3-mile buffer area.
37 There are no known bighorn sheep distributions near the project area (NDOW 2012). Although
38 no big-game mammals such as mule deer or pronghorn antelope were observed during the
39 biological baseline studies, ungulate scat was recorded throughout the project area (most likely
40 from mule deer). Skeletal remains of a mule deer were found in the northern part of the project
41 area. No other sign of big-game mammals was found in the project area (EcoSynthesis and WRC
42 2012).

1 Two common species of lizards were recorded in the project area: the side-blotched lizard (*Uta*
2 *stansburiana*) and the western fence lizard (*sceloporus occidentalis*). No snakes were observed
3 during the study.

4 3.2.7.1.2 Migratory Birds, Raptors, and Special-status Species

5 **Migratory Birds and Raptors**

6 *Migratory bird* means any bird listed in 50 CFR 10.13. All native birds found commonly in the
7 United States, with the exception of native resident game birds, are protected under the
8 Migratory Bird Treaty Act (MBTA). This act makes it unlawful to pursue, hunt, take, capture, or
9 kill; attempt to take, capture, or kill; or possess any migratory bird part, nest, egg, or product,
10 manufactured or not (16 USC 703–712).

11 NDOW's response letter indicates that various species of raptors, which use diverse habitat
12 types, are known to reside near the project area. American kestrel (*Falco sparverius*), barn owl,
13 burrowing owl, Cooper's hawk (*Accipiter cooperi*), ferruginous hawk (*Buteo regalis*), golden
14 eagle (*Aquila chrysaetos*), great horned owl, long-eared owl, merlin, northern goshawk, northern
15 harrier (*Circus cyaneus*), northern saw-whet owl, osprey, peregrine falcon, prairie falcon (*Falco*
16 *mexicanus*), red-tailed hawk (*Buteo jamaicensis*), rough-legged hawk, sharp-shinned hawk,
17 short-eared owl, Swainson's hawk, turkey vulture (*Cathartes aura*), and western screech owl
18 have distribution ranges that include the project area and its 3-mile buffer area. NDOW also
19 noted ferruginous hawk and golden eagle have been directly observed near the project area.

20 During the baseline biological surveys, seven species of raptors were observed in the project
21 area. Prairie falcon, red-tailed hawk, golden eagle, and turkey vulture were seen flying over the
22 project area. The American kestrel, Cooper's hawk, and northern harrier were observed foraging
23 in the project area. Suitable nesting habitat is present in the project area for all the recorded
24 raptor species, except for the prairie falcon. The golden eagle and the prairie falcon are
25 designated special-status species and are discussed in Table 3-8. No known bald eagle nests are
26 documented within 10 miles of the project area.

27 **Special-status Species**

28 Special-status species are species for which state or federal agencies afford an additional level of
29 protection by law, regulation, or policy. Included in this category are federally listed and
30 federally proposed species that are protected under the Endangered Species Act (ESA), species
31 considered as candidates for such listing by the U.S. Fish and Wildlife Service (USFWS), BLM
32 sensitive species, and species that are state protected. In accordance with the ESA, federal
33 agencies are prohibited from authorizing, funding, or carrying out actions that "destroy or
34 adversely modify" critical habitat (ESA Section 7(a)(2)). If harm to individuals (take) or
35 destruction or adverse modification of critical habitat cannot be avoided, the agency may seek an
36 exemption (in addition to consultation with USFWS).

37 Table 3-7 provides a list of all wildlife special-status species identified in the biological baseline
38 report (EcoSynthesis and WRC 2012) with potential to occur in the project area. The table also
39 identifies habitat/diet needs as well as any recorded observations during the baseline studies.

Table 3-8. Wildlife Special-status Species with Potential To Occur in the Project Area

Common Name	Scientific Name	Status (federal/state) ¹	Habitat Association/Dietary Needs/Observations in Project Area ²
BIRDS			
Brewer's sparrow	<i>Spizella breweri</i>	–/S	Observed in project area. Usually found in association with sagebrush but also found in desert scrub and creosote bush during migration and in winter.
Ferruginous hawk	<i>Buteo regalis</i>	S/P	Not observed in project area. Typically found in association with open, arid grasslands, prairie and shrub steppe country.
Golden eagle	<i>Aquila chrysaetos</i>	–/P	One immature observed flying over project area (not foraging). Nests are constructed on cliffs or in large trees. No nests or adult golden eagles were observed, and no suitable nest locations were found in the area proposed for surface disturbance. Feeds primarily on small mammals, especially rabbits, marmots, and ground squirrels, but also insects, snakes, birds, and carrion. Suitable golden eagle foraging habitat is present in the project area in black and big sagebrush shrublands. Cliffs and outcrops immediately outside and east of the project area provide some highly suitable nest sites for golden eagles (NDOW has a 1980 record for a golden eagle nest in this area) (EcoSynthesis and WRC 2012). NDOW reports one nest near the project area and four golden eagle nests within 10 miles of the project area (NDOW 2012).
Greater sage-grouse	<i>Centrocercus urophasianus</i>	C,S/–	No Greater sage-grouse or their sign was found in the project area. Highly dependent on sagebrush for cover and food. Project area holds little suitable habitat for sage-grouse; with the exception of drainages and low elevation hills in the westernmost portion of the project area, the habitat is primarily pinyon-juniper woodland of various densities. Sagebrush habitat that is present is almost exclusively dominated by black sagebrush, which is not suitable habitat for sage-grouse. Surveys conducted in April 2011 at three lek sites located along northern access routes observed three males strutting at the Seligman Canyon West lek. No sage-grouse were detected at the other leks and no sage-grouse or sage-grouse sign were found. Greater sage-grouse summer distribution exists outside of the project area in the northern, southern, and eastern portions of the 3-mile buffer area. The northernmost portion of the project area and a larger portion of the northern, southern, and eastern portions of the 3-mile buffer area contain sage-grouse winter distribution and nesting habitat. Core breeding habitat exists in sagebrush communities in Newark and Railroad valleys in the northern and eastern portions of the 3-mile buffer area.
Loggerhead shrike	<i>Lanius ludovicianus</i>	–/P	Observed in project area. Prefers grasslands, pastures, desert scrub habitats, open woodlands, and other open areas; typically nest in thick brush, shrubs, or small trees in open areas. The diet is composed of insects, small mammals, birds, and reptiles.
Pinyon jay	<i>Gymnorhinus cyanocephalus</i>	S/–	Observed in project area. Diet consists primarily of pinyon and other pine seeds, but also includes berries, small seeds, grains, and insects. Nests are located in trees, usually conifers.
Prairie falcon	<i>Falco mexicanus</i>	–/P	Observed in project area. Typically found in open habitats such as plains and prairies. The diet includes a variety of prey, but mammals such as ground squirrels are particularly important during the summer. Prey may be cached in vegetation or on a ledge, most commonly during early periods of brood rearing.

Table 3-8. Wildlife Special-status Species with Potential To Occur in the Project Area

Common Name	Scientific Name	Status (federal/state) ¹	Habitat Association/Dietary Needs/Observations in Project Area ²	
Sage thrasher	<i>Oreoscoptes montanus</i>	S/S	Observed in project area. Found mostly in the shrub-dominated valleys and plains of the western United States. It is considered a sagebrush obligate, generally dependent on large patches and expanses of sagebrush steppe for successful breeding.	
Western burrowing owl	<i>Athene cunicularia hypugaea</i>	S/-	No burrowing owls or burrowing owl signs were observed in the project area. NDOW has indicated that no burrowing owl nest sites are near the project area.	
MAMMALS				
Pygmy rabbit	<i>Brachylagus idahoensis</i>	S/-	No pygmy rabbits and no evidence of current or past occupancy by pygmy rabbits were found in the project area. Black sagebrush shrubland, which comprises most of the sagebrush in the project area, is not considered suitable habitat. The very limited areas of big sagebrush habitat in the project area do not have the canopy height and canopy cover to provide highly suitable habitat and are therefore only marginally suitable. In addition, a model of potential pygmy rabbit habitat developed by the BLM's Ely FO does not depict any potential habitat for this species in the project area.	
Big brown bat	<i>Eptesicus fuscus</i>	S/S	Identified by acoustic survey.	Although bats forage over sagebrush and other shrubs found in the project area, these plants do not provide suitable long-term night and day roosting sites. Within the project area, potential day roosting habitat is located in rock outcrops, which are generally restricted to the eastern third of the project area, and in pinyon and juniper trees (EcoSynthesis and WRC 2012).
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>	S/P		
Small-footed myotis	<i>Myotis ciliolabrum</i>	S/-		
Long-eared myotis	<i>Myotis evotis</i>	S/-		
Little brown myotis	<i>Myotis lucifugus</i>	S/-		
Pallid bat	<i>Antrozous pallidus</i>	S/P	Not observed in project area.	
California myotis	<i>Myotis californicus</i>	S/-		
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	S/S		
Spotted bat	<i>Euderma maculatum</i>	S/T		
Silver-haired bat	<i>Lasionycteris noctivagans</i>	S/-		
Long-legged myotis	<i>Myotis volans</i>	S/-		
Yuma myotis	<i>Myotis yumanensis</i>	S/-		
Fringed myotis	<i>Myotis thysanodes</i>	S/P		
Western pipistrelle bat	<i>Pipistrellus hesperus</i>	S/-		

Source: EcoSynthesis and WRC (2012) and NDOW (2012).

¹ Federal statuses: E= listed endangered, T= listed threatened, C= candidate for listing under ESA, S= listed as sensitive by BLM (for state of Nevada);

State of Nevada statuses: E= endangered; T= threatened; P= protected; S= sensitive

² Directly observed or positively identified by sign or vocalization.

1 3.2.7.2 Environmental Consequences

2 3.2.7.2.1 Proposed Action

3 **Wildlife**

4 Impacts as a result of the Proposed Action would be similar for all wildlife species encountered
5 in the project area and would generally consist of temporary habitat loss, disturbance from
6 human activity and noise, and individual injury or mortality from vehicular collisions or
7 drowning in sumps.

8 There would be temporary surface disturbance of 65 acres of existing wildlife habitat from
9 exploration activities during Phase I; approximately 72 acres would be disturbed during Phase II.
10 This comprises approximately 1% of the project area during each phase. Portions of Phase I
11 would be reclaimed concurrently with development of Phase II. Surface disturbance would
12 include a maximum of 70,703 linear feet of road during Phase I and a similar amount during
13 Phase II. Wildlife habitat fragmentation would be unlikely to occur because Midway's phasing
14 and ongoing reclamation would minimize the total acreage of disturbance and open roads; only
15 those access roads and drill pads needed for future exploration would remain open. Midway
16 would reclaim all areas within two years if drilling results indicate that no resource is present and
17 would reclaim areas with native seeds that are representative of the indigenous species present in
18 the adjacent habitat. Therefore, the quality, quantity, and distribution of suitable wildlife habitat
19 are not expected to be substantially altered by project implementation.

20 Disturbance to wildlife from human activity and noise would likely be limited to temporary
21 auditory and visual disturbances to individuals foraging in or near exploration activities.
22 Individuals would likely leave the immediate area, resulting in a temporary spatial redistribution
23 of individuals or habitat-use patterns during exploration activities; this would not be a long-term
24 effect because undisturbed and suitable habitat exists around the drill sites. A maximum of 10
25 drill rigs would be operating at one time, in diverse locations, allowing wildlife to move around
26 and between project activities.

27 Transportation associated with the Proposed Action would result in increased risk of vehicle-
28 animal collisions on access roads or drill roads due to increased traffic associated with project
29 activities. there would be approximately 70,700 feet of new drill roads (about 13 miles) during
30 Phase I; the number and length of Phase II drill roads have not been determined. The two
31 northern access routes would be 15.3 and 16.1 miles long; the southern access route would be
32 10.6 miles long. Risk of wildlife-vehicular collisions from project-related traffic would be
33 reduced through prudent speed limits on all access roads and drill roads. Sumps would be fenced
34 with safety netting to keep large animals out; however, smaller rodents and reptiles might still be
35 able to gain access to sumps. Sumps would be constructed to the shallowest depth possible to
36 allow for maximum evaporation, and at least one side of the sumps would be sloped for easy
37 access/egress. Sumps are expected to dry quickly, but in the cases that they do not and drilling
38 fluids that remain pose a hazard to wildlife, Midway would work with the BLM to reduce the
39 wildlife hazard by either removing the fluid or backfilling the sump.

40 **Migratory Birds and Raptors**

41 Impacts to migratory birds include direct loss of habitat due to removal of a maximum of 137
42 acres of vegetation (2.5% of the project area, primarily in the Scrub/Shrub cover class and the

1 Great Basin Pinyon-Juniper Woodland ecological system); abandonment of nests during
2 breeding seasons because of noise or human activity; and potential mortality due to direct loss
3 resulting from vehicular collisions, construction, or exploration activities. These impacts would
4 be minimized by the ACEPMs presented in Chapter 2. There is suitable habitat adjacent to the
5 project area that is available for nesting. Midway's phasing and ongoing reclamation would
6 minimize the total acreage of disturbance at any one time. Wherever possible, Midway would
7 time land clearing, and surface disturbance would be timed to prevent potential disturbance to or
8 destruction of active bird nests or young birds during the bird breeding season (May 15–July 31,
9 annually). If surface-disturbing activities are unavoidable during this period, Midway would
10 have a qualified biologist survey the areas proposed for immediate disturbance for the presence
11 of active nests. If active nests are located, or if other evidence of nesting is observed (mating
12 pairs, territorial defense, carrying of nesting material, transporting of food), the area would be
13 avoided to prevent destruction or disturbance of nests until the birds are no longer present. Bird
14 surveys would be conducted only during the bird breeding season and immediately prior (within
15 seven days) to Midway's exploration activities that would result in disturbance. After such
16 surveys are performed and disturbance created (i.e., road construction and drill pad
17 development), Midway would not conduct any additional disturbance during the bird breeding
18 season without first conducting another bird survey. After July 31, exploration activities would
19 continue; in compliance with MBTA, no further bird surveys would be conducted until the next
20 year.

21 Migratory birds could also be attracted to drilling mud sumps. Sumps are expected to dry
22 quickly, but in the cases that they do not and drilling fluids that remain pose a hazard to wildlife,
23 Midway would work with the BLM to reduce the wildlife hazard by either removing the fluid or
24 backfilling the sump.

25 Indirect impacts to raptors under the Proposed Action could include a temporary relocation of
26 prey away from the project area due to construction noise and activity within the proposed
27 disturbance areas; however, there is suitable habitat for displaced prey adjacent to the project
28 area that would be available for hunting.

29 Midway would protect active raptor nests in undisturbed areas within 0.25 mile of areas
30 proposed for project activities using species-specific protection measures. Midway would
31 inventory areas containing suitable nesting habitat for active raptor nests prior to the initiation of
32 any project activities. Ferruginous hawk (which is also a BLM-sensitive species) nest sites would
33 not be disturbed, and no surface use would be allowed within 0.5 mile of an occupied
34 ferruginous hawk nest during the March 1 through June 30 period or until the birds have fledged
35 (left) the nest, as determined by a BLM biologist.

36 **Special-status Species**

37 There would be no direct impacts to federally listed threatened or endangered wildlife species
38 because no such species are found in the Project Area. The direct disturbance of 54 acres of the
39 Shrub/Scrub land cover class during Phase I activities would result in an approximately 1.4%
40 loss of the 3,737 total acres of this cover class within the 5,228-acre project area for BLM
41 sensitive species that rely on this land cover class for food, forage, or cover. This includes
42 several avian species and a variety of bat species. Site-specific surveys indicate that most of the
43 Shrub/Scrub land cover on the project area is classified as the Great Basin Xeric Mixed
44 Sagebrush Shrubland ecological system and exclusively dominated by black sagebrush, which is

1 not suitable habitat for greater sage-grouse or pygmy rabbit. Neither species has been observed
2 within the project area (EcoSynthesis and WRC 2012). It should also be noted that the baseline
3 survey report has noted that the SWReGAP vegetation models overestimates the acreage the
4 Shrub/Scrub land cover; thus actual acreage of the Shrub/Scrub land cover loss is likely to be
5 lower.

6 There would also be direct disturbance of 10 acres of the Great Basin Pinyon-Juniper Woodland
7 ecological system during Phase 1 activities. This equates to less than 1% of the available 1,710
8 acres of this land cover class (within the 5,528-acre project area; however, as noted, SWReGAP
9 vegetation models underestimates this ecological system). This would affect BLM-sensitive
10 species such as the pinyon jay, which rely on this land cover class for food, and several species
11 of bats, whose day roosting habitat is located in rock outcrops, and in pinyon and juniper trees.

12 A similar amount of disturbance to both these land cover classes is expected during Phase II;
13 concurrent reclamation would reduce the amount of disturbance to less than the full sum of
14 Phase I and II disturbance. These impacts would last until Midway reclaimed the disturbance
15 areas. Midway would reclaim all areas within two years if drilling results indicate that no
16 resource is present. Per the ACEPMs described in Section 2.2.13, Table 2-2, Midway would
17 generally conduct reclamation with native seeds that are representative of the indigenous species
18 present in the adjacent habitat.

19 Indirect impacts specific to the greater sage-grouse, a candidate species for federal listing and a
20 BLM special-status species, would include potential abandonment of nests during breeding
21 seasons due to noise or visual disturbances. Although the project area does not contain suitable
22 breeding habitat, core breeding habitat exists in sagebrush communities in Newark and Railroad
23 valleys in the northern and eastern portions of the 3-mile buffer area.

24 Viewshed analyses were conducted to determine impacts to sage-grouse from disturbance in the
25 project area and proposed access roads.

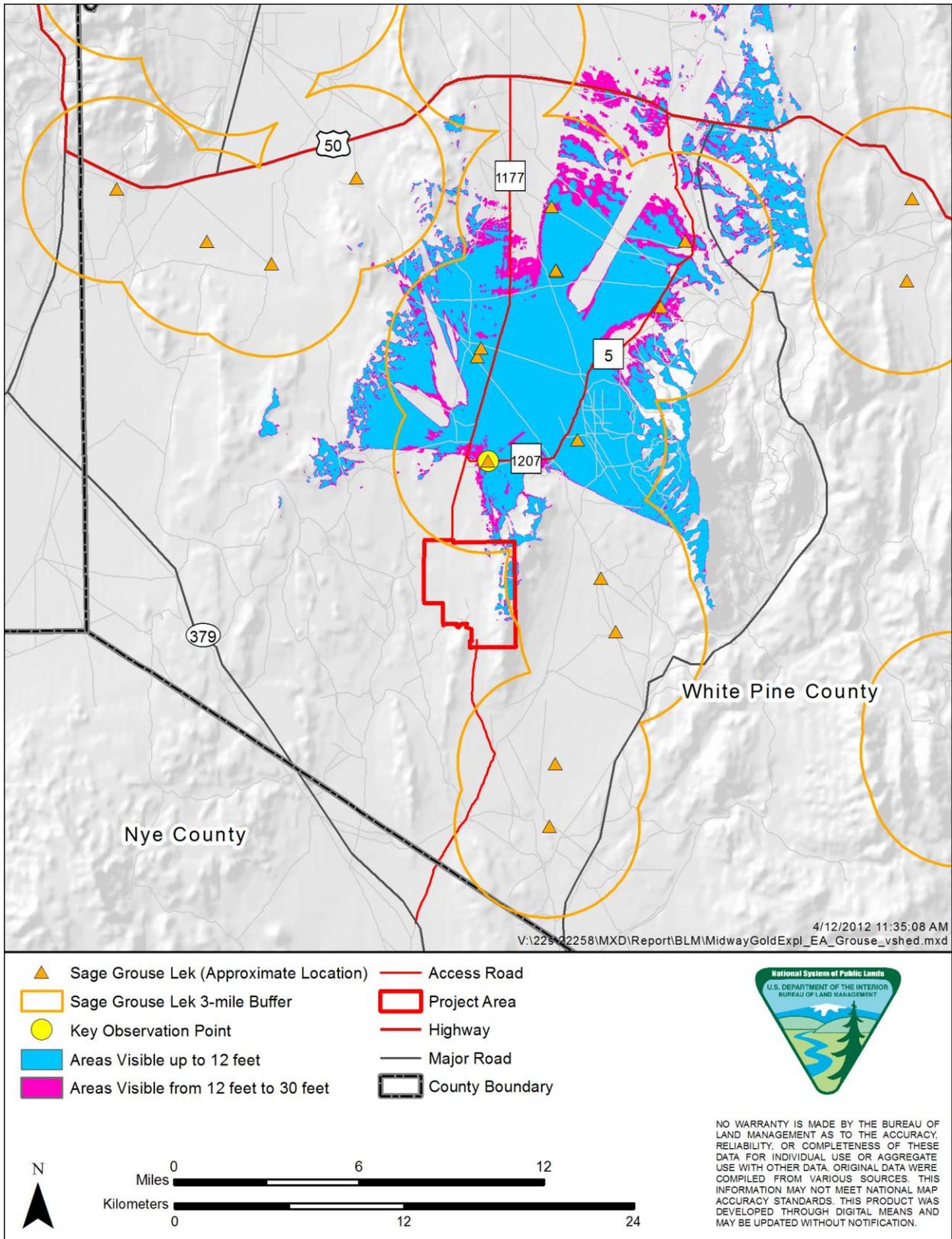
26 The view from 12 inches above the Monte Cristo West lek (the lek located closest to the project
27 area, approximately 2.5 miles from the project area, and adjacent to the County Road 1207) was
28 analyzed at two increments:

- 29 • ground level to 12 feet above ground level, representing vehicles, equipment or personnel
- 30 • 12 feet above ground level to 30 feet above the ground level, representing the height of
31 the drilling rigs

32 As indicated on Figure 3-3, sage-grouse would be able to see any vehicles, equipment, or human
33 travelling along most of both northern access roads. Most of the project area itself is
34 topographically shielded from the lek; however, sage-grouse would be able to see vehicles,
35 equipment, or humans in the easternmost portion of the project area, at a distance of
36 approximately 2.6 to 5.4 miles. A small portion of the eastern part of the project area is located
37 such that taller drilling rigs up to 30 feet would be seen from the sage-grouse lek.

