United States Department of the Interior
Bureau of Land Management

Environmental Assessment
DOI-BLM-UT-0000-2018-0001-EA

September 2018 Oil and Gas Lease Sale

Location: Green River and Color Country District,
Price and Richfield Field Offices
Emery and Wayne Counties, Utah

Applicant/Address: U.S. Department of the Interior
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BLM

1 CONTENTS

TABLE OF CONTENTS

1 INTRODUCTION

1.1 PROJECT LOCATION AND LEGAL DESCRIPTION

LEGAL DESCRIPTION:

There are 78 parcels on the southern border of Emery County, two sold but not issued leases just north of the parcels in Emery County and 16 suspended leases on the northern boundary of Wayne County northeast of Hanksville, UT (Appendix D).

Please see Appendix B and Map, Figure 1.

1.2 BACKGROUND

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

Utah is a major source of natural gas for heating and electrical energy production in the lower 48 states. The continued sale and issuance of lease parcels facilitates exploration and production as oil and gas companies seek new areas for production or attempt to develop previously inaccessible or uneconomical reserves

The BLM's Utah State Office conducts quarterly competitive lease sales to sell available oil and gas lease parcels. A Notice of Competitive Lease Sale (NCLS), which lists lease parcels to be offered at the auction, is published by the Utah State Office (USO) at least 45 days before the auction is held. Lease stipulations applicable to each parcel are specified in the NCLS. The decision as to which public lands and minerals are open for leasing and what leasing stipulations may be necessary, based on information available at the time, is made during the land use planning process. Constraints on leasing and any future development of split estate parcels are determined by the BLM in consultation with the appropriate surface management agency or the private surface owner.

In the process of preparing a lease sale, the USO compiles a list of lands nominated and legally available for leasing, and sends a preliminary parcel list to the appropriate District Office where the parcels are located. Field Office staff then reviews the legal descriptions of the parcels to determine if they are in areas open to leasing under the relevant Resource Management Plan (RMP) and that appropriate stipulations have been included; verify whether any new information has become available that might change any analysis conducted during the planning process; confirm that appropriate consultations have been conducted; and identify any special resource conditions of which potential bidders should be made aware. For parcels nominated after January 31, 2018, the nominated parcels are posted online for a two week public scoping period. This posting also includes the appropriate stipulations as identified in the relevant RMP. The BLM

then prepares an analysis in compliance with the National Environmental Policy Act (NEPA), usually in the form of an Environmental Assessment (EA).

For this lease sale, the State Office has prepared a list of available lease parcels and associated stipulations and notices is made available to the public through a NCLS for the 76 nominated parcels. The BLM also analyzed 2 sold-but-not-issued (SNI) leases that were protested in 2006 and 16 leases that were suspended in 2006 to ensure they are in compliance with the 2008 RMP. Lease sale notices are posted on the Utah BLM website at: http://go.usa.gov/xXk8ch. The BLM may decide to defer or withhold some of the nominated parcels prior to the day of the lease sale. In such cases, the BLM prepares an errata to the NCLS. The SNI leases and suspended leases will not be part of the NCLS because they have already been sold.

The EA and an unsigned FONSI for all parcels and leases (nominated parcels, SNI, and suspended leases) are made available to the public through the concurrent posting of those documents and a NCLS at least 45 days in advance of the scheduled lease sale. The posting of the NCLS, EA and FONSI initiates a 10 day public protest period for the proposed lease sale offering that will end at least 35 days before the scheduled lease sale. The stipulations and notices applicable to each parcel proposed for lease will be specified in attachments to the NCLS. If any changes are needed to the parcels or stipulations and notices on the NCLS identified through the protest period, an erratum is posted to the BLM Utah's Oil and Gas Leasing website, and in the public room for the BLM Utah State Office, in order to notify the public of any such changes. The lease parcels, as identified by the NCLS and any errata, would be offered for sale at a competitive lease sale tentatively scheduled to be held on September 11, 2018. The SNI and suspended leases will not be included in the NCLS because they were already purchased.

If the nominated parcels are not leased at the September 2018 lease sale, then they will remain available to be leased noncompetitively for a period of up to two years to any qualified lessee at the minimum bid cost. Parcels obtained in this way may be re-parceled by combining or deleting other previously offered lands. Mineral estate that is not leased within a two-year period after an initial offering will no longer be available and must go through a competitive lease sale process again prior to being leased.

The act of leasing does not authorize any development or use of the surface of lease lands without further application by the operator and approval by the BLM. In the future, the BLM may receive Applications for Permit to Drill (APDs) for those parcels that are leased. If APDs are received, the BLM conducts additional site-specific NEPA analysis before deciding whether to approve the APD and what conditions of approval (COA) should apply.

The BLM has prepared this EA to disclose and analyze the environmental consequences of the leasing of 76 parcels during the September 2018 oil and gas lease sale and to evaluate if 2 SNI leases and 16 suspended leases should be issued or unsuspended, and if so whether updated stipulations and/or lease notices are needed. The EA is an analysis of potential impacts that could result from the implementation of a proposed action or alternatives to the proposed action. The EA ensures compliance with NEPA in making a determination as to whether any significant impacts could result from the analyzed actions. Significance is defined by NEPA and is found in

40 Code of Federal Regulations (CFR) § 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a FONSI statement. A FONSI statement, if applicable for this EA, would document the reasons why implementation of the selected alternative would not result in significant environmental impacts (effects) beyond those already addressed in the EISs prepared for the current land use plans: Price Field Office Resource Management Plan (PFO RMP) (BLM, 2008a) for the 2 SNI leases and the 76 nominated parcels and Richfield Field Office Resource Management Plan (RFO RMP) (BLM, 2008b) for the 16 suspended leases. If the decision maker determines that this project has significant impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record (DR) may be signed for the EA approving the selected alternative, whether the Proposed Action or another alternative. This EA is tiered to and incorporates by reference the environmental impact analysis contained in both the Price and Richfield Field Office Proposed Resource Management Plans and Final Environmental Impact Statements (BLM, 2008c) (BLM, Richfield Field Office Proposed Resource Management Plan and Final Environmental Impact Statement, 2008d).

