

APPENDIX A
GREATER SAGE-GROUSE REQUIRED DESIGN FEATURES

Table 1 Minerals Resources Management Decisions for Locatable Minerals

MDMR #	MDMR Text	Applicable (Yes/No)	GRSG Amendment Consistency by Alternative (Yes/No)					Notes
			Proposed Action	25 kV Overhead Distribution Line Alternative	Three Bars Road/Atlas Haul Road as Only Access Alternative	Mount Hope and North Roberts Creek Road for Light Vehicle Traffic Alternative	No Action Alternative	
15	Review Objective SSS 4 , and to the extent allowed by law, apply MDs SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat. (Note: SSS 1 through SSS 4 are addressed below in Table 2).	Yes	Yes	No	Yes	Yes	Yes	Objective SSS 4: In PHMAs and GHMAs, apply the concept of "avoid, minimize, and compensatory mitigation" for all human disturbance in areas not already excluded or closed, so as to avoid adverse effects on GRSG and its habitat. The first priority will be to avoid new disturbances (GRSG Amendment, Appendices F and I). The proposed Project is a non-discretionary 43 CFR 3809 action, therefore implementing this management decision is limited to preventing unnecessary and undue degradation. The BLM is coordinating with MMI to determine appropriate mitigation to offset residual impacts using either the State of Nevada's Conservation Credit System (CCS) or a proponent driven plan.
16	Recommend for withdrawal SFA under the General Mining Act of 1872, as amended, subject to valid existing rights (see Appendix A; Figures 2-1 and 2-4).	No	-	-	-	-	-	No Sagebrush Focal Areas (SFAs) are located within or in proximity to the Project boundary.
17	On public lands, manage disturbances associated with notice-level activity in GRSG habitat on a landscape basis to avoid segmenting a project. Do this by encouraging operators and claimants to consolidate exploration into a plan of operations to reduce the proliferation of mining notices, in accordance with 43 CFR, Part 3809.21(b).	Yes	Yes	Yes	Yes	Yes	No	Exploration is proposed for this Project; therefore, the exploration in the Project area would be associated with the Plan.
18	Subject to valid existing rights and applicable law, authorize locatable mineral development activity, by approving plans of operation and apply mitigation and best management practices that minimize the loss of PHMAs and GHMAs or that enhance GRSG habitat by applying the "avoid, minimize and compensatory mitigation" process through an applicable mitigation system, such as the Nevada Conservation Credit System.	Yes	Yes	Yes	Yes	Yes	Yes	The proposed Project is a non-discretionary 43 CFR 3809 action, therefore implementing this management decision is limited to preventing unnecessary and undue degradation. Avoidance and minimization measures are discussed in Section 2.2.20 . The BLM is coordinating with MMI to determine appropriate mitigation to offset residual impacts using either the State of Nevada's Conservation Credit System (CCS) or a proponent driven plan.
19	Close or mitigate abandoned mine sites in PHMAs and GHMAs to reduce GRSG predation by eliminating physical structures that could provide nesting opportunities and perching sites for predators.	No	-	-	-	-	-	This would be an active Project area therefore this MD does not apply to this Project. Site reclamation is described in Section 2.2.19 .

Table 2 Management Decision(s) SSS 1 through SSS 4

MD #	MD Text	Applicable (Yes/No)	GRSG Amendment Consistency by Alternative (Yes/No)					Notes
			Proposed Action	25 kV Overhead Distribution Line Alternative	Three Bars Road/Atlas Haul Road as Only Access Alternative	Mount Hope and North Roberts Creek Road for Light Vehicle Traffic Alternative	No Action Alternative	
SSS 1	In PHMAs and GHMAs, work with the proponent/applicant, whether in accordance with a valid existing right or not, and use the following screening criteria to avoid effects of the proposed human activity on GRSG habitat: A. First priority – locate project/activity outside PHMAs and GHMAs B. Second priority – If the project/activity cannot be placed outside PHMAs and GHMAs, locate the surface-disturbing activities in non-habitat areas first, then in the least suitable habitat for GRSG C. Third priority – collocate the project/activity next to or in the footprint of existing infrastructure	Yes	Yes	Yes	Yes	Yes	Yes	The Project cannot be located outside of PHMA or GHMA; however, the proposed Project is located at the site of the previous Atlas Mine. Therefore, this project would be collocated with the existing footprint of the previous mine. The 25 kV overhead distribution line would be collocated with existing power line features where possible.
SSS 2 (PHMA)	In PHMAs, the following conditions will be met in order to avoid, minimize, and mitigate any effects on GRSG and its habitat from the project/activity:							
SSS 2A (PHMA)	Manage discrete anthropogenic disturbances, whether temporary or permanent, so they cover less than 3 percent of 1) biologically significant units (BSUs; total PHMA area associated with a GRSG population area (see Appendix A; Figure 2-2) and 2) in a proposed project analysis area. See Appendix E (Disturbance Cap Guidance) for additional information on implementing the disturbance cap, including what is and is not considered disturbance and how to calculate the proposed project analysis area, as follows: 1. If the 3 percent human disturbance cap is exceeded on all lands (regardless of ownership) in PHMAs in any given BSU, then no further discrete human disturbances (subject to applicable laws and regulations, such as the 1872 Mining Law, as amended, and valid existing rights) will be permitted, by BLM within GRSG PHMA in any given BSU until the disturbance has been reduced to less than the cap (see Nevada exception under MD SSS 2 a. 3. Appendix E). 2. If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in a PHMA, then no further anthropogenic disturbance will be permitted by BLM until disturbance in the proposed project analysis area has been reduced to maintain the area under the cap (subject to applicable laws and regulations, such as the 1872 Mining Law, as amended, valid existing rights; see Nevada exception under MD SSS 2 a. 3. Appendix E).	No	-	-	-	-	-	GRSG Amendment Appendix E directs that the disturbance cap analysis should be conducted and results provided in NEPA analyses, but any exceedances of the cap (at both the BSU and project levels scales) do not apply to locatable mineral resources project with existing valid rights from BLM approval.
SSS 2B (PHMA)	In PHMA, in undertaking BLM management actions, and consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species, including accounting for any uncertainty associated with the effectiveness of such mitigation. The project/activity with associated mitigation (such as the use of the State of Nevada Conservation Credit System) will result in an overall net conservation gain to GRSG (Appendix F).	Yes	Yes	Yes	Yes	Yes	Yes	The BLM is coordinating with MMI to determine appropriate mitigation to offset residual impacts in PHMA using either the State of Nevada's Conservation Credit System (CCS) or a proponent driven plan.

Greater Sage-Grouse Required Design Features

MD #	MD Text	Applicable (Yes/No)	GRSG Amendment Consistency by Alternative (Yes/No)					Notes
			Proposed Action	25 kV Overhead Distribution Line Alternative	Three Bars Road/Atlas Haul Road as Only Access Alternative	Mount Hope and North Roberts Creek Road for Light Vehicle Traffic Alternative	No Action Alternative	
SSS 2C (PHMA)	<p>Authorized/permitted activities are implemented by adhering to the RDFs described in Appendix C, consistent with applicable law. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity:</p> <ol style="list-style-type: none"> 1. A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. 2. An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. 3. A specific RDF will provide no additional protection to GRSG or its habitat. 	No	-	-	-	-	-	<p>The proposed Project is a non-discretionary 43 CFR 3809 action, and discretion is limited to preventing unnecessary and undue degradation.</p> <p>MMI has committed to the EPMs presented in Section 2.2.20.</p>
SSS 2D (PHMA)	In management actions, and consistent with valid and existing rights and applicable law in authorizing third- party actions, the BLM will apply the lek buffer-distances identified in the USGS report, Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review Open File-Report 2014-1239 (Manier et al., 2014), in accordance with Appendix B.	No	-	-	-	-	-	<p>The proposed Project is a non-discretionary 43 CFR 3809 action, and discretion is limited to preventing unnecessary and undue degradation.</p> <p>The Project holds valid existing rights and therefore is not subject to lek buffer distances identified in Appendix B of the GRSG Amendment.</p>
SSS 2E (PHMA)	<p>Seasonal restrictions will be applied during the period specified below to manage discretionary surface- disturbing activities and uses on public lands to prevent disturbances to GRSG during seasonal life-cycle periods:</p> <ol style="list-style-type: none"> 1. In breeding habitat within 4 miles of active and pending GRSG leks from March 1 through June 30 <ul style="list-style-type: none"> a. Lek—March 1 to May 15 b. Lek hourly restrictions—6 p.m. to 9 a.m. c. Nesting—April 1 to June 30 2. Brood-rearing habitat from May 15 to September 15 <ul style="list-style-type: none"> a. Early—May 15 to June 15 b. Late—June 15 to September 15 3. Winter habitat from November 1 to February 28 <p>The seasonal dates may be modified due to documented local variations (e.g., higher/lower elevations) or annual climatic fluctuations (e.g., early/late spring, long/heavy winter), in coordination with NDOW, in order to better protect GRSG and its habitat.</p>	No	-	-	-	-	-	<p>The proposed Project is a non-discretionary 43 CFR 3809 action, and discretion is limited to preventing unnecessary and undue degradation.</p> <p>MMI has committed to the following measures:</p> <ul style="list-style-type: none"> • Travel timing restrictions would be implemented during lekking season (March 1 – May 15) on Three Bars Road and Roberts Creek Road, from 6:00 AM to 10:00 AM and from 6:00 PM to 4:30 AM. Emergency and local traffic would be exempt from these restrictions. • Access road work, road maintenance-related work, gravel pit work conducted by MMI within four miles of an active or pending lek are subject to timing restrictions during lekking season (March 1 – May 15) from 6:00 AM to 10:00 AM and from 6:00 PM to 4:30 AM.

Greater Sage-Grouse Required Design Features

MD #	MD Text	Applicable (Yes/No)	GRSG Amendment Consistency by Alternative (Yes/No)					Notes
			Proposed Action	25 kV Overhead Distribution Line Alternative	Three Bars Road/Atlas Haul Road as Only Access Alternative	Mount Hope and North Roberts Creek Road for Light Vehicle Traffic Alternative	No Action Alternative	
SSS 2F (PHMA)	Authorizations and permits will limit noise from discretionary activities (during construction, operation, and maintenance) to not exceed 10 decibels above ambient sound levels at least 0.25 mile from active and pending leks, from 2 hours before to 2 hours after sunrise and sunset during the breeding season. See Appendix M, Greater Sage-Grouse Noise Protocol.	No	-	-	-	-	-	The proposed Project is a non-discretionary 43 CFR 3809 action, and therefore this MD is not applicable. However, the project is not expected to increase noise levels more than 10 dBA above ambient levels at near-by lek locations. This is discussed in detail in Section 4.21.2 . Additionally, MMI has committed to the following EPMs: <ul style="list-style-type: none">• Noise from generators could be shielded by a combination of a sound enclosure at the generator with an additional sound wall constructed adjacent to and between the generators and the leks, if required. Should a sound wall be necessary, it would be approximately 14 feet tall to attenuate the generator noise at the leks.• Noise would also be reduced through installation of an enhanced generator silencing package on the generators.• Berms would be constructed along the haul roads in conformance with MSHA requirements that would also assist in the attenuation of noise along the haul roads.
SSS 3 (GHMA)	In GHMAs, the following conditions will be met in order to avoid, minimize, and mitigate any effects on GRSG or its habitat from the project/activity:							
SSS 3A (GHMA)	In GHMAs, in undertaking BLM management actions, and consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species, including accounting for any uncertainty associated with the effectiveness of such mitigation. The project/activity with associated mitigation (such as the use of the State of Nevada Conservation Credit System) in GHMAs will result in an overall net conservation gain to GRSG (Appendix F, Regional Mitigation Strategy).	Yes	Yes	Yes	Yes	Yes	Yes	The proposed Project is a non-discretionary 43 CFR 3809 action, and discretion is limited to preventing unnecessary and undue degradation. The BLM is coordinating with MMI to determine appropriate mitigation to offset residual impacts using either the State of Nevada's Conservation Credit System (CCS) or a proponent driven plan.

Greater Sage-Grouse Required Design Features

MD #	MD Text	Applicable (Yes/No)	GRSG Amendment Consistency by Alternative (Yes/No)					Notes
			Proposed Action	25 kV Overhead Distribution Line Alternative	Three Bars Road/Atlas Haul Road as Only Access Alternative	Mount Hope and North Roberts Creek Road for Light Vehicle Traffic Alternative	No Action Alternative	
SSS 3B (GHMA)	<p>Authorized/permited activities are implemented adhering to the RDFS described in Appendix C, consistent with applicable law. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity:</p> <ol style="list-style-type: none"> 1. A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. 2. An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. 3. A specific RDF will provide no additional protection to GRSG or its habitat. 	No	-	-	-	-	-	<p>The proposed Project is a non-discretionary 43 CFR 3809 action, and discretion is limited to preventing unnecessary and undue degradation.</p> <p>MMI has committed to the EPMs presented in Section 2.2.20.</p>
SSS 3C (GHMA)	In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the USGS report, Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review Open File Report 2014-1239 (Manier et al., 2014), in accordance with Appendix B.	No	-	-	-	-	-	<p>The proposed Project is a non-discretionary 43 CFR 3809 action, and discretion is limited to preventing unnecessary and undue degradation.</p>
SSS 3D (GHMA)	<p>Seasonal restrictions will be applied during the period specified below to manage discretionary surface- disturbing activities and uses on public lands to prevent disturbing GRSG during seasonal life cycle periods, as follows:</p> <ol style="list-style-type: none"> 1. In breeding habitat within 4 miles of active and pending GRSG leks from March 1 through June 30 <ul style="list-style-type: none"> a. Lek—March 1 to May 15 b. Lek hourly restrictions—6 p.m. to 9 a.m. c. Nesting—April 1 to June 30 2. Brood-rearing habitat from May 15 to September 15 <ul style="list-style-type: none"> a. Early—May 15 to June 15 b. Late—June 15 to September 15 3. Winter habitat from November 1 to February 28 <p>The seasonal dates may be modified due to documented local variations (e.g., higher/lower elevations) or annual climatic fluctuations (e.g., early/late spring, long/heavy winter), in coordination with NDOW, in order to better protect GRSG and its habitat.</p>	No	-	-	-	-	-	<p>The proposed Project is a non-discretionary 43 CFR 3809 action, and discretion is limited to preventing unnecessary and undue degradation.</p> <p>MMI has committed to the following EPMs:</p> <ul style="list-style-type: none"> • Travel timing restrictions would be implemented during lekking season (March 1 – May 15) on Three Bars Road and Roberts Creek Road, from 6:00 AM to 10:00 AM and from 6:00 PM to 4:30 AM. Emergency and local traffic would be exempt from these restrictions. • Access road work, road maintenance-related work, gravel pit work conducted by MMI within four miles of an active or pending lek are subject to timing restrictions during lekking season (March 1 – May 15) from 6:00 AM to 10:00 AM and from 6:00 PM to 4:30 AM.

Greater Sage-Grouse Required Design Features

MD #	MD Text	Applicable (Yes/No)	GRSG Amendment Consistency by Alternative (Yes/No)					Notes
			Proposed Action	25 kV Overhead Distribution Line Alternative	Three Bars Road/Atlas Haul Road as Only Access Alternative	Mount Hope and North Roberts Creek Road for Light Vehicle Traffic Alternative	No Action Alternative	
SSS 3E (GHMA)	Authorizations and permits will limit noise from discretionary activities (during construction, operation, and maintenance) to not exceed 10 decibels above ambient sound levels at least 0.25 mile from active and pending leks, from 2 hours before to 2 hours after sunrise and sunset during the breeding season. See Appendix M, Greater Sage-Grouse Noise Protocol.	No	-	-	-	-	-	The proposed Project is a non-discretionary 43 CFR 3809 action, and therefore this MD is not applicable. However, MMI has committed to the following EPMs: <ul style="list-style-type: none">• Noise from generators could be shielded by a combination of a sound enclosure at the generator with an additional sound wall constructed adjacent to and between the generators and the leks, if required. Should a sound wall be necessary, it would be approximately 14 feet tall to attenuate the generator noise at the leks.• Noise would also be reduced through installation of an enhanced generator silencing package on the generators.• Berms would be constructed along the haul roads in conformance with MSHA requirements that would also assist in the attenuation of noise along the haul roads.
SSS 4 (OHMA)	In OHMAs, authorized/permited activities are implemented adhering to the RDFs described in Appendix C, consistent with applicable law. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity: <ol style="list-style-type: none">1. A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.2. An alternative RDF is determined to provide equal or better protection for GRSG or its habitat.3. A specific RDF will provide no additional protection to GRSG or its habitat.	No	-	-	-	-	-	The proposed Project is a non-discretionary 43 CFR 3809 action, and discretion is limited to preventing unnecessary and undue degradation. There is no OHMA present within the Project boundary. There is OHMA present along the 25 kV overhead distribution line alternative alignment.

Table 3 General Required Design Features

RDF #	RDF Text	Applicable ¹ (Yes/No)	Notes
Gen 1	Locate new roads outside of GRSG habitat to the extent practical.	No	Most roads associated with this project are existing and would only be improved for safety and to allow for heavy-haul traffic. Access to the mine would be on existing roads. Roads are described in Section 2.2.2 .
Gen 2	Avoid constructing roads within riparian areas and ephemeral drainages. Construct low-water crossings at right angles to ephemeral drainages and stream crossings (note that such construction may require permitting under Sections 401 and 404 of the Clean Water Act).	No	No riparian areas are present within the Project boundary.
Gen 3	Limit construction of new roads where roads are already in existence and could be used or upgraded to meet the needs of the project or operation. Design roads to an appropriate standard, no higher than necessary, to accommodate intended purpose and level of use.	No	Most roads associated with this project are existing and would only be improved for safety and to allow for heavy-haul traffic. Access to the mine would be on existing roads. Roads are described in Section 2.2.2 .
Gen 4	Coordinate road construction and use with ROW holders to minimize disturbance to the extent possible.	No	The Project is not anticipated to impact any ROWs (Section 4.10.2).
Gen 5	During project construction and operation, establish and post speed limits in GRSG habitat to reduce vehicle/wildlife collisions or design roads to be driven at slower speeds.	No	MMI has committed to the following EPM: <ul style="list-style-type: none">• Speed limits would be posted at 35 miles per hour (mph) on haul roads and 45 mph on access roads.
Gen 6	Newly constructed project roads that access valid existing rights would not be managed as public access roads. Proponents will restrict access by employing traffic control devices such as signage, gates, and fencing.	No	Site access is described in Section 2.2.7 , and would include fencing and gates.
Gen 7	Require dust abatement practices when authorizing use on roads.	No	MMI has committed to the following EPMs: <ul style="list-style-type: none">• A fugitive dust control program would provide for water application on haul roads and other disturbed areas; chemical dust suppressant application (such as Lignin sulfate or magnesium chloride) where appropriate; and other dust control measures.• Dust generated from the use of roads and excavation activities would be minimized to the extent reasonable and practicable by using BMPs such as minimizing vehicular traffic, and using prudent vehicle speeds. Fugitive emissions in the process area would be controlled at the crusher, and conveyor drop points through the use of bag houses and/or water sprays, where necessary. Other process areas requiring dust and/or emission controls would include the cement/lime silos, ADR Plant, the various ancillary screening and sizing processes, agglomerator, refinery, generators, and the laboratory. Appropriate emission control equipment would be installed and operated in accordance with an NDEP-issued Air Quality Operating Permit.
Gen 8	There is no Gen 8 RDF.	No	-
Gen 9	Upon project completion, reclaim roads developed for project access on public lands unless, based on site-specific analysis, the route provides specific benefits for public access and does not contribute to resource conflicts.	No	Road closure is described in Section 2.2.19 .
Gen 10	Design or site permanent structures that create movement (e.g., pump jack/ windmill) to minimize impacts on GRSG habitat.	No	These types of structures are not proposed for this Project.
Gen 11	Equip temporary and permanent aboveground facilities with structures or devices that discourage nesting and perching of raptors, corvids, and other predators.	No	MMI has committed to the following EPMs: <ul style="list-style-type: none">• Any overhead power lines within four miles of active and pending active leks would be constructed with anti-perching devices, where applicable. Actions would be completed in consideration of the latest Avian Power Line Interaction Committee guidelines with assistance of BLM and NDOW for the appropriate predatory bird anti-perching devices.• Fences in the process area would be continuous, with no breaks, except for gates, that would be kept closed; and smooth or barbed wire would be used above the top horizontal portion of fencing to discourage perching.• MMI would consider obtaining a Raven Depredation Permit from United States Fish and Wildlife Service (USFWS) or submit for coverage under an NDOW permit.

RDF #	RDF Text	Applicable ¹ (Yes/No)	Notes
Gen 12	Control the spread and effects of nonnative, invasive plant species (e.g., by washing vehicles and equipment, minimize unnecessary surface disturbance; Evangelista et al. 2011). All projects would be required to have a noxious weed management plan in place prior to construction and operations.	No	The <i>Noxious Weed Plan for the Gold Bar Mine Project, Eureka County, Nevada</i> (GBE, 2013) was provided as Appendix D of the Plan of Operations. MMI has also committed to the following EPMs: <ul style="list-style-type: none"> • All vehicle and heavy equipment that may have been exposed to noxious weeds would be cleaned with a power or high-pressure washer prior to entering or leaving the Project mine boundary. Vehicle cleaning would minimize the transport of vehicle-borne weed seed, roots, or rhizomes. • To minimize the transport of soil-borne noxious weed seeds, roots or rhizomes infested soils or material would be stockpiled adjacent to the areas from which they were stripped. Appropriate measures would be taken to avoid wind or water erosion of the affected stockpile. • All interim and final seed mixes, hay, and straw products would be certified weed-free.
Gen 13	Implement project site-cleaning practices to preclude the accumulation of debris, solid waste, putrescible wastes, and other potential anthropogenic subsidies for predators of GRSG.	No	The Class III-waivered landfill is described in Section 2.2.7 . MMI has committed to the following EPM: <ul style="list-style-type: none"> • During all phases of the Project, all food, waste, and other trash would be placed in closed containers.
Gen 14	Locate project related temporary housing sites outside of GRSG habitat.	No	No temporary housing is proposed for this Project.
Gen 15	When interim reclamation is required, irrigate site to establish seedlings more quickly if the site requires it.	No	Reclamation is described in Section 2.2.19 .
Gen 16	Utilize mulching techniques to expedite reclamation and to protect soils if the site requires it.	No	The use of mulch in the reclamation is discussed in Section 2.2.19 and further detailed in the <i>Conceptual Reclamation/Revegetation Plan for the Gold Bar Project Waste Rock Dumps</i> (Cedar Creek, 2016), which was provided as Appendix O of the Plan of Operations.
Gen 17	Restore disturbed areas at final reclamation to the pre-disturbance landforms and desired plant community.	No	Reclamation is described in Section 2.2.19 .
Gen 18	When authorizing ground-disturbing activities, require the use of vegetation and soil reclamation standards suitable for the site type prior to construction.	No	Reclamation of disturbed areas resulting from the Project would be completed in accordance with BLM and NDEP regulations.
Gen 19	Instruct all construction employees to avoid harassment and disturbance of wildlife, especially during the GRSG breeding (e.g., courtship and nesting) season. In addition, pets shall not be permitted on site during construction (BLM 2005b).	No	MMI has committed to the following EPM: <ul style="list-style-type: none"> • New hire and annual refresher training for all employees and contractors would include greater sage-grouse specific protection training that specifically addresses the commitment of MMI to implement the protection program and the need for all employees to avoid harassment and disturbance of greater sage-grouse, especially during the breeding season. MMI would work with NDOW in the development of training materials.
Gen 20	To reduce predator perching in GRSG habitat, limit the construction of vertical facilities and fences to the minimum number and amount needed and install anti-perch devices where applicable.	No	See description for Gen RDF 11.
Gen 21	Outfit all reservoirs, pits, tanks, troughs or similar features with appropriate type and number of wildlife escape ramps (BLM 1990; Taylor and Tuttle 2007).	No	MMI has committed to the following EPM: <ul style="list-style-type: none"> • All lined ponds would be constructed with escape ramps consisting of textured liner to assist in a safe footing during egress, should any wildlife manage to gain access and inadvertently fall into one of the ponds.
Gen 22	Load and unload all equipment on existing roads to minimize disturbance to vegetation and soil.	No	Equipment would be loaded and unloaded in previously disturbed areas, when practicable.