38 Impacts to sage-grouse breeding would be minimized through the ACEPMs presented in Section
39 2.2.13. No surface use would be allowed within 0.5 mile of any sage-grouse lek between 5 a.m.
40 until 10 a.m. during the breeding period (March 1 through May 15).

1



2
3

Figure 3-3. Lek viewshed analysis.

1 Acoustic communication is known to be important in the reproductive behaviors of sage-grouse.
 2 There is evidence that the acoustic displays produced by males on leks facilitate reproduction in
 3 at least two ways. First, females use these vocalizations to find leks within the habitat. Second,
 4 after arrival at a lek, there is evidence that females use male vocalizations (and other aspects of
 5 male display) to choose a mate. Anthropogenic noise in the sage grouse habitat may mask
 6 vocalizations produced by males, interfering both with females' ability to locate leks and to
 7 choose mates. (Upper Green River Basin Sage-Grouse Working Group 2007).

8 Under the Proposed Action, there would be road construction and drilling activities within the
 9 project area, and vehicular traffic along the access roads. There are 13 sage grouse leks located
 10 within three miles of the project area or access roads (see Figure 3-3); a portion of the 3-mile
 11 buffer areas surrounding three of the leks overlap onto the project area. All of the proposed
 12 northern access roads (county roads 1177, 1207, and 5) are within one or more 3-mile buffer
 13 areas. There are two leks just west of County Road 1177, three leks just east of County Road 5,
 14 and one lek (Monte Cristo West, the lek used for the viewshed analysis) located adjacent to
 15 County Road 1205, about 2.5 miles north of the project area. There are also two lek buffer
 16 boundaries that overlap onto the southern access road.

17 A project area noise assessment (EDI 2012) was conducted to 1) calculate the maximum noise
 18 levels that would be generated in any one place by project operations, and 2) identify resulting
 19 noise levels at each of the leks along the access roads, given the attenuation that would result due
 20 to distance, topography, and typical atmospheric conditions. Table 3-9 provides the noise levels
 21 from equipment and vehicles used for the noise assessment.

Table 3-9. Noise Levels from Equipment Associated with the Proposed Action

Description	Manufacturer's Description	Equipment Function	dB(A) @ 100 ft.
Dozer	CAT – D8	Drill Site Preparation	76
Motor Grader	CAT-14G	Access Road and Drill Site Preparation	72
Service Vehicles	Pick Up Trucks	Employee, Delivery, etc.	69
Drill	Morooka	Exploratory Drilling	78
Drill	Schramm 685	Exploratory Drilling	78
Motor Grader	CAT-14G	Road and Drill Site	72
Dozer	CAT-D8	Maintenance	76
Service Vehicles	Pickup Trucks	Employee, Delivery, etc.	69
Water Trucks		Dust Control	65
Motor Grader	CAT-14G	Site Clearing	72
Dozer	CAT-D8	Site Clearing	76
Water Truck		Dust Control, Planting	65
Service Vehicles		Employee	69
Cultivator		Planting and Seeding	65

Source: EDI 2012

22 The assessment considered three different operating scenarios: 1) operation of one bulldozer
 23 (estimated at 76 dBA at 100 ft.), representing early project construction activities); 2) operation
 24 of 10 drill sites (estimated collectively at 88 dBA), representing maximum exploration-only

1 activity; and 3) operation of 10 drill sites in close proximity to an operating bulldozer (estimated
2 collectively as 88 dBA), representing concurrent road construction and drill operating activities.

3 Because drilling and road locations have only been identified for Phase I activities, the noise
4 assessment was designed to measure potential noise levels from five locations along the border
5 of the project area. Collectively, the sites are the closest possible drilling locations to all of the
6 leks, and therefore represent the loudest possible project area noise sources that could cause
7 disturbance to breeding sage grouse (Figure 3-4).

8 For each scenario, the noise assessment first identified the decibel level at 100 feet from the
9 source using the factors identified in Table 3-9. The assessment then calculated noise levels at
10 each of the leks, taking into account three factors that affect noise levels:

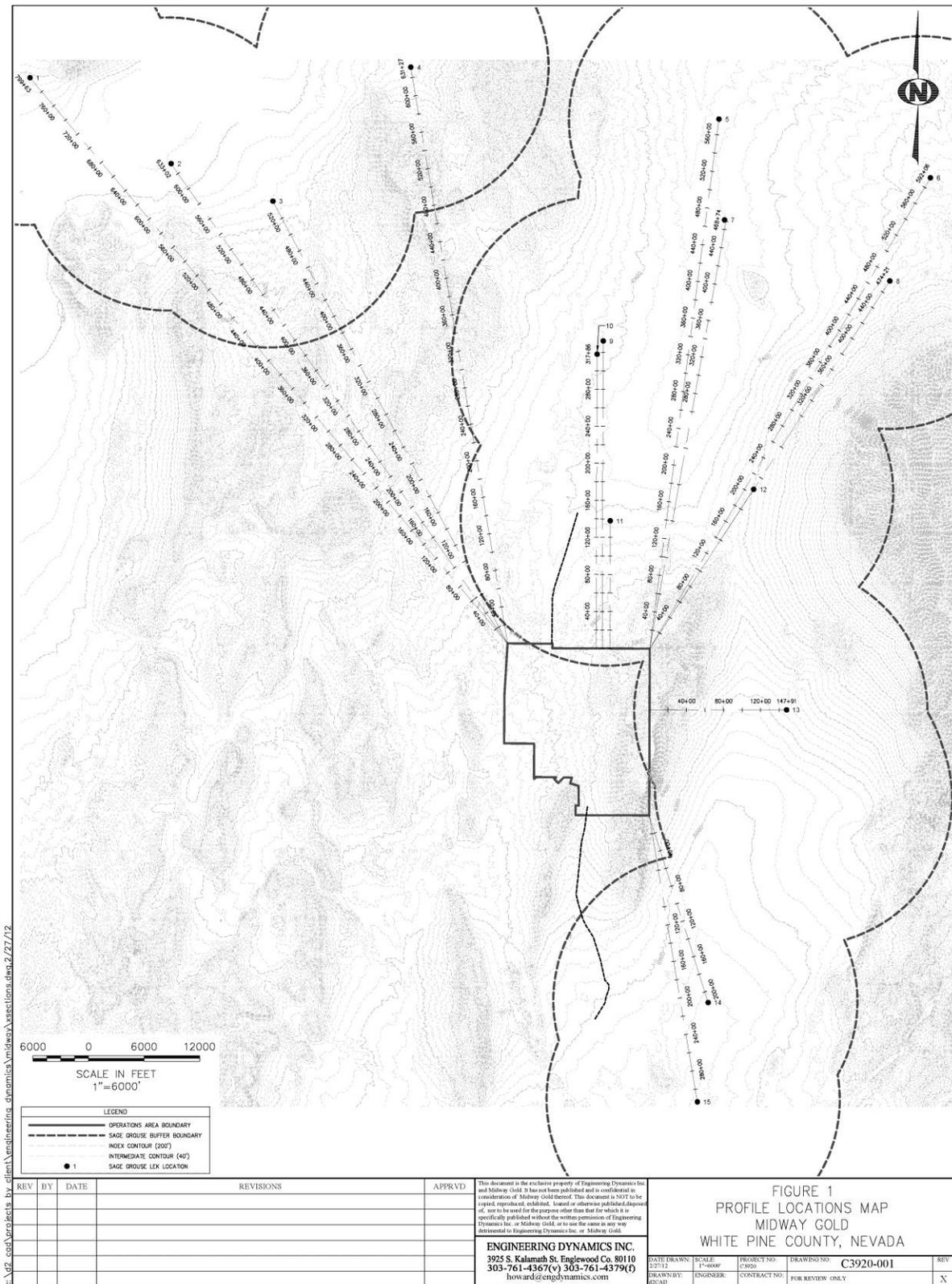
- 11 • attention from distance; which typically has a drop-off rate of 6 dBA per doubling of
12 distance;
- 13 • reductions in decibel level based on standard atmospheric conditions (no rain, snow, or
14 wind);
- 15 • noise reductions based on site-specific terrain, using topographical maps to develop cross
16 section maps that identify any noise barrier or barriers between the source and the lek and
17 calculating reductions when there is terrain barrier of significance.

18 As shown in Table 3-10, under all three scenarios and at all potential sites, the noise attenuation
19 from distance, atmosphere and terrain would result in the noise level at leks from project area-
20 activities remaining below the current noise levels of 35 dBA.

Table 3-10. Noise Levels from Equipment Associated with the Proposed Action

Lek No.	Distance to lek (feet)	Distance Reduction (1)	Atm Reduction (2)	Terrain Reduction (3)	Sum (1+2+3)	Project Area Noise Level at lek (dB(A))			Increase to Ambient Noise level at lek (35dBA)
						One Dozer	Ten Drills	One Dozer & Ten Drills	
1	79,200	58	>40	24	122	NA	NA	NA	No change
2	62,500	56	>40	24	120	NA	NA	NA	No change
3	55,800	55	>40	24	119	NA	NA	NA	No change
4	62,500	56	>40	24	120	<15	<15	<15	No change
5	57,500	55	>40	0	95	<15	<15	<15	No change
6	58,300	55	>40	2	97	<15	<15	<15	No change
7	45,800	53	>40	0	93	<15	<15	<15	No change
8	47,500	54	>40	10	104	<15	<15	<15	No change
9	31,300	50	31	2	83	<15	<15	<15	No change
10	32,500	50	32	2	84	<15	<15	<15	No change
11	13,700	43	13	10	66	22	22	22	No change
12	20,000	46	20	10	76	<15	<15	<15	No change
13	15,000	43	15	10	68	20	20	20	No change
14	20,000	46	20	0	66	22	22	22	No change
15	30,300	50	30	0	80	<15	<15	<15	No change

NA: noise from project activities would be completely inaudible.



1
2 Figure 3-4. Location of the five source points used for noise assessments as related to leks.

1 Modeling of traffic noise study was performed using the Federal Highway Administrations
2 FHWA Traffic Noise Model (TNM), Version 2.5. This program allows the user to specify, in 3-
3 dimensional coordinates, the location of the roadway, the noise receptors, existence of any noise
4 barriers and vehicle information.

5 The modeling used the following assumptions:

- 6 • The proposed access roads will be gravel, and have an assumed width of 20 feet, one lane
7 each direction. For this analysis, EDI assumed a long straight roadway section, with no
8 grade.
- 9 • At shift change, there would be as many as 20 vehicles in and out of the project area (ten
10 in each direction); 2) four delivery medium truck operations (two each direction); and 3)
11 up to four heavy truck operations (two each direction). For heavy truck traffic, the model
12 also considered the height of the exhaust stack, which is about 8 to 10 ft. above roadway
13 level and would therefore require a barrier of at least 12 ft. above roadway level to have
14 any terrain reductions.
- 15 • Receiver specifications were taken as perpendicular distances from the centerline of the
16 roadway; 50 foot increments from 50 to 300 feet.
- 17 • Atmospheric conditions would include no rain, snow, or wind.
- 18 • Pickup trucks have standard exhaust systems (i.e., no straight pipes).

19 Traffic noise levels were modeled for the following combinations of these vehicle volumes:

- 20 • Case 1: 20 cars, representing employee commute
- 21 • Case 2: 20 cars and 4 medium trucks, representing employee commute plus a moderate
22 level of concurrent equipment delivery
- 23 • Case 3: 4 medium trucks only, representing a moderate level of concurrent weekly supply
24 traffic not occurring during commuting hours
- 25 • Case 4: 4 medium trucks and 4 heavy trucks, representing maximum concurrent weekly
26 supply delivery not occurring during commuting hours
- 27 • Case 5: 20 cars, 4 medium trucks, and 4 heavy trucks, representing the maximum level of
28 concurrent traffic if there is no ride-sharing.
- 29 • Case 6: 10 cars, 2 medium trucks and 2 heavy trucks, representing the maximum level of
30 concurrent traffic if ride-sharing is employed.

31 Two vehicle speeds were considered for each scenario, 55 mph as defined by the BLM and 35
32 mph (a more realistic speed limit for some sections of roadway), for a total of 12 possible
33 scenarios.

34 Under all scenarios, noise would attenuate to existing noise levels (35 dBA) within 2,000 feet.
35 There are 3 leks along the access roads that are less than 2,000 feet and which would be subject
36 to a potential increase in noise levels. Table 3-11 present attenuation data for the three leks.

37

Table 3-11 Traffic Noise Levels at Leks within 2,000 feet From Access Roads

Lek No.	Distance to lek (feet)	Noise Level at lek-dB(A) (55mph/35/mph)					
		Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
6	1,400	32/31	34/32	32/31	34/32	35/33	36/33
8	912	36/35	38/35	37/35	38/36	39/37	40/38
11	90	54/53	55/54	54/53	55/54	57/55	57/55

Note: Calculated traffic noise levels are rounded up to the nearest dB(A), which is why several of the Cases have the same predicted noise levels.

1 As shown above, traffic noise does exceed 35 dB(A) at three leks. This analysis is a conservative
 2 estimate of impacts because USGS contours do not show any cuts or barrow pits along the access
 3 roads, which would further reduce noise levels. However, as discussed previously large truck
 4 traffic would require a 12 ft barrier above roadway level to have any terrain reductions.

5 The impacts of noise on sage grouse leks would be minimized through the application of the
 6 ACEPMs in Section 2.2.13, which would not allow any surface use within 0.5 mile of an active
 7 sage-grouse lek from 5 a.m. until 10 a.m. during the period March 1 through May 15. This
 8 would restrict commuting and project delivery traffic during the period when sage grouse are
 9 most likely to engage in breeding or strutting rituals.

10 Reducing vehicle speed to 15 mph within 0.5 miles of the lek could be used to reduce the noise
 11 at the leks located near the access roads. This would reduce the dBA approximately 3 dBA,
 12 which would mean that noise levels at lek 6 would be reduced to ambient noise levels under all
 13 scenarios. Noise levels at lek 8 would be reduced to ambient noise levels in cases 1 through 5;
 14 case 6 noise levels would be 36 dBA. Noise levels at lek 11 would be reduced to between 51 and
 15 53 dBA, but would still be well above existing noise levels. This measure is included in Section
 16 3.3, Mitigation.

17 3.2.7.2.2 *No Action Alternative*

18 Under the No Action Alternative, the area would remain available for other multiple use
 19 activities as approved by the BLM. Midway would continue to explore the project area under the
 20 approved Notice, which limits surface disturbance to a maximum of 5 acres. As a result, Midway
 21 would be able to create sequential acreage of disturbance with BLM approval. Impacts to
 22 wildlife would be similar to those described under the Proposed Action but would affect less
 23 acreage and be of a shorter duration. There would still be project area and traffic noise associated
 24 with Notice-level activities. Project area noise would attenuate to baseline levels at leks. Noise
 25 from traffic could still be in excess of 35 dBA at the three leks closest to the access roads, but
 26 would be lower than the Proposed Action, due to fewer numbers of vehicles.

27 3.2.8 *Visual Resources*

28 Visual resource management (VRM) is a system for minimizing the visual impacts of surface-
 29 disturbing activities and maintaining scenic values for the future. Visual resources consist of
 30 landforms vegetation, bodies of water and human-made structures. These elements of the
 31 landscape can be described in terms of their form, line, color, and texture. Visual resources are
 32 identified through the Visual Resource Management (VRM) inventory. This inventory consists
 33 of a scenic quality evaluation, sensitivity level analysis and a delineation of distance zones.
 34 Based on these factors, BLM-administered lands are placed into four visual resource inventory

1 classes: VRM Class I, II, III and IV. Class I and II are the most valued, Class III represents a
2 moderate value and Class IV is of the least value. VRM classes serve two purposes: (1) as an
3 inventory tool that portrays the relative value of visual resources in the area, and (2) as a
4 management tool that provides an objective for managing visual resources.

5 Visual resource management also includes impacts from light pollution. A *natural lightscape* is
6 defined by the National Park Service as a “place or environment characterized by the natural
7 rhythm of the sun and moon cycles, clean air, and of dark nights unperturbed by artificial light”
8 (NPS 2012). Light pollution is defined as the illumination of the night sky caused by artificial
9 light sources (Bortle 2001). Effects of light pollution consist of a decrease in the visibility of
10 stars and other natural night sky features, as well as a disruption in natural lightscapes from
11 direct glare. Light pollution is caused by artificial light sources that are directed upward or
12 sideways. Light then scatters throughout the atmosphere, resulting in skyglow.

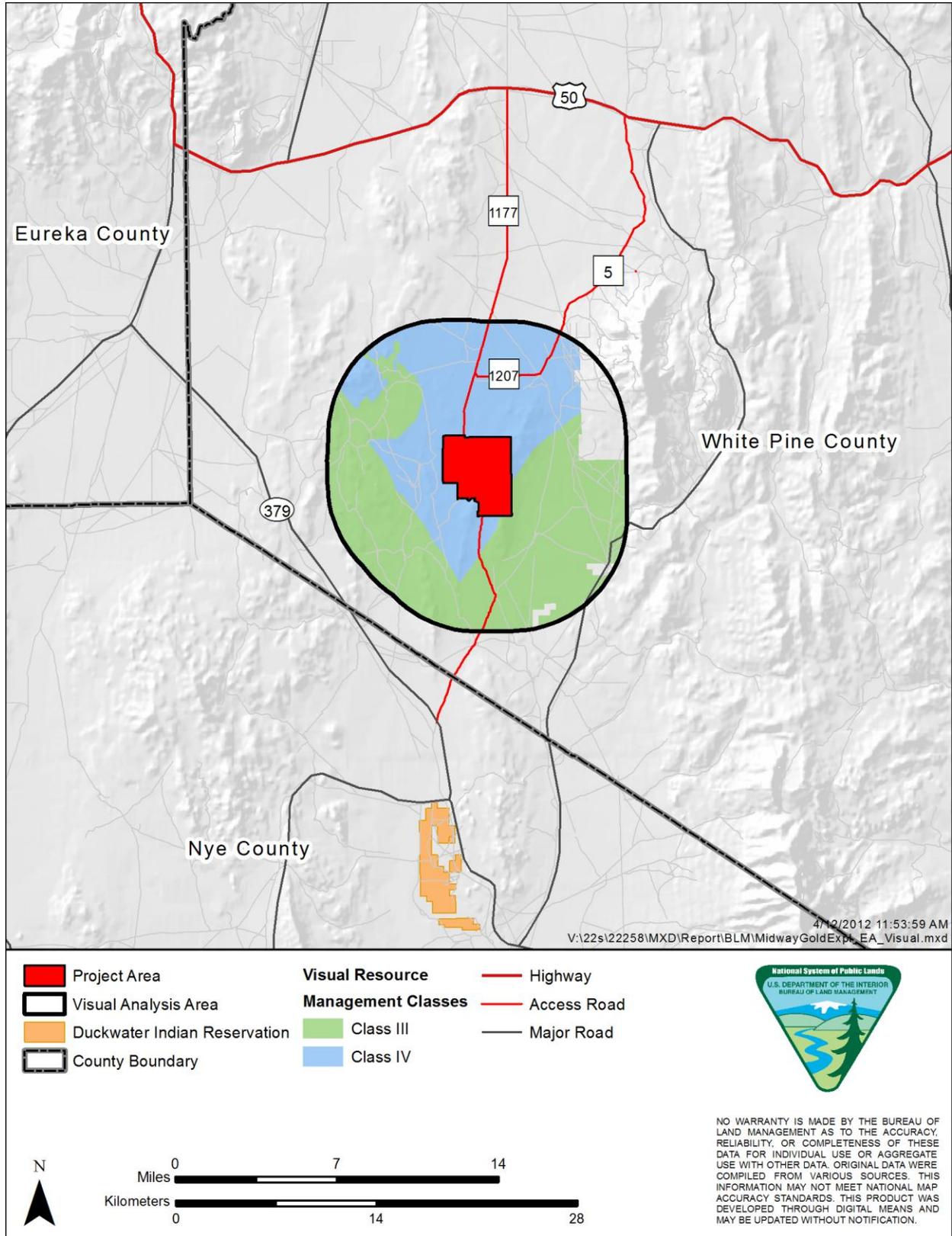
13 To effectively evaluate the visual impacts of a proposed project, a contrast rating is done from
14 the most critical viewpoints, called key observation points (KOPs). This is usually along
15 commonly traveled routes or at other likely observation points. Using BLM Form 8400-4-Visual
16 Contrast Rating Worksheet, visual resource specialists evaluate the degree of visual contrasts
17 from each KOP based on the form, line, color, and texture changes between the existing
18 landscapes and how the landscapes would look after implementation of the Proposed Action. The
19 analysis area for impacts to visual resources consists of the project area and all areas within a 5-
20 mile radius around the project area, which roughly marks the background views and an area from
21 which a casual observer may distinguish elements of the Proposed Action (Figure 3-5).

22 3.2.8.1 Affected Environment

23 The Project Area occurs within a classic basin and range landscape that consists of an open
24 valley flanked by north-south-trending ridges. The dominant visual features in the project area
25 are the heap leach pad and access roads associated with the former Easy Junior mine. Vegetation
26 typical of the Great Basin occurs throughout the project area. Sagebrush is interspersed with
27 other shrubs and grasses that contribute to the scenic quality of the area. Exposed gray, buff, and
28 tan-colored soils also add contrasts and scenic quality to the area. Additional vegetation consists
29 of the darker green juniper present throughout the area. Most of the project area falls within
30 VRM Class IV. The Class IV management objective is “to provide for management activities
31 which require major modifications of the existing character of the landscape. The level of change
32 to the characteristic landscape can be high. These management activities may dominate the view
33 and be the major focus of viewer attention. However, every attempt should be made to minimize
34 the impact of these activities through careful location, minimal disturbance, and repeating the
35 basic elements” (BLM 1986).