Seventy-six parcels comprising 158,944.27 acres within the Price Field Office (PFO) were nominated for the September 2018 Competitive Oil and Gas Lease Sale. We are analyzing an additional 38,879.95 acres in the Richfield Field Office (RFO) that were suspended in 2006 due to an appeal with the Interior Board of Land Appeals (IBLA) and 6398.24 acres that were SNI leases from February 2006 within the PFO. Seventy-eight parcels and leases were determined to be open to be leased for oil and gas development under the PFO RMP and 16 were determined to be open under the RFO RMP. This figure is comprised of 165342.51 acres of federal land in the PFO and 38879.95 acres of federal land in RFO and no split-estate land in either Field Office. The mineral rights for these parcels are owned by the federal government and administered by the PFO and RFO. The legal descriptions of the nominated parcels are in Appendix B.

This EA documents the review of the nominated parcels, SNI leases under the administration of the PFO and suspended leases under the administration of the RFO. It serves to verify conformance with the approved land use plan and provides the rationale for the Field Offices' recommendation to offer or to defer particular parcels from a lease sale. This EA is also being used to determine if the stipulations and lease notices attached to the parcels as part of the Proposed Action would be sufficient to protect resources and inform potential lessees of special conditions and restrictions that may constrain development. Additional lease notices may be developed during analysis, if warranted.

1.3 PURPOSE AND NEED

The purpose of the Proposed Action is to respond to the nominations or expressions of interest for oil and gas leasing on specific federal mineral estate through a competitive leasing process. The need for the Proposed Action is established by the BLM's responsibility under the Mineral Leasing Act (MLA) of 1920, as amended, the Mining and Minerals Policy Act of 1970, the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (Reform Act), and the Federal Land Policy and Management Act (FLPMA) and to promote the development of oil and gas on the public domain. Parcels may be nominated by the public, the BLM or other agencies. The MLA establishes that deposits of oil and gas owned by the United States are subject to disposition in

the form and manner provided by the MLA under the rules and regulations prescribed by the Secretary of the Interior, where consistent with FLPMA and other applicable laws, regulations, and policies.

The analysis also evaluates if 2 SNI leases in the PFO and 16 suspended leases in the RFO are in compliance with the 2008 RMPs. If they are not, this document will be used to assess what additional stipulations and/or lease notices need to be attached to the parcels in order to make sure that they comply with the 2008 RMPs and have updated consultation processes.

Furthermore, the BLM will decide whether or not the stipulations from the 2008 PFO and RFO RMP's are protective enough to issue or lift the suspensions from the leases at this time. If so, the leases will be updated according to this analysis, as needed. If the new stipulations do not offer enough protection, the leases may be cancelled immediately or may remain as they are now (SNI or suspended) until a RMP amendment is completed to address the issue that needs to be mitigated. If the stipulations are found to be sufficient, the BLM will issue a decision to the winning bidders/lease holders that they must accept the updated stipulation(s) and/or lease notices or their leases shall be cancelled.

1.3.1 1.3.1 Decisions to be Made

The BLM will decide whether to lease the 76 nominated parcels and, if so, under what terms. The BLM will also issue a new decision on each of the SNI leases and suspended leases; the decision will determine whether to issue the two SNI leases and lift the suspension on the 16 suspended leases and whether to modify the stipulations and notices on these 18 leases.

1.4 PLAN CONFORMANCE REVIEW

The Proposed Action was reviewed for conformance (43 CFR 1610.5, BLM 1617.3) with the following plan(s):

Name of Plan: Price Field Office Record of Decision and Resource Management Plan (RMP) (BLM, 2008a) as amended.

Date Approved: October 2008

Decision Language: The RMP designated approximately 1,910,000 acres of federal mineral estate open for continued oil and gas development and leasing. The RMP (with associated amendments) also describes specific stipulations that would be attached to new leases offered in certain areas. Under the Proposed Action, parcels to be offered would be leased subject to stipulations prescribed by the RMP. Therefore, the Proposed Action conforms to the fluid mineral leasing decisions in the RMP and subsequent amendments, and are consistent with the RMP's goals and objectives for natural and cultural resources.

The Proposed Action specifically conforms to the following RMP decisions:

MLE-5 (Page 125 PFO ROD/RMP)

The BLM has identified leasing allocations for all lands within the Price Field Office. In addition, the RMP describes specific lease stipulations (RMP, Appendix R-3) that apply to a variety of different resources including raptors, greater sage grouse, and big game habitat, as well as program-related Best Management Practices (RMP, Appendix R-14) that may be applied on a case-by-case basis, site-specific basis to prevent, minimize, or mitigate resource impacts (RMP, Map R-8).