¹ The proposed Project is a non-discretionary 43 CFR 3809 action; therefore, these RDF's are considered recommendations.

Table 4 Lands and Realty Required Design Features

RDF #	RDF Text	Applicable ¹ (Yes/No)	Notes
LR 1	Where new ROWs associated with valid existing rights are required, co-locate new ROWs with existing ROWs or where it best to minimizes impacts in GRSG habitat. Use existing roads to access valid existing rights that are not yet developed.	No	Most roads associated with this project are existing and would only be improved for safety and to allow for heavy-haul traffic. Access to the mine would be on existing roads. Roads are described in Section 2.2.2 .
LR 2	Don not issue ROWs to counties on newly constructed energy/mining development roads, unless for a temporary use consistent with all other terms and conditions included in this document.	No	There would be no ROWs issues to counties for this project.
LR 3	Where necessary, fit transmission towers with anti-perch devices (Lammers and Collropy 2007) in GRSG habitat.	No	MMI has committed to the following EPM: <ul style="list-style-type: none"> • Any overhead power lines within four miles of active and pending active leks would be constructed with anti-perching devices, where applicable. Actions would be completed in consideration of the latest Avian Power Line Interaction Committee guidelines with assistance of BLM and NDOW for the appropriate predatory bird anti-perching devices.

¹ The proposed Project is a non-discretionary 43 CFR 3809 action; therefore, these RDF's are considered recommendations.

Table 5 Fuels and Fire Management Required Design Features

RDF #	RDF Text	Applicable ¹ (Yes/No)	Notes
WFM 1	Power-wash all fire fighting vehicles, including engines, water tenders, personnel vehicles, and all-terrain vehicles (ATVs), prior to deploying in or near GRSG habitat to minimize the introduction and spread of undesirable and invasive plant species.	No	<p>The <i>Noxious Weed Plan for the Gold Bar Mine Project, Eureka County, Nevada</i> (GBE, 2013) was provided as Appendix D of the Plan of Operations. MMI has also committed to the following EPMs:</p> <ul style="list-style-type: none"> • All vehicle and heavy equipment that may have been exposed to noxious weeds would be cleaned with a power or high-pressure washer prior to entering or leaving the Project mine boundary. Vehicle cleaning would minimize the transport of vehicle-borne weed seed, roots, or rhizomes. • To minimize the transport of soil-borne noxious weed seeds, roots or rhizomes infested soils or material would be stockpiled adjacent to the areas from which they were stripped. Appropriate measures would be taken to avoid wind or water erosion of the affected stockpile. <p>All interim and final seed mixes, hay, and straw products would be certified weed-free.</p>
WFM 2	Protect wildland areas from wildfire originating on private lands, infrastructure corridors, and recreational areas.	No	<p>MMI has committed to the following fire protection EPMs:</p> <ul style="list-style-type: none"> • As specified by MSHA, MMI would institute a fire protection training program and would have a rehearsed fire suppression plan. A fire protection system would be installed that would incorporate Eureka County and State of Nevada code requirements in the administration and warehouse complexes, truck shop, crushing plant, and process plant. A 250,000-gallon fresh water/fire water tank would be located above the ADR plant, on the south side of the HLP to provide adequate water pressure for the operations and fire suppression system. A rangeland fuel break would be constructed around the facilities. Water trucks, used for dust suppression, would be available in the event of a fire. MMI would promptly comply with any emergency directives and requirements of Eureka County and the BLM pertaining to industrial operations during the fire season. • Light vehicles traveling outside of the main mining areas and along roads that traverse vegetated rangeland during fire season would carry a small water supply in order to control sparks that may be generated by exhaust. Vehicle catalytic converters would be inspected often and cleaned of all brush and grass debris. • When conducting welding operations, they would be conducted in an area free of or mostly free of vegetation. A minimum of 10 gallons of water and a shovel would be on hand to extinguish any fires created from the sparks. Extra personnel would be at the welding site to watch for fires created by welding sparks.
WFM 3	Reduce the risk of vehicle or human-caused wildfires and the spread of invasive species by planning perennial vegetation (e.g. green-strips) paralleling road right-of-way	No	Reclamation is described in Section 2.2.19 .

¹ The proposed Project is a non-discretionary 43 CFR 3809 action; therefore, these RDF's are considered recommendations.

Table 6 Locatable Minerals Required Design Features

RDF #	RDF Text	Applicable ¹ (Yes/No)	Notes
LOC 1	Install noise shields to comply with noise restrictions (see Action SSS 7) when drilling during the breeding, nesting, brood-rearing, and/or wintering season. Apply GRSG seasonal timing restrictions when noise restrictions cannot be met (See Action SSS 6).	No	Noise modeling completed as part of the analysis does not anticipate noise levels from mining operations (including drilling) to exceed 10 decibels above ambient (Section 4.21.2). Additionally, MMI has committed to the following EPMs: <ul style="list-style-type: none"> Travel timing restrictions would be implemented during lekking season (March 1 – May 15) on Three Bars Road and Roberts Creek Road, from 6:00 AM to 10:00 AM and from 6:00 PM to 4:30 AM. Emergency and local traffic would be exempt from these restrictions. Access road work, road maintenance-related work, gravel pit work conducted by MMI within four miles of an active or pending lek are subject to timing restrictions during lekking season (March 1 – May 15) from 6:00 AM to 10:00 AM and from 6:00 PM to 4:30 AM.
LOC 2	Cluster disturbances associated with operations and facilities as close as possible, unless site-specific conditions indicate that disturbances to GRSG habitat would be reduced if operations and facilities locations would best fit a unique special arrangement.	No	Proposed Project facilities are clustered around the existing Atlas Mine.
LOC 3	Restrict pit and impoundment construction to reduce or eliminate augmenting threats from West Nile virus.	No	Pits are not anticipated to produce pit lakes; therefore, this RDF would not be applicable to this project.
LOC 4	Remove or re-inject produced water to reduce habitat for mosquitoes that vector West Nile virus. If surface disposal of produced water continues, use the following steps for reservoir design to limit favorable mosquito habitat: <ul style="list-style-type: none"> Overbuild size of ponds for muddy and non-vegetated shorelines. Build steep shorelines to decrease vegetation and increase wave actions. Avoid flooding terrestrial vegetation in flat terrain or low lying areas. Construct dams or impoundments that restrict down slope seepage or overflow. Line the channel where discharge water flows into the pond with crushed rock. Construct spillway with steep sides and line it with crushed rock. Treat waters with larvicides to reduce mosquito production where water occurs on the surface. 	No	Project is not expected to produce any additional water from mining operations. The process solution and event ponds are described in Section 2.2.6 .
LOC 5	Address post reclamation management in reclamation plan such that goals and objectives are to protect and improve sage-grouse habitat needs.	No	The reclamation plan is described in Section 2.2.19 .
LOC 6	Maximize the area of interim reclamation on long-term access roads and well pads including reshaping, topsoiling, and revegetating cut and fill slopes.	No	The reclamation plan is described in Section 2.2.19 .
LOC 7	Cover (e.g., fine mesh netting or use other effective techniques) all pits and tanks regardless of size to reduce sage-grouse mortality.	No	Pits are too large for this RDF to be feasible; however, sage-grouse would be able to escape by flight or walking if ever present within the pits.

¹ The proposed Project is a non-discretionary 43 CFR 3809 action; therefore, these RDF's are considered recommendations.

APPENDIX B
EUREKA COUNTY MASTER PLAN CONSIDERATION

Eureka County Master Plan Consideration

The National Environmental Policy Act (NEPA) requires an Environmental Impact Statement (EIS) to discuss certain factors. See 42 United States Code § 4332(2) (C)(i-v). As set forth by NEPA's implementing regulations, one of these factors is potential conflicts between a proposed action and the objectives of federal, regional, state, and local land use plans, policies and controls for the area concerned. 40 Code of Federal Regulations (C.F.R.) § 1502.16. Where an inconsistency exists between the proposed and any approved state or local plan or law, the EIS should describe the extent to which the agency would reconcile its proposed action with the plan or law.

Also related to state and local planning, 40 C.F.R. § 1506.2(d) requires that the EIS "discuss any inconsistency of a proposed action with any approved state or local plan and laws," and if an inconsistency exists, describe "the extent to which the agency would reconcile its proposed action with the plan or law."

The Council on Environmental Quality (CEQ) regulations at 40 CFR 1502.16(c) require the Environmental Consequences section of an EIS to disclose "possible conflicts between the proposed action and the objectives of federal, regional, state, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned."

The CEQ has also provided guidance for situations where a proposed action conflicts with local plans, policies, and controls through their publication: *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations* (46 Fed. Reg. 18026 (1981)). Question 23c asks, "What options are available for the decisionmaker when **conflicts with such plans** or policies are identified?" CEQ's answer states, "After identifying any potential land use conflicts, the decisionmaker must weigh the significance of the conflicts, among all the other environmental and non-environmental factors that must be considered in reaching a rational and balanced decision. Unless precluded by other law from causing or contributing to any inconsistency with the land use plans, policies or controls, the decisionmaker retains the authority to go forward with the proposal, despite the potential conflict..."

The Eureka County 1973 Master Plan, updated in 2010, contains a description of the county, and its history, articulates various goals, objectives, policies, and restrictions, to seek to maintain and enhance local economic viability and development, and the rural quality of life in Eureka (Eureka County, 2010). It outlines recommendations for future land use planning and includes goals and policies for economic stability, security and growth, social stability, private property rights, local and private management of resources, recreational opportunities, transportation and utility infrastructure, easements and right-of-way's (ROWs), and public access to federal and state lands (Eureka County, 2010). It is divided into sections that focus on specific planning issues identified during the development of the Master Plan. Each section is referred to as an element. There are seven elements: Growth Management Element, Public Facilities and Services Element, Economic Development Element, Natural Resources & Federal or State Land Use Element, Land Use Element, Housing Element, and Water Resources Element. Titles are reserved for Transportation, Conservation, Historic Preservation, Open Space Elements, and Public Finance Elements.

The Natural Resources and Federal and State Land Use Element (referred to as the Natural Resource and Land Use Plan) was originally developed and included into the Master Plan in response to Nevada Senate Bill 40 (1983) which directs counties to develop plans and strategies for resources that occur within lands managed by federal and state agencies. The Natural Resource and Federal or State Land Use element is an executable policy for natural resource management and land use on federal and state administered lands in Eureka County (Eureka County, 2010).

This appendix is referenced in the EIS and provides an overview of the relevant goals, objectives, and policies of the Eureka County Master Plan for the resources discussed in the Environmental Consequences section in compliance with the CEQ regulations. The discussion of the Eureka County Master Plan goals, objectives, and policies is organized by resource type. Goals, objectives, and policies from the Eureka County Master Plan are in italics.

Air Quality

Air Quality is included in the Eureka County Master Plan Natural Resources & Federal or State Land Use Element. For Air Quality, the Eureka County Master Plan the defined goal is *to prevent significant deterioration of the superior air quality found in Eureka County*. Relevant objectives to this project associated with this goal focus on working with the State of Nevada and federal agencies air quality permitting process for developments that could diminish air quality, and developing best management practices for limiting unnecessary emissions from existing and new point and nonpoint sources. Additionally, Eureka County supports mining that *uses the best available science and technology to ensure adequate protection of land, air, and water resources*.

Proposed Action Implications on Eureka County Goals, Objectives, and Policies: The Gold Bar Mine Project (Project) would not result in a significant deterioration of air quality. McEwen Mining Inc. (MMI) has committed to several environmental protection measures (EPMs) which would reduce fugitive dust from Project related disturbance. MMI would comply with all applicable State of Nevada air quality permits and regulations. Impacts from the Project are anticipated to be short-term and localized, with no substantial adverse effects to air quality.

Cultural Resources

Cultural resources are included in the Eureka County Master Plan Natural Resources & Federal or State Land Use Element as a topic along with historic and paleontological resources. For these resources, the defined goal is that *in coordination with federal state and local government planning agencies, tribal leadership and interested members of the public, determine the significance of cultural resource sites according to condition, content and relevance and increase the opportunity for educational, recreational, socio-cultural, and scientific uses of cultural and Paleontological resources*.

Proposed Action Implications on Eureka County Goals, Objectives, and Policies: Any adverse impacts to National Register of Historic Places (NRHP) eligible cultural sites would be avoided. If avoidance is not feasible, measures to minimize or mitigate effects would be proposed

in accordance with a memorandum of agreement (MOA) and detailed in a Historic Properties Treatment Plan (HPTP) developed in coordination with the State Historic Preservation Office (SHPO). With implementation of the MOA, impacts from the Project are anticipated to be localized, short-term, and would result in no adverse effect.

Forest Products

Vegetation and Woodland Resources are included in the Eureka County Master Plan Natural Resources & Federal or State Land Use Element as two different topics. Vegetation is included as a primary resource with soil and watersheds. The defined goal for the primary resources of soil, vegetation, and watersheds, is *to maintain or improve the soil, vegetation and watershed resources in a manner that perpetuates and sustains a diversity of uses while fully supporting the custom, culture, economic stability, and viability of Eureka County and its individual citizens.* Relative to forest products, an objective associated with this goal is *to develop and implement an aggressive pinyon pine, juniper, and shrub abatement and control plan for all sites where invasion and/or senescence due to age of a stand is adversely affecting desirable vegetation and/or wildlife. Development of such plans will include technical references to Woodland or Rangeland Ecological Sites and other appropriate interpretations of specific soil series within a Soil Survey. Whenever possible, plans to reduce the density of pinyon or juniper will emphasize removal and use of the material for firewood, posts, or commercial products including chips for energy production. This item depends on continued access to all areas that are subject to future woodland manipulations.*

The defined goal for woodland resources is *to maintain or improve aspen and conifer tree health, vegetation diversity, wildlife and watershed values through active management of sites with the ecological potential for aspen, pinyon, or juniper woodlands and initiate thinning, removal, or other management measures.*

Proposed Action Implications on Eureka County Goals, Objectives, and Policies: The Project would remove approximately 482 acres of pinyon-juniper woodland, which would be reclaimed to a grass and forb dominated community, and eventually to a shrub dominated community. This would assist with habitat improvement for certain wildlife species. The Project is anticipated to have localized, long-term, minor adverse impacts on forest products, including pine nut harvesting, fuel wood cutting, and Christmas tree cutting on public land.

Geology and Minerals

For the resource, geology and minerals, the associated topic in the Eureka County Master Plan Natural Resources & Federal or State Land Use Element is Locatable Minerals, Fluid Minerals, and Mineral Materials. For this topic, the defined goal is *to facilitate environmentally responsible exploration, development and reclamation of oil, gas, geothermal, locatable minerals, aggregate and similar resources on federal lands.* A relevant objective for this topic is for the County to *actively engage in NEPA analysis of environmental and community impacts related to proposed mineral, oil and gas development, including social, economic, and fiscal impacts.* Mining is the top employer in Eureka County and historically has been an important part of the county economy.

Proposed Action Implications on Eureka County Goals, Objectives, and Policies: The Proposed Action would entail mining approximately 72.5 million tons of waste rock and 13 million tons of ore, and ship offsite approximately 325,000 ounces of gold over the life of the Project. The disturbances constitute a fraction of a percent in the study area of the acreage containing the geologic and mineral resources. MMI would reclaim approximately 975 acres of Project related disturbance (approximately 86 percent of the total Project related disturbance), as well as an additional approximately 25 acres of non-MMI disturbance (1,000 acres of total reclamation). This would include 395 acres of the existing disturbance within the Plan boundary, which constitutes an environmentally responsible approach to mining and exploration. The Proposed Action involves a permanent but minor to negligible adverse effect on the regional geologic and mineral resource.

Grazing Management

Forage and Livestock Grazing included in the Eureka County Master Plan Natural Resources & Federal or State Land Use Element as a topic. Open space agriculture is the single greatest land use (2.4 million acres) in Eureka County, which includes livestock grazing and crops (Eureka County, 2010). The defined goal for forage and livestock grazing is to *provide for landscape vegetation maintenance and improvement that will:*

- 1) *Support restoration of suspended AUMs;*
- 2) *Support allocation of continuously available temporary non-renewable use as active preference;*
- 3) *Support allocation of forage produced in excess of the original adjudicated amounts where greater amounts of forage are demonstrated to be present;*
- 4) *Restore livestock numbers of individual ranches to at least the full levels at the time of grazing allotment adjudications; and*
- 5) *Restore wildlife populations to those peak levels of the mid-1990's.*

Relevant objectives for this goal include: *identify and implement all economically and technically feasible livestock distribution, forage production enhancement, and weed control programs before seeking changes in livestock stocking rates and assure that all grazing management actions and strategies fully consider impact on property rights of inholders and adjacent private land owners and consider the potential impacts of such actions on grazing animal health and productivity.* Additionally, Eureka County supports mining that *uses the best available science and technology to ensure adequate protection of land, air, and water resources.*

Proposed Action Implications on Eureka County Goals, Objectives, and Policies: Adverse impacts to livestock grazing from the Proposed Action are anticipated to be temporary, regional, and minor. Less than one percent of animal unit months (AUMs) within allotments and pastures affected by the Proposed Action would be lost temporarily or permanently. Indirect impacts from the Project include economic impacts from the potential reduction in AUMs from the Proposed

Action. These impacts would be long-term, regional, and minor to the ranching community and agricultural or grazing sector of Nevada's or Eureka County's economy, but the economic impact to the affected permittees could be long-term, regional, and moderate. However, approximately 4,518 acres (approximately 81 percent) of the Project area consists of woodland communities, and approximately 942 acres (approximately 17 percent) consists of prior mining-related disturbance or existing roads. Neither the woodland communities or the existing disturbance within the Plan boundary, both of which make up 98 percent of the Plan boundary, would be considered prime forage area for livestock. In addition, any adjustment to permitted AUMs would be based on forage lost, removed, or otherwise inaccessible due to mining operation. AUMs can be reinstated once reclamation has been successfully completed, and successful reclamation may also increase the forage quality and quantity because much of the disturbed area is currently pinyon-juniper woodland that would be reseeded with grasses, forbs, and shrubs.

Hazardous or Solid Waste

Hazardous, or Solid Waste are discussed in Element 4, Public Facilities and Services. The section discusses solid waste and materials as a separate header. The defined goal for Solid Waste and Materials is *to provide solid waste and hazardous waste management to meet the needs of planned land uses, with systems that are cost-effective and environmentally sound.*

Proposed Action Implications on Eureka County Goals, Objectives, and Policies: Small quantities of hazardous waste would be temporarily stored per federal, state, and local regulations. Most of the hazardous materials used on site would be spent or consumed during operations. Materials that were not spent or consumed, such as used antifreeze and oil, would be recycled or disposed off-site in accordance with applicable federal, state, and local regulations. Based upon the small quantities of hazardous waste that would be generated by the Proposed Action, an accident resulting in a release of hazardous waste to the environment during transportation from the Proposed Action is not anticipated. Sanitary liquid wastes would be handled and disposed of through septic tanks/leach fields permitted by the NDEP. Impacts from hazardous and solid waste from the Project are not expected to be long-term and would be regional and minor.

Historic Trails

There are no specific goals identified related to historic trails in the Eureka County Master Plan. Cultural resources are included in the Eureka County Master Plan Natural Resources & Federal or State Land Use Element as a topic along with historic and paleontological resources. For these resources, the defined goal is that *in coordination with federal state and local government planning agencies, tribal leadership and interested members of the public, determine the significance of cultural resource sites according to condition, content and relevance and increase the opportunity for educational, recreational, socio-cultural, and scientific uses of cultural and Paleontological resources.*

Proposed Action Implications on Eureka County Goals, Objectives, and Policies: During construction and operation of the Project, impacts may occur to the intended setting of the Pony

Express National Historic Trail (NHT), which would include visual impacts from Project disturbance, construction equipment, vehicle traffic, and personnel, as well as additional noise generated from Project operations. However, based on the viewshed analysis completed for the Project, existing mining-related disturbance is already visible from the NHT, so impacts from the Proposed Action would be a continuation of current conditions. The degree of visual contrast and impacts to the Pony Express NHT's setting associated with the Project would be reduced following reclamation. Noise impacts from Project operations are anticipated to be short-term, localized, and moderate. However, the project is using an enhanced silencing package which would reduce impacts from generator noise. All other impacts are anticipated to be negligible to minor.

Land Use, Access, Realty, and Transportation

Land use, access, realty, and transportation are discussed in several Elements of the Eureka County Master Plan, specifically, Growth Management, Public Facilities and Services, and Economic Development Elements. Goals, objectives, and policies related to these resources seek to maintain and enhance local economic viability and rural quality of life in Eureka County.

Goals in the Growth Management Element include:

- *Encourage new development in Eureka County in a planned and orderly manner consistent with the maintenance of existing quality of life, environmental attributes, and fiscal resource limits of the County;*
- *Encourage new development in areas in or proximate to existing communities where public infrastructure can be efficiently provided and a sense of community can be established or improved;*
- *Accommodate new development at a rate which can be adequately served by available community facilities and services;*
- *Ensure that development and use of land occurs in a manner which promotes the health, safety, and welfare of Eureka County residents;*

Goals in the Public Facilities and Services Element include:

- *To provide for the organized planning, funding, construction, and maintenance of infrastructure at locations consistent with planned land uses and with capacities which are adequate to meet the needs of these planned land uses;*
- *To build and maintain a transportation system which combines a mix of transportation modes and transportation system management techniques, and which is designed to meet the needs of the County's Land Use plan while minimizing the transportation systems' impacts on air quality, the environment, and adjacent development.*
- *To plan, build, and maintain a system of major roadways which provides adequate service to the County's planned land uses, integrates automobile use and the other modes of transportation, and minimizes environmental impacts.*

Goals in the Economic Development Element include:

- *Retain and expand existing business and industry; and*
- *Diversify and expand the Eureka County economy.*

Policies and objectives relative to these goals and the project include:

- *Eureka County encourages development which minimizes impacts to sensitive environmental areas*
- *Eureka County may identify and pursue mining industry induced industrial development opportunities; and*
- *Eureka County may encourage the productivity of existing “Building Blocks” beginning with such assets of a work force and natural resources including water, minerals, livestock forage, and wildlife.*

As the Natural Resource and Federal or State Land Use element is an executable policy for natural resource management and land use on federal and state administered lands in Eureka County, some of the goals of this element pertain to lands and realty in addition to other resources listed here. These include the following:

- *To maintain and improve the soil, vegetation and watershed resources in a manner that perpetuates and sustains a diversity of uses while fully supporting the custom, culture, and economic stability and viability of Eureka County and its individual citizens;*
- *Facilitate environmentally responsible exploration, development and reclamation of oil, gas, geothermal, locatable minerals, aggregate and similar resources on federal lands;*
- *Prevent significant deterioration of the superior air quality found in Eureka County; and*
- *Maintain, improve or mitigate wildlife impacts to habitat in order to sustain viable and harvestable populations of big game and upland game species as well a wetland/riparian habitat for waterfowl, fur bearers and a diversity of other game and non-game species.*

Primary planning guidance of the Natural Resource and Land Use Plan is found in Eureka County Code Title 9, Chapters 30, 40 and 50. Eureka County Code 9.30.060(E) states, *It is critical to the welfare of the citizens of Eureka County and the nation that mining on state and federal lands remains an open and free enterprise. Eureka County upholds the tenet that mining claims are compensable property belonging to individuals or groups of individuals* (Eureka County, 2010). The primary guidance for mining activities within Chapter 30 that pertain to lands and realty includes (Eureka County, 2010):

- *Retention of and compliance with the 1872 Mining Law as amended;*
- *Compliance with mine reclamation activities as per NRS Chapter 519A;*
- *Use of best available science and technology to ensure adequate protection of land, air, and water resources;*

- *Mitigation of mining activities that may impair the economic future of Eureka County citizens through bilateral or multi-lateral consultations with the Board of Eureka County Commissioners; and*
- *Disposal of mine dewatering water in a manner that returns water to the ground in the same basin it is withdrawn with minimal evaporation and transpiration loss.*

Proposed Action Implications on Eureka County Goals, Objectives, and Policies: Project related disturbance from mining and processing facilities would result in the direct loss of public land for multiple use authorizations for the seven-year life of the mine. However, there is adequate public land adjacent to the Project boundary for multiple use authorizations during the life of the Project, so impacts to multiple land use authorizations from the loss of this area for multiple use authorizations would be short-term, localized, and minor. MMI would reclaim approximately 975 acres of Project related disturbance (approximately 86 percent of the total Project related disturbance), as well as an additional approximately 25 acres of non-MMI disturbance (1,000 acres of total reclamation including previously disturbed area), which would provide a post-mining surface condition that would be consistent with the expected long-term land uses, including wildlife habitat, livestock grazing, and possible future mining-related activities. In addition, there may be opportunities to utilize infrastructure at the Project for future industrial use. The Proposed Action would not result in impacts or changes to land ownership within the area of analysis, and the Project would not result in conflicts, substantial modifications or termination of the ROWs or land use authorizations within the area. MMI is proposing to substantially reduce overall traffic generation from the Project by utilizing passenger vans to transport personnel to the mine site. Impacts from traffic generations associated with the Project is anticipated to be short-term, regional, and minor, and is not anticipated to degrade the integrity of the road network utilized for access to the Project. MMI would maintain Three Bars Road and Roberts Creek Road in coordination with Eureka County. No dewatering is anticipated.