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Figure 3-5. Visual resources analysis area.

1 A small portion of the project area in the southeast corner is within VRM Class III. The objective
2 of this class is “to partially retain the existing character of the landscape. The level of change to
3 the characteristic landscape should be moderate. Management activities may attract attention but
4 should not dominate the view of the casual observer. Changes should repeat the basic elements
5 found in the predominant natural features of the characteristic landscape” (BLM 1980).

6 Existing or potential sources of artificial nighttime light in the area consist of traffic along U.S.
7 Highway 50, residences at the Duckwater Indian Reservation, and the communities of Eureka
8 and Ely. Because there are so few sources of artificial light, the night skies in the project area and
9 the surrounding area are assumed to be some of the darkest skies in the continental United States.

10 **3.2.8.2 Environmental Consequences**

11 There are no private residences, major roadways, recreation sites, trails, scenic overlooks, or
12 other destinations in and near the project area that would be considered a critical KOP; however,
13 a single KOP was identified along the main project access road approximately 0.5 mile north of
14 the project area as the primary public view of the Proposed Action (Figure 3-6).



15
16 Figure 3-6. View from KOP looking south.

17 The KOP is located on the main access road just north of the project area. From this location, the
18 view is to the south and looks up into the open valley floor. Dark green junipers, low shrubs, and
19 grasses cover the valley floor and surrounding ridges. This location represents the views of
20 people traveling south from U.S. Highway 50. During the field visit, the limited visibility of the
21 project area from surrounding lands was confirmed by driving existing roads to the north, east,
22 south, and west of the project area.

1 3.2.8.2.1 *Proposed Action*

2 Under the Proposed Action, there would be mining exploration activities throughout the project
3 area. During the field visit to discuss potential visual impacts, it was determined there would be
4 weak to moderate contrasts to the existing topography and landform within the project area, and
5 to the existing vegetation and soil surfaces. Weak contrasts can be seen, but do not attract the
6 attention of viewers; moderate contrasts begin to attract the attention of viewers and may also
7 begin to dominate the characteristic landscape. Although the proposed access roads, drill pads,
8 sumps, pits, and trenches would contrast with the form, line, color, and texture of the existing
9 natural vegetation and rolling topography throughout the area, they would repeat the basic
10 elements of form, line, color, and texture associated with the existing historic mining
11 disturbances found in the project area, and thus would not attract the attention of viewers
12 travelling through Newark Valley. Although there would be apparent contrasts visible from the
13 KOP identified in the field, because the project area is screened from view from the surrounding
14 areas, the contrasts would not be visible from U. S. Highway 50 or State Highway 379.

15 Moderate contrasts in the elements of the environment are consistent with the objectives for
16 VRM Classes III and IV. The planned reclamation and mitigation measures outlined in Section
17 3.3 would reduce the visible contrast in the long term by masking areas with moderate contrast
18 during exploration activities and returning the area to its original condition.

19 The intermittent need for nighttime exploration activities would result in the presence of portable
20 artificial lighting fixtures and would create short-term increases in artificial lighting. Because of
21 the small amount of artificial lighting that may be used during exploration, and the intermittent
22 and short-term need for artificial lighting, use of artificial light sources for drilling activities
23 would not contribute to long-term increases in the existing skyglow of the area. Visible glare
24 from direct lighting during nighttime exploration activities would occur intermittently and would
25 be partially screened by the existing topography surrounding the project area.

26 3.2.8.2.2 *No Action Alternative*

27 Under the No Action Alternative, the area would remain available for other multiple-use
28 activities, as approved by the BLM. Midway would continue to explore the project area under
29 the approved Notice, which limits surface disturbance to a maximum of 5 acres. As a result,
30 Midway would be able to create sequential acreage of disturbance with BLM approval. There
31 would still be changes to form, line, color, and texture of the existing natural vegetation and
32 rolling topography throughout the area, but impacts at any one time would be less due to the
33 lower level of concurrent development.

34 3.2.9 ***Recreation Resources***

35 The analysis area for impacts to recreation is NDOW Hunt Unit 131, a 998,036-acre area of
36 White Pine, Eureka, and Nye counties (Figure 3-7). Hunt Unit 131 was chosen because it
37 encompasses the project area and all of the nearby environs, and is actively managed as a whole
38 for hunting.

39 3.2.9.1 **Affected Environment**

40 Recreation in NDOW Hunt Unit 131 consists of a variety of activities primarily based on public
41 lands. NDOW Hunt Unit 131 is open for elk, mule deer, and pronghorn antelope hunting.
42 NDOW hunt information sheets for Hunt Unit 131 indicate that elk hunting is generally most

1 successful in the higher elevations in the summer and fall, with elk moving to the lower
2 elevations above Jakes and Railroad valleys during winter. Deer are mostly found in the upper
3 elevations of the White Pine Range but will migrate to lower areas in October. Pronghorn are
4 generally found in Little Smokey Valley and Railroad Valley, although small herds may also be
5 found in Jakes and Newark valleys (where the project area is located) (NDOW 2012).

6 There are no developed recreation facilities or sites within or adjacent to the project area. Access
7 to and within the project area is currently open to the public. Based on available resources,
8 topography, and information from the BLM and NDOW, recreation in the project area would
9 likely comprise off-highway vehicle (OHV) travel, hunting (as part of Hunt Unit 131), camping,
10 and wildlife and bird watching. BLM data indicate that OHV use has rapidly increased in the
11 entire Ely district and has become a preferred mode of transportation for activities such as
12 hunting, fishing, camping, ranching, mining, and wood cutting (BLM 2007).

13 There are currently 1,800 miles of road identified by GIS within Hunt Unit 131. Access for
14 hunters within Hunt Unit 131 is good; there are no areas closed by private land, and the unit
15 contains many maintained roads as well as smaller jeep trails requiring 4X4 vehicles. There is an
16 active gold mine located on the portion of the unit east of the Pancake Mountains, approximately
17 10 miles from Ely. BLM records indicate surface disturbance of 5,000 acres; portions of that area
18 may be unavailable for recreation due to safety concerns, or may be undesirable for hunting due
19 to disturbance or noise.

20 3.2.9.2 Environmental Consequences

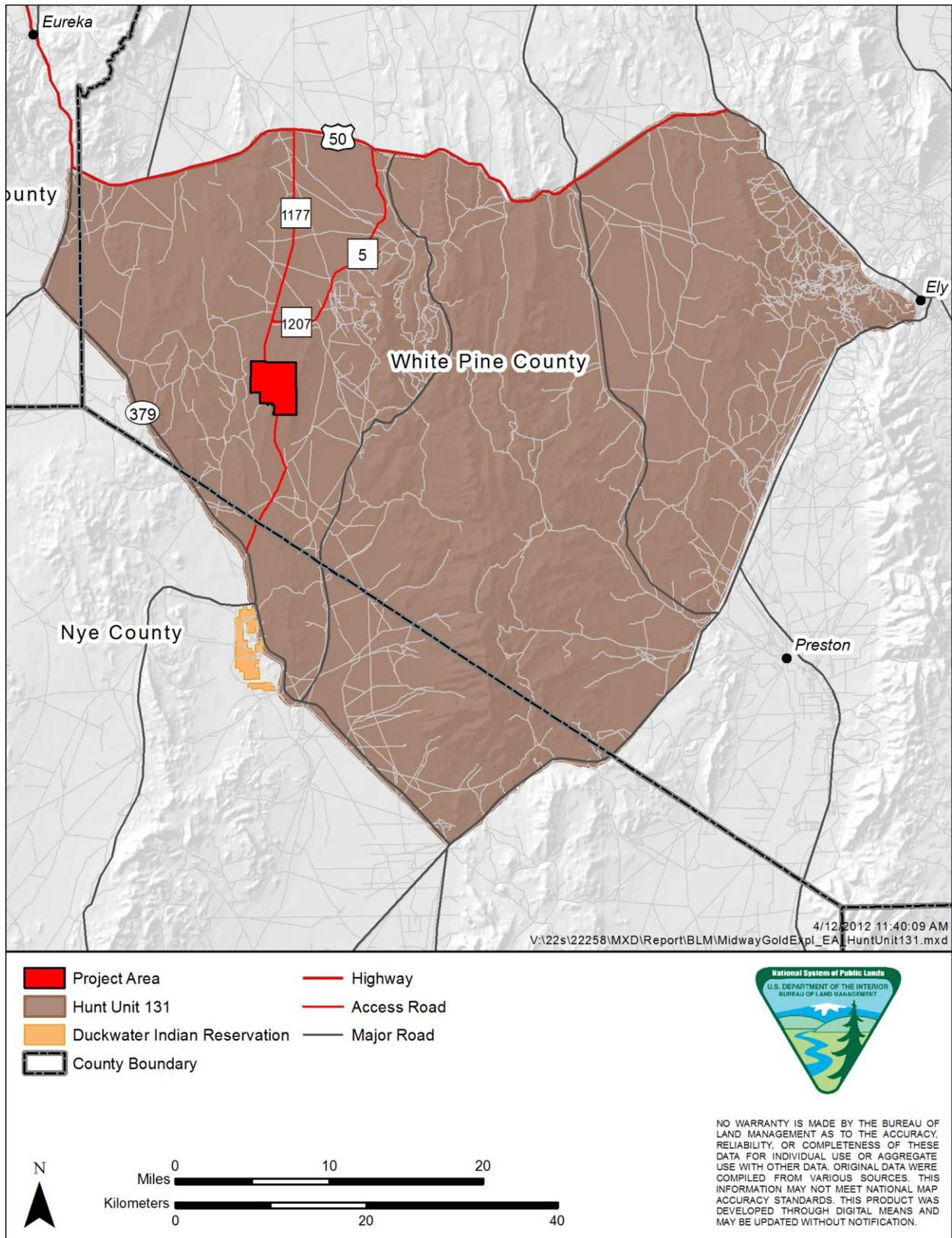
21 3.2.9.2.1 Proposed Action

22 Under the Proposed Action, access to and within the project area would remain open to the
23 public. This would allow existing recreational uses to continue; however, the sump portion of
24 each of the 165 drill sites would be fenced off and unavailable for recreation use while being
25 actively used during Phase I exploration activities (approximately two years). Concurrent
26 reclamation would take place where possible, which would reduce the total acreage impacted or
27 unavailable for access at any one time to less than the sum of the acreage associated with all 165
28 sumps. The 12-acre laydown area would be unavailable for the life of the project (five years).
29 Additionally, the presence of drill rigs, vehicles, and workers would likely deter recreation in
30 areas that are unfenced but undergoing active construction exploration activities.

31 The noise and visual disturbance from construction activities would reduce the quality of the
32 recreational experience for certain users within or near the 5,528-acre project area. The noise
33 could also impact hunting by affecting the distribution or abundance of wildlife species available
34 for hunting or viewing. Although there would be apparent contrasts visible within portions of the
35 project area, the project area is screened from view from the surrounding areas, and contrasts
36 would not attract the attention of viewers traveling through Newark Valley (see Section 3.2.13).
37 Noise levels would average 88 dBA at 100 feet for the drilling activities, but would attenuate to
38 background levels outside the project area (see Section 3.2.9). Project activities are likely to
39 minimally impact tourism in Newark Valley because most of the recreation within the project
40 area is done by residents, ranchers, and some dispersed recreationists.

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Figure 3-7. Hunt Unit 131.

1 Indirect impacts include increased access for recreation activities on newly constructed drill
2 roads and/or potential for unauthorized off-road travel on overland travel routes. Phase I
3 activities would include the construction of 13.4 miles of new road and 2.0 miles of overland
4 travel. This is an increase of less than 1% to the existing roads within the hunt unit. A similar
5 amount of road construction and overland travel is expected in Phase II activities. The potential
6 for these impacts would be further limited because exploration roads and overland travel routes
7 would be reclaimed and revegetated to approximate their original topography as soon as they are
8 no longer needed, which before the end of the life of the project . However, if any roads and
9 routes remain visible after reclamation, they could still be accessed by recreational users.

10 Project traffic may impact recreational users by causing delays, increasing the risk of traffic
11 accidents, and accelerating road degradation. Midway has committed to using employee carpools
12 to the project area to reduce traffic impacts, and would maintain county roads per maintenance
13 agreements with White Pine and Nye counties. Transportation impacts are discussed in Section
14 3.2.13.

15 3.2.9.2.2 *No Action Alternative*

16 Under the No Action Alternative, the area would remain available for other multiple use
17 activities, as approved by the BLM. Midway would continue to explore the project area under
18 the approved Notice, which limits surface disturbance to a maximum of 5 acres. As a result,
19 Midway would be able to create sequential acreage of disturbance with BLM approval. There
20 would still be changes to recreational opportunities throughout the area, but impacts would be
21 less due to the lower level of concurrent development.

22 3.2.10 *Socioeconomics*

23 The area used for analysis of socioeconomic impacts comprises White Pine and Eureka counties
24 and the Duckwater Reservation, located on Duckwater Road (Nevada State Highway 379) about
25 12 miles to the south of the project area, in Nye County. This area was chosen because it
26 incorporates the towns of Eureka and Ely, the two main areas where project employees or
27 contractors would reside or take temporary accommodations and because the Duckwater
28 Reservation qualifies as an environmental justice community, under Executive Order 12898.

29 3.2.10.1 **Affected Environment**

30 At the 2010 census, the population of White Pine County was 10,030 (U.S. Census 2011a).
31 Mining is the second largest employment sector in the county after government. In 2009, the
32 sector employed 20% of the total workforce (760 out of 4,630); experienced mining-related
33 personnel include mechanics, electricians, drillers, blasters, welders, heavy equipment operators,
34 truck drivers, lab personnel, security personnel, and general laborers (White Pine County 2012).

35 At the 2010 census, the population of Eureka County was 1,987 (U. S. Census 2011b). Mining is
36 the largest employment sector of the county, comprising 84% of all available jobs in 1999. It
37 should be noted that many of those jobs are not necessarily held by local residents; in 2001, the
38 mining industry employed 3,560 individuals, well in excess of the number the local labor force
39 (850). Top employers in the county include mining companies, a mine service supply company,
40 and a drilling service company. The town of Eureka contains a variety of mining-related supply
41 companies as well as a water trucking company (Eureka County 2012).

1 Most gold development communities have housing shortages due to the influx of mining workers
2 from other areas (Harding 2011). A housing gap analysis study prepared for White Pine County
3 in 2008 projected a housing deficit of 780 homes; however, the study also concluded that the
4 “boom and bust” cycle of mining development results in population instability that limits the
5 building of local housing stock. The report concluded that White Pine and Eureka counties had
6 the highest levels of population instability within Nevada (Harris and Bonnenfant 2008). In
7 2010, a housing impact summary was prepared for Eureka County to provide an overview of
8 housing issues. The summary reported the shortage of quality housing was affecting turnover of
9 mining staff as well as other industries. The memo noted that many employees had to obtain
10 housing in Ely or even Elko (Johnson 2010). Eureka County is currently partnering with the
11 Nevada Rural Housing Authority to develop subdivisions that would ultimately provide 110
12 rental units and 112 single family homes, with land reserved for temporary construction worker
13 housing. Approximately 80 rental units will be ready for occupancy in mid-2012 (Eureka County
14 2012). No data were available regarding development plans in White Pine County or Ely.

15 There are currently several moderately sized hotels in Eureka. Rooms are booked quickly and
16 reservations are often not available (TripAdvisor 2012). As of 2011, White Pine County
17 contained 24 motels with 671 rooms, which include several casinos. Most of these hotels are in
18 Ely. Midway established an office in Ely in July of 2010 to oversee exploration activities in
19 Nevada and currently has 12 employees in Ely working on three projects including Gold Rock.
20 Midway employees currently reside in Ely or nearby (Snell 2012).

21 Duckwater Shoshone Tribe has a 3,815-acre federal reservation, the Duckwater Reservation,
22 located to the south of the project, in Nye County (see Figure 1). At the 2010 census, the
23 population of the reservation was 156 (US Census 2011c). The tribe owns two greenhouses as
24 part of the Duckwater Falls Nursery where they raise seedlings of native plant species, which are
25 used by large mining operations in land reclamation programs (Great Basin Heritage 2012). In
26 2000, the reported per capita income for the reservation was \$13,110. The 2006-2010 American
27 Community Survey 5-year estimate of reservation per capita income is \$26,452 (US Census
28 2010). Employment by industry data within the same time period indicate that employment is
29 primarily within public administration (34.6%); agriculture, forestry, fishing and mining
30 industries (25%); and educational services, health care and social assistance professions (17.3%)
31 (US Census 2010).

32 3.2.10.2 **Environment Consequences**

33 3.2.10.2.1 *Proposed Action*

34 Under the Proposed Action, Midway will contract up to 10 rigs, as available, to complete Phase I
35 of the PoO. Assuming 24 hour operations, each rig would require up to six contract operators for
36 a maximum of 60 full-time jobs (30 per shift) for about 9 months of each year for about two
37 years. This represents an increase of about 500% over the levels of employment provided by
38 Midway’s current Notice-level activities (i.e., under the No Action Alternative). Most of these
39 jobs would be for drillers or heavy equipment operators, who would be brought in from
40 exploration sites as far as Montana as well as all of Nevada (Snell 2012). The rest of the jobs
41 (geologists, project managers, etc) would likely be held by existing Midway personnel; however,
42 Midway would hire temporary employees as necessary to provide one extra geologist per rig
43 when multiple rigs are in place.

1 Because most of these jobs would be short-term jobs involving contractors from outside the
2 community, the addition of these jobs would not necessarily change the employment rate within
3 White Pine or Eureka counties. However, they would provide indirect beneficial impacts to the
4 local economy through purchase and use of goods and services. According to research conducted
5 at the University of Nevada at Reno, the mining industry directly employed 12,198 people in
6 Nevada in 2008 and was responsible for another 52,000 jobs related to providing the goods and
7 services needed by the industry and its employees within the state (Driesner and Coyner 2008).
8 Although this may not directly translate to a definite number of indirect jobs per mining job and
9 may vary with respect to White Pine and Eureka counties, it does provide some indication of
10 how the addition of jobs in the mining industry would indirectly contribute to other employment
11 sectors and therefore, communities in which those opportunities exist.

12 The addition of these 60 full-time jobs would result in additional demands on short-term housing
13 in Eureka and Ely. Depending on timing of this project with other ongoing mining projects, as
14 well as the availability of the proposed rental units, it is likely that there would not be enough
15 accommodations in Eureka for all new employees and that many of the employees would need to
16 secure accommodations in Ely. This would increase contract employee commute by about 25
17 miles each way for those employees. Impacts to transportation due to employee commute from
18 Ely are discussed in Section 3.2.13. There would be no change to commuting patterns for
19 Midway employees due to short-term housing shortages in Eureka because the Midway office is
20 located in Ely and employees would be more likely to choose accommodations close to that city.
21 Employment levels for Phase II have not been fully defined but are anticipated to be similar and
22 would provide employment for an additional three years. The Proposed Action is not expected to
23 provide direct employment for Duckwater reservation residents (since most jobs would be short-
24 term jobs involving outside contractors), but could provide indirect beneficial impacts if native
25 plant species used for reclamation are purchased from the reservation. As discussed in Table 3-1,
26 there are no adverse impacts that would disproportionately affect the reservation.

27 *3.2.10.2.2 No Action Alternative*

28 Under the No Action Alternative, Midway would continue to explore the project area under the
29 approved Notice, which limits surface disturbance to a maximum of 5 acres at any one time.
30 Midway's contribution to area employment opportunities within the mining industry and
31 associated indirect impact to the local economy would remain at current levels, as would
32 demands on short-term housing.

33 **3.2.11 Transportation**

34 The area used for analysis of transportation impacts comprises the project area drill roads, access
35 routes, U. S. Highway 50 to Eureka and Ely, and State Highway 379 from the intersection with
36 the southern access route to Eureka. This area was chosen because it incorporates the routes on
37 which employees, contractors, and suppliers would most likely travel on a regular basis (see
38 Figure 1-1).

39 **3.2.11.1 Affected Environment**

40 U.S. Highway 50 is the primary east-west highway in White Pine County and the only major
41 highway near the project area. In 2010, the annual average daily traffic (AADT; defined as the
42 total volume of vehicle traffic on a road for a year, divided by 365 days) reported on the portion
43 of U.S. Highway 50 just east of Duckwater Road was 570 vehicle trips per day (NDOT 2010).

1 This portion of U.S. Highway 50 closest to Duckwater Road would be used under the following
2 circumstances:

- 3 • If supplies or employees were travelling to and from the town of Eureka to the project
4 area (using proposed northern access roads)
- 5 • If the southern access road were to be used for project area access and traffic was
6 originating from Ely)

7 On the portion of U.S. Highway 50 located just west of Mill Street in Ely, the AADT was 3,500
8 vehicle trips per day (NDOT 2010). Project traffic would affect this portion of U.S. Highway 50
9 if employees and supplies were originating from the town of Ely.

10 U.S. Highway 50 is classified by NDOT as a principal artery, meaning it has the ability to serve
11 corridor movements having trip length and travel density characteristics of substantial statewide
12 or interstate travel. U.S. Highway 50 is maintained by NDOT. In 2008, NDOT's interstates,
13 urban freeways, principal arterials, and rural minor arterials were rated the smoothest roads in the
14 United States by the Federal Highway Administration (NDOT 2008).