MLE-6 (Page 125 PFO ROD/RMP)

Review all lease parcels prior to lease sale. If the Price Field Office determines that new resource data information or circumstances relevant to the decision is available at the time of the lease review that warrants changing a leasing allocation or specific lease stipulation, the Price Field Office will make appropriate changes through the plan maintenance or amendment process. The Price Field Office may also apply appropriate conditions of approval at the permitting stage to ensure conformance with the LUP and all applicable laws, regulations, and policies.

MLE-9 (Page 126 PFO ROD/RMP)

Oil and gas leasing management will be conducted as shown on Map R-25a.

- Areas open to leasing subject to the standard terms and conditions of the lease form (1,161,000 acres)
- Areas open to leasing subject to moderate constraints (timing limitations; controlled surface use (CSU), and lease notices) (467,000 acres)
- Areas open to leasing subject to major constraints (no surface occupancy (NSO)) (282,000 acres)
- Areas unavailable to leasing (569,000 acres)
  The combination of all restrictions on oil and gas development is shown on Map R-26a.

The Proposed Action is also consistent with the PFO ROD/RMP decisions and objectives as they relate to the management of the following resources (including but not limited to): air quality, BLM natural areas, cultural resources, recreation, riparian, soils, water, vegetation, fish and wildlife, and Areas of Critical Environmental Concern (ACEC). Additional RMP decisions are specified in Chapter 3 or the Interdisciplinary Team (ID team) checklist. In addition, site visits were conducted by the PFO ID team of resource specialists for the proposed parcels to verify consistency with the PFO ROD/RMP.

It is also in conformance with the Richfield Field Office RMP

Name of Plan: Richfield Field Office Record of Decision and Resource Management Plan (RMP) (BLM, 2008b) as amended

Date Approved: October 2008

Decision Language: The RMP designated approximately 1,680,700 acres of federal mineral estate open for continued oil and gas development and leasing. The RMP (with associated amendments) also describes specific stipulations that would be attached to new leases offered in certain areas. Under the Proposed Action, parcels to be offered would be leased subject to stipulations prescribed by the RMP. Therefore, the Proposed Action conforms to the fluid mineral leasing decisions in the RMP and subsequent amendments, and are consistent with the RMP's goals and objectives for natural and cultural resources.

The Proposed Action specifically conform to the following Land Use Plan decisions:

MIN-1. (Table 19 Page 135 RFO ROD/RMP)
Issue oil and gas leases and allow for oil and gas exploration and development.

MIN-9. (Table 19 Page 136 RFO ROD/RMP)
In accordance with an UDEQ-DAQ letter dated June 6, 2008, (see Appendix 13 of the ROD/RMP) requesting implementation of interim nitrogen oxide control measures for compressor engines; BLM will require the following as a Lease Stipulation and a Condition of Approval for Applications for Permit to Drill:

- All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horsepower must not emit more than 2 gms of NOx per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower.
- All new and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gms of NOx per horsepower-hour.

MIN-10. (Table 19 Page 136 RFO ROD/RMP)
Area closed to leasing: 447,300 acres

MIN-11. (Table 19 Page 136 RFO ROD/RMP)
Manage fluid mineral leases as shown on Map 23:

- Areas open to leasing with standard lease terms: 608,700 acres
- Areas open to leasing subject to Controlled Surface Use (CSU) and/or timing limitations: 917,500 acres
- Areas open to leasing subject to No Surface Occupancy (NSO): 154,500 acres

It is also consistent with RMP decisions and their corresponding goals and objectives related to the management of (including but not limited to) air quality, cultural resources, recreation, riparian, soils, water, vegetation, fish & wildlife and Areas of Critical Environmental Concern (ACEC) as well as the Surface Stipulations Applicable to Oil and Gas Leasing and Other Surface Disturbing Activities (Appendix 11 of the RMP/ROD).

Standard lease terms provide for reasonable measures to minimize adverse impacts to specific resource values, land uses, or users (Standard Lease Terms are contained in Form 3100-11, Offer to Lease and Lease for Oil and Gas, U.S. Department of the Interior, BLM, October 2008 or later edition). Compliance with valid, nondiscretionary statutes (laws) is included in the standard lease terms. Nondiscretionary actions include the BLM's requirements under federal environmental protection laws, such as the Clean Water Act, Clean Air Act, Endangered Species Act, National Historic Preservation Act, and Federal Land Policy Management Act, which are applicable to all actions on federal lands.

Once the lease has been issued, the lessee has the right to use as much of the leased land as necessary to explore for, drill for, extract, remove, and dispose of oil and gas deposits located under the leased lands, subject to the standard lease terms and additional restrictions attached to the lease in the form of lease stipulations (43 CFR 3101.1-2). Even if no restrictions are attached to the lease, the operations must be conducted in a manner that complies with environmental laws, avoids unnecessary or undue degradation of the environment and minimizes adverse impacts to the land, air, water, cultural, biological, and visual elements of the environment, as well as other land uses or users. Also included in all leases are the two mandatory stipulations for the statutory protection of cultural resources and threatened or endangered species (BLM Handbook 3120-1), which are described in Section 2.3.2. BLM would also encourage industry to consider participating in EPA's Natural Gas STAR program. The program is a flexible, voluntary partnership wherein EPA works with companies that produce, process, transmit and distribute natural gas to identify and promote the implementation of cost-effective technologies and practices to reduce emissions of methane, a greenhouse gas.

1.5 PUBLIC PARTICIPATION

1.5.1 Scoping

The principal goal of scoping is to identify issues, concerns, and potential impacts that require detailed analysis. Internal scoping was conducted through meetings of an interdisciplinary (ID) team of resource specialists and discussion of the nominated parcels. All resources considered are documented in Appendix E Interdisciplinary Team Checklist. The rationale beside each resource explains whether issues for that resource were found that required detailed analysis. However the following are questions that warrant more exploration in the analysis below:

Air Quality
How would oil and gas development operations that could result from leasing the proposed parcels impact air quality?