Native American Cultural Concerns

There are no specific goals identified related to specifically to Native American Cultural Concerns, in the Eureka County Master Plan, however, cultural resources are included in the Eureka County Master Plan Natural Resources & Federal or State Land Use Element as a topic along with historic and paleontological resources. For these resources, the defined goal is that *in coordination with federal state and local government planning agencies, tribal leadership and interested members of the public, determine the significance of cultural resource sites according to condition, content and relevance and increase the opportunity for educational, recreational, socio-cultural, and scientific uses of cultural and Paleontological resources.*

Proposed Action Implications on Eureka County Goals, Objectives, and Policies: Any adverse impacts to NRHP eligible cultural sites would be avoided. If avoidance is not feasible, measures to minimize or mitigate effects would be proposed in accordance with a MOA and detailed in a HPTP developed in coordination with the SHPO. With implementation of the MOA, impacts from the Project are anticipated to be localized, short-term, and would result in no adverse effect. To date, no Traditional Cultural Property, property of traditional religious cultural

importance, or sacred site has been identified by the tribe or bands participating in the government-to-government consultation process or through cultural resources inventories.

Paleontological Resources

Paleontological resources are included in the Eureka County Master Plan Natural Resources & Federal or State Land Use Element as a topic along with historic and cultural resources. For these resources, the defined goal is that *in coordination with federal state and local government planning agencies, tribal leadership and interested members of the public, determine the significance of cultural resource sites according to condition, content and relevance and increase the opportunity for educational, recreational, socio-cultural, and scientific uses of cultural and Paleontological resources.*

Proposed Action Implications on Eureka County Goals, Objectives, and Policies: Mining conducted in the Proposed Action would blast, remove, and crush the host formations for vertebrate and invertebrate fossils. Project EPMs for Paleontological Resources provide protection of the resource in the event of discovery during the Proposed Action, and thereby minimizes impacts to the resource through cessation of work until notice to proceed is issued by an Authorized Officer. Impacts would be permanent, localized, and negligible to minor.

Recreation

Hunting, Fishing, and Outdoor Recreation is included in the Eureka County Master Plan Natural Resources & Federal or State Land Use Element as a topic. Outdoor recreation, along with mining and agriculture is a key component of Eureka County's economy. The Eureka County Master Plan includes goals and policies for recreational opportunities (including hunting, fishing, and outdoor recreation), wilderness and wilderness study areas (WSAs). The primary goal relating to recreation within the Eureka County Master Plan is:

- *Provide for multiple recreation uses on Eureka County federal and state administered lands located within its boundaries for residents and visitors to the County. Provide recreational uses including high quality recreational opportunities and experiences at developed and dispersed/undeveloped recreation sites by allowing historic uses and access while maintaining existing amenities and by providing new recreation sites for public enjoyment. Pursue increased public access opportunities in both motorized and non-motorized settings through the acquisition of rights-of-way or easements across federal administered lands and private lands at the invitation of the property owner. Recognize that multiple recreation uses are mandated by the multiple use concepts and that adequate outdoor recreation resources must be provided on the federal administered areas; keeping open all existing access roads and the ability to maintain those same roads or accesses.*

The primary goal for wilderness areas and WSAs is:

- *Seek immediate Congressional designation action on all WSAs and other restrictive land classifications based on Eureka County policy to release these areas for multiple use management and in the interim prevent, minimize or mitigate impairment or degradation of such areas to the extent that Congressional actions are not pre-empted. Provide the*

amenities promised by wilderness designation through multiple use management that includes dispersed recreation where appropriate and opportunities for solitude

Proposed Action Implications on Eureka County Goals, Objectives, and Policies: Implementation of the Proposed Action mining and processing facilities would result in the loss of recreation opportunities within the 127 acres that would be fenced within the Project area for the life of mining operations. However, there would be no perimeter fencing around the Plan boundary that would preclude recreation use in other areas within the Plan boundary that are not actively being mined. Areas of active mining would restrict access for recreation activities for the life of mining operations, but the Proposed Action would reclaim approximately 420 acres of existing disturbance within the Plan boundary, which would be a positive impact in the long-term on recreation in the area. Adverse impacts from the Project on recreation in the area is anticipated to be short-term, localized, and minor.

Social and Economic Values

Social and economic values are addressed in several Elements in the Eureka Master Plan. Defined goals and objectives related to economic values are covered above under the key resources that compose the majority of Eureka County's economy: Livestock Grazing, Mining (Geology and Minerals), and Recreation, as well as Land Use, Access, Realty, and Transportation.

Proposed Action Implications on Eureka County Goals, Objectives, and Policies: Operation of the Project would result in employment levels of approximately 135 workers for the life of mining operations, and 101 jobs from indirect and induced employment. It is anticipated that the rental vacancy rate in the Eureka vicinity would be sufficient to accommodate the expected Project-related demand. Construction of the mine would have a short-term, localized, moderate, positive short-term fiscal effect for Eureka County, and operation and maintenance of the mine would have a long-term, minor positive fiscal effect for the life of the Project for Eureka County. These effects would effectively cease at the time the Project is completed and reclaimed.

Soils

Soils are included in the Eureka County Master Plan Natural Resources & Federal or State Land Use Element. Soils are included as a primary resource with vegetation and watersheds. The defined goal for the primary resources of soil, vegetation, and watersheds, is *to maintain or improve the soil, vegetation and watershed resources in a manner that perpetuates and sustains a diversity of uses while fully supporting the custom, culture, economic stability, and viability of Eureka County and its individual citizens*. Additionally, Eureka County supports mining that *uses the best available science and technology to ensure adequate protection of land, air, and water resources*.

Proposed Action Implications on Eureka County Goals, Objectives, and Policies: Disturbed areas would be subject to wind and water erosion until stabilizing vegetation becomes established. Project EPMS and concurrent reclamation, where practicable, would help reduce

wind and water erosion impacts. Mining and construction activities would impact the productivity and fertility of newly disturbed soils by mixing and compaction of the soils during salvage operations. However, there is nearly 654 acres of existing mine related disturbance within the Plan boundary from previous operators that is already impacting soil quality. The Proposed Project would reclaim approximately 420 acres of this existing disturbance, which may help overall soil productivity. Overall, adverse impacts to soils are expected to be long-term, localized, and minor to moderate over the life of the mine and after life of the mine.

Vegetation

Vegetation Resources are included in the Eureka County Master Plan Natural Resources & Federal or State Land Use Element. Vegetation is included as a primary resource with soil and watersheds. The defined goal for the primary resources of soil, vegetation, and watersheds, is *to maintain or improve the soil, vegetation and watershed resources in a manner that perpetuates and sustains a diversity of uses while fully supporting the custom, culture, economic stability, and viability of Eureka County and its individual citizens.*

Specifically, objectives relative to vegetation resources for this topic is to *prevent the introduction, invasion or expansion of undesirable plants and noxious weeds into native rangelands and improve the ecological status of sites that are currently invaded by undesirable plants or noxious weeds by integrating, through consultation with the Eureka County Weed District and Eureka County Department of Natural Resources, appropriate control methods into all planning efforts. Prescriptions for control of undesirable plants and noxious weeds may include, but are not limited to burning, grazing, mechanical, manual, biological and chemical methods and include with fire line and site rehabilitation plans, identification, utility and limitations of native or exotic vegetation capable of supporting watershed function and habitat for wildlife and livestock.*

In addition, an objective associated with goals for Growth Management indicates that *Eureka County encourages development which minimizes impacts to sensitive environmental areas. Eureka County supports mining that uses the best available science and technology to ensure adequate protection of land, air, and water resources.*

Proposed Action Implications on Eureka County Goals, Objectives, and Policies: The Proposed Action would disturb 718 acres of previously undisturbed vegetation communities. Fourteen percent of the total disturbance from the Proposed Action would remain after mine closure; the remaining 86 percent would be reclaimed which would re-establish vegetation communities to a productive level, including for livestock grazing. Indirect impacts to vegetation communities would include the potential for the spread and introduction of noxious weeds and non-native invasive species; however, concurrent reclamation would occur, where practicable, and Project EPMs and MMI's Noxious Weed Plan would help reduce impacts from the spread and introduction of noxious and non-native invasive species. Overall impacts to vegetation communities would be long-term, localized, and minor.

Water Quality and Quantity

The Water Resources Element describes Eureka County's goals and planning guidance for water resources within Eureka County. Eureka County Code 9.30.060(C) states that *Eureka County would continue to work to maintain its water resources in a condition that will render it useable by future generations for the full range of beneficial uses that further a viable and stable economic and social base for its citizens* (Eureka County, 2010). Defined goals include meeting *the requirements for water quality contained in the Nevada Administrative Code (NAC) Section 445, to the extent they can be met while complying with constitutional and statutory law as to vested water rights, maintain or improve riparian areas and aquatic habitat that represents a range of variability for functioning condition*. Additionally, Eureka County supports mining that *uses the best available science and technology to ensure adequate protection of land, air, and water resources*.

Eureka County Commissioners have also adopted the 2016 Eureka County Water Resources Master Plan (Eureka County, 2016). The primary purpose of the Eureka County Water Resources Master Plan is to provide more details of guidance to implement the Eureka County Master Plan Water Resources Element. The goal of the Water Resource Master Plan arises from this guidance of the Water Resources Element of the Master Plan and is, *tempered by input from its residents, and is, quite simply, to provide sufficient information to its residents to help them develop the County's water resources in a manner that the resource can be used in perpetuity*. The document is organized to provide detailed information of water resources related issues facing Eureka County, including water rights, groundwater resources, surface water resources, current water usage, water quality, ability for growth within Eureka County communities, floodplain management, and provides potential management alternatives. Objectives include:

- 1) *Quantify the water resources available for use in the 16 hydrographic areas which comprise the County's Water Resource Master Plan planning area.*
- 2) *Estimate the amount of water which is currently being consumed within the planning area.*
- 3) *Identify areas where water use currently exceeds the supply or may someday outstrip supply if all approved water rights were to be put to beneficial use.*
- 4) *Estimate how much water may be available for future growth and provide insight as to where these supplies might be developed.*
- 5) *Identify the issues that might affect water supplies within the County and help residents recognize how these issues might affect them. These concerns may be related either to water quantity or water quality.*
- 6) *Raise residents' awareness of the potential threat from flooding within the County.*
- 7) *Ensure that water and water resource related management actions are consistent with Eureka County plans, policies, and desires through local, grass-roots planning and management of the water resources within Eureka County.*

- 8) Help stakeholders identify, evaluate and implement management strategies to address water resource issues.
- 9) Coordinate with the Nevada Division of Water Resources, other federal, state and local agencies (e.g., Eureka Conservation District), the Central Nevada Regional Water Authority, and the Humboldt River Basin Water Authority, to efficiently manage the resource to the benefit of all stakeholders in a manner consistent with County plans and policies and the letter of the applicable laws.

Proposed Action Implications on Eureka County Goals, Objectives, and Policies: Project-related impacts may occur from erosion and sedimentation; however, the Project's stormwater control design, erosion specific EPMs and Best Management Practices would reduce impacts to surface waters from erosion. Under the maximum pumping scenario, the 10-foot drawdown isopleth would extend up to two miles from the pumping wells and drawdown at the Roberts Creek Ranch well would be around 25 feet. A 99 percent recovery of groundwater levels are anticipated within two years after cessation of pumping. The Non-Designated waste rock would be placed in one of the nine waste rock disposal areas developed for this type of waste, and all Designated waste would be placed in the Designated Waste Cell in the Pick East Lower Dump. The heap leach pad would be designed as a zero discharge facility in accordance with NAC guidelines. Impacts to surface water, groundwater, and geochemistry are anticipated to be long-term, regional, and negligible.

Wildlife

Wildlife is included in the Eureka County Master Plan Natural Resources & Federal or State Land Use Element. The Eureka County Master Plan identifies the following goal for wildlife and wildlife habitat: *Maintain, improve or mitigate wildlife impacts to habitat in order to sustain viable and harvestable populations of big game and upland game species as well as wetland/riparian habitat for waterfowl, fur bearers and a diversity of other game and nongame species.* A relevant objective is to *include considerations of wildlife habitat requirements in the design and reclamation of mineral development projects through approved Plan(s) of Operations.*

Proposed Action Implications on Eureka County Goals, Objectives, and Policies: The Proposed Action would disturb three types of wildlife habitat; curl-leaf mountain mahogany, pinyon-juniper woodland, and sagebrush steppe. This would reduce habitat and forage area for various wildlife species, migratory birds and raptors. However, the Proposed Action would reclaim over 86 percent of the total disturbance associated with the Project, which includes approximately 395 acres of existing mine related disturbance from previous operators, which would be a benefit for wildlife habitat in the area. Impacts from the Proposed Action on wildlife, and their habitat from is anticipated to be long-term, localized, and minor.

Wild Horses

Wild Horses are not a specific topic in the Eureka County Master Plan but are considered under livestock grazing, water quality, soils, vegetation, and wildlife and wildlife habitat topics. Specific goals that may be relevant to this resource include: *to maintain or improve the soil, vegetation*

and watershed resources in a manner that perpetuates and sustains a diversity of uses while fully supporting the custom, culture, economic stability and viability of Eureka County and its individual citizens.

Specific objectives related to wild horses include: *manage wild horse and burro populations within HMAs at levels that preclude adverse impacts to soil, water and vegetation until monitoring studies and allotment evaluations demonstrate that population adjustments are warranted by changing resource conditions; develop and implement a management plan for wild horses, livestock and wildlife to minimize surface disturbance and erosion adversely affecting riparian areas; and provide for the development and maintenance of water conveyance systems (i.e. provide for livestock watering systems, irrigation diversions, and domestic or municipal uses).*

Proposed Action Implications on Eureka County Goals, Objectives, and Policies: Direct impacts of the Proposed Action to wild horses include loss of habitat, a reduction in forage availability, and possible mortality or injury from vehicle collisions. Changes to wild horse distribution and use patterns may occur. Project impacts are anticipated to be moderate and localized within the immediate Project area, but minor on the regional herd management area scale. The habitat is not highly valuable to wild horses due to pinyon and juniper cover, terrain and the existing disturbance from previous mining, and though wild horses move through the area, there is likely little reliance on the area for forage.

APPENDIX C
KEY OBSERVATION POINTS (KOPS)

KOP 1 NNW - Existing Conditions



KOP 1 NNW - Final Buildout



KOP 1 NNW – Post Reclamation



KOP 1 NNE - Existing Conditions



KOP 1 NNE – Final Buildout



KOP 1 NNE – Post Reclamation



KOP 2 NNW - Existing Conditions



KOP 2 NNW – Final Buildout



KOP 2 NNW – Post Reclamation



KOP 2 NNE - Existing Conditions



KOP 2 NNE – Final Buildout (No Change)



KOP 2 NNE – Post Reclamation (No Change)



KOP 3 NNW - Existing Conditions



KOP 3 NNW – Final Buildout



KOP 3 NNW – Post Reclamation (No Change)



KOP 3 NNE - Existing Conditions



KOP 3 NNE – Final Buildout



KOP 3 NNE – Post Reclamation



KOP 4 SW - Existing Conditions



KOP 4 SW – Final Buildout (No Change)



KOP 4 SW – Post Reclamation (No Change)



APPENDIX D
BLM FORM 8400-4 FOR EACH KEY OBSERVATION POINT

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date November 20, 2015
District Battle Mountain
Resource Area
Activity (program) Minerals

SECTION A. PROJECT INFORMATION

1. Project Name	Gold Bar EIS	4. Location	5. Location Sketch
2. Key Observation Point	KOP 1: Northeasterly Viewing Angle	Township 22N	
3. VRM Class	Class IV	Range 50E	Section 25

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

1. LAND/WATER		2. VEGETATION	3. STRUCTURES
FORM	Wide flat valley; Roberts Mts have a jagged & rugged form with weak triangular forms; bald flat road form	Small, globular shrubs; flat large block form farther in FM zone; large masses & irregular forms in background	Building with rectangular form; fence posts w/ thin vertical forms
LINE	No distinct lines in the FM zone; strong silhouette line of mtns against sky; strong curvilinear road	Subtle horizontal lines by variation in color of vegetation.	Building with short straight lines; fence posts with vertical shirt lines
COLOR	Light tan in the FM zone; rich brown and gray road	Grey & very pale green shrubs; dark green & olive forest. Ash green low chrome in distant background	Buildings are brown and pale colors with silver roofs; fence posts that are dark brown
TEXTURE	Clumped soil between shrubs; finely stippled road surface	Coarse dense shrubs; Uniform and finely stippled shrubs.	No discernible texture

SECTION C. PROPOSED ACTIVITY DESCRIPTION

1. LAND/WATER		2. VEGETATION	3. STRUCTURES
FORM	Very thin; nearly rectangular	None	None
LINE	None		
COLOR	Dark grey and brown		
TEXTURE	Coarse		

SECTION D. CONTRAST RATING SHORT TERM LONG TERM

1. DEGREE OF CONTRAST	FEATURES												2. Does project design meet visual resource management objectives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)	
	LAND/WATER BODY (1)			VEGETATION (2)			STRUCTURES (3)							
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None		
ELEMENTS	Form		X			X		X			X		Evaluator's Names George Dix	
	Line			X			X			X			Date Feb. 2, 2017	
	Color			X			X			X				
	Texture		X			X		X			X			

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date November 20, 2015
District Battle Mountain
Resource Area
Activity (program)

SECTION A. PROJECT INFORMATION

1. Project Name	4. Location	5. Location Sketch
Gold Bar EIS	Township 22N Range 50E Section 25	
2. Key Observation Point		
KOP 1: Northwesterly Viewing Angle		

3. VRM Class

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

1. LAND/WATER		2. VEGETATION	3. STRUCTURES
FORM	Wide, flat valley floor; weak concave and triangular forms of descending ridgelines; thin long road; irregular mine	Small globular shrubs; large, flat block form of more distant shrubs; large masses and irregular forms on mountains	No structures
LINE	Smooth rolling silhouette line of mtns and sky. Thin diagonal line from road	Subtle horizontal lines from color variation in shrub vegetation	No structures
COLOR	Brown soils between shrubs; white snow on high peaks; light tan road; light tan, grey & orange mine	Gray and very pale green shrubs; very dark green and olive on mountains ~ 25% grey East from KOP	No structures
TEXTURE	Coarse soils close to KOP	Coarse dense shrubs; uniform, finely stippled shrubs.	No structures

SECTION C. PROPOSED ACTIVITY DESCRIPTION

1. LAND/WATER		2. VEGETATION	3. STRUCTURES
FORM	Trapezoidal shape; somewhat rounded; very thin & low	Somewhat retaining trapezoidal shapes	None
LINE	Curving, nearly straight & horizontal; short diagonal lines; irregular silhouette	None	
COLOR	Grey/brown; dark brown	Green and tan (post-reclamation)	
TEXTURE	Coarse	Coarse	

SECTION D. CONTRAST RATING SHORT TERM LONG TERM

1. DEGREE OF CONTRAST	FEATURES												2. Does project design meet visual resource management objectives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)		
	LAND/WATER BODY (1)			VEGETATION (2)			STRUCTURES (3)								
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None			
ELEMENTS	Form	X			X						X				
	Line		X			X					X				
	Color	X				X					X				
	Texture		X			X					X				

Evaluator's Names

George Dix

Date

Feb 2, 2017

Stantec

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date November 20, 2015
District Battle Mountain
Resource Area
Activity (program)

SECTION A. PROJECT INFORMATION

1. Project Name <i>Bald Bald EIS</i>	4. Location Township <u>20N</u> Range <u>51E</u> Section <u>35</u>	5. Location Sketch
2. Key Observation Point <i>KOP 2: Northeasterly Viewing Angle</i>		
3. VRM Class <i>Class IV</i>		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

1. LAND/WATER		2. VEGETATION	3. STRUCTURES
FORM	Gently rolling hills; wide flat valley floor; large triangular to conical mountains; thin horizontal farm lines on valley floor	Bald spherical trees; small globular shrubs; sparse spiky grass; flat block stub masses; irregular form on mountains	Simple, short fence posts
LINE	Sharp prominent lines along crests of low rolling hills; sharp straight line in valley; strong and weak flowing silhouette lines	Sharp straight line where vegetation meets bare soils in valley.	Straight & vertical
COLOR	Dark grey and brown road surface; grey and white snow; light tan to off-white bare soil	Dark green; brown and dark grey; dark green to very dark grey; light tan	Dark brown
TEXTURE	Coarse uniform road surface	Uniform and finely stippled	No discernible texture

SECTION C. PROPOSED ACTIVITY DESCRIPTION

1. LAND/WATER		2. VEGETATION	3. STRUCTURES
FORM	None visible	None visible	None visible
LINE			
COLOR			
TEXTURE	↓	↓	↓

SECTION D. CONTRAST RATING SHORT TERM LONG TERM

1. DEGREE OF CONTRAST	FEATURES									2. Does project design meet visual resource management objectives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)		
	LAND/WATER BODY (1)			VEGETATION (2)			STRUCTURES (3)					
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
ELEMENTS	Form			✗			✗			✗		
	Line			✗			✗			✗		
	Color			✗			✗			✗		
	Texture			✗			✗			✗		

Evaluator's Names

George Dix
Stantec

Date

Feb. 2, 2017

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date November 20, 2015
District Battle Mountain
Resource Area
Activity (program) Minerals

SECTION A. PROJECT INFORMATION

1. Project Name <u>Gold Bar EIS</u>	4. Location Township <u>20 N</u> Range <u>51 E</u> Section <u>35</u>	5. Location Sketch
2. Key Observation Point <u>KOP 2: Northwesterly Viewing Angle</u>		
3. VRM Class <u>Class IV</u>		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

1. LAND/WATER		2. VEGETATION	3. STRUCTURES
FORM	Prominent; large and irregular; wide and flat; contrasting linear form; jagged and irregular forms; weak triangle	Bold spherical form; very small circular forms; irregular shaped patches; low sparse and spiky; large flat black form	Thin & vertical
LINE	Strong curvilinear; strong irregular silhouette line	Subtle horizontal lines	Straight lines; bold horizontal and vertical lines
COLOR	Light tan to nearly white; gray and pale brown	Dark green; very dark gray; light tan; pale green to gray; low chroma	Bright red; yellow
TEXTURE	Distinct finely stippled	Random and even; uniform and finely stippled	No texture

SECTION C. PROPOSED ACTIVITY DESCRIPTION

1. LAND/WATER		2. VEGETATION	3. STRUCTURES
FORM	None discernible	None discernible	None discernible
LINE			
COLOR			
TEXTURE			

SECTION D. CONTRAST RATING SHORT TERM LONG TERM

1. DEGREE OF CONTRAST	FEATURES									2. Does project design meet visual resource management objectives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)		
	LAND/WATER BODY (1)			VEGETATION (2)			STRUCTURES (3)					
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
ELEMENTS	Form			X			X			X		
	Line			X			X			X		
	Color			X			X			X		
	Texture			X			X			X		

Evaluator's Names

George Dix

Date

Feb 2, 2017

Stante c

Ref. 8-30

1/17/86

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date November 20, 2015
District Battle Mountain
Resource Area
Activity (program) Minerals

SECTION A. PROJECT INFORMATION

1. Project Name	Gold Bar EIS	4. Location	5. Location Sketch
2. Key Observation Point	KOP 3: Northeasterly Viewing Angle.	Township	21 N
3. VRM Class	Class IV	Range	50 E
		Section	3