15 White Pine County Road 5 (Green Springs Road) and White Pine County Road 1177 (Easy
16 Junior Road) are unpaved county roads that originate at U.S. Highway 50 and provide project
17 area access from the north. The distance on White Pine County Road 5 from U.S. Highway 50 to
18 the project area boundary is approximately 16.1 miles. From U.S. Highway 50 to the project area
19 boundary, the distance on White Pine County Road 1177 is 15.3 miles. No traffic counts or
20 measurements were found for White Pine County Road 5, White Pine County Road 1177 or the
21 unmarked county road that joins Duckwater Road; however, traffic on these routes would
22 include vehicles associated with Midway's current exploration activities in the project area, as
23 well as other users, including recreationists. Midway estimates that project-related vehicular
24 traffic has averaged approximately 9–10 vehicles per day during previous exploration periods.
25 Other vehicle traffic observed by Midway field staff includes that associated with other
26 exploration companies and claim holders, hunters, recreationists, ranchers, and pine nut
27 gatherers. Observed travel was estimated at approximately 30 vehicles per day (Williams 2012).
28 Road maintenance on White Pine County Road 5 and 1177 is currently provided by White Pine
29 County.

30 Project area access from the south would be provided by an unmarked county road that joins
31 Duckwater Road (Nevada State Highway 379). From this junction, Duckwater Road extends
32 north into Eureka County to U.S. Highway 50 and south to the Duckwater Indian Reservation,
33 located in Nye County. The distance on the unmarked county road branching from Duckwater
34 Road to the project area boundary is 10.6 miles. Road maintenance is currently provided by Nye
35 County. No traffic counts or measurements were found for the unmarked county road, or
36 Duckwater Road.

37 In 2009, Nevada had a total of 20,454 million annual miles driven and 243 motor vehicle-related
38 fatalities. This translates into a fatality rate of 1.19 per 100 million vehicle miles traveled
39 (USDOT 2009).

40 The BLM is in the process of conducting its travel inventory and has not yet determined travel
41 designations for OHV use in or near the project area. Until the travel inventory is completed, the
42 area is being managed as "open" to OHV use (Rajala 2012).

1 3.2.11.2 Environmental Consequences

2 3.2.11.2.1 Proposed Action

3 Under the Proposed Action, vehicular travel would result from employee/contractor commute
4 and equipment supply delivery. The project would employ up to 10 drill rigs and associated
5 support vehicles. Water trucks would make at least one trip to the project area per day; the water
6 source would be located within 10 miles of the project area. Drilling mud, fuel, and other
7 supplies would be delivered no more frequently than weekly. Crew vehicles would travel to and
8 from the site daily. There would be two shifts per day; shifts would typically be 12 hours
9 beginning at 6 a.m. and 6 p.m. One or more Midway geologists would travel to the project each
10 day to supervise operations via a separate vehicle.

11 Midway has committed to having each drill crew carpool to the project area. Assuming this is the
12 case, there would be a total of 10–15 employee vehicles commuting to and from the project area
13 at the beginning and end of each shift (20–30 vehicles total). There would also be up to 10 water
14 trucks per day (although not necessarily scheduled at the same time of day as employee
15 commuting traffic), as well as the potential for up to five deliveries per week of other supplies.
16 Defining a vehicle trip per day as one trip either to or from the project area, up to 60 vehicle trips
17 per day would occur on U.S. Highway 50 and county roads for employee commuting, plus a
18 maximum of 30 truck trips for water and other supplies (assuming all other deliveries occurred
19 on the same day). If carpooling did not occur and each person drove separately, there would be
20 approximately 35–40 vehicles commuting to and from the project area each shift (70–80 vehicles
21 total, plus a maximum of 30 truck trips for water and other supplies [assuming all deliveries
22 occurred on the same day]). This would equate to 190 vehicle trips per day on U.S. Highway 50
23 and county roads. Table 3-12 shows the potential traffic increase on U.S. Highway 50 compared
24 with current AADT. Traffic volume increases would occur in the spring, summer, and fall
25 seasons, during 2012 and 2013.

26 The relative increase in daily vehicle trips from project activities would be greatest on the
27 portions of U.S. Highway 50 closer to Duckwater Road (a 11.6% increase would occur with
28 carpooling and a 33.3% increase would occur without carpooling), which is the portion of U.S.
29 Highway 50 that would be used if traffic were to originate from Eureka or if the southern access
30 routes would be used. Near Ely, there would be a 2.6% increase in daily vehicle trips from
31 project activities with carpooling and a 5.4% increase without carpooling.

Table 3-12. Increase in Daily Vehicle Trips on U.S. Highway 50

Location	2010 AADT	2010 AADT and Maximum Daily Vehicle Trips with Carpool (% increase)	2010 AADT and Maximum Daily Vehicle Trips without Carpool (% increase)
U.S. Highway 50 just east of Duckwater Road	570	660 (11.6%)	760 (33.3%)
U.S. Highway 50 west of Mill Street in Ely	3,500	3,590 (2.6%)	3,690 (5.4%)

32 As a principal artery, these types of traffic increases on U.S. Highway 50 are unlikely to affect
33 level of service or maintenance requirements for these roads because the highway is designed to
34 accommodate high levels of traffic.

1 Based on observed current traffic, it is likely that traffic would at least triple on the three
2 proposed access roads (from the observed minimum of 40 vehicles per day to over 130 vehicles
3 per day). Vehicular use for project activities on county road systems could degrade these roads
4 (e.g., create rutting, etc.). Road use agreements with White Pine and Nye counties would allow
5 Midway to perform road maintenance and snow removal for year-round access to the project
6 area on White Pine County Road 5, White Pine County Road 1177, and the unmarked county
7 road. Access road maintenance would be done in accordance with the road use agreements and
8 could include grading and watering. Where appropriate and necessary, road base or gravel would
9 be placed on the road to reduce rutting. These maintenance activities would likely minimize
10 degradation of the county roads.

11 Increased traffic from project construction also presents an increased risk of accidents and
12 fatalities. Assuming the northern access routes would be the primary access to the project area
13 due to their connection with U.S. Highway 50, the longest potential daily commuting distance
14 would be approximately 67 miles; 52 miles along the U.S. Highway 50 (Ely to White Pine
15 County Road 1177) and 15 miles along White Pine County Road 5. Under the carpooling
16 scenario (90 daily vehicle trips), a maximum of 6,120 vehicle miles would be travelled per day.
17 Assuming a work schedule of seven days a week over three seasons (approximately 274 days), a
18 maximum of 1,676,880 vehicle miles would be traveled per year. If carpooling were not
19 employed, approximately 12,920 vehicle miles would be travelled per day and a maximum of
20 3,540,080 vehicle miles would be traveled per year. Assuming the ratio of fatalities to vehicles
21 miles travelled for the Proposed Action is the same as the ratio for the state of Nevada, project
22 activities under either scenario would not result in additional annual fatalities (less than one
23 fatality per 100 million vehicle miles).

24 *3.2.11.2.2 No Action Alternative*

25 Under the No Action Alternative, Midway would continue to explore the project area under the
26 approved Notice, which limits surface disturbance to a maximum of 5 acres. There would still be
27 changes to transportation resources (traffic volume, road conditions, access changes, and
28 accident risk), but impacts would be less due to the lower level of development.

29 **3.2.12 Hazardous Materials and Fire and Fuels Management**

30 The analysis area for impacts to hazardous materials and fire and fuels management is the project
31 area, its access routes, U.S. Highway 50 to Eureka and Ely, and State Highway 379 from its
32 intersection with southern access route to Eureka (see Figure 1-1). This area was chosen because
33 it incorporates the areas in which there could be a hazardous materials spills or human-caused
34 fire, or where workers could encounter existing environmental hazards.

35 **3.2.12.1 Affected Environment**

36 *3.2.12.1.1 Hazardous Materials*

37 Recognized environmental conditions, for the purpose of the Comprehensive Environmental
38 Response, Compensation and Liability Act (CERCLA) Superfund Amendments and
39 Reauthorization Act of 1986 are defined by the American Society for Testing and Materials
40 (ASTM) as “the presence or likely presence of any hazardous substance or petroleum products
41 on a property under conditions that indicate an existing release, a past release, or a material threat
42 of a release of any hazardous substances or petroleum products into structures on the property or

1 into the ground, ground water, or surface water of the property” (ASTM 2005). The project area
2 and transportation routes do not include any current recognized environmental conditions. The
3 project area has been used for previous mining operations; reclamation was considered complete
4 in 2006 (Midway 2011). Midway has not conducted a formal Phase I environmental site
5 assessment but has completed a very thorough internal site assessment for hazardous materials
6 and health and safety risks.

7 *3.2.12.1.2 Fires and Fuels Management*

8 The BLM Ely District currently manages planned and unplanned ignitions according to the 2004
9 Ely Fire Management Plan, which incorporates the Ely Managed Natural and Prescribed Fire
10 Plan (BLM 2000). Memoranda of understanding between the Ely FO and surrounding public
11 land management agencies (e.g., Humboldt-Toiyabe National Forest, Elko FO) have been
12 established and identify responsible parties for initial attack of fires on public lands. The project
13 area and access roads are located in fire management units that allow (to the extent practical for
14 resource benefit) the managed use of wildland fire to improve ecological system function, and to
15 allow fire to function as a natural part of the ecological system.

16 According to the Nevada Community Wildfire Hazard Assessment Project (RCI 2005), ignition
17 risks for wildfires generally fall into two categories: lightning and human caused. Human-caused
18 ignitions can come from a variety of sources such as burning material thrown out of vehicle
19 windows, sparks from auto accidents, off-road vehicles, railroads, arcing power lines,
20 agricultural fires, campfires, debris burning in piles or burn barrels, and fireworks. In White Pine
21 County, 1,765 fire incidents were recorded between 1980 and 2003; 1,548 were lightning caused
22 and 217 were human caused. The cause of the remaining 135 fires was not reported (RCI 2005).
23 According to the Nevada Division of Forestry, there were four wildland fires near the project
24 area in 2011, all occurring around the same day (July 26, 2011). Three fires were contained to
25 less than 1 acre; one fire was contained at approximately 1 acre (Division of Forestry 2011). The
26 cause of these fires was not reported.

27 The timing and the frequency of wildland fires can be affected by the presence of invasive
28 weeds. Annual bromes such as cheatgrass are prolific seeders that can form a continuous bed of
29 highly flammable fine fuels at a time of year that fires did not historically burn. Cheatgrass
30 presence in western ecological systems has affected both the timing and the frequency of
31 wildland fires (BLM 2007). Site-specific surveys of the project area and the BLM Risk
32 Assessment notes that there is currently cheatgrass scattered throughout the project area, mainly
33 along roads in and to the project area.

34 **3.2.12.2 Environmental Consequences**

35 *3.2.12.2.1 Proposed Action*

36 Hazardous Materials

37 The generation of waste and the use of hazardous materials to implement the Proposed Action
38 could result in the accidental release of these wastes or materials during transportation, transfer,
39 or use. The risk of contamination would be minimized through the application of the ACEPMs in
40 Section 2.2.13.

41 Under the Proposed Action, the following hazardous materials would be delivered and used in
42 the project area:

- 1 • Approximately 625 gallons of diesel fuel to be stored in vehicle and drill rig fuel delivery
- 2 systems
- 3 • Approximately 125 gallons of gasoline to be stored in fuel delivery systems for light
- 4 vehicles
- 5 • An aboveground diesel fuel tank of approximately 15,000 gallons, provided with its own
- 6 double containment system, located at the laydown area
- 7 • Approximately 125 pounds of lubricating grease, stored on the drill rigs or transported by
- 8 drill trucks

9 Standard, nontoxic drilling muds and additives such as Flocc 360™, Abandonite™, Alcomer
10 120L™, bentonite, EZ-mud™, Polyplus™, and Super Plug™ would be used for drilling
11 activities and stored on-site. All containers of hazardous substances would be labeled and
12 handled in accordance with NDOT and MSHA regulations. No chemicals subject to the
13 Superfund Amendments and Reauthorization Act and no extremely hazardous substances, as
14 defined in 40 CFR 355, in threshold-planning quantities would be used in the project area or
15 transported along the transportation routes.

16 The truck routes for delivery of hazardous materials to the project area and removal of trash and
17 other wastes from the project area would be along one or more of the routes described above.
18 Deliveries are expected to occur no more than once per week, and assuming that the northern
19 access roads are used, and that supplies come from Ely, the transportation route would be a
20 maximum of 68 miles each way. The transfer of fuel from the tank to trucks would occur
21 primarily within the laydown area; minor amounts of fuel transfer could also occur at each drill
22 pad location. Maintenance of equipment would occur mainly in the laydown area but could occur
23 at any of the drill pad locations.

24 Self-contained, portable, chemical toilets supplied and serviced by a contractor would be used
25 for human waste. All other refuse generated by the Proposed Action would be transported off-
26 site and disposed of at an authorized landfill facility, consistent with applicable regulations. All
27 human waste would be hauled off-site and disposed of in a sewage treatment facility. No refuse,
28 human waste, or toilet chemicals would be buried on-site.

29 In the event hazardous or regulated materials were spilled, measures would be taken to control
30 the spill and the BLM, NDEP, and/or the Emergency Response Hotline would be notified, as
31 required. If any oil, hazardous material, or chemicals are spilled during operations, they would be
32 cleaned up as soon as Midway becomes aware that a spill has occurred. After clean up, the oil,
33 hazardous material, or chemicals and any contaminated material would be removed from the site
34 and disposed of at an approved disposal facility. Any hazardous materials uncovered during
35 construction or exploration activities would be immediately reported to the AO.

36 Fires and Fuel Management

37 Under the Proposed Action, there would be a risk of accidental ignition from the following:

- 38 • Improper storage or handling of highly flammable materials: During the life of the
- 39 project, there would be one 15,000-gallon aboveground diesel fuel tank located in the
- 40 laydown area; trucks and equipment together would carry an additional 750 gallons of
- 41 diesel fuel or gasoline.

- 1 • Sparks from overland travel by ATVs or pickup trucks: There would be a total of 10,760
2 linear feet of overland travel by ATV during Phase I. A similar amount is expected
3 during Phase II.
- 4 • Personnel activities such as smoking: There could be up to approximately 60 crew
5 members on the project area daily during both phases of the project.

6 These risks would be minimized by the ACEPMs outlined in Section 2.2.13. Mobile equipment
7 would be properly muffled and equipped with suitable fire suppression equipment, such as fire
8 extinguishers, hand tools, and portable water pumps. All applicable state and federal fire laws
9 and regulations would be complied with, and all reasonable measures would be taken to prevent
10 and suppress fires in the project area. During business hours, Midway would report any
11 uncontrolled fires immediately to the BLM Ely District Manager or AO; after hours, any
12 uncontrolled fires would be reported to 911 emergency services or the sheriff's office. There is
13 also potential for an increased risk of wildfire due to the introduction of invasive weed species,
14 which increase the risk and intensity of wildfire. The BLM Risk Assessment (Appendix B) rates
15 the project activities as "moderate" in their potential for introducing or spreading noxious weeds,
16 and "high" for the consequences of those noxious weed establishment, because the area currently
17 has very few weeds, and any new infestations would impact nearby native plant communities
18 and could alter the fire regime in the area. The area of risk would include all areas of surface
19 disturbance (a total of 137 acres) plus all areas within 200 feet from the proposed roads and
20 overland travel areas (an additional 830 acres). The ACEPMs presented in Section 2.2.13 and in
21 the BLM Risk Assessment (Appendix B), regarding reclamation and reseeding, would minimize
22 these risks. There would be also more personnel onsite to report any wildfires occurring on or
23 near the project area and some firefighting equipment in vehicles and trucks onsite to provide
24 potential initial control to any fires directly threatening Midway facilities or personnel.

25 3.2.12.2.2 *No Action Alternative*

26 Under the No Action Alternative, Midway would continue to explore the project area under the
27 approved Notice, which limits surface disturbance to a maximum of 5 acres. Solid and hazardous
28 wastes would be present during those activities but would be in smaller quantities. Risk of wildfire
29 ignition would also be present, but would be less due to the smaller amounts of flammable
30 materials on-site and reduced numbers of employees and overland travel trips.

31 **3.3 MITIGATION**

32 The following section contains specific mitigation measures that could be implemented to further
33 reduce impacts to wildlife/special status species and visual resources. The ACEPMs described in
34 the Proposed Action (Section 2.2.13) are sufficient to reduce impacts for all other resources.
35 Monitoring throughout the life of the project will continue as stated with regards to invasive
36 species management, road maintenance, dust reduction efforts, and seeding activities during
37 reclamation.

38 **Wildlife/Special Status Species**

39 The following additional mitigation measures could be used to further reduce the noise at the
40 leks located near the access roads.

- 41 • Reduce vehicle speed to 15 mph within 0.5 miles of the lek. This would reduce the dBA
42 approximately 3 dBA, which would mean that noise levels at lek 6 would be reduced to

1 ambient noise levels under all scenarios. Noise levels at lek 8 would be reduced to
2 ambient noise levels in cases 1 through 5; case 6 noise levels would be 36 dBA. Noise
3 levels at lek 11 would be reduced to between 51 and 53 dBA.

4 **Visual Resources**

5 The planned reclamation and mitigation measures outlined below would reduce the visible
6 contrast in the long term by masking areas with moderate contrast during exploration activities
7 and returning the area to its original condition.

- 8 • Construction Drill Roads and Drill Sites: Any removed vegetation from road creation
9 would be saved and used at access entrance. All drilling sites, including turnouts, would
10 be visually masked by spreading the cut and downed brush and trees scattered across
11 each site. This method would be most suitable to assist with blending disturbances into
12 the surrounding characteristic landscape while vegetation is re-established from re-
13 seeding, and to prevent continued use by the general public. Areas adjacent to and
14 accessible by the main access roads should be a priority when using removed vegetation.
15 Removed vegetation from sump sites would be saved, lopped, and scattered after access
16 is ripped and re-seeded.
- 17 • Overland Travel: No ripping would be necessary. Any removed vegetation would be
18 saved from sump sites and used at access entrance by lopping and scattering up to 50
19 feet, to avoid continued access on two-tracks.
- 20 • Reclamation: Once completed, trenches and pits would be backfilled and recontoured to
21 near original contour. The top 1 foot of surface soil and plant material would be spread
22 back over the area, and the area would be seeded with a BLM-approved seed mix.

1 **4.0 CUMULATIVE IMPACTS ANALYSIS**

2 As defined in 40 CFR 1508.7 (Council on Environmental Quality [CEQ] regulations for
 3 implementing the NEPA) a cumulative impact is an impact on the environment that results from
 4 the incremental impact of the action when added to other past, present, and reasonably
 5 foreseeable future actions, regardless of which agency (federal or nonfederal) or person
 6 undertakes such other actions.

7 **4.1 ANALYSIS AREAS**

8 The geographic extent of cumulative impacts varies by the type of resource and impact. The
 9 timeframes, or temporal boundaries, for those impacts may also vary by resource. Five different
 10 spatial and temporal cumulative impact analysis areas (CIAAs) have been developed and are listed
 11 with their total acreage in Table 4-1.

Table 4-1. Cumulative Impact Analysis Areas by Resource

Resource	Cumulative Impact Analysis Area (CIAA)	Total CIAA Acreage	Temporal Boundary
Air, Soils, Water, Vegetation, and Paleontology Resources	Headwaters Duckwater Creek, Upper Bull Creek, Middle Bull Creek, and Hoppe Spring Duckwater Creek HUC 12 subwatersheds. This area was chosen because it is an area with clear topographical boundaries against which to measure impacts to air quality and visibility and has vegetative connectivity, similar soil types, and hydrological functionality of this area. See Figure 3-1.	113,516	Soils, Water and Vegetation: 8 years (5-year life of project plus 3 years for vegetation reclamation) Air: Life of project (5 years) Paleontology: 8 years (5-year life of project plus 3 years for reclamation activities)
Cultural	<u>Prehistoric</u> : Lower Newark/Upper Railroad Valley plus the Pancake/White Pine Range <u>Historic Mining</u> : the White Pine and Pancake Mining Districts <u>Historic Transportation</u> : Lower Newark/Upper Railroad Valley These areas were chosen because of local lifeway-ecological associations or historic activities, as identified through previous discoveries	277,632 166,127 154,527	8 years (5-year life of project plus 3 years for reclamation activities)
Wildlife/SSS, Recreation Resources, Transportation	NDOW Hunt Unit 131. This area was chosen due to the continuity of big game habitat and recreational uses such as hunting and because it encompasses the transportation routes. See Figure 3-7.	998,036	8 years (5-year life of project plus 3 years for vegetation reclamation)
Socioeconomics	White Pine and Eureka counties and the Duckwater reservation. This area was chosen because it incorporates the towns of Eureka and Ely, the two main areas where project employees or contractors would reside or take temporary accommodations.	NA	5-year life of project
Visual Resources	5-Mile viewshed from project area. This area was chosen because it encompasses the entire project area viewshed as seen by travelers on nearby roads. See Figure 3-6.	94,366	8 years (5-year life of project plus 3 years for vegetation reclamation)

1 4.2 PAST, PRESENT AND REASONABLY FORESEEABLE FUTURE ACTIONS

2 The primary past and present actions that would affect the resources analyzed in this EA are
3 historic exploration and mining operations, numbers and scattered transmission lines, livestock
4 grazing, and road development. The BLM LR2000 database was used to query the past and
5 present mineral exploration or mining activities (authorized Notices, expired Notices, closed
6 Notices) that have been approved in the CIAA. This includes areas of existing surface
7 disturbance from mining operations associated with the Easy Junior Mine within the Gold Rock
8 project area, as well as surface disturbance exploration activities associated with Midways' Pan
9 project, located approximately 10 miles northwest of the Gold Rock project area. Road
10 disturbance was identified through GIS road layers for each of the analysis area. Past and present
11 actions are summarized by CIAA in Table 4-2 below.

12 Within the Humboldt-Toiyabe National Forest (USFS) Ely Ranger District, there is an
13 abandoned and partially reclaimed 500-acre mine, as well as a 3-acre geothermal project within
14 the White Pine Mountains east of the project area. This project would fall into the
15 Wildlife/SSS/Recreation CIAA (Hunt Unit 131) and are included in Table 4-2 below. No data
16 are available on the acreage of impacts of past and present livestock grazing.