ACEC/Cultural Resources
How would oil and gas development operations that could result from leasing the proposed parcels impact cultural resources, particularly in the Cultural ACEC?

Greenhouse Gas Emissions/Climate Change
How would greenhouse gas emissions from oil and gas development operations and downstream combustion that could result from leasing the proposed parcels impact climate change?

Lands With Wilderness Characteristics

How would oil and gas development operations that could result from leasing the proposed parcels impact lands determined by the BLM to possess wilderness characteristics?

Pollinators
How would oil and gas development operations that could result from leasing the proposed parcels impact pollinators?

Recreation
How would recreational opportunities in the parcels be affected by potential development?

Visual Resources
How would sensitive recreational sites be affected by potential development of the lease parcels?

Dark Night Sky/Soundscapes
How would night skies and soundscapes at sensitive recreational sites potentially be affected by potential development?

External scoping was conducted by posting the proposed parcel list and maps for a 15-day period from March 30 to April 16, 2018, on BLM's ePlanning website at: http://go.usa.gov/xQrVg. This external scoping process gave the public an opportunity to provide comments, which the BLM considered and incorporated into the EA as appropriate (see Appendices A and F). The BLM also sent notification of the proposed sale to affected landowners including Utah Public Lands Policy and Coordination Office, U.S. Fish and Wildlife Service, private landowners, the National Park Service, U.S. Forest Service, Utah Division of Wildlife Resources, and the State of Utah Trust Lands Administration. A response was received from the Superintendent of the Southeast Utah Group for the National Park Service, National Park Conservation Association and Southern Utah Wilderness Alliance.

The main concerns raised in the scoping comments included potential impacts of leasing on the following resources; lands with wilderness characteristics, air quality inside national parks, night skies inside national parks scenic viewsheds from the national park, recreational resources in the national park, impact to water quality of the San Rafael River and the Green River, greenhouse gas emissions and climate change, potential impacts to cultural resources, wild and scenic resources, paleontological resources, access to backcountry landscapes, pronghorn, kit fox, sensitive fish and wild turkey.

Concerns were addressed either by consideration and dismissal in Appendix F, or analysis in the EA that resulted in the attachment of Lease Notices to inform the potential lessees of conflicts that would have to be resolved at the time of development.

1.6 RELATIONSHIP TO STATUTES, REGULATIONS, POLICIES OR OTHER PLANS

The Proposed Action is in compliance with federal environmental laws and regulations, Executive Orders, and Department of Interior and BLM policies and is consistent, to the maximum extent possible, with state laws and local and county ordinances and plans, including the following:

- Federal Land Policy and Management Act (1976) as amended and the associated regulations at 43 CFR Part 1600
- Mineral Leasing Act (1920) as amended and the associated regulations at 43 CFR Part 3100
- BLM Utah Riparian Management Policy (2005)
- National Historic Preservation Act (1966) as amended and the associated regulations at 36 CFR Part 800
- Endangered Species Act (1973) as amended
- BLM Manual 6840- Special Status Species Management
- Bald and Golden Eagle Protection Act (1962)
- Migratory Bird Treaty Act (1918)
- Utah Partners in Flight Avian Conservation Strategy Version 2.0 (Parrish et al., 2002)
- Birds of Conservation Concern 2002 (USFWS 2008)
- Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds
- MOU between the USDI BLM and USFWS to Promote the Conservation and Management of Migratory Birds (April 2010)
- BLM Manual 6310 - Conducting Wilderness Characteristics Inventory of BLM Lands
- BLM Manual 6320 - Considering Lands with Wilderness Characteristics in the BLM Land Use Planning Process
- BLM Handbook 3120-1 Competitive Leases (P)
- MOU Among the USDA, USDI and EPA Regarding Air Quality Analysis and Mitigation for Federal Oil and Gas Decisions Through the NEPA Process (2011)
- Protection of Ground Water Associated with Oil and Gas Leasing, Exploration and Development (BLM UT IM 2010–055)
- Updated Oil and Gas Leasing Reform —Land Use Planning and Lease Parcel Reviews (BLM WO IM 2018-034)
- BLM-Utah Guidance for the Lands with Wilderness Characteristics Resource (IM UT 2016-027 Change 1)
- Richfield Field Office Visual Resource Inventory (2011)

These documents, and their associated analysis or information, are hereby incorporated by reference, based on their use and consideration by various authors of this document. The attached Interdisciplinary Team Checklist, Appendix F, was also developed after consideration of these documents and their contents. Each of these documents is available for review upon request to the PFO or the RFO.

1.7 DOCUMENTS INCORPORATED BY REFERENCE

In order to reduce redundant paperwork and analysis in the NEPA process (*See* 40 CFR §§ 1502.20 and 1502.21) the following documents and their associated information or analysis are hereby incorporated by reference.

1.7.1 EISs, EAs and Decision Documents

- Price and Richfield Field Office Final Environmental Impact Statements (FEIS) and Proposed Resource Management Plans (BLM, 2008c) (BLM, Richfield Field Office

Proposed Resource Management Plan and Final Environmental Impact Statement, 2008d) and Records of Decision (BLM, 2008a) (BLM, 2008b).

