

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

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**June 2012 Competitive Oil and Gas  
Lease Sale  
for the Battle Mountain District,  
Tonopah Field Office, Nevada**

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# 1.0 INTRODUCTION

It is the policy of the Bureau of Land Management (BLM) as derived from various laws, including the Mineral Leasing Act of 1920 and the Federal Land Policy and Management Act of 1976, to make mineral resources available and to encourage development of mineral resources to meet national, regional, and local needs.

The BLM Nevada State Office (NSO) conducts competitive lease sales for oil and gas lease parcels in the Battle Mountain District. The NSO publishes a Notice of Competitive Lease Sale (NCLS) that lists lease parcels offered at the auction at least 45 days before the auction is held. The BLM bases its decision as to which parcels to offer for this competitive lease sale on current information and the management framework developed in the appropriate district or field area land use plan.

In the process of preparing a lease sale, the NSO sends a list of nominated parcels to each field office where the parcels are located. The Field Office staff then review the parcels to determine:

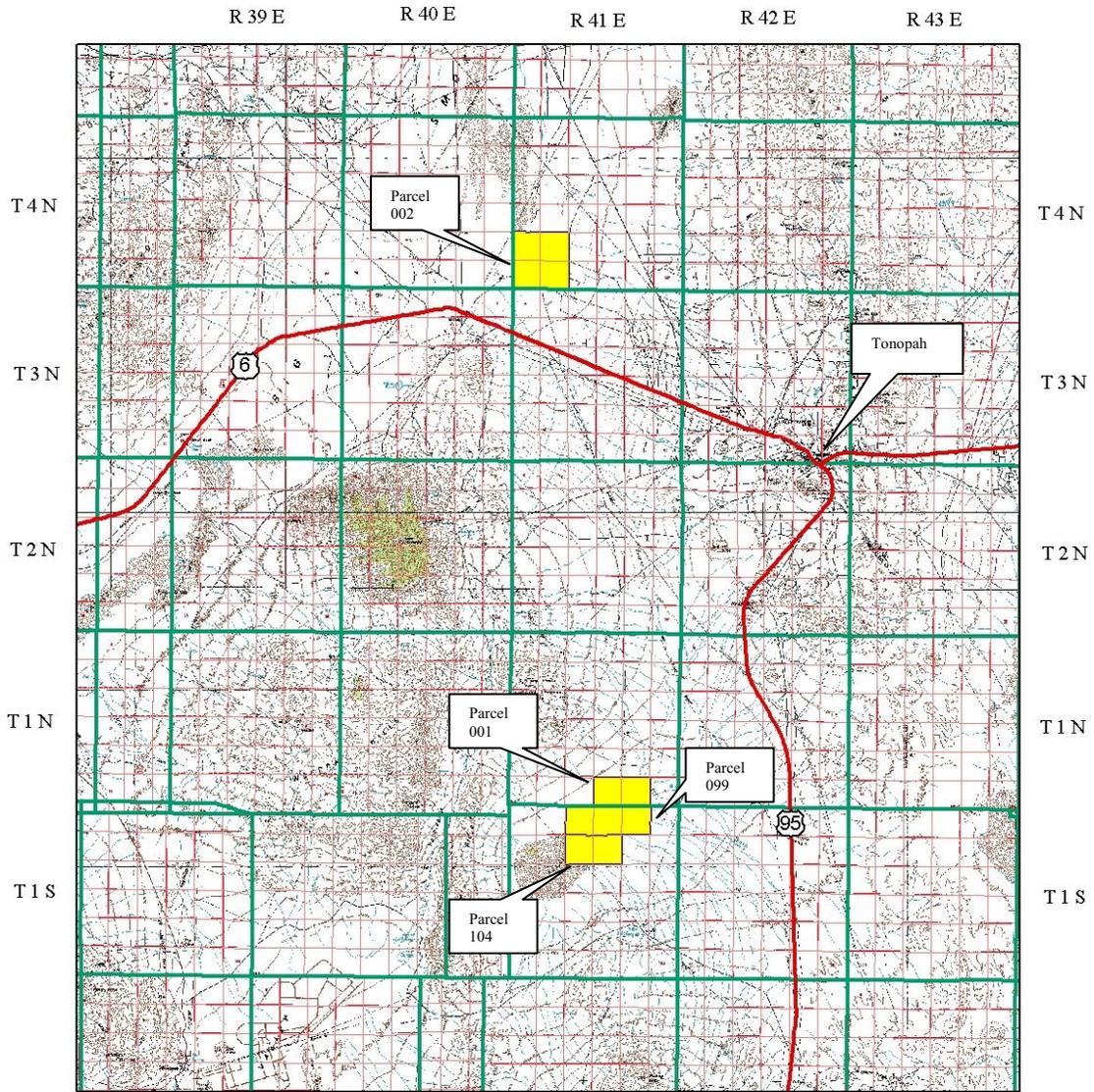
- If they are in areas open to leasing;
- If new information has become available which might change any analysis conducted during the planning process;
- If appropriate consultations have been conducted;
- What appropriate stipulations should be included; and
- If there are special resource conditions of which potential bidders should be made aware.

Once the draft parcel review is completed and returned to the NSO, a list of available lease parcels and stipulations is made available to the public through a NCLS. Lease stipulations applicable to each parcel are specified in the Sale Notice. On rare occasions, additional information obtained after the publication of the NCLS, may result in withdrawal of certain parcels prior to the day of the lease sale.

There are 5 Tonopah Field Office (TFO) administered parcels nominated for the June 2012 Competitive Oil and Gas Lease Sale (see Appendix A). This Environmental Assessment (EA) documents the review of 4 of the parcels nominated (parcels 001, 002, 099, and 104). Parcel 004 will be deferred from the June 2012 Lease Sale pending completion of the priority sage grouse habitat map.

An assessment of environmental impacts that might result from an oil and gas lease sale was conducted by resource specialists who relied on historical data and personal knowledge of the areas involved, conducted field inspections, or reviewed existing databases and file information to determine the appropriate stipulations to attach to specific parcels. This complies with National Environmental Policy Act (NEPA) of 1969, as amended (Public law 91-90, 42 USC 4321 et seq.)

# June 2012 Oil and Gas Lease Sale



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for the individual use or aggregate use with other data.

Figure 1. Location map of the June 2012 oil and gas lease sale parcels analyzed in this EA.

At the time of this review, it is not known whether nominated parcels will receive bids, if leases will be issued, or if well sites or roads might be proposed in the future. Detailed site specific analysis of individual wells or roads would occur when an Application for Permit to Drill (APD) is submitted.

The assessment area is approximately 200,000 acres covering a small part of southern Big Smoky Valley and northeastern section of the Alkali Lake located southwest of Tonopah, Nevada.

## **2.0 PURPOSE AND NEED**

The BLM TFO's purpose is to offer 4 nominated parcels for competitive oil and gas leasing in the June 2012 Competitive Oil and Gas Lease Sale. Offering nominated parcels for competitive oil and gas leasing allows private individuals or companies to explore the federal mineral estate of lands managed by the federal government.

The sale of oil and gas leases is needed to allow continued exploration for additional petroleum reserves which would help the United States meet its growing energy needs and to enable the United States to become less dependent on foreign oil sources. This action is being initiated to facilitate the TFO's implementation of the requirements in Executive Order 13212 (2001) and the National Energy Policy Act (2005).

### **2.1 Land Use Plan Conformance**

The proposed action is in conformance with the Tonopah Resource Management Plan (RMP), approved on October 2, 1997, for the Tonopah Planning Area. The proposed action is in conformance with the RMP because it is specifically provided for in the following LUP decisions:

Page 22 of the RMP, under the heading "Fluid Minerals" subtitled "Objective": "To provide opportunity for exploration and development of fluid minerals such as oil, gas, and geothermal resources, using appropriate stipulations to allow for the preservation and enhancement of fragile and unique resources."

Page 22-23 of the RMP, under the heading "Fluid Minerals" subtitled "RMP Determinations" numbers 1-4: "The RMP designated 5,360,477 acres of BLM-administered federal land in the Tonopah Planning Area open for continued oil and gas leasing and development, subject to standard lease terms and conditions." All of the parcels nominated for leasing in the June 2012 Oil and Gas lease sale are within areas open to oil and gas leasing.

### **2.2 Relationship to Statutes, Regulations, Policy, Plans and Other Environmental Analysis**

Purchasers of oil and gas leases are required to obey all applicable federal, state, and local laws and regulations including obtaining all required permits should lease development occur.

Federal regulations and policies require the BLM to make public land and resources available based on the principle of multiple-use. At the same time, it is BLM policy to conserve special status species and their habitats, and ensure that actions authorized by the BLM do not contribute to a species becoming listed as threatened or endangered by the United States Fish and Wildlife Service (USFWS).

The BLM must adhere to Section 106 of National Historic Preservation Act (NHPA). The BLM also must comply with Nevada State Historical Preservation Office (SHPO) protocol agreement,

which is authorized by the National Programmatic Agreement between the *BLM*, the *Advisory Council on Historic Preservation*, and the *National Conference of State Historic Preservation Officers*.

As the BLM reviews draft parcel locations, the cultural resource staff reviews the locations to determine if any are within known areas of cultural or archeological concern. If requested by tribes, Native American consultation is conducted for each lease sale. If Traditional Cultural Properties (TCP) or heritage-related issues are identified, such parcels are withheld from the sale while letters requesting information, comments, or concerns are sent to Native American representatives. If the same draft parcels appear in a future sale, a second request for information is sent to the same recipients and the parcels may be held back again. If no response to the second letter is received, the parcels may be offered in the next sale.

If responses are received, BLM cultural resources staff will discuss the information or issues of concern with the Native American representative to determine if all or only portions of a parcel need to be withdrawn from the sale or if special stipulations need be attached as lease stipulations.