17 Reasonably foreseeable future actions (RFFAs) are those for which there are existing decisions,
18 funding, formal proposals, or which are highly probable, based on known opportunities or trends.
19 The BLM has identified two primary reasonably foreseeable mining actions occurring within the
20 CIAAs identified above.

- 21 • The Pan Mine, proposed by Midway, is located approximately 10 miles northwest of the
22 Gold Rock project area. The mine proposes approximately 3,238 acres of surface
23 disturbance, including two open rock disposal areas, one heap leach facility, and other
24 mining related facilities, including transmission lines. This project falls into the
25 Wildlife/SSS/Recreation, Socioeconomic, and the Pancake Wild Horse CIAAs.
- 26 • The Gold Rock Mine, also proposed by Midway, is a mine proposed within the project
27 area. The timing, exact location and extent of facilities is to be determined but could
28 include shafts, open pits, rock disposal areas, heap leach processing facilities, roads, and
29 other ancillary facilities, at least some of which would be located in the same areas of
30 surface disturbance as the Gold Rock exploration project. The project is estimated to
31 impact a maximum of approximately 2,000 acres, but would not occur for at least three
32 years, so would be removed temporally from some or all of the resource impacts
33 associated with the Gold Rock exploration project. This project would fall within all of
34 the CIAAs.

35 The Humboldt-Toiyabe National Forest (USFS) Ely Ranger District has several geothermal and
36 mining projects planned within the White Pine Mountains east of the project area. These projects
37 would fall into the Wildlife/SSS/Recreation CIAA (Hunt Unit 131).

- 38 • Centennial Exploration Project: exploration drilling, 1.2 acres of proposed disturbed
39 disturbance expected to occur in summer 2012.
- 40 • Wheeler Ridge Phased Exploration Project: exploration drilling, 50 acres of proposed
41 disturbance, expected to occur summer 2013.

- 1 • Centennial Mine Plan: The timing, exact location and extent of facilities is to be
2 determined but is estimated to impact approximately 320 acres and would not occur for at
3 least three years.
- 4 The BLM 2008 RMP has also identified a proposed corridor for the Southwest Intertie Project
5 (SWIP), a proposed 500 kV transmission line that when completed, will extend more than 500
6 miles from Jerome County, Idaho to Clark County, Nevada. A portion of the SWIP corridor lies
7 within the easternmost portion of the Wildlife/SSS/Recreation CIAA (Hunt Unit 131).
- 8 Table 4-2 summarizes all known past, present, and reasonably foreseeable disturbance impacts by
9 CIAA. Because the SWIP project is well removed the project area and its associated recreation
10 and wildlife uses and impacts, it is not included in the RFFA acreages in Table 4-2 but is
11 discussed qualitatively in the wildlife/species-status species and recreation analyses.

Table 4-2. Past, Present and Reasonably Foreseeable Disturbance Impacts by CIAA

Cumulative Impact Analysis Area (CIAA)	Past Development Activity (Acres) ¹	Present Development Activities (total acres, including roads)	Past or Current Road Disturbance (Miles/Acres)	Reasonably Foreseeable Future Actions (RFFAs)
Air/ Soils/ Water/Vegetation and Paleontology	157	10.1	60 (2.0)	2,000
Cultural: prehistoric	195	110	191	5,238
historic mining	189	110		
historic transportation	160	9		
Wildlife/SSS/Recreation /Transportation	739	5,110	1,800 (1,785)	5,609
Visual Resources	156	10.1	191 (20)	2,000
Wild Horses	216	116	1,175 (761)	5,238
Socioeconomics	739	5,110	1,800 (1,785)	5,609

¹ Road acreage assumes an average road width of 24 feet .

12

13 The CIAAs also contain reasonably foreseeable future actions that would have countervailing
14 cumulative impacts for some resources. The BLM Pancake Complex Wild Horse Gather would
15 remove 800-1,000 excess wild horses over the next 6 to 10 years (BLM 2011). The locations of
16 the gather activities would fall into all CIAAs identified above. Within the
17 Wildlife/SSS/Recreation CIAA, the Ely Ranger District is proposing a variety of vegetation
18 restoration projects over the next several years, focused on areas of pinyon-juniper
19 encroachment. These projects would be scattered throughout USFS lands within the CIAA, and
20 are estimated to treat 1,000 – 2,000 acres of pinyon juniper per year (Rozich 2012).

21 **4.3 CUMULATIVE IMPACTS BY RESOURCE**

22 **4.3.1 Air Quality**

23 Impacts from past and present actions within the within the 113,516-acre CIAA include fugitive
24 dust and any emissions associated with 169 acres of surface disturbance activities, which

1 includes construction of 60 miles of road. This is less than 0.2% of the CIAA. Reclamation has
2 reduced the potential for fugitive dust and visibility impacts from some of these disturbances.

3 RFFAs would result in an additional 2,000 acres of surface disturbance from the proposed Gold
4 Rock Mine, with corresponding increases in fugitive dust and vehicle emissions. This is
5 approximately 1.8% of the CIAA. There are no specific data on when project activities are
6 scheduled to begin, the proposed amount /types of equipment vehicles, or proposed miles of
7 roads; however it is expected that these activities would begin largely after completion of the
8 Proposed Action and would therefore be partially or wholly out of the temporal boundaries of the
9 analysis for air quality (5-year life of project). ACEPMs associated with these projects would
10 include plans to reduce emissions and minimize the potential effects of fugitive dust on air
11 quality; reclamation of project-related proposed surface disturbance would gradually eliminate
12 fugitive dust from wind erosion. Together, past, present, and reasonable surface disturbance
13 would total 2,169 acres (approximately 1.9% of the CIAA).

14 The Proposed Action would disturb an additional 137 acres of soils (approximately 0.1% of the
15 CIAA) over the next five years, a 6% addition to the past, present, and reasonable foreseeable
16 surface disturbances identified above. However, as noted above, the contribution of the Proposed
17 Action's particulate and combustion emissions and fugitive dust would be at least partially
18 temporally removed from RFFAs, further reducing impacts to air quality in terms of total
19 cumulative acres of disturbance at one time.

20 Under the No Action alternative, surface disturbances would be limited to five acres at any one
21 time, which would reduce particulate and combustion emissions and fugitive dust. The No
22 Action would also be partially or wholly temporally removed from the RFFA, resulting in little
23 or no cumulative impact.

24 4.3.2 *Cultural Resources*

25 Cultural resources tend to degrade over time due to natural forces; however, many survive for
26 hundreds or thousands of years. Any land-disturbing activity can disturb or damage cultural
27 resources. Activities such as grazing, mining, exploration, and road construction all have the
28 potential to disturb, damage, or cause changes to the setting of cultural resources. Impacts would
29 depend on the amount, placement, and type of surface disturbance. Past and present development
30 activities have led to collection of information about previous cultures, but also to the loss of
31 sites. Identification and avoidance of NRPH-eligible sites through cultural surveys have reduced
32 these disturbances but there may still be losses of cultural resources important to understanding
33 the past. Recreation activities and wildfires may also cause damage or discovery of cultural
34 resources. Cultural resources of concern within the CIAA consist of prehistoric, historic mining,
35 and historic transportation resources. CIAAs have been established for each of these resource
36 types, based upon lifeway-ecological associations or historic activities, as identified through
37 previous discoveries.

38 Impacts from past and present actions within the 277,632-acre Prehistoric CIAA include 195
39 acres of surface disturbance activities, which include construction of 528 miles of road. This is
40 less than 0.07% of the CIAA. Impacts from past and present actions within the 166,127-acre
41 Historic Mining CIAA include 189 acres of surface disturbance activities, which include
42 construction of 306 miles of road. This is less than 0.11% of the CIAA. Impacts from past and
43 present actions within the 154,527-acre Historic Transportation CIAA include 160 acres of

1 surface disturbance activities, which include construction of 314 miles of road. This is less than
2 0.10% of the CIAA.

3 Reasonably foreseeable future actions (RFFAs) would result in an additional 5,238 acres of
4 surface disturbance (from the proposed Pan and Gold Rock mines). This is approximately 1.9%
5 of the Prehistoric CIAA, 3% of the Mining CIAA, and 4% of the transportation CIAA. Areas of
6 surface disturbance have not yet been identified. Within the Pan project area there are Carbonari
7 sites, a potential section of an alternative route of the Lincoln Highway used from 1913 to 1926,
8 five non-eligible historic trash dumps as well as other isolated historic artifacts, and eight eligible
9 prehistoric rock rings. Within the Gold Rock project area there are eight NRHP-eligible sites
10 (one prehistoric projectile point accumulation, two prehistoric habitation sites, two prehistoric
11 antelope traps, one prehistoric rockshelter, one prehistoric lithic scatter, and one historic
12 habitation site that is likely associated with charcoal production). Both of these RFFAs would
13 occur in areas that have been subject to previous mining activities, so it is possible that past or
14 present actions have already disturbed or damaged previously unidentified cultural resources.
15 RFFAs would require BMPs or other ACEPMs to mitigate impacts to cultural resources.

16 Sites would be avoided whenever possible; mitigation of impacts would occur through
17 archaeological data recovery investigations. Livestock grazing, wild horse foraging, and
18 wildfires are also likely to continue within the CIAA, which would continue to disturb or damage
19 cultural resources. The removal of 800-1,000 excess wild horses over the next 6 to 10 years
20 would have some countervailing cumulative impacts to cultural resources by reducing
21 destruction of any cultural resources located on or near the surface. Development from the Pan
22 Mine could impact the integrity of a short section of a potential alternative route of the Lincoln
23 Highway; however the NRHP-eligibility of the potentially affected sections has not yet been
24 fully determined. Development of the Gold Rock Mine would not affect the setting of historical
25 transportation routes because they are not visible from the project area, and to date, there are no
26 identified cultural resources related to the establishment of these transportation routes. Together,
27 past, present, and reasonable surface disturbance would total 5427 acres (approximately 2.0%) of
28 the Prehistoric CIAA; 5,398 acres (3.2%) of the Mining CIAA; and 5,552 (3.6% of the Historic
29 Transportation CIAA).

30 The Proposed Action would disturb an additional 137 acres, which is approximately 0.05% of
31 the Prehistoric CIAA, 0.08% of the Mining CIAA, and 0.09% of the transportation CIAA. This
32 comprises a 2.5% addition to the past, present, and reasonably foreseeable surface disturbance
33 identified above. This contribution would be minimized due to implementation of ACEPMs and
34 BMPs.

35 Total surface disturbance under the No Action alternative would be limited to five acres at one
36 time, but could ultimately disturb the same amounts of surface disturbance as the Proposed
37 Action and with similar impacts. This contribution would be also minimized due to
38 implementation of ACEPMs and BMPs.

39 4.3.3 *Paleontological Resources*

40 Any land-disturbing activity (such as grazing, mining exploration, road construction) can cause
41 surface and subsurface physical disturbance that could result in the destruction or
42 discovery/recovery of paleontological resources. Impacts would depend on the amount,
43 placement, and type of surface disturbance. Recreation and wildfires can also result in damage or
44 discovery of paleontological resources. Impacts from past and present actions within the 113,516-

1 acre CIAA include 169 acres of surface disturbance activities, which includes construction of 30 miles of road. This is less than 0.2% of the CIAA.

Reasonably foreseeable future actions (RFFAs) would result in an additional 2,000 acres of surface disturbance (from the proposed Gold Rock Mine). This is approximately 1.8% of the CIAA. Areas of surface disturbance have not yet been identified; however, over 75% of the Gold Rock project area consists of geologic units that are not likely to contain recognizable fossil remains, vertebrate fossils, or scientifically significant nonvertebrate fossils (PFYC 1 or 2). The remaining 25% of the CIAA consists of geologic units where fossil content varies in significance, abundance, and predictable occurrence, or geologic units of unknown fossil potential (PFYC 3b). Assuming a random distribution that results in 25% of this surface disturbance located in PFYC 3b areas, the RFFA would result in approximately 500 acres of surface disturbance within geologic units that could contain recognizable fossil remains, vertebrate fossils, or scientifically significant nonvertebrate fossils. This contribution would be minimized due to implementation of ACEPMs and BMPs. Together, past, present, and reasonable surface disturbance would total 2,169 acres (approximately 1.9% of the CIAA).

The Proposed Action would disturb an additional 137 acres, approximately 0.1% of the CIAA and a 6% addition to past, present, and reasonably foreseeable surface disturbance. Implementation of ACEPMs and BMPs would be used to minimize impacts.

Total surface disturbance under the No Action Alternative would be limited to five acres at one time, but could ultimately disturb the same amount of surface disturbance as the Proposed Action and with similar impacts and distribution in geologic units that could contain recognizable fossil remains, vertebrate fossils, or scientifically significant nonvertebrate fossils. This contribution would be also minimized through implementation of ACEPMs and BMPs.

24 4.3.4 *Soil Resources*

Any land-disturbing activity that removes native vegetation and topsoil would adversely affect soil. Impacts would depend on the amount, placement, and type of surface disturbance, the type of soil and its characteristics. Specific impacts to soils include removal of vegetation, exposure of soil, mixing of soil horizons (layers), soil compaction, loss of productivity, and increased susceptibility to wind and water erosion. Impacts from past and present actions within the 113,516-acre CIAA include 169 acres of surface disturbance activities, which includes construction of 60 miles of road, with resulting changes in soil physical properties, soil movement in response to water and wind erosion, and compaction. This is less than 0.2% of the CIAA. Reclamation of past mining and exploration disturbance has reduced erosion potential from some of these disturbances.

RFFAs would result in an additional 2,000 acres of surface disturbance (from the proposed Gold Rock Mine). This is approximately 1.8% of the CIAA. There are no specific data on when project activities are scheduled to begin and areas of surface disturbance have not yet been identified but the majority of the soils types identified in the CIAA and within the project area have characteristics that could limit reclamation. RFFAs would require BMPs or other ACEPMs to mitigate soil movement and productivity loss. The removal of 800-1,000 excess wild horses over the next 6 to 10 years would have countervailing cumulative impacts to soil resources by reducing compaction and destruction of fragile soils throughout the CIAA. Together, past, present, and reasonable surface disturbance would total 2,169 acres (approximately 1.9% of the CIAA).

1 The Proposed Action would disturb an additional 137 acres of soils, which is approximately
2 0.1% of the CIAA. This comprises a 6% addition to the past, present, and reasonable foreseeable
3 surface disturbance identified above. This contribution would be localized and minimized due to
4 implementation of environmental protection measures and BMPs. Soil salvaged and used in
5 reclamation would become viable and would be expected to return to pre-disturbance
6 productivity once vegetation was established. Because earlier disturbances would undergo
7 reclamation concurrent with later disturbances, it is expected that at least portions of the total 137
8 acres of disturbance would be temporally removed from the RFFAs, further reducing impacts to
9 soils in terms of total cumulative acres of disturbance at one time.

10 Total surface disturbance under the No Action alternative would be limited to five acres at one
11 time, but could ultimately disturb the same amounts of soils as the Proposed Action and with
12 similar impacts. The No Action would also be partially or wholly temporally removed from the
13 RFFAs.

14 4.3.5 *Water Resources*

15 Impacts from past and present actions within the 113,516-acre CIAA include 169 acres of
16 surface disturbance (including 60 miles of road), with resulting erosion and sedimentation. This
17 is less than 0.2% of the CIAA. Reclamation of past mining and exploration disturbance has
18 reduced the potential for sedimentation.

19 RFFAs would result in an additional 2,000 acres of surface disturbance (from the proposed Gold
20 Rock Mine). This is approximately 1.8% of the CIAA. Impacts to surface water resources would
21 depend on the placement, and type of surface disturbance, the type of soil, and the surface
22 hydrology. There are no data regarding proposed surface disturbance locations as related to
23 ephemeral tributary locations, which typically run for a few days after heavy storm events. The
24 project would require BMPs or other mitigation to reduce erosion and sedimentation. Together,
25 past, present, and reasonable surface disturbance would total 2,169 acres (approximately 1.9% of
26 the CIAA).

27 The Proposed Action would disturb up to 137 acres of vegetation, approximately 0.1% of the
28 CIAA and a 6% addition to past, present, and reasonable foreseeable surface disturbance. BMPs
29 and ACEPMs would be used to minimize erosion and sedimentation. Because earlier
30 disturbances would undergo reclamation concurrent with later disturbances, it is expected that at
31 least portions of the total 137 acres of disturbance would be temporally removed from the
32 RFFAs, further reducing impacts to water resources in terms of total cumulative acres of
33 disturbance at one time. No groundwater impacts are expected from the Proposed Action;
34 therefore, this resource is not included in the cumulative impact analysis.

35 Total surface disturbance under the No Action alternative would be limited to five acres at one
36 time, but could ultimately disturb the same amounts as the Proposed Action. Similar BMPs and
37 ACEPMs would be used to minimize erosion and sedimentation. The No Action would also be
38 partially or wholly temporally removed from the RFFAs.

39 4.3.6 *Vegetation Resources*

40 Impacts from past and present actions within the 113,516-acre CIAA include 169 acres of
41 surface disturbance, including construction of 60 miles of road, with resulting losses in
42 vegetation, and potential for spread of noxious and invasive weeds. This is less than 0.2% of the
43 CIAA. Many of these areas have been reclaimed, however reclamation may also result in some

1 alterations to the plant communities within the CIAA, including the introduction of noxious or
2 invasive weeds.

3 RFFAs would result in an additional 2,000 acres of surface disturbance from the proposed Gold
4 Rock Mine (approximately 1.8% of the CIAA). The area of surface disturbance has not yet been
5 identified but would be expected to occur primarily in the Great Basin Pinyon-Juniper Woodland
6 ecological system and the Shrub/Scrub land cover class. Vegetation impacts from reclamation of
7 exploration roads and drill pads would initially alter these two land cover classes, which would
8 be converted to native grass and forb species found in the existing plant communities. In time,
9 the reclaimed and seeded areas would result in stable plant communities with densities that are
10 similar to the pre-disturbance plant densities. However, disturbed sites and recently seeded areas
11 would be candidates for invasion by undesirable species such as noxious weeds and cheatgrass.
12 Areas at risk would include the entire 2,000 acres of proposed disturbance plus all acreage within
13 200 feet of roads. Together, past, present, and reasonably foreseeable future surface disturbance
14 would total 2,169 acres (approximately 1.9% of the CIAA). The removal of 800-1,000 excess
15 wild horses over the next 6 to 10 years would have some countervailing cumulative impacts to
16 vegetation resources by reducing vegetation use from foraging.

17 The Proposed Action would disturb an additional 137 acres of vegetation (approximately 0.1%
18 of the CIAA), primarily within the Great Basin Pinyon-Juniper Woodland ecological system and
19 the Shrub/Scrub land cover class. This comprises a 6% addition to past, present, and reasonable
20 foreseeable surface disturbance. Because earlier disturbances would undergo reclamation
21 concurrent with later disturbances, it is expected that at least portions of the total 137 acres of
22 disturbance would be temporally removed from the RFFAs, further reducing impacts to
23 vegetation resources in terms of total cumulative acres of disturbance at one time.

24 Total surface disturbance under the No Action alternative would be limited to five acres at one
25 time, but could ultimately disturb the same amounts and types of vegetation as the Proposed
26 Action, and with similar risks of limited reclamation. The No Action would also be partially or
27 wholly temporally removed from the RFFAs.

28 4.3.7 *Wildlife Resources*

29 4.3.7.1 **Big Game, Small Mammals, and Reptiles**

30 Land-disturbing activities would adversely affect big game, small mammals, and reptiles by
31 decreasing foraging habitat or prey base. Impacts to wildlife from past and present actions within
32 this 998,036-acre CIAA include 7,634 acres of surface disturbance (including 1,800 miles of
33 road), with corresponding removal or alteration of wildlife habitat and temporary (or, in the case
34 of some roads, permanent) noise and disturbance to wildlife species, or direct impacts to
35 individuals from vehicular collisions. There is also potential for increased predation from the
36 raptors on transmission lines. This is less than 0.8% of the CIAA. Habitat loss from past
37 disturbance would have been reduced through reclamation and seeding of disturbed areas and
38 natural recolonization of native species; current disturbance areas would be likewise reclaimed.

39 RFFAs would result in an additional 5,609 acres of surface disturbance in areas that are
40 potentially used by one or more big-game species or are home to a variety of small mammals and
41 reptiles (from the proposed Pan and Gold Rock mines, as well as from proposed mining and
42 exploration activities on USFS lands). This is approximately 0.6% of the CIAA. These projects
43 would result in modification to wildlife habitat through habitat loss, and displacement from noise

1 or human activity, but are likely to incorporate wildlife protection measures and habitat
2 restoration measures during and following construction and operation to reduce impacts to
3 wildlife. There are no specific data on the miles of new road and changes in road density that
4 could result from these activities. Together, past, present, and reasonably foreseeable future
5 surface disturbance would total 13,243 acres (approximately 1.3% of the CIAA). The removal of
6 800-1,000 excess wild horses over the next 6 to 10 years would have some countervailing
7 cumulative impacts to wildlife by reducing competition for forage.

8 Impacts to wildlife from the Proposed Action consist of temporary impacts to 137 acres of existing
9 wildlife habitat over a five-year period. This is approximately 0.01% of the CIAA and comprises
10 a 1% addition to the total past, present, and reasonable foreseeable surface disturbance identified
11 above. However, the Proposed Action would be at least partially temporally removed from some
12 or all of the RFFAs (particularly the 2,000-acre Gold Rock Mine), thus the overall cumulative
13 impact to wildlife would be reduced in terms of total acres of disturbance at one time.