- Moab Master Leasing Plan Final Environmental Impact Statement and Proposed Resource Management Plan (BLM, 2016a)

1.7.2 Other Documents

Price Field Office UT-070, Determination of NEPA Adequacy (DNA), 12/15/2005

2 ALTERNATIVES

2.1 INTRODUCTION

This chapter describes the alternatives analyzed in detail. Alternatives considered but not analyzed in detail are also discussed.

2.2 REASONABLY FORESEEABLE DEVELOPMENT SCENARIO

In September 2016 the Price and Richfield Field Offices prepared an updated Reasonably Foreseeable Development Scenario (RFDS) for the San Rafael Desert Master Leasing Plan Area (MLPA) (BLM, 2016b). . In January 2018, the BLM decided a plan amendment was most likely not necessary to lease these parcels but additional analysis was, therefore this EA is being prepared. The area that was formerly called the San Rafael Desert Master Leasing Plan Area encompassed all of the parcels included in this analysis, therefore, the updated RFDS will be used as the baseline assumption for the analysis in this EA. A summary of the RFDS follows:

- The average area of surface disturbance for each new well projected to be drilled during the next 15 years (including well pads, roads, gathering pipelines, and projected main pipeline) will be 19.5 acres.
- Future oil and gas drilling for the next 15 years is projected to average two wells per year for a total of 30 wells. Twelve of the wells are projected to be dry holes.[1]
- Future surface disturbance for 30 projected new wells and associated infrastructure will be approximately 585 acres.
- A total of 492 acres of surface disturbance will be reclaimed during the next 15 years; including 12 dry holes, and interim reclamation of 18 future producing wells.
- The total net surface disturbance for all drilling activity in the San Rafael Desert Master Leasing Plan Area over the next 15 years will equal roughly 93 acres.
- Future surface disturbance over the next 15 years for geophysical exploration (270 linear miles of source lines) will be approximately 330 acres.
- Total geophysical related surface disturbance to be successfully reclaimed during the next 15 years will be 264 acres.
- The total net surface disturbance for geophysical activity over the next 15 years will be roughly 66 acres.

The baseline RFDS is summarized as follows:

[1]For the entire area within the former San Rafael MLPA future oil and gas drilling for the next 15 years is projected to average two wells per year for a total of 30 wells, 12 of which would be dry holes. However, because RFDs are prepared with the assumption that all potentially productive oil and gas areas are open for leasing under standard lease terms and conditions except those areas designated as closed to leasing by law, regulation or executive order, in order to account for the acreage designated "No Surface Occupancy" by the RFO and PFO RMPs, Alternative A (the no-action alternative) of the administrative draft of the EA prepared for the MLPA assumed 29 wells would be drilled, and 17 would produce hydrocarbons.

These baseline projections represent average activity levels over the next 15 years and are not intended to be thresholds for limiting future activity. Oil and gas exploration and development activity tends to be sporadic over time due to market influences and other factors affecting the oil and gas industry. Because of this, it is recognized that during the next 15 years there may be years when oil and gas activity in the San Rafael Desert Master Leasing Plan Area would be much less than the projected average levels and other years when activity may be greater.

RFDS of the Proposed Parcels and Leases:

The parcels and leases cover 38% of the MLPA, translating to 11 wells drilled over 15 years, seven of which would be producing wells. This would result in a total surface disturbance of 114.4acres from construction of new well pads and associated infrastructure, including roads and pipelines. The estimated total existing surface disturbance from previous oil and gas activity in the RFDS is 0 acres due to the fact that the last well drilled in the area was plugged and abandoned over 25 years ago. Over the next 15 years, it is reasonably foreseeable that a total of 114.4 acres will be disturbed by oil and gas drilling activity and of that total 96.2 acres will be reclaimed or under reclamation giving a net long term surface disturbance of 18.2 acres.

For geophysical exploration, 102.6 linear miles of source lines with an associated surface disturbance of 125.4 acres are projected over the next 15 years. Total geophysical related surface disturbance that will be reclaimed during the next 15 years will be 100.32 acres, leaving a net surface disturbance of 25.08 acres.

The following sections provide a general discussion of possible post-leasing RFD activities. All of these activities would require additional NEPA review.

2.2.1 Well Drilling and Completion Operations

A drilling rig would be transported to the well pad (along with other necessary equipment). Drilling would commence with well spud. Typical drilling operations would include: adding joints of drill pipe at the surface as the hole deepens; circulating drilling fluids to cool the drill bit and remove the drill cuttings; pulling the drill pipe from the hole to replace worn drill bits; and setting strings of casing and cementing them in place. Air and/or water-based drilling fluid may be used to drill the hole. Prior to setting the production casing, open-hole well logs may be run to identify potentially productive horizons. If the evaluation concludes that sufficient natural gas and/or oil are present and recoverable, steel production casing would be installed and cemented in place. Drilling activities on a well would typically occur 24 hours per day, seven days per week, and would require approximately 20 workers. It could require from two to four weeks to drill a well depending on the depth and complexity of the well.

Once a well has been drilled and evaluated to have sufficient oil and/or natural gas, completion operations would begin. Well completion involves perforating the production casing in target zones, followed by hydraulic fracturing (fracking) of the formation. Fracking operations include injecting an agent (e.g., water, gel, liquid, carbon dioxide, and/or nitrogen) into the formation under pressure. The fracking agent would likely contain sand or other proppant material to keep

the fractures from closing, thereby allowing fluids to be produced from the formation. The next phase of completion would be to flow and test the well to determine rates of production.