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

1. LAND/WATER		2. VEGETATION	3. STRUCTURES
FORM	Flat & regular (valley); rolling and rounded (foothills); bold, rough and steep (peaks)	Small and round (shrubs); complex and irregular (shrubs); large strip shaped form; spherical (trees); irregular	No structures
LINE	Curving and somewhat smooth silhouette; Strong flowing silhouette; strong jagged silhouette	No discernible lines	No structures
COLOR	Orange-brown to brown	Pale green to blue-green; green and olive green; dark green to very dark gray; light tan; white snow	No structures
TEXTURE	No discernible textures	Coarse dense; uneven and random	No structures

SECTION C. PROPOSED ACTIVITY DESCRIPTION

1. LAND/WATER		2. VEGETATION	3. STRUCTURES
FORM	Thin & irregular; trapezoidal	None	None
LINE	Straight horizontal		
COLOR	Dark gray & brown; light brown		
TEXTURE	Indistinguishable	↓	↓

SECTION D. CONTRAST RATING SHORT TERM LONG TERM

1. DEGREE OF CONTRAST	FEATURES										2. Does project design meet visual resource management objectives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)		
	LAND/WATER BODY (1)			VEGETATION (2)			STRUCTURES (3)						
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate		Weak	None
ELEMENTS	Form	X			X			X				Evaluator's Names George Dix	Date Feb 2, 2017
Line		X			X			X					
Color			X			X			X				
Texture			X			X			X				

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date	November 20, 2015
District	Battle Mountain
Resource Area	
Activity (program)	Minerals

SECTION A. PROJECT INFORMATION

1. Project Name	Gold Bar EIS	4. Location	5. Location Sketch
2. Key Observation Point	KOP 3: Northwesternly Viewing Angle	Township	21 N
3. VRM Class	Class IV	Range	50 E
		Section	3

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

1. LAND/WATER		2. VEGETATION	3. STRUCTURES
FORM	Flat and regular (valley); rolling and round (hills); jagged and irregular; weak triangles	Small and round (shrubs); complex and irregular (shrub); large strip (shrubs); spherical (trees); irregular	No structures
LINE	Curving and smooth silhouette; strong irregular silhouette	No discernible line elements	No structures
COLOR	Orange-brown to brown	Pale green to blue-green; green and olive-green; low-chroma green and olive; light tan	No structures
TEXTURE	Fine (soils)	Coarse dense texture; uneven and random	No structures

SECTION C. PROPOSED ACTIVITY DESCRIPTION

1. LAND/WATER		2. VEGETATION	3. STRUCTURES
FORM	Thin and irregular	None	None
LINE	Irregular silhouette		
COLOR	Dark gray and brown		
TEXTURE	Indistinguishable		V

SECTION D. CONTRAST RATING SHORT TERM LONG TERM

1. DEGREE OF CONTRAST	FEATURES									2. Does project design meet visual resource management objectives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)	
	LAND/WATER BODY (1)			VEGETATION (2)			STRUCTURES (3)				
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	Strong	Moderate	Weak	None
ELEMENTS	Form		X			X			X		
	Line		X			X			X		
	Color		X			X			X		
	Texture		X			X			X		

Evaluator's Names

Date

George Dix

Feb 2, 2017

Stantec

Ref. 8-30

1/17/86

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date November 20, 2015
District Battle Mountain
Resource Area
Activity (program) Minerals

SECTION A. PROJECT INFORMATION

1. Project Name	4. Location	5. Location Sketch
Gold Bar EIS	Township 23N Range 50E Section 35	
2. Key Observation Point KOP 4		

3. VRM Class

Class IV

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

1. LAND/WATER		2. VEGETATION	3. STRUCTURES
FORM	Triangular peaks that are dominant and large. Block form flat area. Rock outcrops with irregular form	'Cone' shaped trees; strip form of willows & of sagebrush. Irregular forms from patches of grass	No structures
LINE	Zig-zag silhouette along top of peaks	Irregular & jagged line along top of willow strip & along top of sagebrush strip	No structures
COLOR	Light gray & light brown rock outcrops; gray road surface	Dark green conifers with black shadows; bright green aspens; brilliant green & pale green shrubs; gray-green shrubs; Green grasses	No structures
TEXTURE	Rough and uneven rocks; very finely stippled road surface	Coarse & uniform willows & sagebrush; Coarse and rough conifers	No structures

SECTION C. PROPOSED ACTIVITY DESCRIPTION

1. LAND/WATER		2. VEGETATION	3. STRUCTURES
FORM	None visible	None visible	None visible
LINE			
COLOR			
TEXTURE	↓	↓	↓

SECTION D. CONTRAST RATING SHORT TERM LONG TERM

1. DEGREE OF CONTRAST	FEATURES										2. Does project design meet visual resource management objectives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)	
	LAND/WATER BODY (1)			VEGETATION (2)			STRUCTURES (3)					
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	
ELEMENTS	Form			X			X			X		
	Line			X			X			X		
	Color			X			X			X		
	Texture			X			X			X		

Evaluator's Names

George Dix

Date

Feb 2, 2017

Stantec

Rec. 8-30

1/17/86

APPENDIX E
BLM SENSITIVE SPECIES LIST

Common Name	Scientific Name	Status	Preferred Habitat (include elevation and soil type for plants)
PLANTS			
Eastwood milkweed	<i>Asclepias eastwoodiana</i>	NS	Open areas on a wide variety of basic soils (usually pH 8 or higher), including calcareous clay knolls, sand, carbonate, or basaltic gravels, or shale outcrops, generally barren and lacking competition, frequently in small washes or other moisture-accumulating microsites, in the shadscale, sagebrush, and low pinyon-juniper zones. Elevation range is between 4,680 feet and 7,080 feet (NNHP, 2001).
Cima milkvetch	<i>Astragalus cimae</i> var. <i>cimae</i>	NS	Dry, open, relatively barren calcareous gravel slopes or clay hills at elevations of 5,100 to 6,420 feet. Known from northwestern Mineral County and central Nye County, and in California (NNHP, 2001).
Tonopah milkvetch	<i>Astragalus pseudodanthus</i>	NS	Deep loose sandy soils of stabilized and active dune margins, old beaches, valley floors, or drainages, with greasewood (<i>Sarcobatus vermiculatus</i>) and other salt desert shrub taxa. Dependent on sand dunes or deep sand in Nevada, 4,320-5,920 feet (NNHP, 2001; Barneby et al., 1989).
Toquima milkvetch	<i>Astragalus toquimanus</i>	NS	Dry, stiff, sandy to gravelly, generally somewhat basic or calcareous soils in single-leaf pinyon (<i>Pinus monophylla</i>), Utah juniper (<i>Juniperus osteosperma</i>), and/or Artemisa communities, mostly on flats or gentle slopes, frequently growing under or up through shrubs. Central Nye County. Elevation range 6,480 to 7,520 feet (NNHP, 2001).
Currant milkvetch	<i>Astragalus uncialis</i>	NS	Dry, open, sparsely vegetated, calcareous sandy-clay soils on flats and gentle slopes of hillsides and alluvial fans. Northeastern Nye County. Elevation range 4,800 to 6,050 feet (NNHP, 2001).
Elko rockcress	<i>Boechera falciflora</i>	NS	Dry, densely vegetated, relatively undisturbed, light-colored silty soils with a high cover of moss and other soil crust components on moderate to steep north-facing slopes in the sagebrush zone, dominated by moss, Wyoming big sagebrush (<i>Artemisia tridentata</i> var. <i>wyomingensis</i>), yellow rabbitbrush (<i>Chrysothamnus viscidiflorus</i> var. <i>puberulus</i>), and Sandberg bluegrass (<i>Poa secunda</i> var. <i>secunda</i>). Also reported but not confirmed from rock crevices. Elko and Lander counties. Elevation range 4,800 to 6,050 feet (NNHP, 2001). Lander County occurrence is a disjunct population in the Shoshone Mountains (Holmgren et al., 2005).
Monte Nevada paintbrush	<i>Castilleja salsuginosa</i>	NS	Damp, open, alkaline to saline clay soils of hummocks and drainages on travertine hot spring mounts with greasewood (<i>Sarcobatus vermiculatus</i>), rubber rabbitbrush (<i>Chrysothamnus nauseosus</i>), alkali sacaton (<i>Sporobolus airoides</i>), etc. Aquatic or wetland dependant. Eureka and White Pine counties. Elevation range 5,965 to 6,130 feet. (NNHP, 2001).
Tecopa birdbeak	<i>Cordylanthus tecopenensis</i>	NS	Open, moist to saturated, alkali-crusted clay soils of seeps, springs, outflow drainages, and meadows, with desert saltgrass (<i>Distichlis spicata</i>), baltic rush (<i>Juncus balticus</i>), <i>Eleocharis</i> , Ash Meadows lady's tresses (<i>Spiranthes infernalis</i>), spring-loving centaury (<i>Centaureum namophilum</i>), <i>Typha</i> , <i>Cirsium</i> , Ash Meadows ivesia (<i>Ivesia kingii</i> var. <i>eremica</i>), white flowered rabbitbrush (<i>Ericameria albida</i>), etc. Dependant on wetland margin areas in Nevada. In Nevada, known only from the Ash Meadows area and Fish Lake Valley. Elevation range 2,100 to 4,900 feet (NNHP, 2001).
Goodrich biscuitroot	<i>Cymopterus goodrichii</i>	NS	Moderate to steep scree and talus slopes of dark angular slate or limestone in the upper subalpine zone and lower alpine zone. Lander, Nye and Pershing counties. Elevation range 7,300 to 11,100 feet (NNHP, 2001). Toiyabe Range in Lander County and Humboldt Range in Pershing County (Cronquist et al., 1997).
Nevada willowherb	<i>Epilobium nevadense</i>	NS	Slopes with limestone outcrops or talus at 6,000 to 8,930 feet elevation. Associated with <i>Pinus monophylla</i> and <i>Pinus ponderosa</i> (NNHP, 2001). Clark, Esmeralda and Lincoln counties. Also in Utah.
Windloving buckwheat	<i>Eriogonum anemophilum</i>	NS	Generally high elevation dry, exposed, relatively barren ridges and knolls on shallow soils over bedrock from 4,750 to 9,840 feet (NNHP, 2001; Reveal, 2005). Volcanic greenstone, tuffaceous clayey or gravelly to rocky (often limestone) outcrops in saltbrush and sagebrush communities and in pinyon-juniper woodlands (Holmgren et al. 2012).
Beatley buckwheat	<i>Eriogonum beatleyae</i>	NS	Dry volcanic outcrops at elevations between 5,600 and 8,745 feet (NNHP, 2001). Granitic or volcanic slopes and ridges in sagebrush communities, and in pinyon-juniper, montane and alpine conifer woodlands (Holmgren et al., 2012) Note: Holmgren et al. (2012) treat <i>E. beatleyae</i> as a variety of <i>E. rosense</i> .
Tiehm buckwheat	<i>Eriogonum tiehmi</i>	FC; SE; NS	Dry, open, relatively barren, light-colored rocky clay soils derived from a formation of interbedded clays. Shales, tuffaceous sandstones and limestones, on all aspects with slopes up to about 50 percent, in pure stands or with a sparse cover of <i>Atriplex confertifolia</i> , <i>Pleuraphis jamesii</i> , <i>Sporobolus aerooides</i> , and a few other species. Endemic to a very small area of the Silver Peak Range. Elevation range 5,960 to 6,300 feet (NNHP, 2001).
Sand cholla	<i>Grusonia pulchella</i>	SP, NS	Sandy to rocky flats, often in sandy areas from 3,800 to 5,000 feet ; throughout most of Nevada (NNHP, 2001; Pinkava, 2003). Sandy to rocky flats or slopes, often at edges of dry washes and lakes (Holmgren et al., 2012)

Common Name	Scientific Name	Status	Preferred Habitat (include elevation and soil type for plants)
Lunar Crater buckwheat	<i>Johanneshowellia crateriorum</i>	NS	Local and usually common on sandy, pumice flats in saltbrush communities. Endemic, Lunar Crater area, Nye County. Elevation Range 5,580 to 6,000 feet. (Holmgren et al. 2012; Reveal, 2004).
Holmgren lupine	<i>Lupinus holmgrenanus</i>	NS	There is question of whether <i>Lupinus holmgrenanus</i> should be considered part of large leaf lupine (<i>Lupinus polyphyllus</i> var. <i>humicola</i>) (as in Cronquist et al., 1989), while the Jepson Manual (Hickman, 1993; Balwin, 2012) and Kartesz (1999) treatments maintain it as a distinct species. Cronquist et al. (1989) state the range of <i>L. holmgrenanus</i> is the north edge of the Mojave Desert near Silver Peak in Esmeralda County.
Low feverfew	<i>Parthenium ligulatum</i>	NS	Barren clay or sandy-clay slopes and flats in the pinyon-juniper community. Elevation Range 5,580 to 7,050 feet (Cronquist et al., 1994). Known from two counties in Colorado, six counties in Utah (Welsh et al. 1993) and Eureka County, Nevada. This species has been falsely reported from Wyoming (WYNHP, 1998)
Pahute Mesa beardtongue	<i>Penstemon pahutensis</i>	NS	"In loose soil and rock crevices among boulders in pinyon-juniper woodlands and sagebrush shrublands" (NNHP 2001). Esmeralda and Nye counties. Elevation range 5360 to 8240 feet (NNHP, 2001).
Lahontan beardtongue	<i>Penstemon palmeri</i> var. <i>macranthus</i>	NS	Along washes, roadsides and canyon floors, particularly on carbonate-containing substrates, usually where subsurface moisture is available throughout most of the summer. Unknown if restricted to carbonate substrates. Elevation range 3,430 to 4,550 feet. (Cronquist et al., 1984; NNHP, 2001).
Bashful beardtongue	<i>Penstemon pudicus</i>	NS	Crevices, soil pockets, and coarse rocky soils of felsic volcanic outcrops, boulder piles, steep protected slopes, and drainage bottoms, mostly on north and east aspects, in the subalpine sagebrush, mountain manhogany and upper pinyon juniper zones. Nevada Endemic, central Nye County. Elevation range 7,500 to 9,000 feet (NNHP, 2001).
Tiehm beardtongue	<i>Penstemon tiehmi</i>	NS	Neutral sandy-loam pockets on steep, southerly-facing volcanic talus and scree slopes. Narrow endemic, known only from one mountain peak, Shoshone Mountains, Lander County, Nevada. Elevation range 7,500 to 9600 feet (NNHP, 2001).
Clarke phacelia	<i>Phacelia filiae</i>	NS	Mostly barren outcrops and silty to clay, often gypsiferous soils derived from white to pinkish volcanic tuff in the creosote-bur sage, shadscale, mixed-shrub, and blackbrush zones, often associated with shadscale saltbush (<i>Atriplex confertifolia</i>). Nevada endemic, Clark, Nye and possibly Lincoln counties. Elevation range 3,40 to 5,820 feet (NNHP, 2001).
Williams combleaf	<i>Polyctenium williamsiae</i>	SE; NS	Relatively barren sandy to sandy-clay or mud margins and bottoms of non-alkaline seasonal lakes perched over volcanic bedrock in the sagebrush, pinyon-juniper, and mountain sagebrush zones, with Douglas' sedge (<i>Carex douglasii</i>), Mat muhy (<i>Muhlenbergia richardsonis</i>), tansleaf evening primrose (<i>Camissonia tanacetifolia</i>), povertyweed (<i>Iva axillaris</i>), tiny mousetail (<i>Myosurus minimus</i>), Newberry's cinquefoil (<i>Potentilla newberryi</i>), short woollyheads (<i>Psilocarphus brevisissimus</i>), <i>Downingia</i> sp., <i>Eleocharis</i> , Baltic rush (<i>Juncus balticus</i>), big sagebrush (<i>Artemisia tridentata</i>), <i>A. cana</i> , etc. Aquatic or wetland-dependent in Nevada. Elevation range reported is 5,670 to 8,930 feet (NNHP, 2001).
Blaine pincusion	<i>Sclerocactus blainei</i>	NS	Alkaline calcareous and volcanic gravelly-clay soils in open valley bottom areas in the shadscale and lower sagebrush zones with greasewood (<i>Sarcobatus vermiculatus</i>), James' galleta (<i>Pleuraphis jamesii</i>), shadscale saltbush (<i>Atriplex confertifolia</i>), big sagebrush (<i>Artemisia tridentata</i>), rubber rabbitbrush (<i>Ericameria nauseosa</i>), etc. Nye county, Nevada. Possibly Nevada endemic. Elevation range 5,100 to 5,300 feet (NNHP, 2001).
Tonopah pincusion	<i>Sclerocactus nyensis</i>	NS	Dry rocky soils and low outcrops of rhyolite, tuff, and possibly other rock types, on gentle slopes in open areas or under shrubs in the upper salt desert and lower sagebrush zones. Nevada endemic, Esmeralda and Nye counties. Elevation range 5,760 to 5800 feet (NNHP, 2001).
Railroad Valley globemallow	<i>Sphaeralcea caespitosa</i> var. <i>williamsiae</i>	NS	Known from at least six occurrences covering fairly extensive acreage in Nye County, Nevada. It occurs on federal, state, and private lands (NNHP, 2001).
Lone Mountain goldenhead	<i>Tonestus graniticus</i>	NS	Crevices of granitic cliffs and outcrops on protected exposures (north to east aspects, deep canyons, etc. in the pinyon-juniper zone. Esmeralda County. Elevation 7,800 feet (NNHP, 2001)
AMPHIBIANS			
Amargosa toad	<i>Bufo nelsoni</i>	NS	Endemic to Oasis Valley in Nye County, Nevada, specifically along a 10-mile stretch of the Amargosa River and nearby upland springs. The toads forage along the water's edge and upland areas during the night (AmphiaWeb, 2015).

Common Name	Scientific Name	Status	Preferred Habitat (include elevation and soil type for plants)
Columbia spotted frog	<i>Rana luteiventris</i>	FC, NS	Widely distributed throughout southwest Idaho, southeast Oregon, northeast and central Nevada, but most populations within this range appear to be small and isolated from each other (USFWS, 2012). Highly aquatic; rarely found far from permanent quiet water; usually occurs at the grassy/sedge margins of streams, lakes, ponds, springs, and marshes. May disperse into forest, grassland, and brushland during wet weather, and may traverse uplands to reach wintering sites. Uses stream-side small mammal burrows as shelter. Overwintering sites in the Great Basin include undercut stream banks and spring heads. Wintering sites in central Idaho included deep lakes. In general, they use the shallows of lentic habitats for breeding and egg deposition. These habitats are usually permanent, although naturally ephemeral pools are used successfully by some populations. Springs are often nearby. Floating and/or emergent vegetation is usually present. Percent sun exposure is typically high (AmphibiaWeb, 2015).
BIRDS			
Northern goshawk	<i>Accipiter gentilis</i> ¹	SS, NS	Nests in various forest types with a preference for taller, mature stands with significant canopy cover. Some pairs may remain near nests year-round. In Nevada, northern goshawks commonly nest in aspen "stringers" that border mountain streams and ephemeral drainages. Foraging habitat includes open sage-steppes to dense forests and riparian areas (Squires and Reynolds, 1997).
Western burrowing owl	<i>Athene cunicularia hypugaea</i> ¹	SP, NS	Uses a variety of habitats that are open, arid, and treeless with low vegetation. Most common where mammal burrows are available for nesting. Unlike breeding owls, wintering owls are not as dedicated to a single burrow or group of burrows. Will often breed near agricultural lands, golf courses, and roadsides, but will not tolerate highly disturbed areas.
Ferruginous hawk	<i>Buteo regalis</i> ¹	SP, NS	Inhabits open country including grasslands and shrublands, while avoiding forests, steep terrain, and high elevations. Most likely to be found in sagebrush scrub, but may also occur in salt desert scrub and sagebrush steppe. May also be associated with pinyon-juniper blocks. In Nevada, often nests in juniper edge habitat bordering open valleys. Ferruginous hawks prey heavily on ground squirrels. Because their principal prey (ground squirrels) enters aestivation by late July or early August, ferruginous hawks typically fledge young and leave the area by early August (Montana, 2012; GBBO, 2010).
Swainson's hawk	<i>Buteo swainsoni</i> ¹	SP, NS	Uses open grasslands and shrublands, and is well adapted to agricultural areas. Typically nests in scattered trees near open areas that are used for foraging (Bechard, 2010). Usually nests in junipers in the Great Basin.
Greater sage-grouse	<i>Centrocercus urophasianus</i> ¹	FC, GS, NS	Associated with sagebrush steppe habitats that include bunchgrass and forb components. During the breeding season sage-grouse congregate on historic open sites known as leks where males display and attempt to attract females. Nesting habitat is generally adjacent to lek sites and is comprised of denser brush canopy for concealment of nests, while brood-rearing and summer habitat encompasses sagebrush and meadow interfaces or other habitats, which supply a diversity of forbs and insects consumed by growing chicks. The majority of the year sage-grouse feed on sagebrush (Schroeder et al., 1999; GBBO, 2010). Will move substantial distances to use seasonally appropriate microhabitats.
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	SP, NS	Nests on the ground on broad open beaches or salt or dry mud flats, where vegetation is sparse or absent (Page, 2009). In Nevada, they generally require hypersaline playas with minimum vegetation (GBBO, 2010).
Peregrine falcon	<i>Falco peregrinus</i> ¹	SE, NS	May be found in a variety of habitat types. Known nest sites in Nevada have been located on cliff ledges or high buildings. Nests in Nevada generally near lakes, wetlands, or river systems. These birds of prey are not commonly found in Nevada. They feed primarily on medium sized birds, but are known to sometimes forage on small mammals, lizards, fish, and insects (White et al., 2002; GBBO 2010).
Pinyon jay	<i>Gymnorhinus cyanocephalus</i> ¹	SP, NS	Nests and forages in pinyon-juniper woodland and may forage in other habitats such as sagebrush shrublands. Strongly associated with occurrence of pinyon pine. Pinyon jays are highly social, cooperative-breeding, seed-caching birds. Pinyon jays inhabit higher elevations of the Great Basin, commonly within pinyon-juniper woodlands with diverse age class distribution. They are the earliest of the passerines to breed, synchronously nesting in winter, depending on seed caches from the fall crop of pine seeds (Balda, 2002).
Bald eagle	<i>Haliaeetus leucocephalus</i> ¹	SE, NS	Usually nests in forests or tall trees near large water bodies. The bald eagle inhabits areas near water and feeds on fish and waterfowl, but also inhabits areas where other food such as rabbits and road kill is available (NatureServe, 2014). Bald eagle nests are most commonly built in trees. During winter months, eastern Nevada bald eagles roost in trees at ranches or on sagebrush in the valley bottoms (GBBO, 2010).