The Proposed Action and alternatives would be in conformance with the National Environmental Policy Act (NEPA) of 1969, (P.L. 91-190 as amended (42 USC §4321 et seq.); Mineral Leasing Act (MLA) of 1920 as amended and supplemented (30 USC 181 et seq.); the Federal Oil and Gas Leasing Reform Act of 1987, which includes the regulatory authority under 43 Code of Federal Regulation (CFR) 3100, Onshore Oil and Gas Leasing; General, and Title V of the Federal Land Policy and Management Act of 1976 (FLPMA); Right-of-Way (ROW) under regulatory authority under 43 CFR 2800 for ROWs.

This area was analyzed previously through the Final Regional Environmental Analysis on Oil and Gas Leasing in the Battle Mountain District Environmental Assessment (EA) (June 23, 1976). The EA is available at the TFO for review.

## **2.3 Scoping and Public Involvement**

Native American consultation letters for the June 2012 Lease Sale were sent November 23, 2011. On December 21, 2011, resource specialists met with a representative of the Duckwater Shoshone Tribe in Tonopah. Lease parcels of interest to the tribes were visited on that day. Comments were received from the Duckwater Shoshone tribe on December 22, 2011. Tribal representative expressed no objections to the location of the lease parcels.

Nevada Department of Wildlife (NDOW) was informed of the June 2012 lease sale on November 8, 2011. A response letter was received from NDOW on December 14, 2011. Resource conflicts identified by NDOW are considered in this EA.

## **3.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES**

### **3.1 Proposed Action**

The proposed action as assessed in this EA is to recommend to the State Director that the BLM offer for competitive oil and gas leasing 4 parcels of federal minerals covering approximately 7,015 acres administered by the TFO. Standard terms and conditions as well as special stipulations would apply.

Lease stipulations (as required by Title 43 CFR 3131.3) would be added to the 4 parcels to address site specific concerns or new information not identified in the land use planning process. Parcel numbers, acreages, and locations of parcels are listed in Appendix A.

Drilling of wells on a lease is not permitted until the lease owner or operator secures approval of a drilling permit and a surface use plan specified under Onshore Oil and Gas Orders, Notice to Lessee's (NTL's) listed in Title 43 CFR 3162.

The 4 parcels contain a special Cultural Resources Lease Notice stating that all development activities proposed under the authority of these leases are subject to compliance with Section 106 of the NHPA and Executive Order 13007. Standard terms and conditions as well as special stipulations listed in the RMP also apply.

Many of the parcels have one or more of the following stipulations associated with the lease, as shown in Appendix B of the EA:

Arch Zone 7 Archeological Stipulation  
NV-060-NA1 Native American Consultation required  
NV-065-24 Migratory Birds Nesting Season Restriction

No additional mitigation measures are necessary at this time; however, if parcels are developed in the future, site specific mitigation measures and Best Management Practices (BMPs) would be attached as Condition of Approval (COA) for each proposed activity which would be analyzed under their own site specific analysis once an Application for Permit to Drill (APD) was received by the BLM.

### **3.2 No Action Alternative**

The BLM NEPA Handbook (H-1790-1) states that for EAs on externally initiated proposed actions, the no action alternative generally means that the proposed action would not take place. In the case of a lease sale, this would mean that all expressions of interest to lease (parcel nominations) would be denied or rejected.

Under the no action alternative the BLM would withdraw all 4 lease parcels from the June 2012 lease sale. Surface management would remain the same and ongoing oil and gas development would continue on leased federal, private, and state lands.

### **3.3 Reasonably Foreseeable Development Scenario**

A Reasonably Foreseeable Development Scenario (RFD) for oil and gas is a long-term projection of oil and gas exploration, development, production, and reclamation activity. The RFD covers oil and gas activity in a defined area for a specified period of time. The RFD projects a baseline scenario of activity assuming all potentially productive areas can be open under standard lease terms and conditions, except those areas designated as closed to leasing by law, regulation, or executive order.

The baseline RFD provides the mechanism to analyze the effects that discretionary management decisions have on oil and gas activity. The RFD also provides the basic information that is analyzed in the NEPA document under various alternatives. The RFD discloses indirect future or potential impacts that could occur once the lands are leased. Prior to any future development, the BLM would require a site-specific environmental analysis at the exploration and development stages in order to comply with NEPA.

The proposed action does not include exploration, development, production, or final reclamation of oil and gas resources; however, authorization of oil and gas leasing does convey a right to subsequent exploration and production activities. These later activities that are associated with oil and gas leasing would be analyzed as part of a site specific NEPA analysis when and if an Application for Permit to Drill (APD) is received.

#### **3.3.1. General Assumptions for the Reasonably Foreseeable Development Scenario**

The RFD provides the basis for the analysis of the environmental consequences in Chapter 4 of this document. The RFD for the assessment area is based on the geology, oil and gas development history, oil and gas potential, BLM well data, and data from other EAs for oil and gas leases in eastern Nevada.

#### **3.3.2 Geology of Oil and Gas in Tonopah Field Office Administrative Area**

Many of the rock formations found within the assessment area are indicative of a continental plate margin converging with an oceanic plate. A combination of depositional geology and orogenic (mountain building) events along this plate margin results in the assessment area having some potential for hydrocarbon production.

The development of the Antler Orogeny in the Late Devonian to Early Mississippian allowed the deposition of the organic-rich source rocks necessary for hydrocarbon development. Late Cretaceous Sevier Orogeny created a stacked set of thrust sheets which buried the mid-Paleozoic organic sediments beneath a thickened crust where they could pass into the oil and gas-generating temperature and pressure windows.

The Sevier Orogeny in Late Cretaceous also placed locally prospective reservoir rocks above the Mississippian source rocks and created potential oil and gas traps. In geologic time following the Sevier Orogeny, the assessment area experienced varying amounts of volcanism and the

development of the present-day basin and range topography. The late Tertiary volcanic rocks constitute the main reservoir of the oil fields in the Railroad Valley petroleum province.

### **3.3.3 History of Oil and Gas Exploration in the Tonopah Administrative Area**

Nevada is considered to be a frontier state for oil exploration with 15 small oil fields in three areas of the state (Pine Valley in northern Eureka County, Railroad Valley in northeastern Nye County, and Deadman Creek in Elko County). Railroad Valley is the predominate area of oil production in Nevada.

The assessment area includes a small part of southern Big Smokey Valley and the Alkali dry lake located southwest of Tonopah. Over the past 60 years, no oil and gas exploration or production has occurred in the assessment area. There are several wildcat wells that were drilled outside of the assessment area mostly in the early 1980's. A wildcat well was drilled 14 miles southwest of parcel 2 in 1997. The well reached the Precambrian basement rocks at 8,006 ft and encountered no oil or gas bearing zones.

Because of the lack of exploration activity in the assessment area, the BLM considers the lease parcel to have low potential for a discovery in the location of the lease parcels analyzed in this EA.

### **3.3.4 Trends and Projections for Oil and Gas Exploration in Nevada and Railroad Valley.**

Oil production data from the Nevada Bureau of Mines and Minerals (Figure 2) show that Oil production has fallen off since the early 1990s and has flattened out at less than 500,000 barrels per year. With new technologies such as horizontal drilling in plays like the Bakken in North Dakota drawing off investment and drilling equipment, it is highly unlikely that the trend would improve much over the next ten years.

However wildcatting may continue on a sporadic basis and another large discovery in Nevada could reverse this trend.

As part of the 1997 RMP, the BLM conducted a reasonable foreseeable development scenario for oil and gas (RFD). The assumptions used in the RMP are presented in the 1997 RMP document.

The RMP (1997) projected that 30 wildcat wells would be drilled through the year 2014 for a total disturbance of 296 acres. They also projected a number of additional production wells in old fields and estimated a total future surface disturbance of 131 acres. The 1997 RMP also projected the development of two additional oil fields with a total future disturbance of 944 acres.

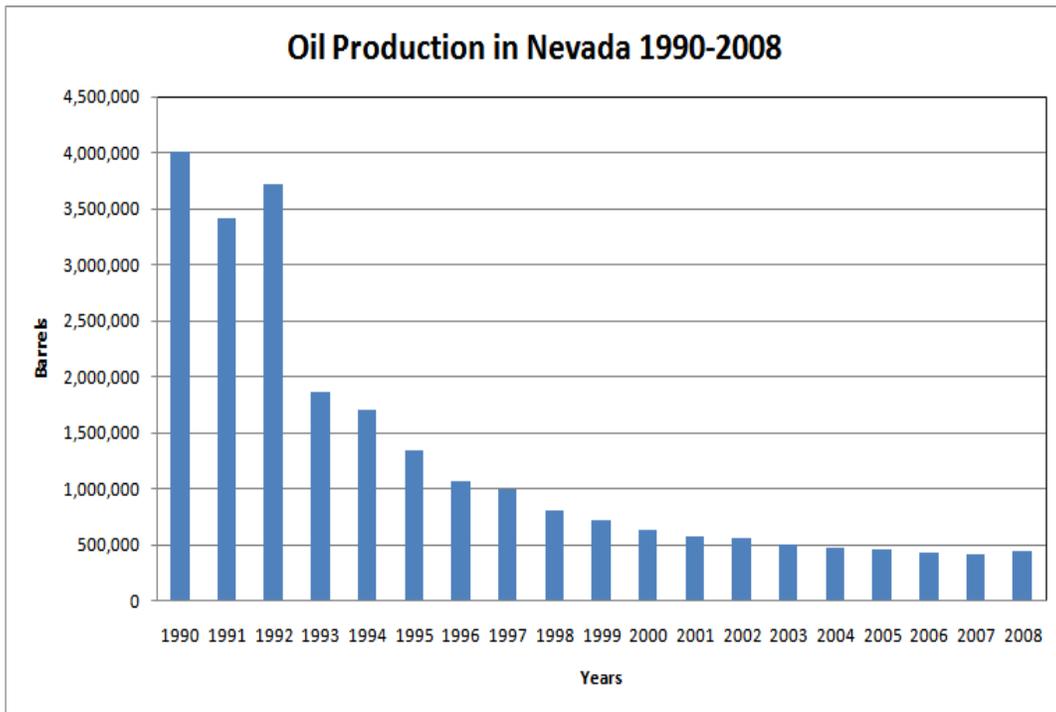


Figure 2. Oil production trends for 1990 through 2008.