Typical equipment and vehicles used during completion activities might include carbon dioxide tanker trucks; sand transport trucks; water trucks; oil service trucks used to transport pumps and equipment for fracking; flat beds and gin trucks to move water tanks, rigs, tubing, and fracking chemicals; logging trucks (cased hole wireline trucks); pickup trucks to haul personnel and miscellaneous small materials; and workover rigs.

Completion activities on individual wells may occur 24 hours per day, seven days per week, and would require approximately 20 to 40 workers. Completion of an individual well could take from 7 to 30 days, depending on the number of completion zones.

2.2.2 Water Usage

The process of drilling for oil and gas requires consumptive water use. Within the affected area, a typical well drilled to the primary target formation would involve about 294,000 gallons of water. The water is used as a drilling medium, for mixing cement, and for various cleanup operations. Therefore, for the oil and gas wells projected in the proposed action, a total of about 3.2 million gallons of water (10 acre feet) could be used in the next 15 years. The source of this water would be primarily municipalities and private sources.

2.2.3 Hydraulic Fracturing

Fracking is a well stimulation technique used to increase oil and gas production from underground rock formations. The RFD includes all reasonably foreseeable development technologies that may be used, and thus, this EA considers the impacts of all reasonably foreseeable oil and gas development regardless of the specific technologies used, including hydraulic fracturing. Fracking will also be evaluated at the APD stage should the lease parcel be sold/issued and a development proposal submitted. The following paragraphs provide a general discussion of the fracking process that could potentially be implemented if development were to occur, including well construction information and general conditions encountered within the PFO and RFO.

Fracking involves the injection of fluids through a wellbore under pressures great enough to fracture the oil and gas producing formations. The fluid is generally comprised of a liquid such as oil, carbon-dioxide or nitrogen, and proppant (commonly sand or ceramic beads), and a minor percentage of chemicals to give the fluid desirable flow characteristics, corrosion inhibition, etc. In the Cane Creek Unit, the producing unit closest to the parcels/leases, the most common liquid used for fracking is oil; an average of 107,826 gallons per well, as opposed to 87 gallons per well of water.[2] The proppant holds open the newly created fractures after the injection pressure is released. Oil and gas flow through the fractures and up the production well to the surface.

[2] These numbers are derived from FracFocus Chemical Disclosure Registry, a website managed by the Ground Water Protection Council and Interstate Oil and Gas Compact Commission to provide the public access to reported chemicals used for hydraulic fracturing. As of November 1, 2012, all operators in the State of Utah have been required to submit the quantity and composition of fluids used to frack wells. Four wells from the Cane Creek Unit were found on FracFocus and used to calculate average water use per well for fracking.

Fracking has been used by oil and natural gas producers since the late 1940s and for the first 50 years was mostly used in vertical wells in conventional formations. Fracking is still used in these settings, but the process has evolved. Technological developments (including horizontal drilling) have led to the use of fracking in unconventional hydrocarbon formations that could not previously be profitably produced. The use of horizontal drilling through unconventional reservoirs combined with high-volume water based multi-stage fracking activities has led to an increase in oil and gas activity in several areas of the country which has, in turn, resulted in a dramatic increase in domestic oil and gas production nationally.

2.2.4 Production Operations

If a well is determined to be commercially productive, production facilities (gas meters, oil and water tanks, separators, etc.) would be installed on the well pad. Fluids such as oil, condensate, and produced water would likely be transferred to trucks as necessary and transported for sale or to an approved disposal site.

2.2.5 Produced Water Handling

Water is often associated with either produced oil or natural gas. Water is separated out of the production stream and can be temporarily stored in the reserve pit for 90 days. Permanent disposal options include surface discharge pits or underground injection. Handling of produced water is addressed in Onshore Oil and Gas Order No. 7, which prescribes measures required for the protection of surface and ground water sources.

2.2.6 Maintenance Operations

Wells are usually visited by a pumper on a daily basis to visually inspect equipment, gauges, etc. Well maintenance activities would occur on a year round basis.

2.2.7 Plugging and Abandonment

If the wells do not produce economic quantities of oil or gas, the well would be plugged and abandoned. The wells would be plugged and abandoned following specifications from a BLM Petroleum Engineer, which would include requiring cement plugs at strategic positions in the well bores. Reclamation would meet the objectives described in the APD

2.3 ALTERNATIVES ANALYZED IN DETAIL

2.3.1 No Action Alternative

The BLM NEPA Handbook (H-1790-1) states that for EAs the No Action Alternative generally means that the Proposed Action would not take place. In the case of a lease sale, the parcels considered for oil and gas leasing would not be offered for lease. Under the No Action Alternative, the BLM would defer all nominated lease parcels from the September 2018 lease sale. The parcels could be considered for inclusion in future lease sales. Surface management would remain the same and ongoing oil and gas development would continue on surrounding private, state, and federal leases.

In the case of the SNI leases, the BLM would not issue the leases because the stipulations and notices do not comply with the PFO RMP (Sept. 2008); therefore, the BLM would not issue the

leases, reject the lease offer and issue a refund of any monies associated with these leases to the companies that bought them.

Under this alternative, the BLM would deem the leases *void ab initio* that were suspended in 2005 and 2006. All suspended leases in the planning area were issued under the management direction of the *Henry Mountain Management Framework Plan* (BLM 1982), which was superseded by the Richfield Field Office RMP in 2008 (BLM, 2008b). There were no stipulations originally attached to the leases.