14 Total surface disturbance under the No Action alternative would be limited to five acres at one
15 time, but could ultimately disturb the same amounts and types of habitat as the Proposed Action.
16 Implementation of the No Action alternative would likely delay development of the Gold Rock
17 Mine. This delay could temporally remove this mine's impacts from some or all of the other
18 RFFAs, but would extend the impacts of the Gold Rock Mine further into the future.

19 4.3.7.2 Migratory Birds and Raptors

20 Impacts to migratory birds and raptors from past and present actions within this 998,036-acre
21 CIAA include 7,634 acres of surface disturbance (including 1,800 miles of road), with
22 corresponding removal or alteration of nesting or foraging habitat, displacement from noise and
23 disturbance, or direct impacts to individuals from vehicular collisions. This is less than 0.8% of
24 the CIAA. Habitat loss from past disturbance would have been reduced through reclamation and
25 seeding of disturbed areas and natural recolonization of native species; some current disturbance
26 areas would be likewise reclaimed. The development of multiple transmission lines in the area
27 have likely resulted in both adverse (injury or electrocution) and beneficial (nesting platforms
28 and perching areas for hunting) impacts for these species.

29 RFFAs would result in an additional 5,609 acres of nesting or foraging habitat loss used by a
30 variety of migratory birds and raptors (from the proposed Pan and Gold Rock mines, as well as
31 from proposed mining and exploration activities on USFS lands). This is approximately 0.6% of
32 the CIAA. Together, past, present, and reasonably foreseeable future surface disturbance would
33 total 13,243 acres (approximately 1.3% of the CIAA). The proposed activities may also result in
34 direct impacts to nests or individuals from development activities, or direct impacts to
35 individuals from vehicular collisions, or indirect impacts from noise. Vegetation restoration
36 projects throughout the USFS lands within the CIAA would have some countervailing
37 cumulative impacts to some migratory birds and raptors by increasing habitat for species that use
38 Shrub/Scrub land cover classes for nesting or foraging but would affect available habitat for
39 species relying on pinyon-juniper habitats. The development of the SWIP could also result in
40 direct impacts to individuals through injury or electrocution, but could also provide stable
41 nesting platforms and high perching roosts for hunting.

42 Impacts to migratory birds and their habitat from the Proposed Action would be limited to up to
43 137 acres removal of habitat, and noise associated with exploration. The Proposed Action would
44 affect approximately 0.01% of the CIAA. This comprises a 1% addition to the total past, present,

1 and reasonably foreseeable future surface disturbance identified above. These impacts would be
2 further localized and minimized due to implementation of environmental protection measures
3 and mitigation measures required by the BLM (e.g., migratory bird nest surveys during the
4 nesting season to comply with the MBTA; BMPs to reduce equipment noise emissions). In
5 addition, the Proposed Action would be at least partially temporally removed from some or all of
6 the RFFAs (particularly the 2,000-acre Gold Rock Mine), thus the overall cumulative impact to
7 migratory birds and raptors would be further reduced in terms of total cumulative acres of
8 disturbance at one time.

9 Total surface disturbance under the No Action alternative would be limited to five acres at one
10 time, but could ultimately disturb the same amounts and types of habitat as the Proposed Action.
11 Implementation of the No Action alternative would likely delay development of the Gold Rock
12 Mine. This delay could temporally remove this mine's impacts from some or all of the other
13 RFFAs, but would extend the impacts of the Gold Rock Mine further into the future.

14 4.3.7.3 Special-status Species

15 Impacts to special-status species from past and present actions within this 998,036-acre CIAA
16 include 7,634 acres of surface disturbance (including 1,800 miles of road), with corresponding
17 removal or alteration of nesting or foraging habitat, displacement from noise and disturbance, or
18 direct impacts to individuals from vehicular collisions. This is less than 0.8% of the CIAA.
19 Habitat loss from past disturbance would have been reduced through reclamation and seeding of
20 disturbed areas and natural recolonization of native species; current disturbance areas would be
21 likewise reclaimed. Development of past and present actions may also result in increased
22 predation from raptors perching on transmission lines. The presence of avian predators in close
23 proximity to sage grouse leks or nesting areas could directly influence survival or nest success of
24 sage grouse. Alternatively, sage grouse may avoid areas where they are exposed to perching
25 avian predators.

26 RFFAs would result in an additional 5,609 acres of surface disturbance in areas that are
27 potentially used by one or more special-status species (from the proposed Pan and Gold Rock
28 mines, as well as from proposed mining and exploration activities on USFS lands). Loss of acres
29 of the Shrub/Scrub land cover class would affect several avian species, including the greater
30 sage-grouse, as well as pygmy rabbit and a variety of bat species. Loss of areas within the Great
31 Basin Pinyon-Juniper Woodland ecological system would affect the pinyon jay and several
32 identified bat species. Vegetation impacts from reclamation of exploration roads and drill pads
33 would initially alter both the Great Basin Pinyon-Juniper Woodland ecological system and the
34 Shrub/Scrub land cover class, which would be converted to native grass and forb species found
35 in the existing plant communities. In time, the reclaimed and seeded areas would result in stable
36 plant communities with densities that are similar to the pre-disturbance plant densities. Portions
37 of the proposed 3,238 Pan Mine would be located near sage-grouse summer habitat and areas
38 along the access roads contain summer and nesting/breeding habitat. Portions of the 2,000-acre
39 Midway Gold Rock mine would be located within three miles of sage-grouse summer and core
40 breeding habitat, and the northernmost portion of the project area contains sage-grouse winter
41 distribution and nesting habitat. However, biological surveys indicate that the sagebrush habitat
42 that is present within the Gold Rock project area is almost exclusively dominated by black
43 sagebrush and not suitable habitat for sage-grouse. Traffic along the Gold Rock mine's access
44 roads could affect sage grouse breeding areas. There are also at least two leks located near
45 current and proposed Pan Mine access roads; no traffic levels have been identified with either

1 project. Portions of the Pan mine project area would also be located within pygmy rabbit habitat;
2 the Gold Rock mine would not be in habitat suitable for pygmy rabbit. The specific ecological
3 systems that would be affected by the USFS mining and exploration projects are unknown.
4 Together, past, present, and reasonable surface disturbance would total 13,243 acres
5 (approximately 1.3% of the CIAA). Development of the SWIP corridor could result in additional
6 displacement of species-status species from noise and visual disturbance. The presence of the
7 transmission towers would increase the potential for long-term predation of sage grouse by
8 golden eagles on adult and immature birds. Adding towers also would provide roost/hunting sites
9 for ravens and magpies, thus increasing the long-term potential for predation on grouse nests
10 (SWIP FEIS 1993) Vegetation restoration projects throughout the USFS lands within the CIAA
11 would have countervailing cumulative impacts to some special-status species by increasing
12 increase habitat for species that use Shrub/Scrub land cover class for nesting or foraging but
13 would affect available habitat for species relying on pinyon-juniper habitats.

14 Impacts to special-status species from the Proposed Action would consist of the loss of up to 137
15 acres, primarily in the Great Basin Pinyon-Juniper Woodland ecological system and the
16 Shrub/Scrub land cover class. The Proposed Action would affect approximately 0.01% of the
17 CIAA. This comprises a 1% addition to the total past, present, and reasonable foreseeable
18 surface disturbance. None of the surface disturbance is considered to be suitable for sage grouse
19 or pygmy rabbit. Noise or visual disturbance to sage grouse leks would be limited primarily to
20 access road traffic. In addition, the Proposed Action would be at least partially temporally
21 removed from some or all of the RFFAs (particularly the 2,000 acre Gold Rock Mine), further
22 reducing the cumulative impacts to special-status species in terms of total cumulative acres of
23 disturbance at one time.

24 Total surface disturbance under the No Action alternative would be limited to five acres at one
25 time, but could ultimately disturb the same amounts and types of habitat as the Proposed Action.
26 Implementation of the No Action alternative would likely delay development of the Gold Rock
27 Mine. This delay could temporally remove this mine's impacts from some or all of the other
28 RFFAs, but would extend the impacts of the Gold Rock Mine further into the future.

29 4.3.8 *Visual Resources*

30 Impacts from past and present actions within the 94,366- acre Visual CIAA include 186 acres of
31 surface disturbance (including 191 miles of road), with resulting contrast with the form, line,
32 color, and texture of the existing natural vegetation and topography throughout the area. This is
33 less than 0.2% of the CIAA. The reclamation of some past mining and exploration disturbance
34 areas has reduced some of these contrasts.

35 RFFAs would result in an additional 2,000 acres of surface disturbance (from the proposed Gold
36 Rock mine) that would be seen in the foreground of the CIAA from the KOP identified in
37 Chapter 3. This is approximately 2.1% of the CIAA. Together, past, present, and reasonable
38 surface disturbance would total 2,186 acres (2.3% of the CIAA).

39 The Proposed Action would disturb up to 137 acres of vegetation, with resulting contrast with
40 the form, line, color, and texture of the existing natural vegetation and topography throughout the
41 area. This is approximately 0.15% of the CIAA, and comprises a 6% addition to the total past,
42 present, and reasonable foreseeable surface disturbances identified above. The Proposed Action
43 would be consistent with the BLM Class III and IV objectives. Visual impacts in the Project
44 Area would be minimized to the extent possible; long-term visual impacts would be minimized

1 upon completion of rehabilitation and reclamation. Because earlier disturbances would undergo
2 reclamation concurrent with later disturbances, it is expected that at least portions of the total 137
3 acres of disturbance would be temporally removed from the RFFA, further reducing impacts to
4 visual resources in terms of total cumulative acres of disturbance at one time.

5 Total surface disturbance under the No Action alternative would be limited to five acres at one
6 time, resulting in similar types but lower amounts of visual impacts as the Proposed Action.
7 Development occurring under the No Action alternative would also be partially or wholly
8 temporally removed from the RFFA.

9 4.3.9 *Recreation*

10 Impacts to recreation from past and present actions within this 998,036-acre CIAA include
11 surface disturbance and road construction. The construction of 1,800 miles of road throughout
12 the CIAA, while resulting in approximately 1,785 acres of surface disturbance, has also resulted
13 in increased access for recreation activities. Other past and current surface disturbance of 5,849
14 acres potentially have made some areas of the CIAA less desirable for certain types of recreation
15 activity until the activities cease and the areas are reclaimed. Total disturbance from past and
16 present actions is 7,634 acres. This is less than 0.8% of the CIAA.

17 RFFAs would result in an additional 5,609 acres of surface disturbance in areas that potentially
18 used by recreationists (from the proposed Pan and Gold Rock mines, as well as from proposed
19 mining and exploration activities on USFS lands). This is approximately 0.6% of the CIAA.
20 Noise, visual and surface disturbances from these activities could reduce the quality of the
21 recreational experience for certain users within or near the mining and exploration areas and
22 could also affect the distribution or abundance of wildlife species available for hunting or
23 viewing. Impacts are expected to last the life of the project, which would be about 10 years.
24 Together, past, present, and reasonable surface disturbance would total 13,243 acres
25 (approximately 1.3% of the CIAA).

26 The RFFA mine projects would also result in increased truck and commuter traffic. There are no
27 specific data on the amount of traffic on newly constructed drill roads, access routes, or
28 employee or supply delivery routes; however, it is expected that workers and supplies would
29 come from Eureka or Ely via U. S Highway 50. It is currently unknown if traffic level would
30 affect level of service or maintenance requirements for these roads or if additional traffic would
31 impact recreational access or enjoyment of certain areas. If drill roads remain visible after
32 reclamation, they could still be accessed by recreational users. Development of the SWIP
33 corridor could also displace or alter the experience of certain recreational activities.

34 Impacts to recreation from the Proposed Action would consist of the loss of recreational access
35 for portions of the 137-acres of proposed surface disturbance, as well as associated noise and
36 visual disturbances. The Proposed Action would affect approximately 0.01% of the CIAA. This
37 comprises a 1% addition to the total past, present, and reasonable foreseeable surface
38 disturbance. Traffic from the Proposed Action would result in a 3 to 12% increase along portions
39 of U. S. Highway 50 and would triple existing traffic along access roads. However, the Proposed
40 Action would be at least partially temporally removed from some or all of the RFFAs
41 (particularly the 2,000-acre Gold Rock Mine), further reducing the cumulative impacts to
42 recreation in terms of total cumulative acres of disturbance and total vehicle trips at one time.

1 Impacts to recreation from the No Action alternative would be similar in type to the Proposed
2 Action but recreational access loss and impacts from noise or visual disturbances would be
3 limited to five acres of development at one time. Implementation of the No Action alternative
4 would likely delay development of the Gold Rock Mine. This delay could temporarily remove
5 this mine's impacts from the other RFFA (the Pan mine), but would extend impacts of the Gold
6 Rock Mine further into the future.

7 4.3.10 *Socioeconomics*

8 Impacts to socioeconomics from past and present actions within this CIAA (which comprises
9 Eureka and White Pine counties and the Duckwater Reservation) include projects that provide
10 temporary employment and demands on short-term and long-term housing, such as mining and
11 road construction projects. This growth has led to a housing shortage and increased personnel
12 demand (Johnson 2010). Eureka County is currently partnering with the Nevada Rural Housing
13 Authority to develop a subdivision that would ultimately provide 110 rental units, 112 single
14 family homes, with additional land reserved for temporary construction worker housing (Eureka
15 County 2012).

16 RFFAs in the area include mining activities that would generate employment for drillers,
17 blasters, welders, heavy equipment operators, truck drivers, geologists, lab personnel, security
18 personnel, and general laborers. Employment from the Pan Mine project is anticipated to require
19 160 construction employees and 150 long-term operations staff. Employment from the Gold
20 Rock Mine is not currently known, but estimated to be similar to the Pan mine. Employment
21 from the mining projects proposed on USFS is also not known. Assuming that employment for
22 these mining projects is proportional to employment for the Pan Mine project, they would
23 employ about 18 construction workers and 17 long-term operations staff. Together, these
24 projects would total 338 jobs during construction phases and about 317 long-term operations
25 jobs and would provide continued opportunities for employment within the mining industry for
26 the next 10 to 15 years. Assuming that all RFFAs begin at roughly the same time and have
27 roughly the same life span, the sequential construction and operations phases of the RFFAs
28 would provide an increase of approximately 7.5% over the most recent figures for combined
29 White Pine and Eureka county mining employment (a total of 4,320 jobs) for about 10 to 15
30 years. The addition of these jobs would also provide indirect beneficial impacts to the local
31 economy through purchase and use of goods and services. These projects may also provide
32 beneficial economic impacts to the Duckwater Reservation through additional job opportunities
33 in the mining sector as well as through purchases of native plant species from the tribal-owned
34 Duckwater Falls Nursery for reclamation activities.

35 The RFFA mine projects would also result in increased demand on short-term and long-term
36 housing because of associated increases in construction- and operations-related employment. It is
37 currently unknown how many of the jobs employ local residents versus outside contractors, but
38 given the current shortage of housing as described above, it is unlikely that current housing can
39 meet the future needs of mineworkers. As discussed in the Affected Environment section, current
40 housing shortages in Eureka County require some workers to commute from Ely or even Elko
41 (about 120 miles away). Full build-out of Eureka County's planned subdivisions would help to
42 reduce this shortage, providing at least 222 housing units (rental units and single-family homes)
43 plus an undetermined amount of temporary construction worker housing. It could also increase

1 demands on government services and school districts, particularly if workers moved to the area
2 with their families.

3 The Proposed Action would result in the creation of about 60 mining exploration jobs for
4 approximately five years. This is 48 more jobs than currently supplied by Midway (a 500%
5 increase), and contribution of approximately 1% to all past, present and reasonably foreseeable
6 mining employment (4,855 jobs total). The employment created under the Proposed Action
7 would also place corresponding demands on short-term housing. However, the Proposed Action
8 would be at least partially temporally removed from the construction phase of some or all of the
9 RFFAs (particularly the 2,000-acre Gold Rock Mine), and almost certainly removed from the
10 operational phases of all projects; therefore the contribution of this action to the RFFAs would be
11 not truly additive. Rather, the Proposed Action represents the addition of a five-year opportunity
12 for continued employment within the mining industry, continued contributions to the local
13 economy, and continued housing demand, potentially assisting in “smoothing out” the boom-
14 bust cycle of mining development within White Pine and Eureka counties.

15 Under the No Action Alternative, Midway’s contribution to employment, local economy, and
16 housing demand would continue at existing levels (12 employees). The extended duration of the
17 No Action Alternative could also postpone the development of the Gold Rock Mine, which could
18 postpone the creation of approximately 200 jobs and corresponding indirect contributions to
19 income; however, it would also postpone the corresponding demand on housing, school districts
20 and government services.

21 4.3.11 *Transportation*

22 Impacts to transportation from past and present actions consist of local, regional, or cross country
23 traffic on the highways bordering the 998,036-acre CIAA (U. S. Highway 50, State Highway
24 379, and U.S. Highway 6), as well as development of use of approximately 1,800 miles of roads
25 within the CIAA,

26 RFFAs in the area include mining activities that would require increased supply delivery, as well
27 as commuter traffic. There are no specific data on the amount of traffic on newly constructed
28 drill roads, access routes, or employee or supply delivery routes; however, it is expected that
29 workers and supplies would come from Eureka or Ely via U.S. Highway 50. Using the
30 employment figures cited above in Section 4.3.9, and assuming no ride sharing, there would be a
31 maximum of 675 vehicle trips per day during construction and a maximum of 634 trips during
32 operations (Table 4-3). The RFFA mine projects would also result in increased truck traffic from
33 delivery of supplies. Midway estimates that there would be about 114 supply delivery per month,
34 or an average of four deliveries per day (8 vehicle trips total) per project. No information is
35 available regarding supply delivery for the USFS mining projects. Assuming that supply use is
36 dependent upon mine size, the 300+-acre USFS mining project would require roughly a tenth of
37 the supplies proposed for the Pan mine, or less than 1 delivery trip every three days. Table 4-3
38 shows the potential traffic increase on U.S. Highway 50 compared with current AADT.

39

Table 4-3. Maximum Increase in Daily Vehicle Trips on U.S. Highway 50

Location	2010 AADT	Max RFFA Daily Commute	Average RFFA Daily Supply Delivery	AADT Increase (percent)
U.S. Highway 50 just east of Duckwater Road	570	675	16	120%
U.S. Highway 50 west of Mill Street in Ely	3,500	675	16	20%

1
2 Traffic increases on U.S. Highway 50 would increase between 20% (near Ely) to 120% (near
3 Eureka). This is unlikely to affect maintenance requirements U.S. Highway because the highway
4 is designed to accommodate much higher levels of traffic. Vehicular use for project activities on
5 county road systems could degrade these roads (e.g., create rutting, etc.). Road use agreements
6 with counties would allow Midway to perform road maintenance and snow removal for the Pan
7 and Gold Rock mine access roads.

8 Increased traffic from project construction also presents an increased risk of accidents and
9 fatalities. Assuming an average daily commuting/supply delivery distance of 60 miles one way
10 and no carpooling, a maximum of 41,520 vehicle miles would be travelled per day for commute
11 and supply delivery. Assuming a year-round work schedule of seven days a week, a maximum of
12 14,781,120 vehicle miles would be traveled per year. Using the 2009 Nevada fatality rate of 1.19
13 per 100 million vehicle miles traveled (USDOT 2009), the RFFAs commute and supply
14 deliveries would result in no fatalities.

15 Traffic from the Proposed Action would result in an additional 3 to 12% increase along portions
16 of U. S. Highway 50 and would triple existing traffic along access roads. However, the Proposed
17 Action would be at least partially temporally removed from some or all of the RFFAs
18 (particularly the 2,000-acre Gold Rock Mine), reducing the cumulative impacts to transportation
19 in terms of total cumulative acres of disturbance and total vehicle trips at one time.

20 Impacts to transportation from the No Action Alternative would be similar in type to the
21 Proposed Action but transportation increases would be reduced due to the lower levels of
22 concurrent development. Implementation of the No Action alternative would likely delay
23 development of the Gold Rock Mine. This delay could temporally remove this mine's impacts
24 from the other RFFA (the Pan mine), but would extend impacts of the Gold Rock Mine further
25 into the future.

26

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1 **5.0CONSULTATION AND COORDINATION AND LIST OF PREPARER**

2 **5.1 PERSONS, GROUPS, AND AGENCIES CONSULTED**

3 The following table provides a summary of those persons, groups, or agencies consulted during
4 preparation of this EA.

Table 5-1. Persons, Groups or Agencies Consulted During Preparation of the EA

Name	Purpose for Consultation or Coordination
Katie Miller, NDOW (Cooperating Agency)	Greater Sage-grouse lek viewshed modeling
Timothy Herrick, NDOW (Cooperating Agency)	Known or potential occurrence of wildlife resources in the vicinity of the Gold Rock Project
Justin Rozich, USFS	Reasonably foreseeable projects on USFS lands
Deanna Sever, USFS	Regarding reasonably foreseeable projects on USFS lands

5 The BLM Ely District Office sent formal consultation letters on Dec. 2, 2011, to the following
6 tribes and tribal councils informing them of the proposed project and EA and inviting comments
7 and concerns:

- 8 • Duckwater Shoshone Tribe
- 9 • Ely Shoshone Tribe
- 10 • Te-Moak Tribe of the Western Shoshone Indians of Nevada
- 11 • South Fork Band Council
- 12 • Elko Band Council
- 13 • Yomba Shoshone Tribe

14 No comments were received.

15 **5.2 SUMMARY OF PUBLIC PARTICIPATION**

16 As required under NEPA, the BLM solicited public comments on the Proposed Action. The
17 BLM used comments received during the scoping period to determine the following:

- 18 • important issues to be addressed,
- 19 • possible data needs and sources,
- 20 • alternatives to be assessed, and
- 21 • potential effects of the alternatives on the human environment.

22 A public scoping letter was sent out on December 2, 2011, and comments were requested within
23 30 days of receipt of that letter. The mailing list can be found in the administrative record. No
24 comments were received.