Finally, the total estimated disturbance for oil and gas development in the Railroad Valley area was estimated at 1,211 acres. This calculates to about 71 acres per year of disturbance.

The above historical data illustrate that there has been a continuous drop in oil production over the last 20 years. Considering that there has been no exploration activity in the assessment area for the last 60 years and the parcels listed in this EA are in unknown oil and gas areas, any drilling would be considered as wildcat wells. It might be expected that 1-2 wells per lease could be drilled. The total amount of disturbance based on the lease acres analyzed in this EA could be expected to be zero or very low ( $\leq 10$  acres).

## **4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

This section describes the resource environments that would be affected by the implementation of the proposed action alternative as described in Section 3.1.

### **4.1 Supplemental Authorities and Other Resources to be considered**

To comply with the NEPA, the BLM is required to address specific elements of the environment that are subject to requirements specified in statute or regulation or by executive order (BLM 1988, BLM 1997, BLM 2008). The following table outlines the elements that must be addressed in all environmental assessments, as well as other resources deemed appropriate for evaluation by the BLM, and denotes if the proposed action or no action alternative affects those elements.

Table 1: Elements of the environment that may be affected by the proposed action

<b>Element</b>	<b>Present Yes/No</b>	<b>Potentially Affected Yes/No</b>	<b>Rationale</b>
Air Quality	Yes	Yes	See discussions in Sections 4.3.1.
Area of Critical Environmental Concern (ACEC)	No	No	The nominated lease parcels are not located in or near any ACECs.
Cultural Resources	Yes	Yes	See discussions in Sections 4.3.2.
Environmental Justice	Yes	No	As of 2009, Esmeralda County and Nye County, respectively, had 6.9 and 16.2 per cent of the population living below poverty level. Additionally, Esmeralda and Nye County had a non-white (minority) population of approximately 23 and 21 per cent (BLM, 2011). Drilling activities often provide a few short-term employment opportunities that may be afforded to low income or disadvantaged individuals. These percentages reflect that there is a very small potential that some minority and/or low income communities could be indirectly affected by drilling activities. This would be a small but positive socioeconomic benefit.
Floodplains	Yes	Yes	There are 100-year floodplains (FEMA Flood Zone A) in or around the nominated lease parcels. See discussion in Section 4.3.6.
Noxious Weeds and Invasive, Non-native Species	Yes	Yes	See discussion in Sections 4.3.9.
Migratory Birds	Yes	Yes	See discussion in Sections 4.3.4.2.
Native American Religious Concerns	Yes	Yes	See discussions in Sections 4.3.3.
Prime or Unique Farmlands	No	No	The nominated lease parcels are not located in or near any prime or unique farmlands.
Threatened, and/or Endangered Species	No	No	Desert tortoise and Railroad Valley springfish are the only two threatened and/or endangered species in TFO resource area. These two species do not occur in the assessment area.
Wastes, Hazardous or Solid	Yes	Yes	See discussion in Sections 4.3.8.
Water Quality (Surface-Ground)	Yes	Yes	See discussion in Sections 4.3.7.
Wetlands-Riparian Zones	No	No	There are no wetlands or riparian zones in the assessment area.

Wild and Scenic Rivers	No	No	The nominated parcels are not located in or near any wild and scenic rivers.
Wilderness	Yes	No	The nominated parcels are not located in or near any wilderness area.

Other resources of the human environment that have been considered for this environmental assessment (EA) are listed in the table 2. Elements that may be affected are further described in the EA. Rationale for those elements that would not be affected by the proposed action and the no action alternative is listed in the table below.

Table 2: Other resources that may be affected by the proposed action

Other Resources	Present Yes/No	Potentially Affected Yes/No	Rationale
Geology and Minerals	Yes	Yes	See discussion in Sections 4.3.5.
Soils	Yes	Yes	See discussion in Sections 4.3.10.
Vegetation	Yes	Yes	See discussion in Sections 4.3.12.
Range Resources	Yes	Yes	See discussion in Sections 4.3.11.
Recreation	Yes	Yes	See discussion in Sections 4.3.16.
Visual Resources	Yes	Yes	See discussion in Sections 4.3.15.
Socioeconomic Values	Yes	Yes	See discussion in Sections 4.3.17.
Wildlife	Yes	Yes	See discussion in Sections 4.3.4.1.
Special Status Species	Yes	Yes	See discussion in Sections 4.3.4.2.
Land & Realty	Yes	Yes	See discussion in Sections 4.3.14.
Forestry	No	No	There is no commercial harvesting in the area of the lease parcels and therefore the lease sale would not pose any significant environmental impacts.
Wild Horse and Burro	Yes	Yes	See discussion in Sections 4.3.13.

## 4.2 Environmental Impacts of No Action Alternative

The no action alternative would mean a rejection or denial of the lease parcels for sale. This in turn means that no on-the-ground actions would occur (geophysical exploration, exploration drilling, etc.). There are no resulting actions that could be reasonably considered in terms of impacts to resources. Since there would not be impacts to resources from the no action alternative, it is not considered further in this chapter of the EA.

## **4.3 Impacts Requiring Further Analysis**

The following resources have been determined, through internal scoping, to be present and potentially affected by the nominated lease parcels: air quality, cultural resources, noxious weeds, geology and minerals, soils, migratory birds, water quality/hydrology, vegetation, wild horses and burros, visual resource management, wastes (hazardous and solid), special status species, Native American concerns, wildlife, range resources, lands and realty, recreation, and socioeconomics. These resources have been brought forth for further analysis in this Environmental Assessment.

There would be no direct impacts from issuing new oil and gas leases because leasing does not directly authorize oil and gas exploration and development activities. Direct impacts from these activities would be analyzed under a separate site-specific environmental analysis at the time activities are proposed.

The reader should note that in the following sections only indirect impacts that might result from the proposed action are considered.

### **4.3.1. Air Quality**

#### **4.3.1.1. Affected Environment**

Weather in central Nevada is characterized by low humidity with large diurnal variations in temperature. Prevailing wind patterns are generally from the west but locally follow the north-south orientations of the mountain ranges. Occasional intense winds can cause localized dust storms which increases fugitive dust and decreases visibility.

Air quality in the assessment area has been designated as “attainment/unclassified” (which means it either meets, or is assumed to meet, the applicable federal ambient air quality standards) for all standard (“criteria”) air pollutants (U.S. Environmental Protection Agency, 2007). The Nevada Department of Conservation and Natural Resources, Division of Environmental Protection, Bureau of Air Pollution Control has been delegated responsibility by both the U. S. Environmental Protection Agency and the State of Nevada to regulate emissions of air pollutants in Nevada.

The lease parcels are not located in or adjacent to any mandatory Class I (most restrictive) federal air quality areas, U.S. Fish and Wildlife Service Class I air quality units, or American Indian Class I air quality lands.

#### **4.3.1.2. Environmental Consequences of the Proposed Action Alternative on Air Quality**

Potential indirect impacts would result from exploration activities where the fine-grained nature of some soils within the lease area would likely contribute to a local increase in dust particles from mineral materials mining and access road and well pad construction. The effect on air quality would be an increase in fugitive dust related to freshly disturbed ground surfaces and exhaust fumes from motorized equipment during site construction and drilling activities.

Increased traffic on the existing roads would also add to the total; however, for most drilling activities, the impacts would be minor and would occur over a two to three week period. Impacts to air quality would cease when these activities cease. The implementation of BMPs, COAs, and mitigation measures would reduce impacts to air quality. All operations would comply with applicable air quality standards.

Since oil and gas exploration activity is expected to be minimal (see Section 3.4) impacts to air quality are not expected to be significant. The proposed action would not result in an exceedance of the National Ambient Air Quality Standards (NAAQS) standards.

## **4.3.2. Cultural Resources**

### **4.3.2.1. Affected Environment**

The June 2012 lease parcels are located west and south west of Tonopah, Nevada, a traditional territory of the Western Shoshone Tribe. The majority of lands within the proposed lease areas have not been surveyed for cultural resources. Most of the surveys conducted within these areas have been linear surveys for roads or mining projects. Cultural sites were identified during most of those surveys. Should exploration or development of a lease parcel be proposed, a Class III cultural survey appropriate for that project would be required if the lease parcel has not been adequately surveyed in the last 10 years.

### **4.3.2.2. Environmental Consequences of the Proposed Action on Cultural Resources**

Should exploration or development be authorized, cultural sites eligible for the National Register of Historic Places (NRHP) could be directly or indirectly impacted by proposed projects or increased access to previously inaccessible areas.

The preferred way to protect eligible cultural sites is to avoid them. However, avoidance of cultural sites eligible for the NRHP may not be adequate if the project results in an adverse effect to the setting and feeling of the view-shed. This may result in a loss of integrity of the site and be considered an adverse effect. When sites cannot be avoided or are indirectly impacted by a project, a Historic Preservation Treatment Plan would be developed and implemented to extract and archive data about the sites.

Environmental impacts to cultural resources are expected to be minimal. This is because activity would be minor and site specific NEPA analysis (including the incorporation of COAs, BMPs, and mitigating measures) would be conducted and appropriate mitigation measures applied to protect cultural resources.

## **4.3.3. Native American Religious Concerns**

### **4.3.3.1. Affected Environment**

The proposed action lies within the traditional territory of the Western Shoshone. Various tribes

and bands of the Western Shoshone have stated that federal projects and land actions can have widespread effects to their culture and spiritual beliefs as they consider the landscape as sacred and as a provider. Sites and resources considered sacred or necessary to the continuation of tribal traditions include, but are not limited to: prehistoric and historic village sites, sources of water (hot and cold springs), pine nut gathering locations, sites of ceremony and prayer, archaeological sites, burial locations, “rock art” sites, medicinal/edible plant gathering locations, areas associated with creation stories, or any other tribally designated Traditional Cultural Property.