2.3.2 Proposed Action – Offer for Lease All Nominated Parcels, Offer Lessees of the Suspended Parcels to Lift the Suspensions if they agree to the new Stipulations and Notices in Attachment B, and offer to issue the "Sold but not Issued" leases to the buyers if they agree to the new Stipulations and Notices in Attachment B.

Under this alternative, the BLM would lease Federal mineral estate in nominated parcels available for leasing in the resource area in accordance with the PFO and RFO RMPs (Sept. 2008). The BLM would also update the SNI lease stipulations and notices in accordance with the PFO RMP (Sept. 2008) and therefore, be able to issue them. The BLM would also lift the suspension on the 16 leases in the RFO after adding the appropriate lease stipulations and notices in accordance with the RFO RMP (Sept. 2008). The current lease sale includes 76 lease parcels in Emery County. Those lands proposed for lease under this alternative total 158,944.27 acres of federal surface and mineral estate (see Appendix A). The lands have been grouped into appropriate lease parcels for competitive sale as oil and gas leases in accordance with the 43 C.F.R. § 3100 regulations. The leases would include the standard lease terms and conditions for development of the surface of oil and gas leases provided in 43 C.F.R. § 3100. Stipulations to protect other surface and subsurface resources would also apply, as prescribed by the RMP. These stipulations are described in Appendix A.

The Competitive Leasing Handbook H-3120-1 also requires the following standard stipulations be added to every lease:

Cultural Resources Stipulation
This lease may be found to contain historic properties and/or resources protected under the National Historic Preservation Act, 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 National Historic Preservation Act (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.

Threatened and Endangered Species Stipulation

The lease may now and hereafter contain plants, animals, and their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objectives to avoid BLM approved activity that will contribute to a need to list such a species or their habitat. BLM may require modification to or disapprove a proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or critical habitat until it completes its obligation under requirements of the Endangered Species Act, as amended, 16 U. S. C. § 1531 et seq., including completion of any required procedure for conference or consultation.

2.4 Alternatives Considered but not Analyzed in Detail

Issue/Lift suspensions on leases without attaching new stipulations

Under this alternative, the BLM would lift the lease suspensions on leases that were suspended in 2005 and 2006. Each of the leases would be returned to active status with the same terms and conditions that were included on the lease at the time the lease was issued. All suspended leases in the planning area were issued under the management direction of the *Henry Mountain Management Framework Plan* (BLM 1982), which was superseded by the Richfield Field Office RMP in 2008 (BLM 2008b). Stipulations from the *Henry Mountain Management Framework Plan* that are attached to the suspended leases can be found in Appendix D. In the case of the two SNI leases, the BLM would issue the leases and lift the suspension on the other 16 leases without updating the lease stipulations and notices to comply with the PFO and RFO RMPs (BLM, 2008c) (BLM, 2008b).

This alternative was not analyzed in detail because there was essentially no change in any major constraints for the areas encompassed by the parcels between the previous plans and the 2008 ones. No areas were closed to leasing, and no large scale areas were identified as No Surface Occupancy (NSO). Regardless of the original lack of stipulations for the leases, all environmental laws such as the Clean Air Act, the National Historic Preservation Act, and the Endangered Species Act require compliance, and adding the additional stipulations did not substantially change this alternative from the proposed action.

Several alternatives were suggested through the scoping process, as follows;

1. A “leasing outside of wilderness-caliber lands” alternative. Under this alternative, BLM would not offer for lease any parcels in BLM-identified non-WSA lands with wilderness characteristics. (SUWA et. al., 2018, p. 17) This alternative was not analyzed in detail because it is subsumed in the “no action” alternative.

2. A “no-surface occupancy” alternative. Under this alternative, BLM would only offer BLM-identified non-WSA lands with wilderness characteristics for lease with non-waivable no surface occupancy stipulations. (SUWA et. al., 2018, p. 17). Such an alternative would not be in compliance with the RMP, since stipulations are derived

through the Land Use Planning process, not NEPA analysis. (See Washington Office Instructional Memorandum N0. 2018-034 *Updating Oil and Gas Leasing Reform – Land Use Planning and Lease Parcel Reviews* Section B(2) "A lease stipulation may be revised consistent with modification criteria found in the RMP, or through amendment, as necessary, given conditions or issues not anticipated in the RMP." The Price and Richfield Field Office 2008 RMPs were both prepared in full awareness that non-WSA lands with wilderness characteristics could be impaired by oil and gas development; this was not an issue that was not anticipated, but neither RMP stipulated that those lands would be offered as NSO. An RMP amendment is not warranted at this time, so the alternative in not being analyzed in detail.

3. A "phased development-leasing" alternative. Under this alternative, BLM would require lessees and operators to first explore and develop land outside of BLM-identified non-WSA lands with wilderness characteristics – and to prove that such areas are capable of production in paying quantities – prior to developing in BLM-identified non-WSA lands with wilderness characteristics (SUWA et. al., 2018, p. 17). This alternative was dismissed for the same reason as the previous one discussed. Outside an RMP amendment, the BLM may not put what are, effectively, major constraints on the development leases on lands not already encumbered by major constraints under the current RMP.

4. A "mitigation leasing" alternative. Under this alternative, BLM would attach additional mitigation measures and best management practices (BMP) to each lease. This would include controlled surface use and NSO stipulations to protect sensitive resources including cultural resources and BLM-identified non-WSA lands with wilderness characteristics. (SUWA et. al., 2018, pp. 17-18). This alternative was dismissed because it differs little from the previous two discussed. Many sensitive resources, such as cultural resources, can and are protected through compliance with various legislative Acts, which allow for stipulations derived from outside the RMP process, such as the one quoted in Section 2.3.2, to be attached to the parcels.