25 This EA will be available on the NEPA Register webpage at https://www.blm.gov/epl-front-office/eplanning/nepa/nepa_register.do prior to issuance of a decision concerning BLM’s
26 approval of the Proposed Action.
27

28 **5.3 LIST OF PREPARERS**

29 The following tables identify BLM staff and consultants used in the preparation of the EA.

Table 5-2. BLM Staff Used in the Preparation of this EA

Name	Purpose for Consultation or Coordination	
Miles Kreidler	Project Lead/Mining Engineer	All Sections
Mindy Seal	NEPA, Social economics, Environmental Justice	All Section.
Kenneth Humphrey	Project Archaeologist	Cultural/Paleo
Leslie Riley	Archaeologist	Cultural
Marian Lichtler	Wildlife Biologist	Wildlife, Migratory Birds, Special Status Species
Mark D'Aversa	Hydrologist	Soil, Air, Water
		Paleo
		Transportation
Ruth Thompson	Wild Horse Specialist	Wild Horses
Stephanie Trujillo	Realty Specialist	Lands and Realty
Amanda Anderson	Vegetation, Rangeland Resources	Vegetation, grazing
TJ Mabey	Natural Resource Specialist	Weeds
Erin Rajala	Outdoor Recreation Planner	Recreation, Visual Resources

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Table 5-3. SWCA Staff Used in the Preparation of this EA

Name	Purpose for Consultation or Coordination	
Janet Guinn, B.S.	Project Manager, SWCA	Review of all sections; Vegetation; Wildlife; Cumulative Impacts, Hazardous Materials
Ben Gaddis, M.E.M.	NEPA Oversight, SWCA	Review of all sections
Mike Cannon, Ph.D.	Principal Investigator, SWCA	Cultural Resources
Gretchen Semerad, M.S.	Environmental Specialist, SWCA	Air Quality, Paleontology, Soils, Water Resources, Transportation. Wildlife
Allen Stutz, B.S.	GIS Manager, SWCA	GIS, mapping
Stephen Leslie, B.S.	Environmental Specialist, SWCA	Visual Resources
Jessica DeBusk, B.S.	Paleontology Specialist, SWCA	Paleontology
Linda Burfitt, B. A.	Technical Editor, SWCA	Technical Editing
Howard McGregor, P.E.	Professional Engineer, EDI	Noise modeling

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6.0 REFERENCES AND ACRONYMS

6.1 REFERENCES CITED

- Beck, C. and G. T. Jones. 1997. The Terminal Pleistocene/Early Holocene Archaeology of the Great Basin. *Journal of World Prehistory* 11:161–236.
- _____. 2009. *The Archaeology of the Eastern Nevada Paleoarchaic Part I: The Sunshine Locality* (University of Utah Anthropological Papers No. 126). University of Utah Press, Salt Lake City.
- Bureau of Land Management (BLM). 1986. Manual 8431 - Visual Resource Contrast Rating. Accessed at: <http://www.blm.gov/nstc/VRM/8431.html> (January 26, 2012). U.S. Department of the Interior, BLM.
- _____. 1992. Manual 8400 - Visual Resource Inventory. Accessed at: <http://www.blm.gov/nstc/VRM/8410.html> (January 26, 2012). U.S. Department of the Interior, BLM.
- _____. 2000. Ely District Managed Natural and Prescribed Fire Plans. U.S. Department of the Interior, BLM, Ely District Office, Ely, Nevada. November 17, 2000.
- _____. 2001. Biological Soil Crusts: Ecology and Management; Technical Reference 1730-2.
- _____. 2007. Ely District Proposed Resource Management Plan and Final Environmental Impact Statement November 2007,. U.S. Department of the Interior, BLM, Ely District Office, Ely, Nevada. Available at: http://www.blm.gov/nv/st/en/fo/ely_field_office/blm_programs/planning/ely_rmp_2007.html
- _____. 2008a. Ely District Record of Decision and Approved Resource Management Plan. August 2008. U.S. Department of the Interior, Bureau of Land Management, Ely District Office, Ely, Nevada. Available at: http://www.blm.gov/pgdata/etc/medialib/blm/nv/field_offices/ely_field_office/ely_resource_management/rmprodintro.Par.32866.File.dat/01%20-%20RMP%20Coverage%20and%20Record%20of%20Decision.pdf. Accessed October 23, 2011.
- _____. 2008b. BLM National Environmental Policy Act Handbook 1790-1 (Public). January 2008. Available at: http://www.ntc.blm.gov/krc/uploads/366/NEPAHandbook_H-1790_508.pdf. Accessed December 4, 2011.
- _____. 2009. BLM Nevada’s War Against Weeds. Website information. Available at: http://www.blm.gov/nv/st/en/prog/more_programs/invasive_species.print.html
- _____. 2011. Decision Record (DR) for Wild Horse Gather Plan Environmental Assessment (EA) for the Pancake Complex. Ely, Nevada. Ely District Office, and Tonopah FO. Dated November 28.
- Bradley, A. B., and J. F. Mustard. 2006. Characterizing the landscape dynamics of an invasive plant and risk of using remote sensing. *Ecological Applications* 16(3): 1132–1147.
- Bortle, J.E. 2001. The Bortle Dark Sky Scale. *Sky and Telescope*, February 2001.
- Driesner, Doug and Allan Coyner. 2008. Major Mines of Nevada 2008: Mineral Industries in Nevada’s Economy. Nevada Bureau of Mines and Geology Special Publication P-20. University of Nevada, Reno. Available at: <http://www.nbmj.unr.edu/dox/mm/mm07.pdf>. Accessed on February 29, 2012
- EcoSynthesis Scientific & Regulatory Services, Inc and Wildlife Resource Consultants (EcoSynthesis and WRC). 2012. Midway Gold U.S. Inc.’s Gold Rock Project Biological Baseline Studies, Dated January 2012.

- 1 Engineering Dynamics, Inc (EDI). 2012. Noise Assessment for Midway Gold Rock Exploration Project,
2 White Pine County, Nevada, February.
- 3 Environmental Protection Agency (EPA). 1974. Information on Levels of Environmental Noise Requisite
4 to Protect Public Health and Welfare with an Adequate Margin of Safety," EPA/ONAC 550/9-74-
5 004, March, 1974.
- 6 Eureka County. 2012. Eureka County Demographics. available at.
7 <http://www.eurekacounty.com/profile/profile.htm>. Accessed on February 28, 2012.
- 8 Grayson, D. K. 1993. The Desert's Past: A Natural Prehistory of the Great Basin. Smithsonian Institution
9 Press, Washington, D.C.
- 10 Great Basin Heritage Area. 2012. Duckwater Shoshone Tribe. Available at.
11 <http://www.greatbasinheritage.org/great-basin-heritage-Duckwater-Shoshone.html>. Accessed on
12 March 26, 2012.
- 13 Harding, Adelia. 2011. booming indutry struggles to find skilled employees. Mining Quarterly 2011.
14 winter 2011. available at http://issuu.com/mining_quarterly/docs/dec2011mq. Accessed on February
15 29, 2012.
- 16 Harris and Bonnenfant 2008. Housing Gap Analysis for White Pine County University Center for
17 Economic Development, Department of Resource Economics. University of Nevada, Reno. Availat
18 at. Accessed on February 29, 2012.
- 19 Johnson, Abigail. 2010. Housing impacts to Eureka County from pending projects. Memo to Eureka
20 County Commission Chair from EIS coordinator Abigail Johnson. Available at
21 http://www.co.eureka.nv.us/comish/eurekacanyon/AC%20Johnson%20Report%206_7_10.pdf.
22 Accessed on February 28, 2012.
- 23 Midway Gold US Inc. 2011. 2011 Gold Rock Project Exploration Plan of Operations. Case File No.
24 NVN-090376. November 22.
- 25 Madsen, D. B. and D. Rhode (editors). 1994. Across the West: Human Population Movement and the
26 Expansion of the Numa. University of Utah Press, Salt Lake City.
- 27 Madsen, D. B. and S. R. Simms. 1998. The Fremont Complex: A Behavioral Perspective. Journal of
28 World Prehistory 12(3):255–336.
- 29 Murphey, P.C., and J. L. DeBusk., 2010. Paleontological Resources Mitigation Monitoring Plan: ON Line
30 Transmission Project; Nevada. Prepared for the Bureau of Land Management, Prepared by SWCA
31 Environmental Consultants, March 2011. On File at SWCA's Pasadena, California office.
- 32 Nevada Department of Transportation (NDOT). 2008. Statewide Transportation Plan –Moving Nevada
33 through 2028. Prepared by the Nevada Department of Transportation Intermodal Planning Division.
34 Available at:
35 [http://www.nevadadot.com/uploadedFiles/NDOT/About_NDOT/NDOT_Divisions/Planning/NevPlan
36 _StatewideTransPlan.pdf](http://www.nevadadot.com/uploadedFiles/NDOT/About_NDOT/NDOT_Divisions/Planning/NevPlan_StatewideTransPlan.pdf). Accessed February 13, 2012.
- 37 ———. 2010. Annual Average Daily Traffic Counts for White Pine County. Available at:
38 [http://www.nevadadot.com/uploadedFiles/NDOT/About_NDOT/NDOT_Divisions/Planning/Traffic/
39 2010WhitePine.pdf](http://www.nevadadot.com/uploadedFiles/NDOT/About_NDOT/NDOT_Divisions/Planning/Traffic/2010WhitePine.pdf). Accessed February 13, 2012.
- 40 Nevada Department of Wildlife (NDOW). 2012. Response to inquiry on known or potential occurrence of
41 wildlife resources in the vicinity of the Gold Rock Project. Written correspondence from Timothy
42 Herrick, NDOW to Janet Guinn, SWCA dated January 25, 2012

- 1 Nevada Department of Conservation and Natural Resources, Division of Water Resources (NDWR).
2 2010. Regulations for Water Well And Related Drilling. Revised and adopted June 2006 and 2009
3 Nevada Revised Statutes Related to Underground Water and Wells. Available at
4 <http://water.nv.gov/home/pdfs/WD%20regs.pdf> . Accessed February 15, 2012.
- 5 Natural Resources Conservation Service (NRCS). 2003. National Soil Survey Handbook, title 430-VI.
6 Available online at <http://soils.usda.gov/technical/handbook/>. Accessed February 12, 2012.
- 7 ———.2006. Soil Survey Geographic (SSURGO) Database. Available at:
8 <http://soildatamart.nrcs.usda.gov>. Accessed February 12, 2012.
- 9 Nevada Division of Forestry. 2011. 2011 Wildland Fire Data Map and Database. Available at
10 <http://forestry.nv.gov/fire-program/2011-nevada-wildland-fires/>. Accessed January 20, 2012.
- 11 Patsch O., Giambastiani D., and C. R. Cole (Patsch et al). 2012. A Class III Cultural Resources Inventory
12 of 5,528 Acres for the Gold Rock Exploration Project, White Pine County, Nevada BLM Report
13 #8111-NV04-11-1957. Prepared for BLM Ely District by ASM Affiliates, Reno NV . February 2012
- 14 Rajala 2012. Personal communication between Erin Rajala, BLM and Janet Guinn, SWCA in January
15 2012 regarding OHV designations in the project area.
- 16 Resource Concepts, Inc (RCI). 2005. Nevada Community Wildfire Hazard Assessment Project: White
17 Pine County. Prepared for the Nevada Fire Safe Council. Available at: [http://www.rci-](http://www.rci-nv.com/reports/whitepine/)
18 [nv.com/reports/whitepine/](http://www.rci-nv.com/reports/whitepine/). Accessed January 20, 2012.
- 19 Rozich, Justin. 2012. Personal communication between Justin Rozich, USFS and Janet Guinn, SWCA in
20 February 2012 regarding USFS vegetation rehabilitation projects within Hunt Unit 131.
- 21 Sever, Deanna. 2012. Personal communication between Deanna Sever, USFS and Janet Guinn, SWCA in
22 February 2012 regarding USFS exploration and mining projects within Hunt Unit 131.
- 23 Snell, Rebecka. 2012. Personal communication between Rebecka Snell, Midway Gold US, Inc and Janet
24 Guinn, SWCA on 2/27/2012 regarding current and proposed employees levels and sources.
- 25 State of Nevada, Bureau of Air Quality Planning. 2003. Bureau of Air Quality Planning 1192-2003 Trend
26 Report. Available at: <http://ndep.nv.gov/baqp/monitoring/trend/report.html>. Accessed February 15,
27 2012.
- 28 Steward, J. H. 1997. Basin-Plateau Aboriginal Sociopolitical Groups. (Smithsonian Institution, Bureau of
29 American Ethnology Bulletin 120). University of Utah Press, Salt Lake City.
- 30 TripAdvisor. 2012. Eureka hotels and B&Bs Available at [http://www.tripadvisor.com/Hotels-g45940-](http://www.tripadvisor.com/Hotels-g45940-Eureka_Nevada-Hotels.html)
31 [Eureka_Nevada-Hotels.html](http://www.tripadvisor.com/Hotels-g45940-Eureka_Nevada-Hotels.html). Accessed on February 28, 2012.
- 32 Upper Green River Basin Sage-Grouse Working Group 2007. Upper Green River Basin Sage-Grouse.
33 Conservation Plan. May 24, 2007 Available at
34 [http://gf.state.wy.us/wildlife/wildlife_](http://gf.state.wy.us/wildlife/wildlife_management/sagegrouse/UpperGreenRiver/Upper%20Green%20River%20Basin%20SG%20Conservation%20Plan5-24-07.pdf)
35 [management/sagegrouse/UpperGreenRiver/Upper%20Green%20River%20Basin%20SG%20Conservation%20Plan5-24-07.pdf](http://gf.state.wy.us/wildlife/wildlife_management/sagegrouse/UpperGreenRiver/Upper%20Green%20River%20Basin%20SG%20Conservation%20Plan5-24-07.pdf). Accessed on February 29, 2012.
- 36 U.S. Census 2011a. Census Quickfacts. White Pine County. 2010. Available
37 at:<http://quickfacts.census.gov/qfd/states/32/32033.html>. Accessed on February 28, 2012.
- 38 U.S. Census 2011b Census Quickfacts. Eureka County. 2010. Available
39 at:<http://quickfacts.census.gov/qfd/states/32/32011.html>. Accessed on February 28, 2012.

- 1 U.S. Census 2011c Census Quickfacts. Duckwater Reservation. 2010. Available at:
2 <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?ref=geo&refresh=t>. Accessed on
3 March 26, 2012.
- 4 U. S. Department of Transportation, National Highway Traffic Safety Administration (USDOT). 2009
5 Traffic Safety Facts: Nevada 2005-2009. Available at: [http://www-](http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/stsi/32_NV/2009/32_NV_2009.PDF)
6 [nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/stsi/32_NV/2009/32_NV_2009.PDF](http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/stsi/32_NV/2009/32_NV_2009.PDF). Accessed February
7 14, 2012.
- 8 U.S. Forest Service (USFS). 1996. Potential fossil yield classification (PFYC): Developed by the
9 Paleontology Center of Excellence and the Region 2 (USFS) Paleo Initiative.
- 10 U.S. Geological Survey. (USGS). 2005. National Gap Analysis Program; Southwest Regional GAP
11 Analysis Project—Land Cover Descriptions. RS/GIS Laboratory, College of Natural Resources, Utah
12 State University.
- 13 ———. 2011. National Water Information System: Web Interface: 2011 Groundwater Levels for Nevada.
14 Available at: <http://nwis.waterdata.usgs.gov/nv/nwis/> . Accessed February 15, 2012.
- 15 White Pine County. 2006. White Pine County Water Resources Plan August 2006. Prepared by the White
16 Pine County Commission, White Pine County Regional Planning Commission and White Pine
17 County Water Advisory Committee. Available at:
18 [http://www.blm.gov/pgdata/etc/medialib/blm/nv/groundwater_development/snwa/draft_eis0/public_c](http://www.blm.gov/pgdata/etc/medialib/blm/nv/groundwater_development/snwa/draft_eis0/public_comments/groups.Par.90933.File.dat/WPC15.pdf)
19 [omments/groups.Par.90933.File.dat/WPC15.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/nv/groundwater_development/snwa/draft_eis0/public_comments/groups.Par.90933.File.dat/WPC15.pdf)
- 20 White Pine County Public Land Users Advisory Committee (WPCPLUAC). 2007. White Pine County
21 Public Land Policy Plan.. Available at <http://www.lands.nv.gov/docs/SLUPA/WhitePinePlan.pdf>.
22 Accessed December 1, 2011.
- 23 White Pine County Tourism and Recreation Board. 2012. White Pine County Climate. Available at:
24 <http://www.elynevada.net/planvisit/climate.html>. Accessed March 26, 2012.
- 25 Williams, Thomas. 2012. Personal communication between Tom Williams, Midway and Janet Guinn,
26 SWCA on February 7, 2012 regarding existing project area traffic and groundwater depths.
- 27 Wilson, J.W. 2007, Water-level surface maps of the carbonate-rock and basin-fill aquifers in the Basin
28 and Range carbonate-rock aquifer system, White Pine County, Nevada, and adjacent areas in Nevada
29 and Utah: U.S. Geological Survey Scientific Investigations Report 2007-5089, 10 p.

1 **6.2 LIST OF ACRONYMS AND ABBREVIATIONS**

- 2 AADT: annual average daily traffic
3 amsl: above mean sea level
4 ACEPM: applicant-committed environmental protection measure
5 ASTM: American Society for Testing and Materials
6 AO: authorized officer
7 ATV: all-terrain vehicle
8 BLM: Bureau of Land Management
9 BMP: best management practice
10 CIAA: cumulative impact analysis areas
11 CO: carbon monoxide
12 CO₂: carbon dioxide
13 CERCLA: Comprehensive Environmental Response, Compensation and Liability Act
14 CEQ: Council on Environmental Quality
15 CFR: Code of Federal Regulations
16 dBA: A-weighted decibels
17 EA: environmental assessment
18 EIS: environmental impact statement
19 EPA: Environmental Protection Agency
20 ESA: Endangered Species Act
21 FLPMA: Federal Land Policy and Management Act
22 FO: field office
23 FONSI: Finding of No Significant Impact
24 HMA: herd management areas
25 HU: hydrologic unit code
26 ID: interdisciplinary
27 IM: instruction memorandum
28 MBTA: Migratory Bird Treaty Act
29 Midway: Midway Gold US Inc.
30 MSDS: material safety data sheet
31 MSHA: Mine Safety and Health Administration
32 NAAQS: National Ambient Air Quality Standards

- 1 NAC: Nevada Administrative Code
- 2 NDEP: Nevada Department of Environmental Protection
- 3 NDOT: Nevada Department of Transportation
- 4 NDOW: Nevada Department of Wildlife
- 5 NDRP: Nevada Department of Environmental Protection
- 6 NDWR: Nevada Division of Water Resources
- 7 NEPA: National Environmental Policy Act
- 8 NFPA: National Fire Protection Association
- 9 Notice: Notice of Intent
- 10 NRCS: Natural Resources Conservation Service
- 11 NRS: Nevada Revised Statutes
- 12 NHRP: National Register of Historic Places
- 13 OHV: off-highway vehicle
- 14 PM₁₀: particulate matter with aerodynamic diameter equal to or less than 10 micrometers
- 15 PFYC: Potential Fossil Yield Classification
- 16 PoO: plan of operations
- 17 RC: reverse circulation
- 18 RCI: Resource Concepts, Inc
- 19 RFFA: reasonably foreseeable future actions
- 20 RMP: resource management plan
- 21 ROD: record of decision
- 22 ROW: right-of-way
- 23 SARA: Superfund Amendments and Reauthorization Act of 1986
- 24 SHPO: State Historic Preservation Officer
- 25 SOP: standard operating procedure
- 26 SSURGO: Soil Survey Geographic
- 27 SWReGAP: Southwest Regional Landcover Data
- 28 USC: United States Code
- 29 USFS: U.S. Forest Service
- 30 USGS: U.S. Geological Survey
- 31 USFWS: U.S. Fish and Wildlife Service
- 32 VRI: Visual Resource Inventory
- 33 VRM: Visual Resource Management

- 1 WPCPLUAC: White Pine County Public Land Users Advisory Committee
- 2 WRC: Wildlife Resource Consultants
- 3
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Appendix A: Reclamation Plan

MEASURES TO BE TAKEN TO PREVENT UNNECESSARY AND UNDUE DEGRADATION

Measures that will be taken to prevent unnecessary and undue degradation are derived from the general requirements established by the BLM surface management regulations (43 CFR 3809) and NDEP mining, reclamation, water quality, and air quality regulations, as listed below. The following measures will be undertaken during the design, construction, operation, and closure of the proposed operation:

- Mineral exploration drill holes will be properly plugged and abandoned per NAC 534 to prevent contamination of water resources.
- Regulated wastes will be managed according to relevant regulations.
- Surface disturbance will be minimized.
- Fugitive dust emissions from disturbed surfaces will be controlled using BMPs. Construction of the new access road will help minimize fugitive dust emissions.
- Where suitable as a growth medium, surficial soils and alluvial material will be salvaged and managed as a topsoil resource, and replaced during reclamation.
- A reclamation plan will be implemented which addresses earthwork and recontouring, revegetation and stabilization, disposal, and monitoring operations necessary to satisfactorily reclaim the proposed disturbance.
- Reclamation activities will be conducted concurrently with mineral exploration activities when disturbance is no longer needed. Reclamation will begin within exploration areas considered inactive, without potential, or completed, at the earliest practicable time.
- The primary method of addressing weedy species invasion will be to quickly reclaim and seed disturbed areas at the first opportunity. Disturbed areas will be reclaimed at the earliest, practicable time.
- At the latest, disturbed areas would generally be graded and seeded in the 3rd or 4th quarter of each year. Areas graded earlier in the year or after the fall seeding period, will be sown with the preliminary seed mixture to control erosion and weed invasion. These areas will be reseeded in the following 3rd or 4th quarter if vegetation has not established.
- Surficial soils will be windrowed to the sides of the roads and drill pad locations. These soils will be spread back over the disturbance when grading is completed.
- Reclamation activities will be coordinated with the BLM and NDEP/BMRR, to meet regulatory requirements.