The majority of lands within the proposed action area have not been analyzed for cultural resources or Native American Religious Concerns. Therefore, the BLM contacted the Duckwater and Yomba Shoshone Tribes to identify areas of concern, mitigation measures, operating procedures or alternatives that may eliminate or reduce impacts to any existing tribal resources. Information sharing and an offer for consultation is on-going and further information about areas of concern to Native Americans may be shared at a later date.

Should an APD be received by an interested party after the sale of a lease parcel, the BLM would initiate site visits to discuss Native American concerns.

#### **4.3.3.2. Environmental Consequences of the Proposed Action on Native American Religious Concerns**

Although the act of selling oil and gas leases does not directly authorize exploration, development, or production, or any other related ground disturbance activities, there does exist the potential for indirect impacts to Native American sites of spiritual, cultural, or traditional nature. If a lease is sold, the lessee retains irrevocable rights and can foreclose the authorized officer's use of some mitigation measures. For example, according to 43 CFR § 3101.1-2, once a lease is issued to its owner, that owner has the *"right to use as much of the lease lands as is necessary to explore for, drill for, mine, extract, remove and dispose of the leased resource in the leasehold"* subject to specific nondiscretionary statutes and lease stipulations. However, impacts to cultural sites can be minimized and/or mitigated when affected Tribes provide input and actively and fully participate in the decision making process.

Environmental impacts to Native American religious concerns are expected to be minimal because exploration activity is expected to be minor and site specific NEPA analysis (including the development of COAs, BMPs, and mitigation measures) would be applied to protect the resources.

#### **4.3.4. Wildlife, Special Status Species, and Migratory Birds**

##### **4.3.4.1. Wildlife**

##### **4.3.4.1.1. Affected Environment**

The area of the proposed action provides habitat for a wide variety of birds, mammals (including bats), and reptiles. The RMP indicates that pronghorn antelope occur in the general area. The

proposed area is habitat for several different species of raptors; including, eagles, falcon, hawks, and owls.

#### **4.3.4.1.2. Environmental Consequences of the Proposed Action on Wildlife**

Direct and indirect effects on specific wildlife species cannot be determined until site specific project proposals are analyzed at the APD stage of development. In general, mammals such as pronghorn antelope will avoid and move away from oil and gas drilling activities. Oil and gas drilling requires very little surface disturbance and is temporary in nature. Wildlife will move back into the area in a short time after reclamation.

Site-specific wildlife resource surveys, BMPs, COAs, and mitigation measures at the APD level environmental assessment and the temporary nature of oil and gas exploration should effectively minimize adverse effects to wildlife. Additionally, the acreage of disturbance associated with oil and gas exploration and production are expected to be minimal.

#### **4.3.4.2. BLM and State of Nevada Sensitive Species and Migratory Birds**

##### **4.3.4.2.1. Affected Environment**

Sensitive Species are taxa that are not already identified as BLM Special Status Species under, federally-listed, proposed, or candidate species; or State of Nevada listed species. BLM policy is to provide these species with the same level of protection as is provided for candidate species in BLM Manual 6840.06 C, that is to ensure that actions authorized, funded, or carried out do not contribute to the species becoming listed. The Sensitive Species designation is normally used for species that occur on BLM-administered lands for which BLM has the capability to affect the conservation status of the species through management. The BLM Manual 6840.06 E provides factors by which a native species may be listed as “sensitive.”

For a complete list of Nevada BLM Sensitive Species that have potential to occur in the assessment area see Appendix C.

Numerous migratory birds utilize the area when water is present. The parcels offered are far enough away from raptor nesting habitat in the surrounding ranges (Lone Mountain, Weepah Range, and Paymaster Ridge) so that drilling activities will not impact nesting. Any exploration activity during the migratory bird nesting season (roughly, March 1 through July 31) risks a violation of the Migratory Bird Treaty Act.

##### **4.3.4.2.2. Environmental Consequences of the Proposed Action on Special Status Species and Migratory Birds**

Construction activities have the potential to affect migratory birds and sensitive species that occur in the lease parcel areas. While little potential exists to effect the population of most bird species, ground clearing, or other habitat disturbance activities (such as road construction and drill pad construction) conducted during the migratory bird nesting season (roughly, March 1

through July 31) have the potential to destroy eggs and young of migratory birds, thereby violating the Migratory Bird Treaty Act.

Site specific COAs, BMPs, and mitigation measures have the potential of reducing the impacts of exploration and production activities on special status species and migratory birds. Site specific NEPA analysis would be implemented to avoid critical habitat for sensitive species (water sources, leks, nesting areas). Since oil and gas activities are expected to be minimal, impacts to migratory birds are expected to be insignificant.

### **4.3.5. Geology and Minerals**

#### **4.3.5.1. Affected Environment**

One nominated lease parcels is located in the southern part of Big Smoky Valley. The Big Smoky Valley is located within the Basin and Range geological province which comprises of a series of north-south oriented mountain ranges separated by broad valleys.

Three of the June 2012 lease parcels are located southwest of Tonopah on a small playa called Alkali Lake. The Alkali Lake is a dry lake bed of late Pleistocene age which are typically found on the valley floors of the Basin and Range topography in Nevada. The Alkali Lake is bounded on the west by Lone Mountain, Weepah Hills, and Paymaster Ridge and by Montezuma Range to the south.

A variety of rocks can be found within the area including plutonic intrusive igneous rocks in Lone Mountain, carbonates and clastic rocks in the San Antonio Mountains, and extrusive volcanic rocks of Tertiary age that make up the silver and gold rich hills surrounding Tonopah. The sediment accumulation in the Big Smoky Valley can reach thousands of feet and is comprised of Tertiary and Pleistocene fluvial, lacustrine sediments, and eroded igneous rocks.

No exploration for oil and gas deposits has occurred in the assessment area for the last 60 years. The oil fields in Railroad Valley produce from Tertiary volcanic rocks of the Garrett Ranch Group. It is not known if this formation occurs in the subsurface of the assessment area. Due to the lack of exploration efforts in the area, the hydrocarbon environment of the assessment area is unknown.

There are 2 active geothermal leases in the assessment area (N-86938 and N-86939). Both leases are south of parcels 099 and 104 with geothermal lease N-86938 partially overlapping the eastern portion of parcel 104.

#### **4.3.5.2. Environmental Consequences of the Proposed Action on Geology and Minerals**

The potential exist that oil and gas interests may overlap with those of mineral exploration. However, the majority of acres that may be used for oil and gas exploration are usually reclaimed within ten years. In most instances, oil and gas exploration and development are short term (less than one year) endeavors and hence would not appreciably affect mineral exploration

and development. Agreements between oil and gas and mineral operators help to mitigate any adverse effects that might interfere with oil and gas production on a long-term basis.

Oil and gas exploration and development activities could require up to 2.5 acres of gravel pit expansion as gravel is removed for construction of access road and well pad. This small acreage would not greatly increase the number of gravel pits, nor would it burden other users of gravel.

In Nevada, oil and gas wells are typically associated with elevated water temperatures (160°F), and conflicts may arise between geothermal and oil and gas exploration and/or development. These potential conflicts would be dealt with through negotiations with the operators.

### **4.3.6. Floodplains**

#### **4.3.6.1. Affected Environment**

Parcel 002 is located within the 100-year floodplain of Peavine Creek in the southern part of the Big Smoky Valley. Summer rain storm events could occur in the higher elevations surrounding the parcels and create flash flooding that would drain toward the major ephemeral wash, Peavine Creek.

Parcels 001, 099, and 104 are located near Alkali Lake. Summer thunderstorms could develop over the higher elevations to the north, west, and south of these parcels and therefore could bring minor ponding to these parcels.

All parcels would be evaluated in more detail once an APD has been received and stipulations may be developed to mitigate any potential flooding.

#### **4.3.6.2. Environmental Consequences of the Proposed Action on Floodplains**

Potential impacts of lease development may include alteration of natural floodplain areas by surface disturbance or placement of oil and gas facilities. New access roads may be constructed which cross floodplains. Specific mitigation measures to avoid potential adverse impacts to floodplains would be taken into consideration during the APD stage.

### **4.3.7. Water Quality (Surface and Ground) and Quantity**

#### **4.3.7.1. Affected Environment**

##### **4.3.7.1.1 Hydrographic Basins**

The proposed lease parcels are located in Hydrographic Region 10, known as the Central Region. The leases are within hydrographic sub-area 142, known as Alkali Spring Valley and sub-area 137A, Big Smokey Valley-Tonopah Flat. Table 1 is a summary of the Hydrographic Basins, perennial yields, and committed resources in the proposed lease area:

<b>Area/ Sub Area</b>	<b>Basin Name</b>	<b>AREA Square Miles</b>	<b>Perennial Yield AF/YR</b>	<b>Committed Resources (12/2011)</b>	<b>Designated (Yes/No)</b>
137A	Big Smoky Valley Tonopah Flat	1603	6,000	23,930	Yes
142	Alkali Spring Valley	313	3,000	2,396	No

Table 3. Hydrographic Basins potentially affected by oil and gas lease sale.

Designated groundwater basins are basins where permitted groundwater rights approach or exceed the estimated average annual recharge and the water resources are being depleted or require additional administration. The committed resource is the total volume of permitted, certificated and vested ground-water rights which are recognized by the State Engineer and can be withdrawn in a groundwater basin in any given year.

#### **4.3.7.1.2. Physiography**

Big Smoky Valley and Alkali Spring Valley are located in the Great Basin section of the Basin and Range Physiographic Province. The Basin and Range Physiographic Province is characterized by alluvial fill valleys bordered by generally north-south trending mountain ranges.

A low alluvial ridge separates the northern and southern areas of the Big Smoky Valley. The Big Smoky Valley is bounded by Toiyabe and Shoshone ranges to the North, the San Antonio Range to the East, the Monte Cristo Range in the west and Lone Mountain and Silver Peak Range to the South. The proposed lease area is located in the southern portion of Smoky Valley, known as Tonopah Flat sub-area. The Tonopah Flat area is within the northeast-southwest trending valley floor with elevation ranges between 4,720-5,800 feet above mean seal level.