Common Name	Scientific Name	Status	Preferred Habitat (include elevation and soil type for plants)
Black rosy-finches	<i>Leucosticte atrata</i> ¹	SP, NS	Barren, rocky or grassy areas and cliffs in alpine tundra atop high mountains. Black rosy-finches are found in alpine settings (Alpine-scree ecotone in high elevation meadow, [WAPT, 2012]), breeding/nesting in cliffs overlooking glaciers and snowfields (Baichich and Harrison, 2005). Within Nevada they have been found nesting in the Ruby, Snake and Santa Rosa Mountain Ranges (Floyd et al., 2007). They are more commonly seen in the winter, when they may be found in open fields and cultivated lands in relatively large flocks feeding on seeds and insects. During the winter rosy-finches are known to roost in mine shafts, caves, barns and old cliff swallow nests (Johnson, 2002).
Lewis' woodpecker	<i>Melanerpes lewis</i>	SP, NS	Nests in open forest and woodland, often logged or burned, including oak, coniferous forest, riparian woodland, orchards, and pinyon-juniper. Primary habitat consists of burned coniferous woodlands and open riparian woodlands with a relatively intact grass or shrub understory. Lewis's woodpecker favors open forests, ranging in altitude from low-elevation riparian areas to higher-elevation burns and pine forests. Like all other woodpeckers, it requires snags (standing, dead or partly dead trees) for nesting, although it is not anatomically specialized for excavating in wood and the trees it selects for nesting are generally well decayed (Vierling et al., 2013). Northeastern Nevada Breeding Bird Atlas records for the species are concentrated in the Ruby, East Humboldt and Jarbridge mountain ranges (Floyd et al., 2007).
Sage thrasher	<i>Oreoscoptes montanus</i> ¹	SS, NS	Considered a sagebrush obligate and is commonly found in habitats of intact, fairly dense stands of sagebrush. Sage thrashers may also occur in greasewood or bitterbrush (Floyd et al., 2007). Sage thrashers situate their nests within dense brush or on the ground. They primarily feed on insects but occasionally eat berries (Reynolds et al., 1999).
Brewer's sparrow	<i>Spizella breweri</i> ¹	SS, NS	Strongly associated with sagebrush habitat including sagebrush scrub and sagebrush steppe. Also commonly found in salt desert scrub. May occur in most habitat types in Nevada. Brewer's sparrows nest in brush communities with low shrubs and grasses, and primarily feed on insects and seeds (Floyd, et al., 2007).
FISH			
Railroad Valley springfish	<i>Crenichthys nevadae</i>	FT, SE	Thermal isolated springs and associated outflows. Their historic range was isolated to six thermal springs in Railroad Valley. They have since been introduced outside of this range into private ponds at Sodaville, Chimney Spring, and Warm Spring. Today, the species is presumed to only exist at six of these sites (USFWS, 2014)
Hot Creek Valley tui chub	<i>Gila bicolor</i> ssp. 5	NS	Tui chub species is widely distributed throughout the Great Basin Region, in much of the area of the historical Lake Lahontan and other pluvial lakes. The disappearance of these lakes isolated populations and now 13 subspecies have been recognized (Lovich).
Railroad Valley tui chub	<i>Gila bicolor</i> ssp. 7	NS	Tui chub species is widely distributed throughout the Great Basin Region, in much of the area of the historical Lake Lahontan and other pluvial lakes. The disappearance of these lakes isolated populations and now 13 subspecies have been recognized (Lovich).
Fish Lake Valley tui chub	<i>Gila bicolor</i> ssp. 4	NS	Tui chub species is widely distributed throughout the Great Basin Region, in much of the area of the historical Lake Lahontan and other pluvial lakes. The disappearance of these lakes isolated populations and now 13 subspecies have been recognized (Lovich).
Monitor Valley speckled dace	<i>Rhinichthys osculus</i> spp. 5	NS	Well oxygenated water with abundant cover of woody debris or overhanging banks along with moving water or wave action is essential for continued persistence. Prefers shallow riffle and channelized streams with some flow (WAPT, 2012). Only found in Monitor Valley.

Common Name	Scientific Name	Status	Preferred Habitat (include elevation and soil type for plants)
MAMMALS			
Pallid bat	<i>Antrozous pallidus</i> ¹	SP, NS	Arid deserts and grasslands, often near rocky outcrops and water. Less abundant in evergreen and mixed conifer woodland. Usually roosts in rock crevice or building, less often in cave, tree hollow, mine, etc. Prefer narrow crevices in caves as hibernation sites. Their primary food sources are arthropods such as crickets, grasshoppers, beetles, scorpions, and spiders. This species has been found between 1,380 to 8,465 feet (Bradley et al., 2006).
Pygmy rabbit	<i>Brachylagus idahoensis</i> ¹	GS, NS	Generally use burrows dug in the taller and denser big sagebrush in an area. May be found in broad valley floors, drainage bottoms, alluvial fans, and other areas with friable soils. May also occur in areas of large dense rabbitbrush and greasewood. Understory can vary from none to dense grasses and forbs. pygmy rabbit burrows are typically found in relatively deep, loose soils of wind- or water-born origin suitable for burrowing (USFWS, 2012; Utah DWR, 2003). Pygmy rabbits may occur in areas of shallower or more compact soils with sufficient shrub cover because abandoned burrows of other species may be utilized (USFWS, 2012).
Townsend's big-eared bat	<i>Corynorhinus townsendii</i> ¹	SS, NS	Maternity and hibernation colonies typically are in caves and mine tunnels. Prefers relatively cold places for hibernation, often near cave or mine entrances and in well ventilated areas. Uses caves, buildings, and tree cavities for night roosts. Throughout much of the known range, commonly occurs in mesic habitats characterized by coniferous and deciduous forests, but occupies a broad range of habitats. Habitats in the vicinity of roosts include pine forests, pinyon-juniper woodland, and cottonwood bottomland. The Townsend's big-eared bat is a moth specialist, the majority of its diet composed of Lepidopterans (BCI, 2015; Bradley et al., 2006).
Big brown bat	<i>Eptesicus fuscus</i>	NS	Various wooded and semi-open habitats, including cities. Much more abundant in regions dominated by deciduous forest than in coniferous forest areas. This species occurs in a variety of habitats, including pinyon-juniper, sagebrush, and agriculture (BCI, 2015; Bradley et al., 2006). Summer roosts generally are in buildings; also hollow trees, rock crevices, tunnels, and cliff swallow nests; prefers sites that do not get hot. Typically roosts in twilight part of cave. Maternity colonies form in attics, barns and occasionally tree cavities. Caves, mines, and especially buildings and man-made structures are used for hibernation. The big brown bat is considered a generalist in their foraging behavior and habitat selections, showing little preference for feeding over water, land, forests, or clearings (BCI, 2015). Their primary diet includes beetles and they usually forage within a few kilometers of their roost. This bat can be locally common in some urbanized environments (Bradley et al., 2006).
Spotted bat	<i>Euderma maculatum</i>	ST, NS	Found in various habitats from desert to montane coniferous stands, including open ponderosa pine, pinyon-juniper woodland, canyon bottoms, open pasture, and hayfields. Roosts in caves and in cracks and crevices in cliffs and canyons. Winter habits poorly known. Distribution is linked to availability of cliff roosting habitat (Bradley et al., 2006). Their primary diet consists of moths, with foraging occurring in canyons, in the open, or over riparian vegetation.
Western red bat	<i>Lasiurus blossevillii</i>	SS	Restricted to riparian habitats along the western and southern edges of Nevada. Found in wooded habitats, including mesquite bosque and cottonwood/willow riparian area (NDOW, 2015).
Silver-haired bat	<i>Lasionycteris noctivagans</i>	NS	Prefers forested (frequently coniferous) areas adjacent to lakes, ponds, and streams. During migration, sometimes occurs in xeric areas. Summer roosts and nursery sites are in tree foliage, cavities, or under loose bark, sometimes in buildings. Silver-haired bats typically roost in trees along forest borders (BCI, 2015). This species primarily feeds on small, soft-bodied insects (BCI, 2015).
Hoary bat	<i>Lasiurus cinereus</i>	NS	Prefers deciduous and coniferous forests and woodlands. Roosts usually in tree foliage 3-5 meters above ground, with dense foliage above and open flying room below, often at the edge of a clearing and commonly in hedgerow trees. Sometimes roosts in rock crevices, rarely uses caves in most of range. Hibernating individuals have been found on tree trunks, in a tree cavity, in a squirrel's nest, and in a clump of Spanish-moss. Solitary females with young roost among tree foliage. Primary food sources include beetles, moths, grasshoppers, dragonflies, and wasps (Bradley, 2006).
Dark kangaroo mouse	<i>Microdipodops megacephalus</i>	SP, NS	Inhabits stabilized sand dunes and other sandy soils in valley bottoms and alluvial fans dominated by big sagebrush (<i>Artemisia tridentata</i>), rabbitbrush (<i>Chrysothamnus</i> spp.), and horsebrush (<i>Tetradymia</i> spp.) (WAPT, 2012). The species also occurs on fine gravelly soils (O'Farrell and Blaustein, 1974), or sandy soils with varying amounts of gravel (Hall, 1995; WAPT, 2012). This species typically occurs in sandy habitats below the elevation where pinyon-juniper occurs and above where greasewood and saltbush predominate (WAPT, 2012). Underground when inactive.

Common Name	Scientific Name	Status	Preferred Habitat (include elevation and soil type for plants)
Pale kangaroo mouse	<i>Microdipodops pallidus</i>	SP, NS	Habitat is nearly restricted to fine sands in alkali sink and desert scrub dominated by <i>Atriplex confertifolia</i> (shadscale) or <i>Artemisia tridentata</i> (big sagebrush). This mouse often burrows in areas of soft, windblown sand piled at the bases of shrubs, generally occurring within the west-central portion of the state (Hafner et al., 2008). Restricted to fine, loose, wind-blown sand (Hall, 1995) and sandy soils with little or no gravel overlay (WAPT, 2012).
California myotis	<i>Myotis californicus</i>	NS	Western lowlands; sea coast to desert, oak-juniper, canyons, riparian woodlands, desert scrub, and grasslands. Often uses man-made structures for night roosts. Uses crevices of various kinds, including those in buildings, for summer day roosts. May also roost on small desert shrubs or on the ground. Hibernates in caves, mines, tunnels, or buildings. May form small maternity colonies in rock crevices, under bark, or under eaves of buildings. These bats feed on moths, flies, and beetles, generally foraging in the open, along margins of tree clumps, and over water (Bradley et al., 2006; NatureServe, 2014).
Western small-footed myotis	<i>Myotis ciliolabrum</i> ¹	NS	This species of bat occurs west of the Rockies in varied habitats, most common in pinyon-juniper communities (Bogen, Valdez and Navo, 1998). Generally inhabits desert, badland, and semiarid habitats; more mesic habitats in southern part of range. Roosts in summer in rock crevices, caves, tunnels, under boulders, beneath loose bark, or in buildings. Hibernates in caves and mines. Maternity colonies often are in abandoned houses, barns, or similar structures.
Long-eared myotis	<i>Myotis evotis</i>	NS	This species is primarily found at higher elevations and is associated with coniferous forest (Bradley et al., 2006). In Northern Nevada, this species is common in pinyon-juniper communities and above, but has also been found in sagebrush and desert scrub habitats (Bradley et al., 2006). Roosting sites include beneath bark or within cavities, crevices in cliffs, hollow trees, and buildings. Foraging occurs along rivers and streams, over ponds, and within forests (Bradley et al., 2006).
Little brown myotis	<i>Myotis lucifugus</i>	NS	This species is found primarily at higher elevations and is associated with coniferous forests (Bradley et al., 2006). The species has adapted to using human-made structures for resting and maternity sites; also uses caves and hollow trees. Foraging habitat requirements are generalized; usually forages in woodlands near water. In winter, a relatively constant temperature of about 40 degrees Fahrenheit and 80% relative humidity is required; uses caves, tunnels, abandoned mines, and similar sites. Maternity colonies commonly are in warm sites in buildings and other structures; also infrequently in hollow trees. Narrow microclimate is suitable for raising young, and availability of suitable maternity sites may limit abundance and distribution. Foraging occurs in open areas among vegetation, over water, cliff faces, meadows, farmland, and along water margins (BCI, 2015; WAPT, 2012).
Fringed myotis	<i>Myotis thysanodes</i>	SP, NS	Primarily at middle elevations of 3900 to 7000 feet in desert, grassland, and woodland habitats (Bradley, 2006). Roosts in caves, mines, rock crevices, buildings, and other protected sites. Nursery colonies occur in caves, mines, and sometimes buildings.
Long-legged myotis	<i>Myotis volans</i> ¹	NS	Primarily in montane coniferous forests, in the south most often at 6500 to 9800 feet (Bradley, 2006); also riparian and desert habitats. May change habitats seasonally. Uses caves and mines as hibernacula, but winter habits are poorly known. Roosts in abandoned buildings, rock crevices, under bark, etc. In summer, apparently does not use caves as daytime roost site. In some areas hollow trees are the most common nursery sites, but buildings and rock crevices are also used.
Fish Spring pocket gopher	<i>Thomomys bottae abstrusus</i>	NS	Endemic to Nevada. Known only from northern Fish Spring Valley, Nye County (Hall 1946; 1995).
San Antonio pocket gopher	<i>Thomomys bottae curatus</i>	NS	Endemic to Nevada. Known only from San Antonio area, Nye County (Hall 1946; 1995).
Pika	<i>Ochotona princeps</i>	SP, NS	Restricted to rocky talus slopes, primarily the talus-meadow interface. Often above treeline up to limit of vegetation. Also found at lower elevations in rocky areas within forests or near lakes. Occasionally on mine tailings, or piles of lumber or scrap metal. Does not dig burrows but may enlarge den or nest site under rock. Elevations between 5,994 to 12,752 feet (WAPT, 2012). A key characteristic of the American pika is its temperature sensitivity; death can occur after brief exposures to ambient temperatures greater than 77.9 °F (USFWS, 2010). Therefore, the range of the species progressively increases with elevation in the southern extents of its distribution. In Canada, populations occur from sea level to 9,840 feet, but in New Mexico, Nevada, and southern California, populations rarely exist below 8,202 feet.
Bighorn sheep	<i>Ovis canadensis</i>	GS, NS	Occur in mesic to xeric, alpine to desert grasslands or shrub-steppe in mountains, foothills, or river canyons. Many of these grasslands are fire-maintained. Suitable escape terrain (cliffs, talus slopes, etc.) is an important feature of the habitat. Require access to surface water in the desert (Shackleton, 1985).

Common Name	Scientific Name	Status	Preferred Habitat (include elevation and soil type for plants)
Western pipistrelle (Canyon bat)	<i>Parastrellus</i> (Formerly <i>Pipistrellus</i>) <i>hesperus</i>	NS	Now classified as <i>Parastrellus hesperus</i> (canyon bat), this species is common to deserts, woodlands, and shrublands. These bats roost among boulders, or in cracks and crevices of rock faces (BCI, 2015). Day and night roosts include rock crevices, under rocks, burrows and sometimes buildings or mines. May hibernate in cave, mine, or rock crevice. Typically visits water and drinks immediately after emergence each evening. Young are born in rock crevices or in buildings.
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>	SP, NS	Roosts primarily in caves in the southwestern U.S. May use rock crevice, bridge, sign, or cliff swallow nest as roost during migration. Generally roosts high (at least 10 feet) above ground to allow free fall required to attain flight. Large maternity colonies inhabit buildings and caves; also uses culverts and bridges. The diet is dominated by moths, but includes other insects as well (BCI, 2015; Bradley et al., 2006). Foraging occurs in the open (Bradley et al., 2006). Considered migratory in northern Nevada (Bradley et al., 2006).
INSECTS			
Crescent Dunes aegialian scarab	<i>Aegialia crrescenta</i>	NS	Dependent on dune or deep sand habitats. This species is only known from the sand dunes north of Tonopah, Nevada (NatureServe, 2014). Sand dunes are the only habitat known for this species. Sand dunes provide an easily penetrable substrate for access to levels of increased moisture and protection from temperature extremes (NatureServe, 2014: NNHP, 2015).
Aegialian scarab beetle	<i>Aegialia knighti</i>	NS	Resides in low, red sand hills and sand blow-outs in an area that extends South of Mormon Mesa Ridge and North and east of the Meadow Valley Wash, Weiser Wash, Muddy River drainage system from the Longdale, Overton exchange on Interstate 90 southward, Nevada. Mojave desert vegetation (NatureServe, 2014).
Crescent Dunes aphodius scarab	<i>Aphodius sp. 2</i>	NS	Endemic to Crescent Dunes, Nye County, Nevada (BLM, 2010).
Big Smoky wood nymph	<i>Cercyonis oetus alkalorum</i>	NS	Found locally in Big Smoky Valley in Lander County, between Northumberland Mine Road and Moore's Road. The host plant for the larvae is believed to be a grass (Austin et al., 2001).
White River wood nymph	<i>Cercyonis pegala pluvialis</i>	NS	Found along the White River in White River Valley in southern White Pine and northern Nye County, and in Lake Valley in Lincoln County. Occurs on local colonies in wet meadows and near seeps. The host plant for larvae is believed to be a grass or a sedge (Austin et al., 2001).
White Mountains skipper	<i>Hesperia miramae longaevicola</i>	NS	High elevations, above 13,100 feet, White Mountains. Found only in the White Mountains mostly in Mono County, California, but extending to Boundary Peak, Esmeralda County, Nevada (NatureServe, 2015).
Railroad Valley skipper	<i>Hesperia uncas fulvipalla</i>	NS	Found only in Railroad Valley, Nye County, Nevada (NatureServe, 2015). Habitat includes alkaline meadows and saltgrass flats on the floor of Railroad Valley (Austin et al., 2001; WildEarth Guardians, 2010).
White River Valley skipper	<i>Hesperia uncas grandiosa</i>	NS	Restricted to White River Valley, from Sunnyside north to the type locality, and possible Big Smokey Valley, White Pine County, Nevada (NatureServe, 2015). Habitat includes alkaline meadows and saltgrass flats in the White River Valley, also documented using its apparent hostplant, <i>Juncus mexicanus</i> in Big Smoky Valley (WildEarth Guardians, 2010).
Great Basin small blue	<i>Philotiella speciosa septentrionalis</i>	NS	Deserts, edges of dry desert lakes, stream edges in foothills, associated with buckwheat species. The Great Basin small blue is a type locality from Fort Churchill Road, approximately 12.3 road miles south of U.S. Highway 50 in Lyon County, Nevada (Warren et al., 2012). The type locality elevation is approximately 4,400 feet (Warren et al., 2012). The Great Basin small blue is subspecies of the small blue (<i>Philotiella speciosa</i>). Habitat for the small blue is desert flats and dry washes (Opler and Wright, 1999). Adults are sedentary and stay close to their larval food plant (Brock and Kaufman, 2003). According to Opler and Wright (1999), the larval food plant of the small blue are <i>Oxytheca</i> spp. and kidney-leaf buckwheat (<i>Eriogonum reniforme</i>). The food plant associated with the type locality holotype is round-leaf puncturebract (<i>Oxytheca perfoliata</i>), which is a species of plant in the buckwheat family. Within Nevada, round-leaf puncturebract is widespread along the entire western and southwestern portions of the state, and is associated with sandy or gravelly soils (Kartesz, 1987). Kartesz (1987) indicates that the species has made its way into western Nevada by following the Lahontan Trough. Kidney-leaf buckwheat is known to occur throughout the Mojave Desert area in southern and southwestern Nevada, and extend north up the Lahontan Trough to Brady's Hot Springs in Churchill County (Kartesz, 1987). According to Kartesz (1987), within its range the kidney-leaf buckwheat is found along dry roadsides, gravelly and sandy hillsides, and gravelly washes.
Crescent Dunes serican scarab	<i>Sericia ammomenisco</i>	NS	Endemic to the Crescent Dunes (Hardy and Andrews, 2010; WildEarth Guardians, 2010).

Common Name	Scientific Name	Status	Preferred Habitat (include elevation and soil type for plants)
Sand Mountain serican scarab	<i>Serica psammobunus</i>	NS	Endemic to Churchill County, Nevada (NatureServe, 2015). Found from Sand Mountain and Blow Sand Mountain, Churchill County (Hardy and Andrews, 2010; WildEarth Guardians, 2010).
MOLLUSCS			
Southern Duckwater pyrg	<i>Pyrgulopsis anatina</i>	NS	Found in freshwater in Hot Creek and Railroad Valleys, Nye County, Nevada (NatureServe, 2015). Have adapted to hot springs.
Large-gland Carico pyrg	<i>Pyrgulopsis basiglans</i>	NS	Have been located in Lander County in the Middle Humboldt Watershed (NatureServe, 2015), but locally endemic to Carico Lake Basin (Hershler, 1998)
Carinate Duckwater pyrg	<i>Pyrgulopsis carinata</i>	NS	Endemic to one spring in Duckwater Valley, Nye County, Nevada. Restoration of Little Warm Spring may have contributed to habitat conditions that increased taxon's abundance (NatureServe, 2015).
Dixie Valley pyrg	<i>Pyrgulopsis dixensis</i>	NS	Endemic to springs near Hot Springs, Dixie Valley, Pershing County, NV. Pyrgulopsis are aquatic obligate snails, which encompass a diverse group with some 80 species in the Great Basin alone, many of which are locally endemic. Their presence in springs is a sign of permanent water sources, many of which have persisted for thousands of years, having become isolated as Pleistocene lakes receded. The Dixie Valley pyrg resides in thermal aquatic habitat associated with spring systems in Dixie Valley, Nevada (Hershler and Sada, 2002).
Oasis Valley pyrg	<i>Pyrgulopsis micrococcus</i>	NS	Known to exist in the Amargosa River drainage and in the Death, Panamint, and Saline Valleys in Nevada and California. Records also indicate that this species might be found in the San Bernardino Mountains in California (NatureServe, 2015).
Wongs pyrg	<i>Pyrgulopsis wongi</i>	NS	Found in springs in CA - Mono County; NV - Douglas, Esmeralda, and Mineral County. Thermal aquatic habitat below spring systems in Owens Valley and Deep Springs Valley, California, and Fish Lake Valley and Hunton Valley, Nevada (Hershler, 1994).

*Habitat Use: List type of use (i.e., year round, breeding, migration, foraging, etc.) and dates species would most likely be present for that activity. Breeding activities include dates of arrival through post-fledging dependency for birds. Denote probable nesting/parturition dates in parenthesis for all animals. For plants, list dates of emergence through senescence with optimal flowering times in parenthesis.

Last Updated: 1December2015

Status Codes

FE = Federally listed endangered

FT = Federally listed threatened

FC = Federally listed candidate

SE = State listed endangered

ST = State listed threatened

SP = State protected

SS = State sensitive

GS = Game species

NS = Nevada BLM sensitive species

1: Species identified to occur near or within the project area during agency consultation

APPENDIX F
GREATER SAGE-GROUSE MITIGATION PLAN FOR THE
GOLD BAR MINE PROJECT

**GREATER SAGE-GROUSE MITIGATION PLAN
GOLD BAR MINE PROJECT
EUREKA COUNTY, NEVADA**

McEwen Mining Inc.
2215 5th Street
Elko, Nevada 89801

January 27, 2017

Table of Contents

1.0	INTRODUCTION	1
1.1	Goals	1
1.2	Project Description	1
1.3	Habitat Description	3
1.4	Mitigation Hierarchy	4
1.4.1	Avoidance Measures.....	4
1.4.2	Minimization Measures.....	4
1.4.3	Rectification Measures	6
1.4.4	Reduction / Elimination Measures.....	7
1.5	Regulatory Framework.....	7
2.0	IMPACTS MITIGATION	8
2.1	Impacts Being Mitigated	8
2.2	Mitigation Approach.....	9
2.2.1	Pre-Treatment Implementation Requirements.....	10
3.0	STANDARDS OF MITIGATION	11
3.1	Siting	11
3.2	Duration	11
3.3	Additionality	11
3.4	Effectiveness.....	12
3.4.1	Effectiveness Monitoring.....	12
3.5	Durability	13
3.5.1	Maintenance	13
3.5.2	Financial Assurance	14
3.6	Metrics	14
3.7	Summary	14
4.0	REFERENCES.....	15

TABLES

Table 1	Vegetation Community Type, Existing Disturbance, and Road Acreage within the Mine Plan Boundary	3
Table 2	Disturbed Greater Sage-grouse Habitat Types and Seasonal Habitat.....	8
Table 3	Acres Mitigated	9

FIGURES

Figure 1	Project Location
Figure 2	Direct Impacts Possible Mitigation Areas

ATTACHMENTS

Attachment A ARMPA Required Design Features and Management Decisions

ACRONYMS

AMSL	Above Mean Sea Level
ARMPA	Approved Resource Management Plan Amendment
BLM	Bureau of Land Management
DEIS	Draft Environmental Impact Statement
EPM	Environmental Protection Measure
FEIS	Final Environmental Impact Statement
GHMA	General Habitat Management Area
kV	Kilovolt
LUPA/FEIS	Nevada and Northeastern California Greater Sage-Grouse Proposed Land Use Plan Amendment and Final Environmental Impact Statement
MMI	McEwen Mining Inc.
mph	Miles Per Hour
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act
OHMA	Other Habitat Management Area
PHMA	Priority Habitat Management Area
PMU	Population Management Unit
Plan	Plan of Operations
Project	Proposed Action and Alternatives
ROD	Record of Decision
RDF	Required Design Feature
STM	State and Transition Model

1.0 INTRODUCTION

McEwen Mining Inc. (MMI) is proposing to construct and operate the Gold Bar Mine in Eureka County, Nevada at the southern end of the Roberts Mountain (**Figure 1**). The Gold Bar Project Draft Environmental Impact Statement (DEIS) analyzed the impacts of the Proposed Action and Alternatives (Project) to greater sage-grouse (*Centrocercus urophasianus*). This plan follows guidance set forth in the Bureau of Land Management's (BLM) *Mitigation Handbook H-1794-1* (BLM, 2016b). The mitigation hierarchy described in the policy instructs proposed projects to avoid, minimize, rectify, reduce/eliminate, and compensate for potential impacts to resources. Several aspects of the Project were designed and environmental protection measures (EPMs) were developed to avoid, minimize, rectify, and reduce/eliminate potential impacts to greater sage-grouse. After these measures were applied, the analysis determined the need for compensatory mitigation. MMI is proposing this proponent-driven mitigation plan to meet the compensatory mitigation requirements for the Project/Proposed Action and any selected Alternative(s).