POST-MINING LAND USE AND RECLAMATION GOALS

Major land uses occurring in the project area include mineral exploration and development, wild horse habitat, livestock grazing, wildlife habitat, and dispersed recreation. Following closure, the project area will support the same multiple land uses. Post-closure land uses are in conformance with the 2008 Ely Resource Management Plan (BLM 2008).

The objectives of the reclamation program are as follows:

- To minimize erosion damage and protect water resources through careful control of water runoff.

- To establish surface growth medium conditions conducive to the regeneration of a stable plant community through managing growth medium.
- To revegetate disturbed areas with a diverse mixture of plant species in order to establish long-term productive plant communities compatible with existing land uses and wildlife habitat.
- To employ existing site-specific resources that will enhance wildlife habitat and encourage invasion by desirable plant species.

DESCRIPTION OF OTHER RECLAMATION ACTIVITIES SUCH AS HISTORIC DISTURBANCES

Not applicable.

MEASURES TO MINIMIZE LOADING TO SURFACE WATERS

When drainages must be crossed with a road, best management practices (BMPs) will be followed to minimize the surface disturbance and erosion potential. BMPs such as silt fences and weed-free straw bales will be used when necessary for erosion and sediment control. It is currently anticipated that temporary culverts may need to be installed within the project area. Maintenance of the exploration roads includes minor seasonal regrading when necessary. Erosion controls will be monitored in the spring and fall.

SCHEDULE FOR THE PROJECT AND RECLAMATION

Exploration activities will continue until the exploration and mine development potential of the project has been fully evaluated. To a major extent, drilling success will determine the duration of project activities and the initiation of reclamation. If reserves that can be economically developed are located, disturbances will remain pending mine permitting. If the company determines that the deposit is not economically feasible to develop, reclamation will commence within two years after the cessation of drilling activities.

When reclamation occurs, re-contouring will be completed at the earliest opportunity following completion of the exploration work, seeding will typically be conducted in the 3rd or 4th quarter of the year. Monitoring will be conducted for three consecutive years in the 3rd quarter of the year. A schematic representation of the proposed schedule is presented in Table 3-2.

PROPOSED DISPOSITION OF BUILDINGS, EQUIPMENT, PIPING, SCRAP, REAGENTS AND OTHER MATERIALS

At the end of Project activities, the fuel tank and all temporary buildings will be removed from the laydown area, along with the microwave tower, and associated fencing.

DRILL HOLE PLUGGING PROCEDURES

Except for the reverse-circulation (RC) rotary holes that may be drilled as pre-collars for some of the core holes, all drill holes will be plugged prior to the drill rig moving from the site in accordance with NRS 534 and NAC 534.4369 and NAC 534.4371. All core holes will be plugged prior to the core rig moving from the drill site. If any drill hole produces artesian flow, the drill hole will be contained pursuant to Nevada Revised Statutes (NRS 534.060) and NAC 534.378 and will be sealed by the method described in Subsection 2 of NAC 534.4371. If the

casings are set in a drill hole, either the drill hole must be completed as a well and plugged pursuant to NAC 534.420 or the casings will be completely removed from the drill hole and then be plugged according to NAC 534.4369 and NAC 534.4371.

Any installed project groundwater monitoring wells will be plugged and abandoned according to Nevada Division of Water Resources (NDWR) requirements when they are no longer needed for environmental baseline data collection. Midway anticipates that monitoring and data collection will continue for a minimum of four years following completion of the monitoring wells. All of the project monitoring wells will be plugged and abandoned at the same time. Thus, the RCE included in Appendix C includes costs for one mobilization–demobilization event as well as the other costs associated with plugging and abandoning the wells in the future.

CONCURRENT RECLAMATION

Concurrent reclamation will take place to the degree possible by backfilling sumps, recontouring, scarifying and seeding drill sites when the sumps become dry enough to backfill without causing a spill of drilling fluids, following the reclamation schedule described above. As described above, final reclamation will take place if and when drilling results indicate that no resource is present, following the reclamation schedule described above.

MEASURES TO BE TAKEN DURING EXTENDED PERIODS OF NON-OPERATION

Only those access roads and drill pads needed for future exploration will remain open. Interim stabilization measures would be taken as necessary at these sites.

REGRADING AND RESHAPING

Regrading and reshaping of all constructed drill sites and exploration roads will be completed to approximate the original topography. Fill material, enhanced with growth medium, will be pulled onto the roadbeds to fill the road cuts and restore the slope to natural contours. Roads and drill sites will be regraded and reshaped with a front-end loader, excavator or bulldozer. For overland travel roads, upgraded roads or pads that do not require replacement of sidecast material, reclamation will be accomplished with an excavator bucket, ripper or a dozer to knock down and smooth any berms and relieve road compaction. Tire tracks (trails created by overland travel) will be lightly scarified and left in a rough state as necessary to relieve compaction, inhibit soil loss from runoff, and prepare the seed bed.

Should any drainages be disturbed, any temporary culverts will be removed and the drainages will be reshaped to approach the pre-construction contours. The resulting channels will be of the same capacity as up- and downstream reaches and will be made non-erosive by use of surface stabilization techniques (rip-rap) where necessary, and ultimately revegetated. Following completion of earthwork, all disturbed areas will be broadcast seeded.

MINE RECLAMATION

Not applicable, this 2011 Plan does not include mining activities.

RIPARIAN MITIGATION

Not applicable. There are no riparian areas in the Gold Rock Project area.

WILDLIFE AND FISHERIES HABITAT REHABILITATION

No fisheries habitat exists within the Gold Rock Project area.

The Gold Rock Project area is habitat for a variety of game and non-game wildlife. Re-establishing a primarily grassland community for erosion control will rehabilitate damage to the existing and previously disturbed habitat types.

THREATENED, ENDANGERED AND SPECIAL STATUS SPECIES

In the event that Threatened, Endangered or Special Status Species are identified within the 2011 Plan boundary, Midway will work with the BLM and NDOW to develop plans to avoid disturbance to the maximum extent possible.

HANDLING AND APPLICATION OF TOPSOIL

The depth of the cut for newly constructed exploration roads will be minimal. Topsoil will be bladed or dozed to the side as the road is built and then bladed or dozed back in place to recontour. For the drill pads, topsoil will be bladed or dozed to one side and returned during reclamation. Amendments are not considered necessary in those areas where sufficient growth medium is available.

REVEGETATION

Reclaimed surfaces will be revegetated to control runoff, reduce erosion, provide forage for wildlife, wild horses, and livestock, and reduce visual impacts. Seedbed preparation and seeding will take place in the fall or spring after grading and replacing growth medium on reclaimed areas.

The preliminary reclamation seed mixture and application rate is shown in Table 4-1. This mixture is intended to provide forage and cover species similar to the pre-disturbance conditions, facilitating the post-mining land uses for wildlife habitat. In addition, the seed mix has been determined based on the species' effectiveness in providing erosion protection, the ability to grow within the constraints of the low annual precipitation experienced in the region, its suitability for site aspect, and the elevation and soil type. The seeding rate will be 11.75 pounds (lbs) bulk seed/acre for drill seeding, which will be doubled for broadcast seeding to 23.4 lbs. The seed rate will also be adjusted for pure live seed (PLS) per the equation in Table 4-1.

Table A-1. Preliminary Seed Mixture

<i>Species (Common Name)</i>	Seeds/lb	lbs Seed	Seeds/ sq ft
<i>Agropyron dasystachyum</i> (Thickspike wheatgrass)	154,000	2.0	7
<i>Poa Sandbergii</i> (Sandberg's bluegrass)	925,000	0.5	10
<i>Pseudoroegneria Spicata</i> spp. <i>Spicata</i> (Bluebunch wheatgrass)	140,000	3.0	10
<i>Oryzopsis hymenoides</i> (Indian ricegrass)	141,000	2.0	6

Species (Common Name)	Seeds/lb	lbs Seed	Seeds/ sq ft
<i>Sitanion hystrix</i> (Squirrel tail)	192,000	1.0	4
<i>Penstemon Palmeri</i> (Palmer penstemon)	610,000	0.25	3
<i>Linum Lewisii</i> spp. <i>Appar</i> (Blue flax)	293,000	0.5	3
<i>Artemisia tridentata</i> ssp <i>Wyomingensis</i> (Wyoming big sagebrush)	2,500,000	0.5	3
<i>Atriplex confertifolia</i> (Shadscale)	64,900	2.0	2
Total	11.75 lbs/ac	48 seeds/sq ft*	

Seed will be sown in the 3rd or 4th quarter of each year

Substitutions will be made depending on seed price and availability.

The BLM will be contacted prior to any substitutions.

*= Seed rate will be adjusted for pure live seed rate using the following formula:

$$\text{Pure Live Seed} = \frac{\text{Seed rate (Listed above) lbs/ac}}{(\% \text{ germination})(\% \text{ purity})}$$

The preliminary seed mixture and application rates are subject to modification. The actual seed mixture and application rates will be determined prior to reseeding based on seed availability and consultation with the BLM.

Generally, seedbed preparation and seeding will take place in the fall after regrading of disturbed areas. All reclaimed areas will be broadcast seeded with a cyclone-type bucket spreader. Broadcast seed will be covered by harrowing, raking, or other site-specific appropriate methods as necessary to provide seed cover and enhance germination. If straw is blown on and crimped in, this process will suffice for burying the seed. Reclaimed surfaces will be left in a textured or rough condition (small humps, pits, etc.) to enhance moisture retention and revegetative success while minimizing erosion potential.

Timing of revegetation activities is critically important to the overall success of the program. Seeding activities will be timed to take advantage of optimal climatic windows and will be coordinated with other reclamation activities. In general, earthwork and drainage control will be completed in the summer or early fall. In general, seedbed preparation will be completed in the fall, either concurrent with or immediately prior to seeding. Seed will be sown in late fall to take advantage of winter and spring precipitation and optimum spring germination. Early spring seeding may be utilized for areas not seeded in the fall. In either case, seeding will not be done when the ground is frozen or snow covered, unless sagebrush is added to the mixture. If this occurs, seeding over snow may be considered to enhance sagebrush establishment.

ISOLATION, REMOVAL, AND/OR CONTROL OF ACID-FORMING, TOXIC, OR DELETERIOUS MATERIALS

Not applicable; no excavations of large amounts of rock are proposed under this 2011 Plan.

REMOVAL OR STABILIZATION OF BUILDING, STRUCTURES, AND SUPPORT FACILITIES

No permanent buildings or structures will be built. Any trailers and storage containers that may be placed on the laydown areas will be removed when the exploration activities have been completed. All equipment and supplies will be removed following completion of the project. Other materials, including scrap, trash, and unusable equipment will be removed on a weekly basis and disposed of in accordance with federal and state regulations and laws.

POST-CLOSURE MANAGEMENT

Post-closure management will commence on any reclaimed area following completion of the reclamation work for the area. Post-closure management will extend until the reclamation of the site or component has been accepted by the BLM and NDEP. For bonding purposes, a three-year, post-closure management period is assumed following completion of reclamation construction on any site. For sites reclaimed early in the operations, management of the reclaimed sites will occur concurrently with operational site management. Annual reports showing reclamation progress will be submitted to the BLM and NDEP by April 15th of each year.

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Appendix B: Weed Risk Assessment

RISK ASSESSMENT FOR NOXIOUS & INVASIVE WEEDS MIDWAY GOLD (GOLD ROCK) EXPLORATION PROJECT

Midway Gold proposes to conduct site-specific mineral exploration activities that would include existing access road travel and maintenance, road building including water bars, drill pad construction, exploration drilling, mineral resource sampling, and reclamation within the 4,303 acre 2011 Plan boundary indicated in the EA.

The disturbance for phase 1 of the drilling plan would include approximately 75,083 feet (34.4 acres) of new road construction, 14,412 feet (3.4 acres) of overland travel, and 199 drill pads and sumps which would disturb approximately 18 acres, 20 auger/trench sites which would disturb approximately 2 acres and a 12 acre laydown area. Total acreage of disturbance for this exploration project would be 142 acres.

Based on the Ely District Weed Inventory the following weeds are documented in the project area:

Lepidium draba Hoary cress

Based on the Ely District Weed Inventory the following weeds are documented along roads and drainages leading to the project area:

Lepidium draba Hoary cress
Acroptilon repens Russian Knapweed

There is also cheatgrass (*Bromus tectorum*) and halogeton (*Halogeton glomeratus*) scattered throughout the project area, but mainly along roads in and to the project area. The project area was last inventoried for noxious weeds in 2008.

Factor 1 assesses the likelihood of noxious/invasive weed species spreading to the project area.

None (0)	Noxious/invasive weed species are not located within or adjacent to the project area. Project activity is not likely to result in the establishment of noxious/invasive weed species in the project area.
Low (1-3)	Noxious/invasive weed species are present in the areas adjacent to but not within the project area. Project activities can be implemented and prevent the spread of noxious/invasive weeds into the project area.
Moderate (4-7)	Noxious/invasive weed species located immediately adjacent to or within the project area. Project activities are likely to result in some areas becoming infested with noxious/invasive weed species even when preventative management actions are followed. Control measures are essential to prevent the spread of noxious/invasive weeds within the project area.
High (8-10)	Heavy infestations of noxious/invasive weeds are located within or immediately adjacent to the project area. Project activities, even with preventative management actions, are likely to result in the establishment and spread of noxious/invasive weeds on disturbed sites throughout much of the project area.

For this project, the Factor 1 rates as Moderate (5) at the present time. With the equipment being used and the types of disturbance activities for this project and the weed species in the area, particularly cheatgrass, it is likely that part of the project area could become infested.

Factor 2 assesses the consequences of noxious/invasive weed establishment in the project area.

Low to Nonexistent (1-3)	None. No cumulative effects expected.
Moderate (4-7)	Possible adverse effects on site and possible expansion of infestation within the project area. Cumulative effects on native plant communities are likely but limited.
High (8-10)	Obvious adverse effects within the project area and probable expansion of noxious/invasive weed infestations to areas outside the project area. Adverse cumulative effects on native plant communities are probable.

This project rates as High (8) at the present time. Currently, the project area has very few weeds so any new infestations would have adverse cumulative effects on the nearby native plant community. Also, an increase of cheatgrass could alter the fire regime in the area.

The Risk Rating is obtained by multiplying Factor 1 by Factor 2.

None (0)	Proceed as planned.
Low (1-10)	Proceed as planned. Initiate control treatment on noxious/invasive weed populations that get established in the area.
Moderate (11-49)	Develop preventative management measures for the proposed project to reduce the risk of introduction of spread of noxious/invasive weeds into the area. Preventative management measures should include modifying the project to include seeding the area to occupy disturbed sites with desirable species. Monitor the area for at least 3 consecutive years and provide for control of newly established populations of noxious/invasive weeds and follow-up treatment for previously treated infestations.
High (50-100)	Project must be modified to reduce risk level through preventative management measures, including seeding with desirable species to occupy disturbed site and controlling existing infestations of noxious/invasive weeds prior to project activity. Project must provide at least 5 consecutive years of monitoring. Projects must also provide for control of newly established populations of noxious/invasive weeds and follow-up treatment for previously treated infestations.

For this project, the Risk Rating is Moderate (40). This indicates that the project can proceed as planned as long as the following measures are followed:

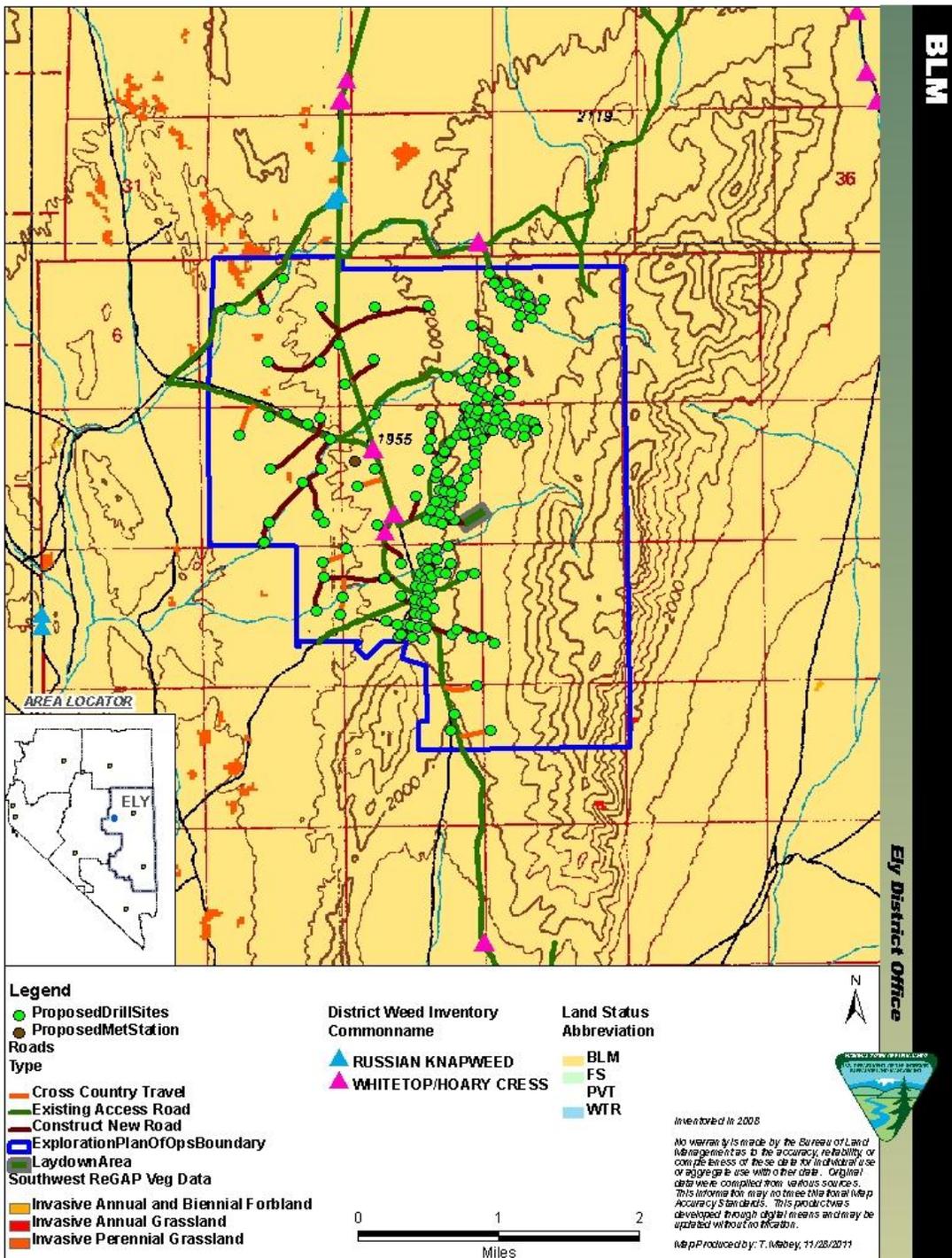
- Prior to entering public lands, the contractor, operator, or permit holder will provide information and training regarding noxious weed management and identification to all personnel who will be affiliated with the implementation and maintenance phases of the project. The importance of preventing the spread of weeds to uninfested areas and importance of controlling existing populations of weeds will be explained.
- Monitoring will be conducted for a period no shorter than the life of the permit or until bond release and monitoring reports will be provided to the Ely District Office. If the presence and/or spread of noxious weeds is noted, appropriated weed control procedures will be determined in consultation with Ely District Office personnel and will be in compliance with the appropriate BLM Handbook sections and applicable laws and regulations. All weed control efforts on BLM-administered lands will be in compliance with BLM Handbook H-9011, H-9011-1 Chemical Pest Control, H-9014 Use of Biological Control Agents of Pests on Public Lands, and H-9015 Integrated Pest Management. Submission of Pesticide Use Proposals and Pesticide Application Records will be required.
- To eliminate the transport of vehicle-borne weed seeds, roots, or rhizomes all vehicles and heavy equipment used for the completion, maintenance, inspection, or monitoring of

ground disturbing activities or for authorized off-road driving will be free of soil and debris capable of transporting weed propagules. All such vehicles and equipment will be cleaned with power or high pressure equipment prior to entering or leaving the work site or project area. Cleaning efforts will concentrate on tracks, feet and tires, and on the undercarriage. Special emphasis will be applied to axels, frames, cross members, motor mounts, on and underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out and refuse will be disposed of in waste receptacles. Cleaning sites will be recorded using global positioning systems or other mutually acceptable equipment and provided to the District Weed Coordinator or designated contact person.

- To eliminate the introduction of noxious weed seeds, roots, or rhizomes all interim and final seed mixes, hay, straw, hay/straw, or other organic products used for reclamation or stabilization activities, feed, bedding will be certified free of plant species listed on the Nevada noxious weed list or specifically identified by the BLM Ely District Office.
- Removal and disturbance of vegetation would be kept to a minimum through construction site management (e.g. using previously disturbed areas and existing easements, limiting equipment/materials storage and staging area sites, etc.)
- Reclamation would normally be accomplished with native seeds only. These would be representative of the indigenous species present in the adjacent habitat. Rationale for potential seeding with selected nonnative species would be documented. Possible exceptions would include use of non-native species for a temporary cover crop to out-compete weeds. Where large acreages are burned by fires and seeding is required for erosion control, all native species could be cost prohibitive and/or unavailable. In all cases, seed mixes would be approved by the BLM Authorized Officer prior to planting.
- No noxious weeds will be allowed on the site at the time of reclamation release. Any noxious weeds that become established will be controlled.

Reviewed by: /s/TJ Mabey
TJ Mabey
Natural Resource Specialist

11/28/2011
Date



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