#### **4.3.7.1.3. Groundwater Occurrence and Movement**

The proposed leases are located in the Central Hydrographic Region which is located within the larger Basin and Range Groundwater Aquifer System. Basin-fill aquifers are composed primarily of alluvial, colluvial and lacustrine deposits with virtually all major groundwater development and withdrawal occurring in the upper 500 feet of these aquifers.

The aquifer of the Tonopah Flat sub-area is approximately 65 miles in length with an average width of 9 miles. The maximum thickness of the unconfined aquifer is between 3,000 and 5,000 feet. The basin-fill aquifer is composed of three hydrostratigraphic units: younger alluvium, older alluvium and playa deposits. Consolidated bedrock underlies the basin fill aquifer and is exposed in the surrounding mountains. Bedrock includes intrusive and extrusive igneous rocks, and clastic and carbonate sedimentary rocks. The carbonate rocks to the east include dolomite, limestone with minor amounts of quartzite and shale. The carbonate rock may transmit significant amounts of water where solution channels have developed.

The aquifer in Alkali Spring Valley is approximately 17 miles long with a average width of 4 miles. The thickness of the aquifer in Alkali Spring Valley exceeds 500 feet and at its center it is probably several times as thick (Rush, 1968).

Groundwater recharge comes from precipitation in the mountain ranges where it reaches the water table through stream flow infiltration or through fractures within the consolidated rocks. Water is discharged at the surface through surface evaporation at playas or transpiration from vegetation.

An estimated 2,000 acre-feet-per-year of underflow moves from Ione Valley (Hydrographic Area 135) to the Tonopah Flats sub-area. It is estimated that 8,000 acre-feet per year of underflow moves from Tonopah Flats to Clayton Valley (Hydrographic Area 143) through the alluvium and consolidated rocks at Clayton Narrows. It is estimated that 5,000 acre-feet per year of underflow moves from Alkali Spring Valley to Clayton Valley (Rush and Schroer, 1971).

An estimated 5,500 acre-feet-per-year of underflow moves from Ralston Valley (Hydrographic Area-141) to Alkali Spring Valley, and an estimated 5,000 acre-feet-per-year of water moves as underflow from Alkali Spring Valley to Clayton Valley (Rush, 1968).

#### **4.3.7.1.4 Groundwater Recharge from Precipitation**

Groundwater recharge is believed to occur principally in the higher mountain ranges. The rain and snowmelt flows overland into channels, where seepage losses occur, and into fractures in the rock. Most of this water is lost. On an annual basis, as much as 90 percent of the total annual precipitation is lost through evaporation and transpiration; only an estimated 5 percent infiltrates to recharge the aquifers. Most of the recharge occurs at elevations above 6,000 feet.

#### **4.3.7.1.5 Groundwater Quality**

Total dissolved solids is lowest in the upland areas and highest in areas of evaporation (playas) and plant transpiration. In general, groundwater in the Tonopah Flats is suitable to marginally suitable for domestic consumption.

Water sampled from a well in the playa in Alkali Spring Valley had a specific conductance of 1730 micromhos. A water sample from a well on a playa in Clayton Valley had a specific conductance of 242, micromhos (Rush 1968). Rush attributes the low specific conductance in the Alkali Spring Valley well to subsurface flows through the valley.

#### **4.3.7.2. Environmental Consequences of the Proposed Action on Water Quality (Surface and Ground) and Quantity:**

Indirect impacts to water quantity from oil and gas development may occur as a result of the following: 1) the extraction and disposal of any produced ground water, and 2) any surface disturbing activities which have the potential to introduce sediment to waterways.

If exploration activities were authorized, they would likely have minimum impact because the volumes of fluid concerned would be minimal. Development phase activities would have a somewhat greater impact, primarily related to the disposal of fluids produced during reservoir testing. Impacts from these two phases would be of short duration and limited to a small area.

Oil and gas production would have minimal potential to impact water resources because produced water is re-injected into the same horizon as produced. Any fresh water aquifer is evaluated in the site specific EA and mitigated by providing protective casing as the operator drills past the aquifer.

### **4.3.8. Waste, Hazardous and Solid**

#### **4.3.8.1. Affected Environment**

Oil and gas development, including exploration drilling, extraction, production facilities, pipeline transport, tanker loading and unloading, may affect the environment through production of waste fluids, air emissions, and site impacts resulting from field development and related infrastructure. Hazards that may be encountered include oil spills, produced waters, drill cuttings and fluids, and hazardous materials.

Indirect impacts would include drilling fluid or hydrocarbon spills, leakage from improperly constructed sump ponds or waste water collection systems, improperly handled brine water from drilling and accumulations of solid waste, which could impact water quality or contaminate soils. Hydrocarbon spills could include hydraulic fluid, gasoline, oil, or grease from vehicles, generators and exploration drill rigs. Brine water from exploration drilling, if improperly disposed, could raise the pH and/or salinity of existing surface waters to unacceptable levels. Generations of nonhazardous solid waste could include small amounts of trash, drill cuttings, wastewater, bentonite and cement generated during drilling operations.

#### **4.3.8.2. Environmental Consequences of the Proposed Action on Waste, Hazardous and Solid**

There would be no direct impacts from issuing new oil and gas leases because leasing does not directly authorize oil and gas exploration and development activities. Direct impacts from these activities would be analyzed under a separate site-specific environmental analysis.

### **4.3.9. Noxious Weeds and Invasive, Non-native Species**

#### **4.3.9.1. Affected Environment**

Approximately fifty-two species of invasive and noxious plants are known to occur in State of Nevada. Of these, three species, Russian Knapweed, Tamarisk, and halogeton are known to occur in the assessment area.

At this time, the inventory process is on-going to detect small, invasive populations. Once a population is found, the BLM coordinates with various agencies, lease operators, and land users to implement treatment to remove or control the population.

If exploration or production activities were authorized on the lease parcels, even with preventive management actions, they could result in the establishment and spread of noxious weeds on disturbed sites throughout portions of the area. Most of the noxious weeds exist mainly along the shoulders of County roads and private roads within the project area.

#### **4.3.9.2. Environmental Consequences of the Proposed Action on Noxious Weeds and Invasive, Non-native Species**

The proposed action would authorize leasing, which in turn, through site-specific EAs would authorize roads and drill pad construction. This potential disturbance would be conducive to new infestations and have the potential to increase and spread existing populations of invasive plants, noxious weeds and pests within the assessment area. Oil and gas exploration and development may include staging, construction, maintenance, and the use of motorized vehicles for transportation of personnel and equipment, which may increase the potential for new and expanded infestations.

New, continued, and enlarged infestations of invasive plants, noxious weeds, and pests that may occur as a result of oil and gas disturbance would be minimized by implementing COA's, BMP's, and mitigation measures in a site specific EA.

#### **4.3.10. Soils**

##### **4.3.10.1. Affected Environment**

Based on soil surveys, the area of the lease parcels can be divided into three different types of landscapes with its associated soil types: playa, intermontane basin, and foothills.

The playa landscape contains silty, clay soils. Slopes in the area are generally 0 to 1 percent with very high runoff potential. The water erodibility is slight and wind erodibility is moderate to high.

The soils in the intermontane basin landscape are well drained and contain loam, sandy loam, very gravelly-loamy sand, silt loam, and fine sand. Slopes in this zone range from 0 to 4 percent. The runoff is usually very low, water erodibility is slight and wind erodibility is slight to moderate.

The foothills landscape contains very gravelly, fine, sandy loam, very stony, sandy loam, very gravelly, loamy sand, and very gravelly, sandy loam on 2-50 percent slopes. Water erodibility is slight to moderate and wind erodibility is slight in these types of soils. These soils are typically well-drained soils.

#### **4.3.10.2. Environmental Consequences of the Proposed Action on Soils**

Road and drill pad building and cross-country travel would impact soil surfaces. These impacts include erosion of soils, disturbance to microbiotic crusts, and soil compaction. The amount of acreage that might be disturbed over a ten year period by oil and gas exploration and production is low; therefore, the impacts to soil would be minimal. Also, at the site specific NEPA level, mitigation such as avoidance of special soils and stockpiling of topsoils are implemented to minimize any environmental impacts.

#### **4.3.11. Range Resources**

##### **4.3.11.1. Affected Environment**

The lease sale parcels are contained within 3 grazing allotments, Montezuma, Sheep Mountain, and Monte Cristo (Figure 3). The allotments are generally run as a yearlong, cow-calf operation. Most of the grazing permittees follow a deferred-use rotation system in which one or more pastures within the allotment are rested (not grazed) to allow the vegetation to recover. Range improvement projects such as windmills, water delivery systems (pipelines, storage tanks, and water troughs), earthen reservoirs, fences, and vegetation control projects are located within the assessment area.

##### **4.3.11.2. Environmental Consequences of the Proposed Action on Range Resources**

Oil and gas activity will disturb less than 10 acres of potential forage. The removal of vegetation would temporarily decrease the amount of available forage for wildlife, wild horses, burros and livestock. This might create a very slight reduction in AUMs. Exploration activities could also have a temporary effect on grazing patterns shifting and/or intensifying livestock grazing in other areas. All impacts are expected to be short term and very small.

If exploration is proposed on any of the leases, the effects of exploration and production would be analyzed in a site-specific EA and mitigation measures developed at that time.

The impacts of the proposed action on range resources are expected to be minimal due to the relatively small amount of disturbance, limited duration, concurrent reclamation, and site-specific mitigation.

#### **4.3.12. Vegetation**

##### **4.3.12.1. Affected Environment**

The 4 parcels analyzed in this EA are located in vegetation cover of mostly Inter-Mountain Basins Mixed Salt Desert Scrub and Inter-Mountain Basins Greasewood Flats, and The Inter-Mountain Basins Big Sagebrush Shrubland.