1.1 Goals

The Project's DEIS determined that there would be impacts to greater sage-grouse from the implementation of the Project. Impacts are discussed in further detail in **Section 2.0**. MMI has prepared this mitigation plan with the following goals:

- To off-set the impacts to greater sage-grouse and their habitat from the Project; and
- Achieve a net conservation gain for greater sage-grouse.

1.2 Project Description

The Project/Proposed Action consists of an open pit gold mine, a water pipeline, and access roads and includes the construction and operation of the following features:

- Open pits;
- Waste rock disposal areas;
- Crushing, screening, and agglomeration facilities;
- Heap leach pad, associated process solution pond, and an event pond;
- An adsorption, desorption, and recovery plant including barren and pregnant solution tanks;
- Ancillary and other facilities including an explosives storage area, prill silos, liquid natural gas cryostorage, or compressed natural gas generators and switch station, truck shop and wash bay, ready line, landfill, laydown areas, water and power infrastructure, buildings, yards, parking, storage, growth media stockpiles, production water wells and associated

water supply pipeline, groundwater monitoring wells, communication facilities, potable water and fire water facilities, septic systems, and fencing; and

- Mine access roads (Three Bars Road, Atlas Haul Road, North Roberts Creek Road [NVN-052399], Bypass Road [NVN-91566], and Roberts Creek Road). (Note: These roads are existing, and only North Roberts Creek Road would have any improvements)

Construction and operation of the proposed mining facilities would result in approximately 1,129 acres of surface disturbance, which includes areas of existing disturbance and areas of proposed new disturbance. Approximately 25 acres of existing non-MMI disturbance would be reclaimed as part of the Project, which is classified as disturbance but would not be directly disturbed by Project operations. Total Project disturbance associated with the proposed mine facilities, including the 25 acres of existing non-MMI disturbance to be reclaimed and exploration disturbance authorized under previous Notices of Intent would be 1,154 acres. The Project is anticipated to have a seven-year mine life (i.e., five years of active mining and heap leaching and two years of residual heap leaching). Traffic under the Project/Proposed Action would be subject to seasonal timing restrictions from 6:00 AM to 10:00 AM and 6:00 PM to 4:30 AM from March 1 to May 15 to reduce impacts to nearby greater sage-grouse leks.

A 25 kilovolt (kV) power distribution line was considered as an alternative means to supply power to the Project, as opposed to the on-site natural gas generators proposed in the Plan of Operations (Plan). The proposed distribution line would consist of the construction and operation of approximately 24.5 miles of new 25 kV overhead distribution line and the use of five miles of existing distribution line to supply the needed power for Project operations. The power would be supplied by Mt. Wheeler Power, Inc. to whom the necessary BLM right-of-way would be granted. The new overhead distribution line would extend from the existing Machacek Substation located on BLM-managed lands west, then north adjacent to the existing Falcon-Gonder 345 kV transmission line to the existing Atlas 25 kV overhead distribution line. At this intersection, the proposed new 25 kV overhead distribution line would tap the existing Atlas 25 kV overhead line. From there, the existing line would be utilized for approximately 4.75 miles west to a tap point on Roberts Creek Road. At this location, a new segment of 25 kV overhead distribution line would extend northwest along North Roberts Creek Road approximately 7.5 miles to the mine site.

An alternative to the Plan was considered to use Three Bars Road and Atlas Haul Road as the only means of access for both heavy and light vehicle traffic to the Plan boundary. Under this alternative, Three Bars Road and Atlas Haul Road would be the only route used to access the Project area and mine facilities. There would be no other access to the mine facilities. Traffic under this alternative would be subject to the same seasonal restrictions as the Project/Proposed Action, which would be from 6:00 AM to 10:00 AM and 6:00 PM to 4:30 AM from March 1 to May 15 to reduce impacts to nearby greater sage-grouse leks. This alternative was considered to reduce environmental impacts resulting from using two access routes, particularly impacts to greater sage-grouse leks within four miles of the proposed Roberts Creek Road access route even though the travel distance for light vehicle traffic would increase by 20 miles. There is no change in the amount of surface disturbance compared to the Project/Proposed Action.

An alternative to accessing the mine facilities was considered for light vehicle traffic to use the authorized Mount Hope access road and well field road as access to the Plan boundary instead

of Roberts Creek Road. This alternative would require light vehicle traffic to use State Route 278 to the Mount Hope access road, and then use the Mount Hope well field road to access Roberts Creek Road. The Bypass Road [NVN-91566] and North Roberts Creek Road would be used from that point to access the Plan boundary. Seasonal timing restrictions for the use of the Mount Hope access road and well field road would be the same as the Project/Proposed Action, which would be from 6:00 AM to 10:00 AM and 6:00 PM to 4:30 AM from March 1 to May 15 to reduce impacts to nearby greater sage-grouse leks. Heavy vehicle traffic would use Three Bars Road and Atlas Haul Road to access the Plan boundary, and would be subject to the same seasonal timing restrictions. Proposed disturbance for this alternative would be the same as the Project/Proposed Action. All improvements to the Mount Hope Access Road would be within the previously permitted disturbance area for the Mount Hope project. This alternative was considered to reduce environmental impacts resulting from using a longer stretch of Roberts Creek Road for light vehicle traffic, particularly impacts to greater sage-grouse leks within four miles of the proposed Roberts Creek Road access route. However, the Nevada Department of Wildlife (NDOW) identified potential adverse impacts from this alternative to the Henderson Pass Lek, which is an active lek approximately 0.12 mile from the Mount Hope well field road.

1.3 Habitat Description

The Project is located in the southern portion of the Roberts Mountain, approximately 30 miles northwest of Eureka and 13 miles north of United States Highway 50. Elevation ranges from just over 9,000 feet above mean seal level (AMSL) on the northern part of the Project area and extends through the foothill zone to the east and south to the Kobeh Valley at approximately 6,500 feet AMSL. Slopes range from nearly level along the valley (gradient less than 0.5 percent) to vertical along portions of the limestone and quartzite outcrops in the higher elevation zones. There are areas of disturbance from previous mining activities, including three pits and associated haul roads.

The Project area lies within the Roberts Creek watershed, but does not include Roberts Creek itself. There are, however, several ephemeral drainages within the Project area draining east out of the Roberts Mountain and dissecting the foothill region, eventually draining into Roberts Creek.

Vegetation communities within the Project area include curl-leaf mountain mahogany, limber pine, pinyon/juniper woodland, and sagebrush steppe. The distribution and composition of these plant communities varies throughout the study area and is influenced by soils, topography, and disturbance history. There is approximately 660 acres of existing disturbance within the Project area where vegetation has already been disturbed. **Table 1** shows the acreages of vegetation communities and existing disturbance within the Project area. More than half of the Project area is mapped as pinyon-juniper woodland, with only two percent mapped as sagebrush steppe.

Table 1 Vegetation Community Type, Existing Disturbance, and Road Acreage within the Mine Plan Boundary

Cover Type	Acres	Percent of Total
Curl-leaf Mountain Mahogany Woodland	1,189	21
Limber Pine	8	0

Cover Type	Acres	Percent of Total
Pinyon/Juniper Woodland	3,321	60
Sagebrush Steppe	101	2
Existing Disturbance ¹	660	12
Mine Access Roads ²	282	5
Total	5,561	100

Source: GBE, 2013

¹ Existing disturbance was mapped from aerial imagery and was a combined file produced by SRK Consulting, Stantec, and MMI. Existing disturbance acreage consists of 654 acres of existing Atlas mining disturbance and approximately six acres of existing North Roberts Creek Road disturbance.

² Mine Access Roads acreage includes Atlas Haul Road, Three Bars Road, Bypass Road, and Roberts Creek Road. This category does not include the North Roberts Creek Road, which would be improved under the Proposed Action.

1.4 Mitigation Hierarchy

This section describes the efforts by the applicant to avoid, minimize, rectify, and reduce/eliminate potential impacts to greater sage-grouse from the Project. To achieve this, MMI has committed to EPMS. MMI has also committed to Required Design Features (RDFs), as shown in **Attachment A**, and Management Decisions from the Approved Resource Management Plan Amendment (ARMPA) (BLM, 2015a and 2015b). However, it should be noted that most of the RDFs are not “required” for non-discretionary projects and that any commitments by MMI have been done so as a good-faith effort to avoid, minimize, rectify, reduce, and eliminate impacts to greater sage-grouse.

1.4.1 AVOIDANCE MEASURES

- MMI proposes to use on-site generators in lieu of constructing a 30-mile long distribution power line through greater sage-grouse habitat. (Note: Construction of the power line is being analyzed as an alternative to the Proposed Action in the DEIS.)
 - This measure would avoid the potential for predator perching sites, the potential for mortality from collision, avoidance of habitat from the presence of the power line, and corvid foraging.
- MMI proposes using existing access roads instead of constructing new roads.
 - This would avoid new disturbance in greater sage-grouse habitat.

1.4.2 MINIMIZATION MEASURES

- MMI has designed the mine facilities to limit the total disturbance footprint.
 - This minimizes the total disturbance footprint from the Project/Proposed Action and avoids unnecessary disturbance in Priority Habitat Management Areas (PHMA) and General Habitat Management Areas (GHMA).
- Speed limits would be posted at 35 miles per hour (mph) on haul roads and 45 mph on access roads;

- This EPM would reduce direct impacts to greater sage-grouse by minimizing the risk of vehicle related mortality from mine traffic
- Flight diverters would be installed on any fencing within 3.1 miles of a lek using the Natural Resources Conservation Service Fence Collision Risk Tool, or other appropriate analysis, to determine best locations for diverters;
 - This EPM would reduce direct impacts to greater sage-grouse by minimizing risks of collision with fence lines near leks.
- Generators would include enhanced generator silencing packages which includes high ambient and sound-attenuated enclosures, use of noise absorbent materials, and an internal exhaust silencer system.
 - This EPM would reduce mining-related noise disturbance to below the 10 decibel threshold for noise related impacts to greater sage-grouse.
- Berms would be constructed along the haul roads in conformance with Mine Safety and Health Administration requirements that would also assist in the attenuation of noise along the haul roads;
 - This EPM would reduce direct impacts to greater sage-grouse by reducing the risk of collision along haul roads and reduce indirect impacts from mining-related noise disturbance.
- A blasting plan has been developed and included in the Plan of Operations to specifically limit blasting during atmospheric conditions (inversions) that could propagate blasting noise beyond the mine area.
 - This EPM would reduce indirect impacts to greater sage-grouse from mining-related noise disturbance.
- A reclamation/revegetation plan has been developed and included in the Plan for the Project's high elevation waste rock dumps to specifically address the unique challenges resulting from the edaphic, geologic, and physiographic conditions of the area. The revegetation plan is specifically focused on the development of greater sage-grouse habitat in areas that were either previously disturbed and unreclaimed or woodland dominated;
 - This EPM would reduce indirect impacts to greater sage-grouse by improving the post-mining habitat within the Project area. The reclamation is designed to create greater sage-grouse habitat in the reclaimed areas.
- New hire and annual refresher training for all employees and contractors would include greater sage-grouse-specific protection training that specifically addresses the commitment of MMI to implement the protection program and the need for all employees to avoid harassment and disturbance of greater sage-grouse, especially during the breeding season. MMI would work with NDOW in the development of training materials;

- This EPM would reduce indirect impacts to greater sage-grouse by educating MMI personnel on the potential effects and measures to reduce impacts during operation.
- Any overhead power lines within four miles of active and pending active leks would be constructed with perch deterrents, where applicable. Actions would be completed in consideration of the latest Avian Power Line Interaction Committee guidelines with assistance of the BLM and NDOW for the appropriate predatory bird anti-perching devices;
- This EPM would reduce indirect impacts to greater sage-grouse by reducing the potential for predator perching and increased foraging area. This EPM would also reduce direct impacts by minimizing the power lines collision risk.
- Hazardous material storage would include secondary containment to preclude contamination of surface water or groundwater resources that animals could access.
 - This EPM would reduce indirect impacts to greater sage-grouse by minimizing the potential for habitat degradation from hazardous contaminants.
- Travel timing restrictions would be implemented during lekking season (March 1 – May 15) on Three Bars Road and Roberts Creek Road, from 6:00 AM to 10:00 AM and from 6:00 PM to 4:30 AM. Emergency and local traffic would be exempt from these restrictions.
 - This EPM would reduce indirect impacts to greater sage-grouse by minimizing vehicular related disturbance and noise during the lekking period.
- Access road work, road maintenance-related work, gravel pit work conducted by MMI within four miles of an active or pending lek are subject to timing restrictions during lekking season (March 1 – May 15) from 6:00 AM to 10:00 AM and from 6:00 PM to 4:30 AM.
 - This EPM would reduce indirect impacts to greater sage-grouse by minimizing vehicular related disturbance and noise during the lekking period.
- MMI would conduct lek attendance monitoring, following NDOW monitoring protocols, for all leks within a two-mile distance of Three Bars and Roberts Creek access roads. Specific triggers would be developed with the BLM and NDOW tied to declining numbers that cannot be accounted for by normal variation and action items to further prevent impacts to greater sage-grouse populations. Leks found to be unoccupied after three successive years of monitoring would be proposed to the BLM and NDOW to be designated as inactive, and monitoring of those leks would be suspended. If no adverse impact to active leks is demonstrated after five years of monitoring, MMI would be able to request suspension of all lek monitoring.
 - This EPM would reduce indirect impacts to greater sage-grouse by collecting data to inform adaptive management decisions should declines in lek attendance be attributed to mining activities.

1.4.3 RECTIFICATION MEASURES

- MMI incorporated pre-existing unreclaimed disturbance into the Project, some of which would be reclaimed, thus improving habitat.

- This would restore ecological function in areas of PHMA and GHMA within the Project boundary.

1.4.4 REDUCTION / ELIMINATION MEASURES

- A Noxious Weed Plan has been developed and included in the Plan to prescribe methods to prevent and control the spread of noxious weeds during construction and operation of the Project;
- This EPM would reduce indirect impacts to greater sage-grouse by reducing the risk of habitat degradation from the establishment and spread of noxious and invasive weed species.
- MMI would implement concurrent reclamation during operations, where possible.
- This would reduce indirect impacts to habitat.

1.5 Regulatory Framework

The Record of Decision (ROD) for the Nevada and Northeastern California Greater Sage-Grouse Proposed Land Use Plan Amendment and Final Environmental Impact Statement (LUPA/FEIS) prepared by the BLM and United States Forest Service was signed in September 2015. The LUPA/FEIS was prepared with the assistance of 24 cooperating agencies. Greater sage-grouse habitat on BLM-administered and National Forest System lands in the decision area consists of lands allocated as PHMA, GHMA, and Other Habitat Management Areas (OHMA). PHMA is defined as lands identified as having the highest value to maintaining sustainable greater sage-grouse populations. GHMA is defined as lands where some special management would apply to sustain greater sage-grouse populations. OHMA is defined as lands identified as unmapped habitat in the LUPA/EIS that are within the planning area and contain seasonal or connectivity to habitat areas.

This mitigation plan was developed in accordance with the *Mitigation Handbook H-1794-1* (BLM, 2016b). The *Greater Sage-Grouse Range-Wide Mitigation Framework* (USFWS, 2014) was used for guidance, especially with respect to standards for mitigation.

2.0 IMPACTS MITIGATION

2.1 Impacts Being Mitigated

The Project/Proposed Action would result in the direct loss of greater sage-grouse habitat. Some of the alternatives, if selected, would also have direct impacts to greater sage-grouse habitat. **Table 2** presents the disturbance acreage by alternative for the Sagebrush Ecosystem Program December 2015 habitat category mapping. **Figure 1** shows the Project/Proposed Action and Alternatives with the December 2015 habitat categories. As a conservative approach, disturbance associated with exploration activities was included under PHMA for the Project/Proposed Action (65 acres), since the exact locations have not been determined and could occur in either PHMA or GHMA.

Table 2 Disturbed Greater Sage-grouse Habitat Types and Seasonal Habitat

Habitat Type	Acres Disturbed			
	Project/Proposed Action ¹	25 kV Overhead Distribution Line Alternative (40-Foot Permanent ROW) ^{1,2}	Three Bars Road/Atlas Haul Road as Only Access Alternative	Mount Hope and North Roberts Creek Road for Light Vehicle Traffic Alternative
December 2015 SEP Habitat Category Mapping				
PHMA	192	56	0	0
GHMA	542	33	0	0
OHMA	0	13	0	0
NDOW Seasonal Habitat Mapping				
Late Summer	11	126	0	0
Winter	5	106	0	0
Nesting and Early Brood Rearing	6	75	0	0

¹Acreages exclude existing disturbance.

²Acreage excludes cultural avoidance areas and areas within the Plan boundary.

The disturbance from the Project/Proposed Action would be term impacts, lasting until successful reclamation to a shrub-dominated community. The Project/Proposed Action would have 154 acres of permanent (non-reclaimed) disturbance. The Project is not expected to result in direct mortality to greater sage-grouse, as any individuals within the Project area are expected to disperse upon commencement of ground-disturbing activities. However, accidental mortalities could occur from vehicle collisions, but this risk would be reduced by implementing the speed limit restrictions outlined in **Section 1.4.2**. Additionally, no leks would be directly disturbed from the Project.

2.2 Mitigation Approach

Top threats to greater sage-grouse in this region include fire, conifer encroachment, noxious and invasive weeds, annual grasses, improper grazing management, and wild horses (BLM, 2015a). To address some of these threats, MMI would contract with a third-party contractor to conduct treatments in one or more areas analyzed in the 3 Bars Ecosystem Final EIS (FEIS) (BLM, 2016a) to mitigate for direct impacts to greater sage-grouse habitat from the Project. MMI is proposing a 4:1 mitigation ratio for PHMA, 3:1 mitigation ratio for GHMA, and 2:1 mitigation ratio for OHMA. The mitigation of OHMA and GHMA acres could occur in areas mapped as GHMA or PHMA. Net conservation gain would be demonstrated using quantification of ecological attributes within the treatment areas and demonstrate an uplift over baseline conditions.

Table 3 Acres Mitigated

December 2015 SEP Habitat Category Mapping	Acres			
	Proposed Action ¹	25 kV Overhead Distribution Line Alternative	Three Bars Road/Atlas Haul Road as Only Access Alternative	Mount Hope and North Roberts Creek Road for Light Vehicle Traffic Alternative
PHMA (4:1)	768	224	0	0
GHMA (3:1)	1,626	99	0	0
OHMA (2:1)	0	26	0	0

Numerous treatment units were approved through the 3 Bars Ecosystem FEIS. If seeding is proposed in a treatment plan, only treatment units outside wild horse herd management areas would be considered for treatment. Additionally, the acreage within eligible treatment units would be modified to exclude BLM-identified livestock “moderate and heavy use” areas. Both criteria would be utilized so that treatments could be implemented within a reasonable timeframe, given the 3 Bars Ecosystem FEIS states that seeding treatments would not occur in areas where horse populations were over approved management level, nor where livestock grazing permits may need modifications due to identified improper use. As this mitigation plan is focused on greater sage-grouse, no pinyon-juniper thinning treatments would be considered, only treatments where complete pinyon-juniper tree removal is prescribed. MMI would select from a combination of treatment units (**Figure 2**) and treatment methods to meet their total mitigation obligation.

Although treatment methods for each type of treatment unit (i.e., sage, riparian, or pinyon-juniper) were approved through the 3 Bars Ecosystem FEIS, treatment unit specifics have not been determined. Therefore, MMI would develop unit-specific treatment plans that utilize approved treatment methods to address the goals and objectives for each unit. The treatment plan(s) would be submitted to BLM for review and authorization before treatments could be implemented. The draft treatment plan(s) would be developed and submitted to BLM for review within six months of the signed ROD for the Gold Bar Mine Project FEIS. Initial treatments would be completed within two years of the signing of the ROD.

The following vegetation treatment methods were analyzed in the 3 Bars Ecosystem FEIS and could be utilized in the development of the unit-specific treatment plans:

- Seeding – hand seeding, broadcast seeding, drill seeding, harrow seeding, aerial broadcast, and hand planting;
- Manual – hand tools to clear, cut, or prune herbaceous and woody species, selective cutting, and hand cutting or removal of noxious weeds; and
- Mechanical – mowing, mulching/shredding, tilling, roller chopping, feller-buncher, and tree shearer.

2.2.1 PRE-TREATMENT IMPLEMENTATION REQUIREMENTS

Pre-treatment field data for the treatment units would be collected by MMI or a qualified contractor. This data would be specific to the treatment unit objectives and would be used as the benchmark to determine treatment effectiveness and uplift. For example, percent cover and density of pinyon-juniper would be relevant to areas where pinyon-juniper treatments are proposed; likewise, perennial grass cover and density would be pertinent to sagebrush treatment areas. See **Section 3.4.1** for a detailed discussion of monitoring methods. Percent cover of annual invasive and noxious species would be important to determine maintenance activities.

Many of the 3 Bars Ecosystem treatment units have had archaeological surveys completed. However, if archaeological surveys have not been completed within the selected treatment area(s), MMI would be responsible for contracting with a qualified consultant to conduct the Class III archeological surveys before treatment is implemented.

3.0 STANDARDS OF MITIGATION

3.1 Siting

Compensatory mitigation should be completed in areas that have been identified as likely to successfully and fully compensate losses to greater sage-grouse (USFWS, 2014). The areas selected for mitigation of impacts were analyzed in the 3 Bars Ecosystem FEIS as having a benefit to greater sage-grouse and their habitat. Additionally, the mitigation would occur in the same Population Management Unit (PMU) as the Project, thereby benefiting the same population of greater sage-grouse being impacted. It is believed that siting mitigation in this manner meets the intent of the 2014 USFWS guidance.

3.2 Duration

The timeframe of the mitigation should be commensurate and proportional with the biological impacts being off-set (USFWS, 2014). The Project would have a mine-life of approximately seven years for construction, operation, and leaching (including residual heap leaching). Reclamation is anticipated to be completed within six years after the cessation of active mining and residual heap leaching. As mitigation to off-set the impacts to greater sage-grouse habitat from the Project, MMI would be responsible for treatment implementation, monitoring, and adaptive management and remedial treatments to off-set the direct impacts until active reclamation bond is completed. This timeframe ensures that treatment effects would be realized until disturbance in the Project area is completed. See **Section 3.4** for a discussion of effectiveness and monitoring.

3.3 Additionality

The treatments would be conducted in accordance with the 3 Bars Ecosystem FEIS and should provide benefits beyond those that would be achieved if MMI does not complete them, and would exceed what is otherwise required by federal, state, or local regulations. The treatments proposed in this plan would provide benefits to other sagebrush obligate species besides greater sage-grouse. Additionally, as treatments conducted as part of the 3 Bars Ecosystem restoration, these treatments would have beneficial, cumulative effects at the landscape level. Although the treatments in the 3 Bars Ecosystem FEIS are approved by BLM, the FEIS does not give authorization or monetary certainty for their implementation. The unit-specific treatment plans, developed by MMI (or a qualified third-party contractor), would require additional National Environmental Policy Act (NEPA) action by BLM (e.g., Determination of NEPA Adequacy) for approval and before treatments could be implemented.

This mitigation plan proposes to have MMI or a qualified third-party contractor (paid by MMI) conduct treatments which BLM currently does not have funding to complete. Therefore, MMI's commitment to fund and complete treatments allows for habitat restoration and preservation that currently has no timeframe for completion, if dependent on BLM to complete.

3.4 Effectiveness

According to USFWS (2014), the mitigation actions should be likely to deliver expected conservation benefits, targeted to provide the greatest benefit to greater sage-grouse, and be measurable. This mitigation plan has objectives that would be used to determine if the treatments are effective and to determine if habitat has been improved for greater sage-grouse. As discussed in **Section 2.2**, pre-treatment field data would be used as the benchmark to determine the effectiveness of the treatments. Additionally, this mitigation plan is centered on achieving habitat objectives in accordance with the 3 Bars Ecosystem FEIS, with a specific focus on improving greater sage-grouse habitat, rather than MMI committing a pre-determined dollar amount per acre of mitigation.