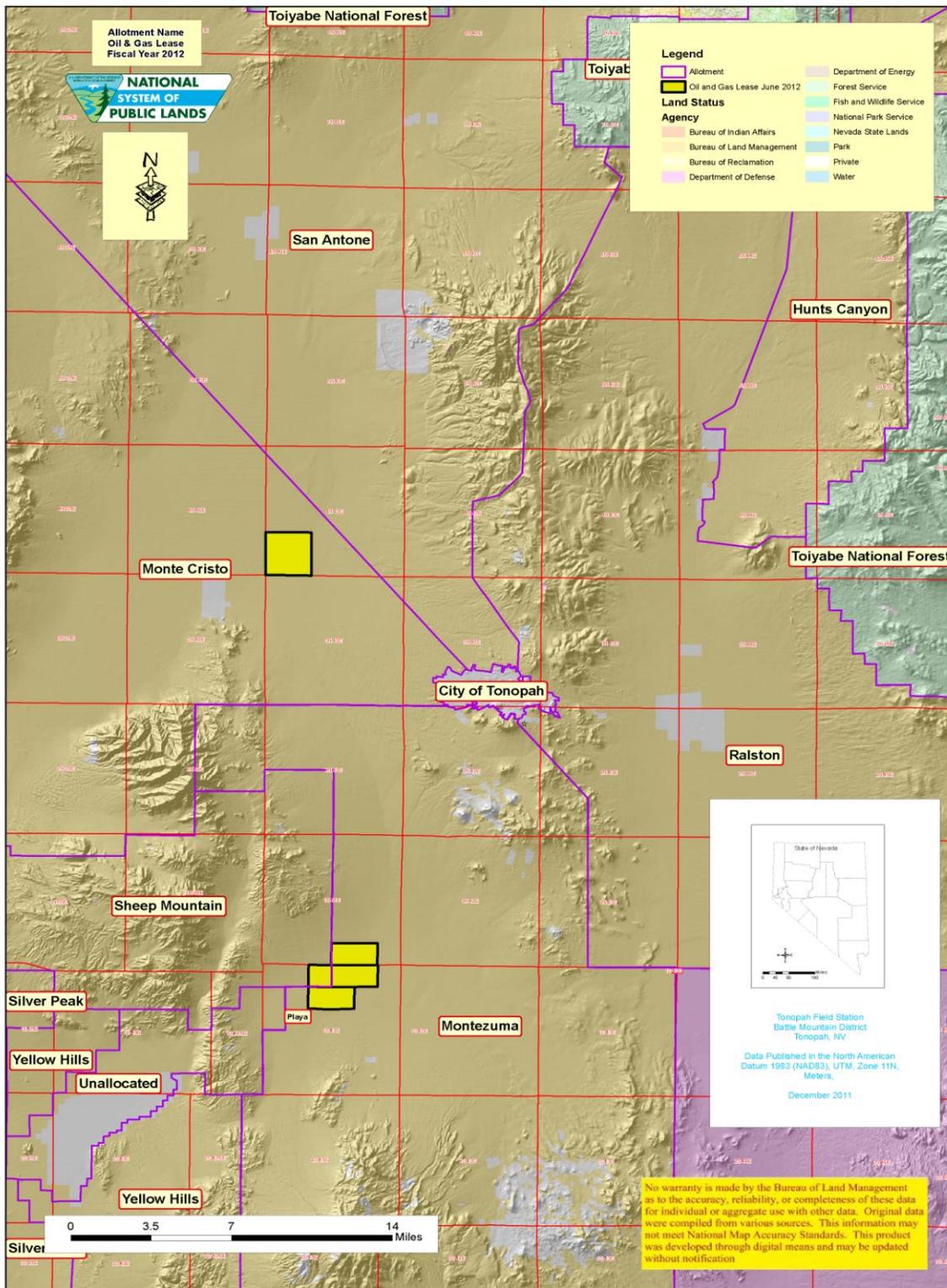


Figure 3. Grazing allotments in the assessment area.

The Inter-Mountain Basins Mixed Salt Desert Scrub is an extensive ecological system which includes open-canopied shrublands of typically saline basins, alluvial slopes and plains. The substrates are often saline and calcareous, medium-to fine-textured, alkaline soils, but include some coarser-textured soils. The vegetation is characterized by a typically open to moderately dense shrubland composed of shadscale, four-wing saltbrush, big sagebrush, and rabbitbrush.

The margins of Alakali Lake are covered by Inter-Mountain Basins Greasewood Flats. This plant community typically occurs on floodplains and closed-basin bottomlands adjacent to playas. Substrates are often saline and calcareous, medium-to fine-textured, alkaline soils, but include some coarser-textured soils. Sites typically have a shallow water table and flood intermittently, but remain dry for most growing seasons. The plant community is characterized by black greasewood, basin wildrye, inland saltgrass, and alkali sacaton.

The Inter-Mountain Basins Big Sagebrush Shrubland usually occurs in the basins between mountain ranges, on plains and on foothills between 2,200-3,500 feet elevation. Soils are usually fine to coarse-textured, well-drained and non-saline. The shrublands are dominated by big sagebrush. Other shrubs may be present including saltbush, greasewood, and rabbitbrush.

#### **4.3.12.2. Environmental Consequences of the Proposed Action on Vegetation**

It is highly unlikely that during the timeframe of oil and gas exploration, development, and production, a great number of acres become disturbed by seismic lines, exploration wells, road construction, and gravel pit expansion in the lease sale parcels. During the interim and final reclamation, soils require time to stabilize and support vegetation. This could potentially leave exposed soils for two to three years or longer depending on the response of reclamation efforts.

The majority of the exploration is likely to occur in saltbush or sagebrush type vegetation areas, rather than pinion-juniper woodlands. Removal of vegetation would increase the amount of bare ground. This in turn could increase wind and water erosion, increase the potential for invasion by non-native and noxious species, reduce the capability for water to infiltrate the ground, and increase runoff and sediment loading.

Impacts to vegetation from exploration/development, are expected to be minor, relatively short term, and localized. In addition, site-specific mitigation measures, BMPs, and COAs would be implemented to reduce impacts.

#### **4.3.13. Wild Horses and Burros**

##### **4.3.13.1. Affected Environment**

The BLM is responsible for the protection, management, and population control of wild horses and burros on public lands in accordance with the Wild and Free-Roaming Horses and Burros Act of 1971, as amended (Public Law 92-195), which states that the BLM “shall manage wild free-roaming horses and burros in a manner that is designed to achieve and maintain a thriving natural ecological balance on the public lands.” The BLM is mandated to manage wild horses

and burros only within those areas where they were found at the time the Wild Free-Roaming Horse and Burro Act was passed in 1971.

Herd Management Areas (HMAs) are areas identified in the RMP for long-term management of wild horses and burros. Each HMA has an established appropriate management level (AML), a number or range that represents optimum population levels for a thriving natural ecological balance, in conformance with the Tonopah RMP, and sound multiple-use management.

None of the proposed areas of the oil and gas lease sales fall directly within any HMA. However, the northern-most parcel is in close proximity to the Pilot Mountain HMA and the southern-most parcel is adjacent to the Paymaster HMA.

The approximate size of the portion of the Pilot Mountain HMA administered by the Tonopah Field Office (TFO) is approximately 220,500 acres and has an AML of 69 wild horses. The current (time of analysis) population estimate for the portion of the Pilot Mountain HMA administered by the TFO is 80 wild horses. Generally, the Pilot Mountain HMA is inventoried and gathered through the Carson City Field Office.

The Paymaster HMA is about 100,500 acres with an AML of 38 wild horses, and an estimated population of 18 wild horses. Wild horses from the Paymaster HMA frequently travel to areas outside of the HMA boundary to find available water.

There is no AML set for wild burros in either of the associated HMAs. However, wild burros often wander into the southern portion of the Paymaster HMA from the Montezuma Peak HMA to the south. Many wild horses and burros regularly water at Alkali Springs south of the southern-most parcel, between the Montezuma Peak and Paymaster HMAs.

#### **4.3.13.2. Environmental Consequences of the Proposed Action on Wild Horses and Burros**

Indirect impacts to wild horses and burros could include temporarily influencing herd distribution through increased traffic and activities.

Mineral exploration activities are common in or around the HMAs mentioned for analysis. Impacts to wild horses or burros may occur from minor disturbances due to an increase in human activity if an oil and gas exploration activity occurs in the valley. The impacts of such activities however, would probably be short term (e.g., less than one year) given that there are no oil fields or producing wells in these areas.

Localized and small scale vegetation disturbance could occur due to seismic exploration, road construction, overland travel, and drill pad construction. If oil or gas were discovered in the location of the lease parcels, increased vehicular traffic and human presence associated with oil or gas production could cause the wild horses and burros to use the developed area less and increase usage in other areas within or outside the HMA.

Particular portions of the HMAs and wild horses could be temporarily impacted if development occurred near critical water and foraging sources. Impacts could also occur to wild horses during

the peak foaling season (i.e., March 1 through June 30) if activities and exploration were to heavily increase. As a result, new foals could be orphaned, wild horses and foals may be required to increase energy expenditures and increase travel to and from forage and water. Within a short period of time, wild horses would acclimate to the presence of human activity and return to the area.

These impacts would be mitigated through project and site-specific NEPA analysis, which would be conducted for each exploration and production project.

#### **4.3.14. Land and Realty**

##### **4.3.13.1. Affected Environment**

All of the proposed lease parcels are on public lands with federally-controlled surface and subsurface mineral rights. Many of the parcels would require a right-of-way (ROW) in order to access the lease parcels. Some parcels include pre-existing land use authorizations such as grants, leases, permits, and withdrawals.

A 75-foot wide Sierra Pacific Power Company ROW (N-33242) is located close to the northwestern corner of parcel 002. A ROW may be needed in the future for any exploratory drilling within this ROW.

Additionally, grants, leases, and permits may be authorized prior to any proposals for exploration by an oil and gas lessee. In both instances, the holder of land use authorization would have a valid existing right to the authorized use of public lands within the lease.

##### **4.3.14.2. Environmental Consequences of the Proposed Action on Land and Realty**

Leasing creates a valid existing right, which could conflict with other existing or future land use authorizations. These conflicts would be mitigated through agreements between relevant operators.

Applications for ROW's may be required for roads for oil and gas exploration and production activities. These off lease ROW's would be non-exclusive where possible, that is, they can be used by the general public for other purposes such as access to public lands and would be subject to the appropriate site-specific NEPA analysis.