3.4.1 EFFECTIVENESS MONITORING

MMI would monitor for the effectiveness of this mitigation plan per 43 Code of Federal Regulations 3809.401(b)(4)). Per the 3 Bars Ecosystem FEIS (BLM, 2016a), treatment effectiveness monitoring within greater sage-grouse habitat would be performed to assess if treatments are meeting specific habitat objectives as outlined in the specific treatment unit plans. Treatment unit objectives would be in accordance with **Table 2-2** in the Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment (BLM, 2015b). Table 2-2 covers a wide variety of greater sage-grouse habitat and habitat objectives, many of which are easily influenced by livestock and wild horse grazing, as well as climactic variability. MMI would focus on attaining the treatment unit objectives from the 3 Bars Ecosystem FEIS, and some of the "general/landscape level" objectives in Table 2-2 of the ARMPA (BLM, 2015b), specifically those objectives related to sagebrush and annual grass cover, and conifer encroachment.

Additionally, to demonstrate a net conservation gain for greater sage-grouse habitat, MMI proposes to quantify and compare ecological attributes of greater sage-grouse habitat in accordance with the *Sage-Grouse Habitat Assessment Framework* (Stiver et al., 2015). A baseline evaluation of important vegetative parameters for greater sage-grouse habitat would be implemented on all potential treatment units and be relevant to the specified treatment methods. Field data would be collected using standardized metrics presented in the *Sage-Grouse Habitat Assessment Framework* (Stiver et al., 2015). Specifically, quantification of vegetative ground cover with the point-intercept technique would provide the most precise and accurate data to demonstrate beneficial outcomes. Baseline vegetation data collection and post-treatment monitoring data collection would quantify the following parameters to determine uplift:

- Tree Cover – A measurement of the amount of tree foliar cover (percent) by species.
- Sagebrush Cover – A measurement of the amount of sagebrush foliar cover (percent) by species.
- Grass Cover – A measurement of the amount of perennial and annual grass foliar cover (percent) by species.

- Forb Cover – A measurement of the amount of perennial and annual foliar cover (percent) by species.
- Preferred Forb Availability – A measurement of the diversity of preferred forb species.

Except for tree cover and annual grass cover, the above parameters would all need to increase above baseline conditions to prove a net conservation gain. For the tree objective, pinyon-juniper cover would need to be less than one percent total live foliar cover to show net conservation gain. The “tree” metric is not evaluated against baseline conditions because the treatment prescriptions would be for complete pinyon-juniper removal. Additionally, control plots (not treated) would be established adjacent to treatment units, within the same ecological site, to determine if treatment units have increased invasive annual grasses and/or forbs compared to the control area.

Following treatment application, monitoring would be conducted one, three, and five years (growing seasons) post-treatment, to evaluate the success, quantify outcomes beneficial to greater sage-grouse, and monitor invasive weeds. Once treatment unit objectives are met, only monitoring for pinyon-juniper establishment and invasive weeds would be required. If effectiveness monitoring data concludes that treatment unit objectives are not met by the fifth year post-treatment, MMI would draft an adaptive management plan to address specific failing objectives and potential treatments (approved in the 3 Bars Ecosystem FEIS) for rectification. These adaptive management treatments would be in addition to the maintenance treatments addressed in **Section 3.5.1**. The additional treatments would be completed within six months of BLM’s approval or during the next appropriate treatment season (e.g., seeding in fall) after approval. MMI would be responsible for monitoring at least every three years and implementing adaptive management until active reclamation is completed.

Quantifiable benefits to greater sage-grouse habitat would be demonstrated by comparing baseline and post-treatment monitoring for each treatment area.

3.5 Durability

Durability refers to the management, legal, and financial assurances that ensure the plan will be in place and effective for the duration of impacts (USFWS, 2014). The monetary assurance and treatment maintenance discussed below are intended to account for unintentional loss/force majeure (e.g., wildfire) and intentional loss (e.g., abandonment of Project) of the plan. BLM would be responsible for minimizing other potential impacts to treated areas (i.e., trespass grazing, etc.).

3.5.1 MAINTENANCE

As outlined in the 3 Bars Ecosystem FEIS, all treatment units would be monitored for noxious weeds or other non-native invasive vegetation following treatment. MMI would then be responsible for monitoring and treating noxious weeds, every three years, in treatment units until the Project’s active reclamation is completed. If noxious weeds are found in the treatment unit(s), they would be treated with an appropriate and approved method, in accordance with the Battle Mountain BLM’s *Integrated Weed Management Plan* (BLM, 2009).

In areas where pinyon-juniper removal is implemented, MMI would be responsible for maintaining this treatment at five-year intervals, until active reclamation is completed. This maintenance activity would likely consist of hand-removal of newly established or sprouting pinyon-juniper trees within the treated areas. Any additional maintenance requirements would be specified in the unit specific treatment plans.

3.5.2 FINANCIAL ASSURANCE

The amount of financial assurance provided and the funding mechanism utilized would be coordinated with BLM and USFWS. The amount of financial assurance would be sufficient to cover all costs required for a third-party contractor to conduct the treatments, monitoring, and maintenance activities.

3.6 Metrics

In accordance with USFWS (2014), determination of expected impacts of mitigation actions and the measures necessary to avoid, minimize, or compensate for those impacts should be based on biological conditions and upon reliable, repeatable, and quantitative science-based methods. As such, the measures used to avoid, minimize, and compensate for impacts to greater sage-grouse from the Project are presented in **Section 1.4** of this plan and are analyzed in the Gold Bar DEIS. The treatments utilized for mitigation have been analyzed in the 3 Bars Ecosystem FEIS (BLM, 2016a). This plan has attempted to utilize treatment areas that would not require further mitigation.

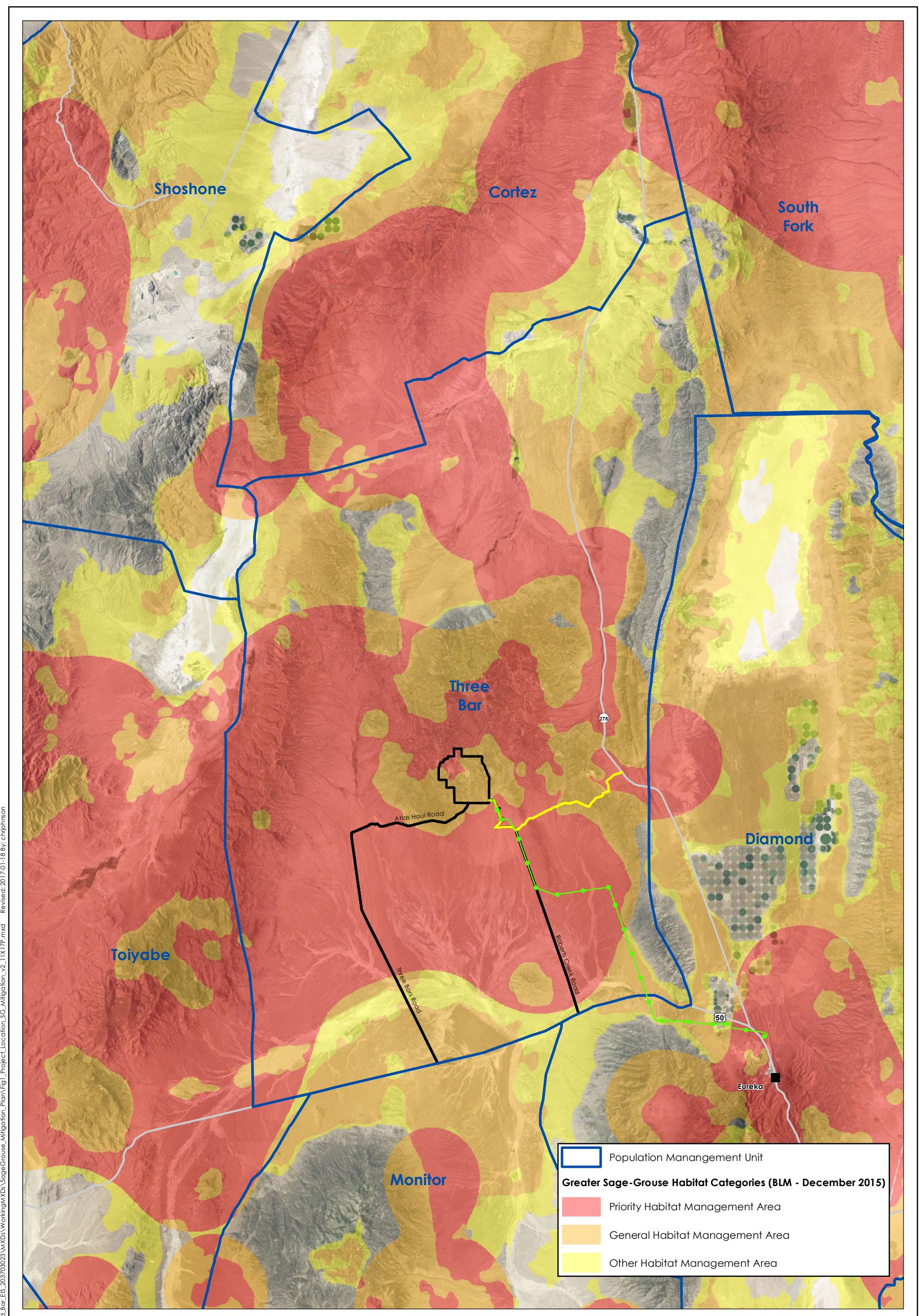
3.7 Summary

This mitigation plan is intended to mitigate the impacts to greater sage-grouse of the Project. The unit specific treatment plans would focus on restoring or enhancing sagebrush and riparian habitat and working towards achieving ecological site potential, in accordance with the goals and objectives outlined in the 3 Bars Ecosystem FEIS. Additionally, habitat would be improved for other species such as mule deer, other sagebrush obligate species, and migratory birds, among others. The mitigation proposed in this plan is designed to have a net conservation gain for greater sage-grouse, specifically within the Three Bar PMU, by implementing treatments with objectives that enhance the quality and connectivity of greater sage-grouse habitat. Additionally, the mitigation acreage ratios consider the impact that the Project can have at the site scale, as well as the landscape scale. Net conservation gain would be ensured by improving habitat above baseline conditions (i.e., uplift) within the treatment units.

4.0 REFERENCES

- Bureau of Land Management (BLM). 2009. Integrated Weed Management Plan, Battle Mountain District, Mt. Lewis Field Office and Tonopah Field Office. Battle Mountain District, Battle Mountain, Nevada.
- Bureau of Land Management (BLM). 2015a. Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region, Including the Greater Sage-grouse Sub Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah. USDI, Bureau of Land Management, Washington D.C. September 2015.
- Bureau of Land Management (BLM). 2015b. Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plant Amendment. USDI, BLM, Nevada State Office. September 2015.
- Bureau of Land Management (BLM). 2016a. 3 Bars Ecosystem and Landscape Restoration Project, Final Environmental Impact Statement. Volumes 1 and 2. BLM-NV-BM/ES/16-07+1793. October 2016. Mount Lewis Field Office, Battle Mountain, Nevada.
- Bureau of Land Management (BLM). 2016b. Mitigation Handbook H-1794-1 December 22, 2016.
- Elzinga, C.L., D.W. Salzer, and J.W. Willoughby. 1998. Measuring & Monitoring Plant Populations. BLM Technical Reference 1730-1. BLM/RS/ST-98/005+1730. Denver, Colorado.
- Great Basin Ecology, Inc. (GBE). 2013. Gold Bar Project Biological Baseline Inventory. Report prepared for McEwen Mining, Inc., Gold Bar Project. Revised July 2013.
- J.C. Brennan & Associates, Inc. (Brennan). 2016. Gold Bar Baseline Noise Report and Predicted Mining Noise Levels. September 2016.
- Stiver, S.J., E.T. Rinkes, D.E. Naugle, P.D. Makela, D.A. Nance, and J.W. Karl, eds. 2015. Sage-Grouse Habitat Assessment Framework: A Multiscale Assessment Tool. Technical Reference 6710-1. Bureau of Land Management and Western Association of Fish and Wildlife Agencies. Denver, Colorado.
- United States Department of Agriculture, Natural Resource Conservation Service, and United States Department of the Interior. 1999. Sampling Vegetation Attributes. BLM Technical Reference 1734-4. BLM/RS/ST-96/002+1730. National Applied Resource Sciences Center, Denver, Colorado. Available online at:
<https://www.blm.gov/nstc/library/pdf/samplveg.pdf>
- United States Fish and Wildlife Service (USFWS). 2014. Greater Sage-Grouse Range-Wide Mitigation Framework. Version 1.0. September 3, 2014.

FIGURES



Legend

- Gold Bar Project Area
- 25 kV Overhead Distribution Line Alternative
- Mount Hope and North Roberts Creek Road Alternative



Stantec

Miles

1 in = 6 miles

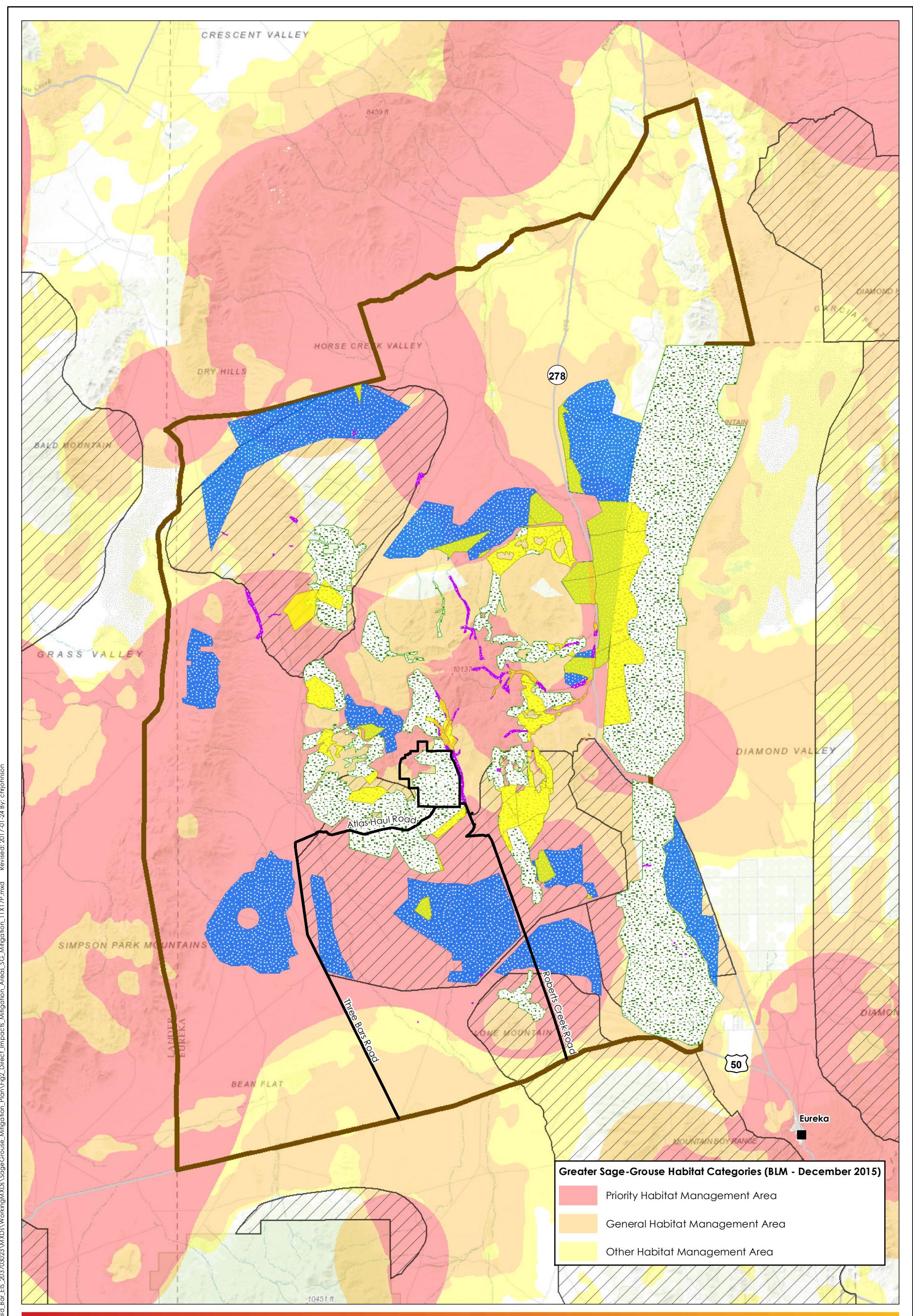
Eureka and Lander County, NV
NAD 1983 UTM Zone 11N

DRAWN BY: JT 1ST REVIEW: CJ 2ND REVIEW: EF

DATE: 1/18/2017 PROJECT NO: 203703023

McEwen Mining Inc.
Gold Bar Sage-Grouse Mitigation Plan

**Figure 1
Project Location**



Legend

- | | |
|---|--|
| | Moderate/Heavy/Severe Livestock Use Area |
| | Sagebrush Treatment Area |
| | PJ Treatment Area |
| | Riparian Treatment Area |
| | Gold Bar Project Area |
| | Three Bar PMU |
| | Herd Management Areas |



Stantec

Eureka and Lander County, NV
NAD 1983 UTM Zone 11N

DRAWN BY: JT

1ST REVIEW: CJ

2ND REVIEW: EF

DATE: 1/24/2017

PROJECT NO: 203703023

McEwen Mining Inc.
Gold Bar Sage-Grouse Mitigation Plan

Figure 2
3 Bars FEIS
Potential Mitigation Areas

ATTACHMENT A

ARMPA Required Design Features and Management Decisions

Table 1 Minerals Resources Management Decisions for Locatable Minerals

MDMR #	MDMR Text	Applicable (Yes/No)	GRSG Amendment Consistency by Alternative (Yes/No)					Notes
			Proposed Action	25 kV Overhead Distribution Line Alternative	Three Bars Road/Atlas Haul Road as Only Access Alternative	Mount Hope and North Roberts Creek Road for Light Vehicle Traffic Alternative	No Action Alternative	
15	Review Objective SSS 4 , and to the extent allowed by law, apply MDs SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat. (Note: SSS 1 through SSS 4 are addressed below in Table 2).	Yes	Yes	No	Yes	Yes	Yes	Objective SSS 4: In PHMAs and GHMAs, apply the concept of "avoid, minimize, and compensatory mitigation" for all human disturbance in areas not already excluded or closed, so as to avoid adverse effects on GRSG and its habitat. The first priority will be to avoid new disturbances (GRSG Amendment, Appendices F and I). The proposed Project is a non-discretionary 43 CFR 3809 action, therefore implementing this management decision is limited to preventing unnecessary and undue degradation. The BLM is coordinating with MMI to determine appropriate mitigation to offset residual impacts using either the State of Nevada's Conservation Credit System (CCS) or a proponent driven plan.
16	Recommend for withdrawal SFA under the General Mining Act of 1872, as amended, subject to valid existing rights (see Appendix A; Figures 2-1 and 2-4).	No	-	-	-	-	-	No Sagebrush Focal Areas (SFAs) are located within or in proximity to the Project boundary.
17	On public lands, manage disturbances associated with notice-level activity in GRSG habitat on a landscape basis to avoid segmenting a project. Do this by encouraging operators and claimants to consolidate exploration into a plan of operations to reduce the proliferation of mining notices, in accordance with 43 CFR, Part 3809.21(b).	Yes	Yes	Yes	Yes	Yes	No	Exploration is proposed for this Project; therefore, the exploration in the Project area would be associated with the Plan.
18	Subject to valid existing rights and applicable law, authorize locatable mineral development activity, by approving plans of operation and apply mitigation and best management practices that minimize the loss of PHMAs and GHMAs or that enhance GRSG habitat by applying the "avoid, minimize and compensatory mitigation" process through an applicable mitigation system, such as the Nevada Conservation Credit System.	Yes	Yes	Yes	Yes	Yes	Yes	The proposed Project is a non-discretionary 43 CFR 3809 action, therefore implementing this management decision is limited to preventing unnecessary and undue degradation. Avoidance and minimization measures are discussed in Section 2.2.20 . The BLM is coordinating with MMI to determine appropriate mitigation to offset residual impacts using either the State of Nevada's Conservation Credit System (CCS) or a proponent driven plan.
19	Close or mitigate abandoned mine sites in PHMAs and GHMAs to reduce GRSG predation by eliminating physical structures that could provide nesting opportunities and perching sites for predators.	No	-	-	-	-	-	This would be an active Project area therefore this MD does not apply to this Project. Site reclamation is described in Section 2.2.19 .

Table 2 Management Decision(s) SSS 1 through SSS 4

MD #	MD Text	Applicable (Yes/No)	GRSG Amendment Consistency by Alternative (Yes/No)					Notes
			Proposed Action	25 kV Overhead Distribution Line Alternative	Three Bars Road/Atlas Haul Road as Only Access Alternative	Mount Hope and North Roberts Creek Road for Light Vehicle Traffic Alternative	No Action Alternative	
SSS 1	In PHMAs and GHMAs, work with the proponent/applicant, whether in accordance with a valid existing right or not, and use the following screening criteria to avoid effects of the proposed human activity on GRSG habitat: A. First priority – locate project/activity outside PHMAs and GHMAs B. Second priority – If the project/activity cannot be placed outside PHMAs and GHMAs, locate the surface-disturbing activities in non-habitat areas first, then in the least suitable habitat for GRSG C. Third priority – collocate the project/activity next to or in the footprint of existing infrastructure	Yes	Yes	Yes	Yes	Yes	Yes	The Project cannot be located outside of PHMA or GHMA; however, the proposed Project is located at the site of the previous Atlas Mine. Therefore, this project would be collocated with the existing footprint of the previous mine. The 25 kV overhead distribution line would be collocated with existing power line features where possible.
SSS 2 (PHMA)	In PHMAs, the following conditions will be met in order to avoid, minimize, and mitigate any effects on GRSG and its habitat from the project/activity:							
SSS 2A (PHMA)	Manage discrete anthropogenic disturbances, whether temporary or permanent, so they cover less than 3 percent of 1) biologically significant units (BSUs; total PHMA area associated with a GRSG population area (see Appendix A; Figure 2-2) and 2) in a proposed project analysis area. See Appendix E (Disturbance Cap Guidance) for additional information on implementing the disturbance cap, including what is and is not considered disturbance and how to calculate the proposed project analysis area, as follows: 1. If the 3 percent human disturbance cap is exceeded on all lands (regardless of ownership) in PHMAs in any given BSU, then no further discrete human disturbances (subject to applicable laws and regulations, such as the 1872 Mining Law, as amended, and valid existing rights) will be permitted, by BLM within GRSG PHMA in any given BSU until the disturbance has been reduced to less than the cap (see Nevada exception under MD SSS 2 a. 3. Appendix E). 2. If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in a PHMA, then no further anthropogenic disturbance will be permitted by BLM until disturbance in the proposed project analysis area has been reduced to maintain the area under the cap (subject to applicable laws and regulations, such as the 1872 Mining Law, as amended, valid existing rights; see Nevada exception under MD SSS 2 a. 3. Appendix E).	No	-	-	-	-	-	GRSG Amendment Appendix E directs that the disturbance cap analysis should be conducted and results provided in NEPA analyses, but any exceedances of the cap (at both the BSU and project levels scales) do not apply to locatable mineral resources project with existing valid rights from BLM approval.
SSS 2B (PHMA)	In PHMA, in undertaking BLM management actions, and consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species, including accounting for any uncertainty associated with the effectiveness of such mitigation. The project/activity with associated mitigation (such as the use of the State of Nevada Conservation Credit System) will result in an overall net conservation gain to GRSG (Appendix F).	Yes	Yes	Yes	Yes	Yes	Yes	The BLM is coordinating with MMI to determine appropriate mitigation to offset residual impacts in PHMA using either the State of Nevada's Conservation Credit System (CCS) or a proponent driven plan.

Greater Sage-Grouse Required Design Features

MD #	MD Text	Applicable (Yes/No)	GRSG Amendment Consistency by Alternative (Yes/No)					Notes
			Proposed Action	25 kV Overhead Distribution Line Alternative	Three Bars Road/Atlas Haul Road as Only Access Alternative	Mount Hope and North Roberts Creek Road for Light Vehicle Traffic Alternative	No Action Alternative	
SSS 2C (PHMA)	<p>Authorized/permitted activities are implemented by adhering to the RDFs described in Appendix C, consistent with applicable law. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity:</p> <ol style="list-style-type: none"> 1. A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. 2. An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. 3. A specific RDF will provide no additional protection to GRSG or its habitat. 	No	-	-	-	-	-	<p>The proposed Project is a non-discretionary 43 CFR 3809 action, and discretion is limited to preventing unnecessary and undue degradation.</p> <p>MMI has committed to the EPMs presented in Section 2.2.20.</p>
SSS 2D (PHMA)	In management actions, and consistent with valid and existing rights and applicable law in authorizing third- party actions, the BLM will apply the lek buffer-distances identified in the USGS report, Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review Open File-Report 2014-1239 (Manier et al., 2014), in accordance with Appendix B.	No	-	-	-	-	-	<p>The proposed Project is a non-discretionary 43 CFR 3809 action, and discretion is limited to preventing unnecessary and undue degradation.</p> <p>The Project holds valid existing rights and therefore is not subject to lek buffer distances identified in Appendix B of the GRSG Amendment.</p>
SSS 2E (PHMA)	<p>Seasonal restrictions will be applied during the period specified below to manage discretionary surface- disturbing activities and uses on public lands to prevent disturbances to GRSG during seasonal life-cycle periods:</p> <ol style="list-style-type: none"> 1. In breeding habitat within 4 miles of active and pending GRSG leks from March 1 through June 30 <ul style="list-style-type: none"> a. Lek—March 1 to May 15 b. Lek hourly restrictions—6 p.m. to 9 a.m. c. Nesting—April 1 to June 30 2. Brood-rearing habitat from May 15 to September 15 <ul style="list-style-type: none"> a. Early—May 15 to June 15 b. Late—June 15 to September 15 3. Winter habitat from November 1 to February 28 <p>The seasonal dates may be modified due to documented local variations (e.g., higher/lower elevations) or annual climatic fluctuations (e.g., early/late spring, long/heavy winter), in coordination with NDOW, in order to better protect GRSG and its habitat.</p>	No	-	-	-	-	-	<p>The proposed Project is a non-discretionary 43 CFR 3809 action, and discretion is limited to preventing unnecessary and undue degradation.</p> <p>MMI has committed to the following measures:</p> <ul style="list-style-type: none"> • Travel timing restrictions would be implemented during lekking season (March 1 – May 15) on Three Bars Road and Roberts Creek Road, from 6:00 AM to 10:00 AM and from 6:00 PM to 4:30 AM. Emergency and local traffic would be exempt from these restrictions. • Access road work, road maintenance-related work, gravel pit work conducted by MMI within four miles of an active or pending lek are subject to timing restrictions during lekking season (March 1 – May 15) from 6:00 AM to 10:00 AM and from 6:00 PM to 4:30 AM.

Greater Sage-Grouse Required Design Features

MD #	MD Text	Applicable (Yes/No)	GRSG Amendment Consistency by Alternative (Yes/No)					Notes
			Proposed Action	25 kV Overhead Distribution Line Alternative	Three Bars Road/Atlas Haul Road as Only Access Alternative	Mount Hope and North Roberts Creek Road for Light Vehicle Traffic Alternative	No Action Alternative	
SSS 2F (PHMA)	Authorizations and permits will limit noise from discretionary activities (during construction, operation, and maintenance) to not exceed 10 decibels above ambient sound levels at least 0.25 mile from active and pending leks, from 2 hours before to 2 hours after sunrise and sunset during the breeding season. See Appendix M, Greater Sage-Grouse Noise Protocol.	No	-	-	-	-	-	The proposed Project is a non-discretionary 43 CFR 3809 action, and therefore this MD is not applicable. However, the project is not expected to increase noise levels more than 10 dBA above ambient levels at near-by lek locations. This is discussed in detail in Section 4.21.2 . Additionally, MMI has committed to the following EPMs: <ul style="list-style-type: none">• Noise from generators could be shielded by a combination of a sound enclosure at the generator with an additional sound wall constructed adjacent to and between the generators and the leks, if required. Should a sound wall be necessary, it would be approximately 14 feet tall to attenuate the generator noise at the leks.• Noise would also be reduced through installation of an enhanced generator silencing package on the generators.• Berms would be constructed along the haul roads in conformance with MSHA requirements that would also assist in the attenuation of noise along the haul roads.
SSS 3 (GHMA)	In GHMAs, the following conditions will be met in order to avoid, minimize, and mitigate any effects on GRSG or its habitat from the project/activity:							
SSS 3A (GHMA)	In GHMAs, in undertaking BLM management actions, and consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species, including accounting for any uncertainty associated with the effectiveness of such mitigation. The project/activity with associated mitigation (such as the use of the State of Nevada Conservation Credit System) in GHMAs will result in an overall net conservation gain to GRSG (Appendix F, Regional Mitigation Strategy).	Yes	Yes	Yes	Yes	Yes	Yes	The proposed Project is a non-discretionary 43 CFR 3809 action, and discretion is limited to preventing unnecessary and undue degradation. The BLM is coordinating with MMI to determine appropriate mitigation to offset residual impacts using either the State of Nevada's Conservation Credit System (CCS) or a proponent driven plan.

Greater Sage-Grouse Required Design Features

MD #	MD Text	Applicable (Yes/No)	GRSG Amendment Consistency by Alternative (Yes/No)					Notes
			Proposed Action	25 kV Overhead Distribution Line Alternative	Three Bars Road/Atlas Haul Road as Only Access Alternative	Mount Hope and North Roberts Creek Road for Light Vehicle Traffic Alternative	No Action Alternative	
SSS 3B (GHMA)	<p>Authorized/permited activities are implemented adhering to the RDFS described in Appendix C, consistent with applicable law. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity:</p> <ol style="list-style-type: none"> 1. A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. 2. An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. 3. A specific RDF will provide no additional protection to GRSG or its habitat. 	No	-	-	-	-	-	<p>The proposed Project is a non-discretionary 43 CFR 3809 action, and discretion is limited to preventing unnecessary and undue degradation.</p> <p>MMI has committed to the EPMs presented in Section 2.2.20.</p>
SSS 3C (GHMA)	In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the USGS report, Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review Open File Report 2014-1239 (Manier et al., 2014), in accordance with Appendix B.	No	-	-	-	-	-	<p>The proposed Project is a non-discretionary 43 CFR 3809 action, and discretion is limited to preventing unnecessary and undue degradation.</p>
SSS 3D (GHMA)	<p>Seasonal restrictions will be applied during the period specified below to manage discretionary surface- disturbing activities and uses on public lands to prevent disturbing GRSG during seasonal life cycle periods, as follows:</p> <ol style="list-style-type: none"> 1. In breeding habitat within 4 miles of active and pending GRSG leks from March 1 through June 30 <ul style="list-style-type: none"> a. Lek—March 1 to May 15 b. Lek hourly restrictions—6 p.m. to 9 a.m. c. Nesting—April 1 to June 30 2. Brood-rearing habitat from May 15 to September 15 <ul style="list-style-type: none"> a. Early—May 15 to June 15 b. Late—June 15 to September 15 3. Winter habitat from November 1 to February 28 <p>The seasonal dates may be modified due to documented local variations (e.g., higher/lower elevations) or annual climatic fluctuations (e.g., early/late spring, long/heavy winter), in coordination with NDOW, in order to better protect GRSG and its habitat.</p>	No	-	-	-	-	-	<p>The proposed Project is a non-discretionary 43 CFR 3809 action, and discretion is limited to preventing unnecessary and undue degradation.</p> <p>MMI has committed to the following EPMs:</p> <ul style="list-style-type: none"> • Travel timing restrictions would be implemented during lekking season (March 1 – May 15) on Three Bars Road and Roberts Creek Road, from 6:00 AM to 10:00 AM and from 6:00 PM to 4:30 AM. Emergency and local traffic would be exempt from these restrictions. • Access road work, road maintenance-related work, gravel pit work conducted by MMI within four miles of an active or pending lek are subject to timing restrictions during lekking season (March 1 – May 15) from 6:00 AM to 10:00 AM and from 6:00 PM to 4:30 AM.

Greater Sage-Grouse Required Design Features

MD #	MD Text	Applicable (Yes/No)	GRSG Amendment Consistency by Alternative (Yes/No)					Notes
			Proposed Action	25 kV Overhead Distribution Line Alternative	Three Bars Road/Atlas Haul Road as Only Access Alternative	Mount Hope and North Roberts Creek Road for Light Vehicle Traffic Alternative	No Action Alternative	
SSS 3E (GHMA)	Authorizations and permits will limit noise from discretionary activities (during construction, operation, and maintenance) to not exceed 10 decibels above ambient sound levels at least 0.25 mile from active and pending leks, from 2 hours before to 2 hours after sunrise and sunset during the breeding season. See Appendix M, Greater Sage-Grouse Noise Protocol.	No	-	-	-	-	-	The proposed Project is a non-discretionary 43 CFR 3809 action, and therefore this MD is not applicable. However, MMI has committed to the following EPMs: <ul style="list-style-type: none">• Noise from generators could be shielded by a combination of a sound enclosure at the generator with an additional sound wall constructed adjacent to and between the generators and the leks, if required. Should a sound wall be necessary, it would be approximately 14 feet tall to attenuate the generator noise at the leks.• Noise would also be reduced through installation of an enhanced generator silencing package on the generators.• Berms would be constructed along the haul roads in conformance with MSHA requirements that would also assist in the attenuation of noise along the haul roads.
SSS 4 (OHMA)	In OHMAs, authorized/permited activities are implemented adhering to the RDFS described in Appendix C, consistent with applicable law. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity: <ol style="list-style-type: none">1. A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.2. An alternative RDF is determined to provide equal or better protection for GRSG or its habitat.3. A specific RDF will provide no additional protection to GRSG or its habitat.	No	-	-	-	-	-	The proposed Project is a non-discretionary 43 CFR 3809 action, and discretion is limited to preventing unnecessary and undue degradation. There is no OHMA present within the Project boundary. There is OHMA present along the 25 kV overhead distribution line alternative alignment.

Table 3 General Required Design Features

RDF #	RDF Text	Applicable ¹ (Yes/No)	Notes
Gen 1	Locate new roads outside of GRSG habitat to the extent practical.	No	Most roads associated with this project are existing and would only be improved for safety and to allow for heavy-haul traffic. Access to the mine would be on existing roads. Roads are described in Section 2.2.2 .
Gen 2	Avoid constructing roads within riparian areas and ephemeral drainages. Construct low-water crossings at right angles to ephemeral drainages and stream crossings (note that such construction may require permitting under Sections 401 and 404 of the Clean Water Act).	No	No riparian areas are present within the Project boundary.
Gen 3	Limit construction of new roads where roads are already in existence and could be used or upgraded to meet the needs of the project or operation. Design roads to an appropriate standard, no higher than necessary, to accommodate intended purpose and level of use.	No	Most roads associated with this project are existing and would only be improved for safety and to allow for heavy-haul traffic. Access to the mine would be on existing roads. Roads are described in Section 2.2.2 .
Gen 4	Coordinate road construction and use with ROW holders to minimize disturbance to the extent possible.	No	The Project is not anticipated to impact any ROWs (Section 4.10.2).
Gen 5	During project construction and operation, establish and post speed limits in GRSG habitat to reduce vehicle/wildlife collisions or design roads to be driven at slower speeds.	No	MMI has committed to the following EPM: <ul style="list-style-type: none">• Speed limits would be posted at 35 miles per hour (mph) on haul roads and 45 mph on access roads.
Gen 6	Newly constructed project roads that access valid existing rights would not be managed as public access roads. Proponents will restrict access by employing traffic control devices such as signage, gates, and fencing.	No	Site access is described in Section 2.2.7 , and would include fencing and gates.
Gen 7	Require dust abatement practices when authorizing use on roads.	No	MMI has committed to the following EPMs: <ul style="list-style-type: none">• A fugitive dust control program would provide for water application on haul roads and other disturbed areas; chemical dust suppressant application (such as Lignin sulfate or magnesium chloride) where appropriate; and other dust control measures.• Dust generated from the use of roads and excavation activities would be minimized to the extent reasonable and practicable by using BMPs such as minimizing vehicular traffic, and using prudent vehicle speeds. Fugitive emissions in the process area would be controlled at the crusher, and conveyor drop points through the use of bag houses and/or water sprays, where necessary. Other process areas requiring dust and/or emission controls would include the cement/lime silos, ADR Plant, the various ancillary screening and sizing processes, agglomerator, refinery, generators, and the laboratory. Appropriate emission control equipment would be installed and operated in accordance with an NDEP-issued Air Quality Operating Permit.
Gen 8	There is no Gen 8 RDF.	No	-
Gen 9	Upon project completion, reclaim roads developed for project access on public lands unless, based on site-specific analysis, the route provides specific benefits for public access and does not contribute to resource conflicts.	No	Road closure is described in Section 2.2.19 .
Gen 10	Design or site permanent structures that create movement (e.g., pump jack/ windmill) to minimize impacts on GRSG habitat.	No	These types of structures are not proposed for this Project.
Gen 11	Equip temporary and permanent aboveground facilities with structures or devices that discourage nesting and perching of raptors, corvids, and other predators.	No	MMI has committed to the following EPMs: <ul style="list-style-type: none">• Any overhead power lines within four miles of active and pending active leks would be constructed with anti-perching devices, where applicable. Actions would be completed in consideration of the latest Avian Power Line Interaction Committee guidelines with assistance of BLM and NDOW for the appropriate predatory bird anti-perching devices.• Fences in the process area would be continuous, with no breaks, except for gates, that would be kept closed; and smooth or barbed wire would be used above the top horizontal portion of fencing to discourage perching.• MMI would consider obtaining a Raven Depredation Permit from United States Fish and Wildlife Service (USFWS) or submit for coverage under an NDOW permit.

RDF #	RDF Text	Applicable ¹ (Yes/No)	Notes
Gen 12	Control the spread and effects of nonnative, invasive plant species (e.g., by washing vehicles and equipment, minimize unnecessary surface disturbance; Evangelista et al. 2011). All projects would be required to have a noxious weed management plan in place prior to construction and operations.	No	The <i>Noxious Weed Plan for the Gold Bar Mine Project, Eureka County, Nevada</i> (GBE, 2013) was provided as Appendix D of the Plan of Operations. MMI has also committed to the following EPMs: <ul style="list-style-type: none"> • All vehicle and heavy equipment that may have been exposed to noxious weeds would be cleaned with a power or high-pressure washer prior to entering or leaving the Project mine boundary. Vehicle cleaning would minimize the transport of vehicle-borne weed seed, roots, or rhizomes. • To minimize the transport of soil-borne noxious weed seeds, roots or rhizomes infested soils or material would be stockpiled adjacent to the areas from which they were stripped. Appropriate measures would be taken to avoid wind or water erosion of the affected stockpile. • All interim and final seed mixes, hay, and straw products would be certified weed-free.
Gen 13	Implement project site-cleaning practices to preclude the accumulation of debris, solid waste, putrescible wastes, and other potential anthropogenic subsidies for predators of GRSG.	No	The Class III-waivered landfill is described in Section 2.2.7 . MMI has committed to the following EPM: <ul style="list-style-type: none"> • During all phases of the Project, all food, waste, and other trash would be placed in closed containers.
Gen 14	Locate project related temporary housing sites outside of GRSG habitat.	No	No temporary housing is proposed for this Project.
Gen 15	When interim reclamation is required, irrigate site to establish seedlings more quickly if the site requires it.	No	Reclamation is described in Section 2.2.19 .
Gen 16	Utilize mulching techniques to expedite reclamation and to protect soils if the site requires it.	No	The use of mulch in the reclamation is discussed in Section 2.2.19 and further detailed in the <i>Conceptual Reclamation/Revegetation Plan for the Gold Bar Project Waste Rock Dumps</i> (Cedar Creek, 2016), which was provided as Appendix O of the Plan of Operations.
Gen 17	Restore disturbed areas at final reclamation to the pre-disturbance landforms and desired plant community.	No	Reclamation is described in Section 2.2.19 .
Gen 18	When authorizing ground-disturbing activities, require the use of vegetation and soil reclamation standards suitable for the site type prior to construction.	No	Reclamation of disturbed areas resulting from the Project would be completed in accordance with BLM and NDEP regulations.
Gen 19	Instruct all construction employees to avoid harassment and disturbance of wildlife, especially during the GRSG breeding (e.g., courtship and nesting) season. In addition, pets shall not be permitted on site during construction (BLM 2005b).	No	MMI has committed to the following EPM: <ul style="list-style-type: none"> • New hire and annual refresher training for all employees and contractors would include greater sage-grouse specific protection training that specifically addresses the commitment of MMI to implement the protection program and the need for all employees to avoid harassment and disturbance of greater sage-grouse, especially during the breeding season. MMI would work with NDOW in the development of training materials.
Gen 20	To reduce predator perching in GRSG habitat, limit the construction of vertical facilities and fences to the minimum number and amount needed and install anti-perch devices where applicable.	No	See description for Gen RDF 11.
Gen 21	Outfit all reservoirs, pits, tanks, troughs or similar features with appropriate type and number of wildlife escape ramps (BLM 1990; Taylor and Tuttle 2007).	No	MMI has committed to the following EPM: <ul style="list-style-type: none"> • All lined ponds would be constructed with escape ramps consisting of textured liner to assist in a safe footing during egress, should any wildlife manage to gain access and inadvertently fall into one of the ponds.
Gen 22	Load and unload all equipment on existing roads to minimize disturbance to vegetation and soil.	No	Equipment would be loaded and unloaded in previously disturbed areas, when practicable.

¹ The proposed Project is a non-discretionary 43 CFR 3809 action; therefore, these RDF's are considered recommendations.

Table 4 Lands and Realty Required Design Features

RDF #	RDF Text	Applicable ¹ (Yes/No)	Notes
LR 1	Where new ROWs associated with valid existing rights are required, co-locate new ROWs with existing ROWs or where it best to minimizes impacts in GRSG habitat. Use existing roads to access valid existing rights that are not yet developed.	No	Most roads associated with this project are existing and would only be improved for safety and to allow for heavy-haul traffic. Access to the mine would be on existing roads. Roads are described in Section 2.2.2 .
LR 2	Don not issue ROWs to counties on newly constructed energy/mining development roads, unless for a temporary use consistent with all other terms and conditions included in this document.	No	There would be no ROWs issues to counties for this project.
LR 3	Where necessary, fit transmission towers with anti-perch devices (Lammers and Collropy 2007) in GRSG habitat.	No	MMI has committed to the following EPM: <ul style="list-style-type: none"> • Any overhead power lines within four miles of active and pending active leks would be constructed with anti-perching devices, where applicable. Actions would be completed in consideration of the latest Avian Power Line Interaction Committee guidelines with assistance of BLM and NDOW for the appropriate predatory bird anti-perching devices.

¹ The proposed Project is a non-discretionary 43 CFR 3809 action; therefore, these RDF's are considered recommendations.

Table 5 Fuels and Fire Management Required Design Features

RDF #	RDF Text	Applicable ¹ (Yes/No)	Notes
WFM 1	Power-wash all fire fighting vehicles, including engines, water tenders, personnel vehicles, and all-terrain vehicles (ATVs), prior to deploying in or near GRSG habitat to minimize the introduction and spread of undesirable and invasive plant species.	No	<p>The <i>Noxious Weed Plan for the Gold Bar Mine Project, Eureka County, Nevada</i> (GBE, 2013) was provided as Appendix D of the Plan of Operations. MMI has also committed to the following EPMs:</p> <ul style="list-style-type: none"> • All vehicle and heavy equipment that may have been exposed to noxious weeds would be cleaned with a power or high-pressure washer prior to entering or leaving the Project mine boundary. Vehicle cleaning would minimize the transport of vehicle-borne weed seed, roots, or rhizomes. • To minimize the transport of soil-borne noxious weed seeds, roots or rhizomes infested soils or material would be stockpiled adjacent to the areas from which they were stripped. Appropriate measures would be taken to avoid wind or water erosion of the affected stockpile. <p>All interim and final seed mixes, hay, and straw products would be certified weed-free.</p>
WFM 2	Protect wildland areas from wildfire originating on private lands, infrastructure corridors, and recreational areas.	No	<p>MMI has committed to the following fire protection EPMs:</p> <ul style="list-style-type: none"> • As specified by MSHA, MMI would institute a fire protection training program and would have a rehearsed fire suppression plan. A fire protection system would be installed that would incorporate Eureka County and State of Nevada code requirements in the administration and warehouse complexes, truck shop, crushing plant, and process plant. A 250,000-gallon fresh water/fire water tank would be located above the ADR plant, on the south side of the HLP to provide adequate water pressure for the operations and fire suppression system. A rangeland fuel break would be constructed around the facilities. Water trucks, used for dust suppression, would be available in the event of a fire. MMI would promptly comply with any emergency directives and requirements of Eureka County and the BLM pertaining to industrial operations during the fire season. • Light vehicles traveling outside of the main mining areas and along roads that traverse vegetated rangeland during fire season would carry a small water supply in order to control sparks that may be generated by exhaust. Vehicle catalytic converters would be inspected often and cleaned of all brush and grass debris. • When conducting welding operations, they would be conducted in an area free of or mostly free of vegetation. A minimum of 10 gallons of water and a shovel would be on hand to extinguish any fires created from the sparks. Extra personnel would be at the welding site to watch for fires created by welding sparks.
WFM 3	Reduce the risk of vehicle or human-caused wildfires and the spread of invasive species by planning perennial vegetation (e.g. green-strips) paralleling road right-of-way	No	Reclamation is described in Section 2.2.19 .

¹ The proposed Project is a non-discretionary 43 CFR 3809 action; therefore, these RDF's are considered recommendations.

Table 6 Locatable Minerals Required Design Features

RDF #	RDF Text	Applicable ¹ (Yes/No)	Notes
LOC 1	Install noise shields to comply with noise restrictions (see Action SSS 7) when drilling during the breeding, nesting, brood-rearing, and/or wintering season. Apply GRSG seasonal timing restrictions when noise restrictions cannot be met (See Action SSS 6).	No	Noise modeling completed as part of the analysis does not anticipate noise levels from mining operations (including drilling) to exceed 10 decibels above ambient (Section 4.21.2). Additionally, MMI has committed to the following EPMs: <ul style="list-style-type: none"> Travel timing restrictions would be implemented during lekking season (March 1 – May 15) on Three Bars Road and Roberts Creek Road, from 6:00 AM to 10:00 AM and from 6:00 PM to 4:30 AM. Emergency and local traffic would be exempt from these restrictions. Access road work, road maintenance-related work, gravel pit work conducted by MMI within four miles of an active or pending lek are subject to timing restrictions during lekking season (March 1 – May 15) from 6:00 AM to 10:00 AM and from 6:00 PM to 4:30 AM.
LOC 2	Cluster disturbances associated with operations and facilities as close as possible, unless site-specific conditions indicate that disturbances to GRSG habitat would be reduced if operations and facilities locations would best fit a unique special arrangement.	No	Proposed Project facilities are clustered around the existing Atlas Mine.
LOC 3	Restrict pit and impoundment construction to reduce or eliminate augmenting threats from West Nile virus.	No	Pits are not anticipated to produce pit lakes; therefore, this RDF would not be applicable to this project.
LOC 4	Remove or re-inject produced water to reduce habitat for mosquitoes that vector West Nile virus. If surface disposal of produced water continues, use the following steps for reservoir design to limit favorable mosquito habitat: <ul style="list-style-type: none"> Overbuild size of ponds for muddy and non-vegetated shorelines. Build steep shorelines to decrease vegetation and increase wave actions. Avoid flooding terrestrial vegetation in flat terrain or low lying areas. Construct dams or impoundments that restrict down slope seepage or overflow. Line the channel where discharge water flows into the pond with crushed rock. Construct spillway with steep sides and line it with crushed rock. Treat waters with larvicides to reduce mosquito production where water occurs on the surface. 	No	Project is not expected to produce any additional water from mining operations. The process solution and event ponds are described in Section 2.2.6 .
LOC 5	Address post reclamation management in reclamation plan such that goals and objectives are to protect and improve sage-grouse habitat needs.	No	The reclamation plan is described in Section 2.2.19 .
LOC 6	Maximize the area of interim reclamation on long-term access roads and well pads including reshaping, topsoiling, and revegetating cut and fill slopes.	No	The reclamation plan is described in Section 2.2.19 .
LOC 7	Cover (e.g., fine mesh netting or use other effective techniques) all pits and tanks regardless of size to reduce sage-grouse mortality.	No	Pits are too large for this RDF to be feasible; however, sage-grouse would be able to escape by flight or walking if ever present within the pits.

¹ The proposed Project is a non-discretionary 43 CFR 3809 action; therefore, these RDF's are considered recommendations.