Impacts to existing ROW's may occur as a result of disturbance activities such as road construction. These impacts may cause temporary disruptions to ROW holders, but the Federal Land Policy and Management Act (FLPMA) requires that prior existing rights must be recognized. Any impacts to existing ROW's such as physical disturbances or disruptions in use may have to be mitigated by the lessee.

## **4.3.15. Visual Resources**

### **4.3.15.1. Affected Environment**

There are four categories of Visual Resource Management (VRM) Objectives. All of the proposed lease parcels are within VRM category IV. The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

### **4.3.15.2. Environmental Consequences of the Proposed Action on Visual Resources**

There would be no direct impacts to visual resources from issuing new oil and gas leases because leasing does not directly authorize oil and gas exploration and development activities. Direct impacts from these activities would be analyzed under a separate site-specific environmental analysis.

Impacts to the landform, vegetation and structural features of the characteristic landscape could occur during the exploration phase; however, these effects would usually be of short duration and localized in a small area. Modern seismic surveys are generally non-invasive and produce very little surface disturbance that may not be identifiable within months of survey. Drilling would temporarily impact the landscape by introducing new line, color, form and texture elements into the landscape. Brightly colored drill rigs and supporting facilities would be visible to visitors. Disturbances to vegetation from drilling could be seen for 2-5 years.

If a well drilled on one of the lease parcels produced economic amounts of oil, the construction of roads, drill pads, pipelines and power lines would result in long-term modifications to the line, form, color and texture of the characteristic landscape. Roads, drill pads and pipelines create strong horizontal linear contrasts. Vegetation and soil removal create color, textural, and linear contrasts with adjacent areas that could be highly visible long after the drilling and development facilities were removed.

While constructed features would have strong geometric and linear shapes and solid colors, small amounts of adjacent vegetation would obscure most of the features because of the typically flat character of the landscape. BMP's, mitigating measures, and SOP's would minimize the visual impact of the contrasts.

Night skies are important features of the assessment area and impacts to dark night skies may need to be mitigated at the time of site specific EA.

## **4.3.16. Recreation**

### **4.3.16.1. Affected Environment**

The proposed lease parcels are all within dispersed recreation areas subject to public use. Dispersed recreation areas are used by recreationists as they desire. Activities from sightseeing, pleasure driving, rock collecting, photography, hunting, four-wheeling, hiking, and bird watching occur in dispersed recreation areas. The assessment area is near Lone Mountain and the Weepah Range and these areas are infrequently used by the public for camping, hunting, hiking, and other outdoor recreation activities.

### **4.3.16.2. Environmental Consequences of the Proposed Action on Recreation**

During the exploration phase, survey and drilling crews are likely to use available access roads and trails in the area that are also used for recreation access. The survey activities conducted during the exploration phase are likely to minimally impact recreation, if at all, due to the short duration, small crew size, and temporal nature of the surveys and drilling of wells as well as the dispersed nature of recreation activities in these areas.

Exploration of the leases would include construction activities. At this time, access roads and well pads are constructed. Increased truck traffic during this phase could affect recreation due to increased noise and dust levels and could cause temporary delays on access roads. Construction sites are likely to have limited access to the public which could, in turn, slightly decrease access to the area for recreation.

The production stage includes operation and maintenance of the constructed facilities. These activities require a small number of employees who would utilize access roads in the area but are not likely to limit the recreational use of these roads. Oil and gas production facilities are likely to have limited access to the public; however, improved access to the area for recreation may be available because of the maintained access road to the production facility.

## **4.3.17. Socioeconomics**

### **4.3.17.1 Affected Environment**

The proposed lease parcels are west and south of town of Tonopah within Esmeralda County. There would be no socio-economic impact due to leasing. However, subsequent exploration and development could provide a minor economic benefit to the local economy. The primary economic activities that contribute to the economic base for lands within the assessment area are mining, transportation, agriculture, and recreation.

Esmeralda County is one of the original counties in Nevada and covers an area of 3,582 square miles. It is located in the south-central portion of the State of Nevada. Goldfield is the county seat and is located 266 miles southeast of Reno and 180 miles northwest of Las Vegas on US Highway 95 and US Highway 6.

Esmeralda County has a population of 783 (U.S. Census Bureau 2010) and offers a rural lifestyle with a population density of 0.2 persons per square mile. Mining, service and government represent the largest economic sectors in the county. Esmeralda County is home to numerous mining ghost towns.

The 2010 population of Esmeralda County represents a decrease of -19.4 percent from the 2000 census. The majority of the population is white (77 percent) with about 15 percent of Hispanic origin. Per capita annual income in 2009 was approximately \$30,763 and median household income was approximately \$42,526. The percent of persons below poverty level was 14.2% (U.S. Census Bureau 2010).

The town of Tonopah which is primarily located in Nye County is the closest commercial and residential location to the potential oil and gas leases. Tonopah is a town of 3,517 and contains the area's major retail centers, restaurants, medical facilities, and lodging (City-data, 2012). If exploratory drilling were to develop as an indirect action resulting from the oil and gas lease sale, then Tonopah would most likely receive a very small temporary (2-3 months) but positive socioeconomic benefit. Work crews on the drill rigs would most likely take lodging and meals in Tonopah and some drilling supplies may be purchased there.

#### **4.3.17.2. Environmental Consequences of the Proposed Action on Socioeconomics**

The only direct effect of issuing new oil and gas leases on socioeconomics within the assessment area would be the generation of revenue from the sale of the leases as the State of Nevada retains 50 percent of the proceeds from lease sales.

Subsequent oil and gas exploration, development, and production could create impacts to the county economy in terms of additional jobs, income, and tax revenues. During the exploration phase, oil and gas companies typically provide in-house scientists and technicians to do the majority of this work. After initial surveys have been completed, road building and drill pad construction could occur as a result of oil and gas exploration and development activities. Road and drill pad construction could be contracted to local contractors. Wells would typically be drilled over a period of time and not at the same time. The exploration crews, ranging from 20 to 30 people, would spend a portion of their salary in the local community for the duration of the project (four to eight weeks). The indirect impacts to socioeconomics within the assessment area from the proposed action based on above scenario would be minimal and of short duration.

If a significant oil field were discovered that led to development and production phase, the potential for socioeconomic impacts within the assessment area would be greater. More permanent roads and drill pads would be constructed, along with associated support facilities and transmission lines. Typically, the majority of this work is supplied by local contractors. Additionally, local businesses may realize increased revenue from the purchase of supplies, meals, rooms, etc. Local trucking and delivery companies may also benefit economically by transporting supplies and building materials.

Oil production from federal lands is subject to a 12.5 percent royalty payment to the federal government. Fifty percent of that amount is provided to the state government which then

provides a portion back to the counties. Taxes are paid in a variety of forms including income and property taxes by both oil production operators and their employees.

## **5.0 CUMULATIVE IMPACT ANALYSIS**

The proposed action has been examined for cumulative effects to the project area and the surrounding environment. Cumulative impacts are those effects on resources within an area or region caused by a combination of past, present, and reasonable foreseeable future actions (RFFA's). These impacts may be individually minor but added together over time may become significant (40 CFR 1508.7).

The cumulative effect study area (CESA) for this environmental assessment encompasses all parcels in this lease sale (Figure 5). The CESA boundary was drawn along the edges of Tonopah Flats and the southern part of the Big Smoky Valley to include the broad alluvial portions of the valleys. Most of the vegetation and soils are fairly similar and this CESA accounts for the key hydrographic subareas as discussed in section 4.3.7.1.1.

Use of these margins for this CESA boundaries also account for similar wild life habitat. Migratory birds and raptor foraging would be included in this CESA, while most raptor nesting will occur outside of the CESA boundary in the higher elevations and more rugged terrain. This CESA also covers most general wildlife habitat as well as habitat for other sensitive species. It also incorporates portions of appropriate grazing allotments and portions of wild horse HMAs.

Oil and gas leases are leased for a 10-year time period; therefore, the same timeframe was selected for the cumulative effect study analysis.

### **5.1 Past and Present Actions**

The CESA covers part of the historic mining area of Tonopah. The area has been the target of precious metal exploration and mining for many years. There have been approximately 10 past mining notices authorized for the exploration of precious metals. These notices have resulted in approximately 20 acres or less of disturbance in the area. Much of the past surface disturbance has been reclaimed. The total disturbance left is much less.

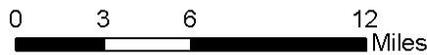
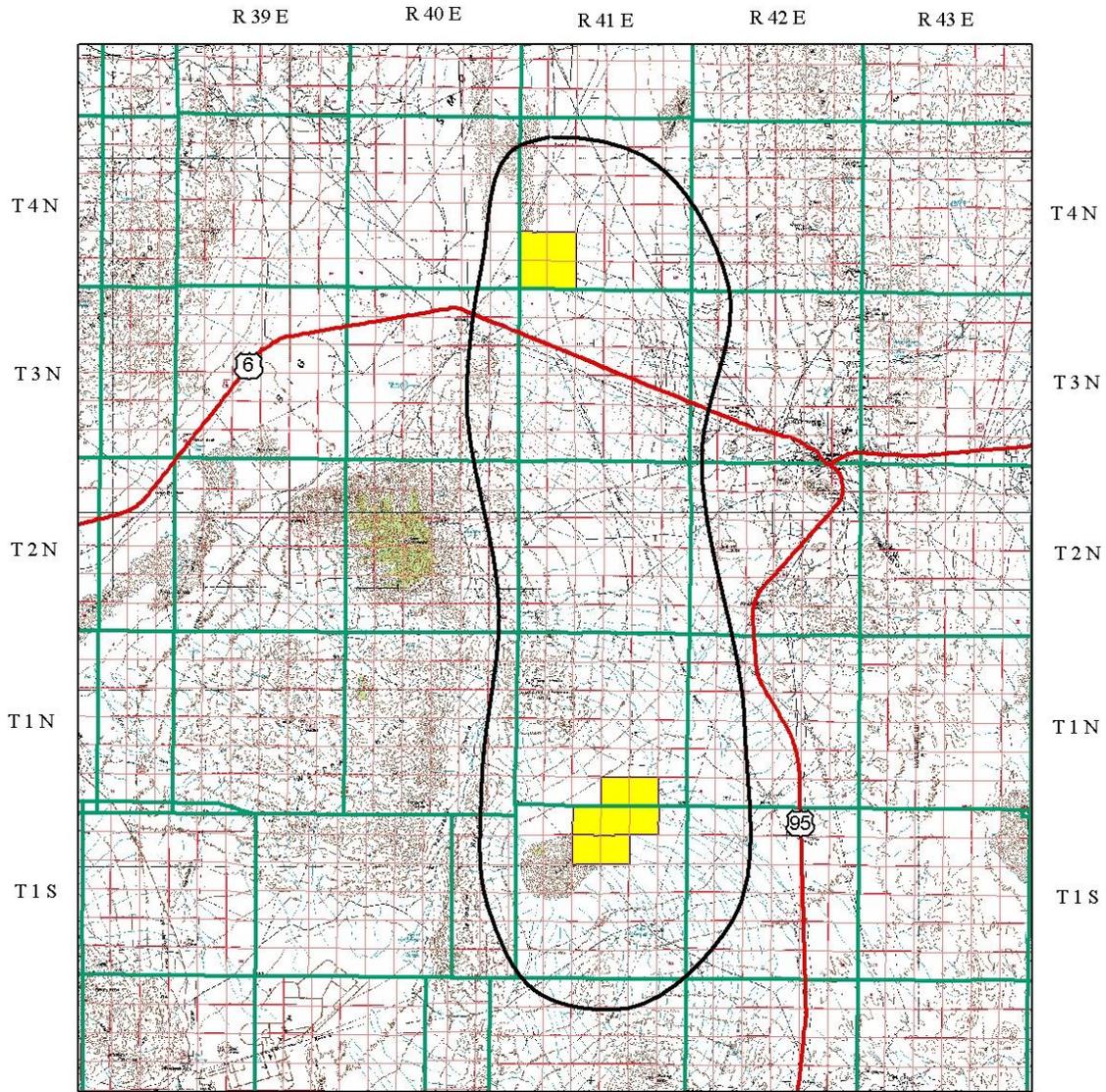
Currently, a mining notice for turquoise extraction with 5 acres of disturbance has been authorized in the CESA area. The notice has a reclamation bond and the project area will be reclaimed upon completion.

There are currently 2 active geothermal leases in the CESA. One geothermal lease (N-86938) partially overlaps parcel 104. No operations plan or definitive conceptual designs have been received on these geothermal leases and therefore, any disturbance on these leases are speculative at this time.

Land-use authorization; like new road, powerline and pipeline ROW's and renewal of existing ROW's associated with oil and gas or geothermal production and grazing can be expected in the future.

There are currently no oil and gas leases in the CESA. No APD's have ever been issued in the CESA. TFO typically authorizes fewer than 4 APD's per year, mostly in Railroad Valley, and

# June 2012 Oil and Gas Lease Sale



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for the individual use or aggregate use with other data.

Figure 4. Cumulative Effect Study Area.

one geophysical exploration permit every 3-4 years. The BLM TFO oil and gas program consists mainly of speculative leasing and the drilling of wildcat wells in and around existing oil fields in the Railroad Valley.

Livestock grazing has been authorized in the past and is currently authorized in the CESA. This includes approximately 158,000 acres of land under 3 grazing allotments.

## **5.2 Reasonable Foreseeable Future Actions (RFFA's)**

The proposed action does not include exploration, development, production, or final reclamation of oil and gas resources; however, authorization of oil and gas leasing does convey a right to subsequent exploration and production activities. These later activities are considered as indirect actions that may occur as a result of the proposed action.

The CESA has some potential for future development of precious metals, lithium extraction, geothermal, and wind and solar. However, at this time, the BLM has received no operation plans for projects that could be included in this cumulative effects analysis. Wild horse management actions, dispersed recreation, and associated land-use authorizations may possibly occur in the foreseeable future.

Historical trends and low oil and gas exploration activity (see section 3.3) illustrate that there is a low potential for oil and gas exploration in the assessment area. Since these parcels were nominated by the members of the industry, the BLM should assume some possible exploration could follow. Assuming one or two APDs were received in the future for drilling of wildcat wells, the associated disturbance would probably be less than 10 acres.

## **5.3 Cumulative Impacts from Past, Present, and Reasonably Foreseeable Future Actions**

The low amount of activity within the CESA and the small amount of disturbance that would likely be associated with any oil and gas exploration in the future, results in a very minor cumulative effect. The total known disturbance both past, present, and future probably represent less than 1%. This small disturbance would represent a very small cumulative effect for all resources in the CESA. Further analysis is not necessary because an insignificant cumulative effect is established by this low disturbance threshold.

While overall cumulative impacts are extremely low, we cannot eliminate any possible significant impact should a drill site be located on an important cultural site. This cannot be determined at this time since no location for well sites have been identified. The impact would be determined at the time an APD is received and at that time a cultural survey would be required and possible mitigation measures would be considered.

## **6.0 LIST OF PREPARERS**

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## **7.0 PERSONS OR AGENCIES CONSULTED**

Duckwater Shoshone Tribe  
Yomba Shoshone Tribe  
Nevada Department of Wildlife (NDOW)

## **8.0 LIST OF REFERENCES**

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**APPENDIX A**

**LIST OF PARCELS  
OFFERED FOR SALE IN THE  
JUNE 2012 OIL AND GAS LEASE SALE**

**List of Nominated Tonopah Field Office Parcels  
Analyzed in this EA**

**NV-12-06-001      1280.000 Acres**

T.0010N, R.0410E, 21 MDM, NV  
Sec. 034 ALL;  
035 ALL;  
Esmeralda County  
Battle Mountain DO  
Formerly Lease No.

**NV-12-06-002      2534.680 Acres**

T.0040N, R.0410E, 21 MDM, NV  
Sec. 029 ALL;  
030 LOTS 1-4;  
030 E2W2,E2;  
031 LOTS 1-4;  
031 E2,E2W2;  
032 ALL;  
Esmeralda County  
Battle Mountain DO  
Formerly Lease No.

**NV-12-06-099      1920.120 Acres**

T.0010S, R.0410E, 21 MDM, NV  
Sec. 002 LOTS 1-4;  
002 S2N2,S2;  
003 LOTS 1-4;  
003 S2N2,S2;  
004 LOTS 1-4;  
004 S2N2,S2;  
Esmeralda County  
Battle Mountain DO  
Formerly Lease No.

**NV-12-06-104      1280.000 Acres**

T.0010S, R.0410E, 21 MDM, NV  
Sec. 009 ALL;  
010 ALL;  
Esmeralda County  
Battle Mountain DO  
Formerly Lease No.

**APPENDIX B**

**OIL AND GAS LEASE PARCELS STIPULATIONS**

## ARCHAEOLOGICAL STIPULATION

These leases may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes and executive orders. The BLM will not approve any ground disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.

Authority: BLM Washington Office Instruction Memorandum 2005-03

Parcel

Description of Lands

ALL PARCELS

ARCH-ZONE 7

NATIVE AMERICAN CONSULTATION REQUIRED

This lease may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes and executive orders. The BLM will not approve any ground disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.

Parcel

Description of Lands

ALL PARCELS

NV-060-NA1

## MIGRATORY BIRDS STIPULATION

Surface disturbing activities during the migratory bird nesting season (March 1 to July 31) may be restricted in order to avoid potential violation of the Migratory Bird Act. Appropriate inventories of migratory birds shall be conducted during analysis of actual site development. If active nests are located, or if other evidence of nesting is observed (mating pairs, territorial defense, carrying of nesting material, transporting of food), the proponent shall coordinate with BLM to establish appropriate protection measures for the nesting sites. Protection measures may include avoidance or restricting or excluding development in certain areas until nests and nesting birds will not be disturbed. After July 31, no further avian survey, will be conducted until the following year.

Parcel

Description of Lands

ALL PARCELS

NV-065-24

**APPENDIX C**

**TONOPAH FIELD OFFICE SPECIAL STATUS SPECIES LIST**

<b>BLM Sensitive Species that may occur in the project area</b>	
<b>Mammals</b>	<b>Common Name</b>
<i>Euderma maculatum</i>	Spotted bat
<i>Eptesicus fuscus</i>	Big brown bat
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat
<i>Lasionycteris noctivagans</i>	Silver-haired bat
<i>Lasiurus blossevillii</i>	Western red bat
<i>Myotis californicus</i>	California myotis
<i>Myotis ciliolabrum</i>	Western small-footed myotis
<i>Myotis evotis</i>	Long-eared myotis
<i>Myotis evotis</i>	Long-eared myotis
<i>Myotis lucifungus</i>	Little brown myotis
<i>Pipistrellus Hesperus</i>	Western pipistrelle
<i>Myotis volans</i>	Long-legged myotis
<i>Ovis canadensi nelsoni</i>	Desert bighorn sheep
<b>Birds</b>	<b>Common Name</b>
<i>Aquila chrysaetos</i>	Golden eagle
<i>Athene cunucularia</i>	Burrowing owl
<i>Buteo regalis</i>	Ferruginous hawk
<i>Falco mexicanus</i>	Prairie falcon
<i>Lanius ludovicianus</i>	Loggerhead shrike
<i>Baeolophus griseus</i>	Juniper titmouse
<i>Gymnorhinus cyanocephalus</i>	Pinyon jay
<i>Spizella breweri</i>	Brewer's Sparrow
<i>Pooecetes gramineus</i>	Vesper sparrow
<i>Vermivora luciae</i>	Lucy's Warbler
<b>Plants</b>	<b>Common Name</b>
<i>Unclahes Rethuiac</i>	Ruth's Milkweed
<i>Astragalus uncialis</i>	Currant Milkvetch
<i>Penstemon palmeri</i>	Palmer's penstemon