Another additional scoping comment was sent requesting that the BLM prepare an "activity plan" "to guide future oil and gas leasing in the San Rafael desert" prior to leasing the parcels. This request was dismissed because in order to achieve the objectives of the submitters, an RMP amendment would be required. A leasing activity plan in conjunction with an RMP amendment is essentially the same entity as a Master Leasing Plan (MLP), and according to IM 2018-034, MLPs create duplicative layers of NEPA review.

3 AFFECTED ENVIRONMENT

3.1 INTRDUCTION

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values and resources) of the impact area as identified in the Interdisciplinary Team Checklist found in Appendix F. This chapter provides the baseline for comparison of impacts/consequences described in Chapter 4.

The CEQ Regulations state that NEPA documents "must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail" (40 CFR 1500.1(b)). While many issues may arise during scoping, not all of the issues raised warrant analysis in an EA. Issues will be analyzed if: 1) an analysis of the issue is necessary to make a reasoned choice between alternatives, or 2) if the issue is associated with a significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of the impacts. Appendix F identifies which parcels are dismissed from detailed analysis.

3.2 GENERAL SETTING

The affected area is located in the Colorado Plateau physiographic province. The nearest municipalities are the towns of Green River and Hanksville, Utah. The western boundary of the area is partially formed by State Route 24, and the eastern boundary is partially formed by the Green River. The southern boundary of the area is proximate to the Horseshoe Canyon unit of Canyonlands National Park, and the northern boundary is several miles south of the town of Green River. The area encompasses generally undeveloped BLM-administered public lands used for livestock grazing, dispersed recreation, and other multiple uses.

3.3 RESOURCES/ISSUES BROUGHT FORWARD FOR ANALYSIS

3.3.1 Air Quality

The U.S. Environmental Protection Agency (EPA) established the National Ambient Air Quality Standards (NAAQS) to limit the amount of air pollutants considered harmful to public health and the environment. Primary and secondary standards have been set for six criteria pollutants: carbon monoxide (CO), lead, nitrogen dioxide (NO_2),[3] ozone (O_3), sulfur dioxide (SO_2), and particulate matter (PM). Ground-level O_3 is not directly emitted into the air but is created by chemical reactions between NO_x and volatile organic compounds (VOCs) in the presence of sunlight. The primary standards provide public health protection and also protect sensitive populations such as children and the elderly. Secondary standards provide public welfare protection, which includes protection against decreased visibility and damage to animals, crops, vegetation, and building (EPA, 2016b). Table 3-1 shows the NAAQS.

[3] EPA uses NO_2 as the indicator for the larger group of nitrogen oxides (oxides of nitrogen) or NO_x. However, emissions are usually reported as NO_x.

Ground-level O_3 and PM are of particular concern in the southwestern United States. Although it can occur naturally, O_3 is also formed under certain conditions through the reaction of its precursor gases (nitrogen oxides [NO_x] and VOCs), which are emitted from power generation, oil and gas production, wildfires, and other sources. Humans can experience health problems when exposed to O_3, and vegetation that is sensitive to O_3 may have slowed growth, reduced photosynthesis, and an increased risk of disease and damage (EPA, 2017b). PM, also known as particle pollution, is a complex mixture of extremely small dust, dirt, and soot particles. It is composed of coarse, inhalable particles (generally 10 micrometers in diameter and smaller [PM_{10}]) and fine inhalable particles (generally 2.5 micrometers and smaller [$PM_{2.5}$]). PM can be directly emitted from a source such as an unpaved road or formed in the atmosphere from reactions of chemicals such as SO_2 and NO_x. PM can cause health effects in humans, with $PM_{2.5}$ posing the greater risk because of its ability to penetrate the lungs and possibly enter the bloodstream. $PM_{2.5}$ is also the main cause of reduced visibility (haze). PM can settle on vegetation, snow, or water and has potential environmental effects such as depleting the nutrients in soil and making lakes and streams acidic (EPA, 2018c). Both O_3 and PM can be transported great distances, although elevated short-term, local concentrations can also occur.

Table 3-1 National Ambient Air Quality Standards

Pollutant		Primary/ Secondary	Averaging Time*	Level	Form
CO		Primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead		Primary and secondary	Rolling 3-month average	0.15 μg/m^3	Not to be exceeded
NO2		Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Primary and secondary	1 year	53 ppb	Annual mean
O_3		Primary and secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
PM	$PM_{2.5}$	Primary	1 year	12 μg/m^3	Annual mean, averaged over 3 years
		Secondary	1 year	15 μg/m^3	Annual mean, averaged over 3 years
		Primary and secondary	24 hours	35 μg/m^3	98th percentile, averaged over 3 years
	PM_{10}	Primary and secondary	24 hours	150 μg/m^3	Not to be exceeded more than once per year on average over 3 years

Pollutant	Primary/ Secondary	Averaging Time*	Level	Form
SO_2	Primary	1 hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Source: (EPA, 2016b).

Notes: $\mu g/m^3$ = microgram(s) per cubic meter; ppb = part(s) per billion; ppm = part(s) per million.

* Averaging time is the time period during which pollutant concentrations are measured and averaged.

Areas that do not comply with NAAQS requirements for criteria pollutants are considered nonattainment areas. A particular geographic region may be designated an attainment area for some pollutants and a nonattainment area for others. Comprehensive state plans to reduce pollutant concentrations are required in nonattainment areas. Emery and Wayne Counties are currently in attainment with the NAAQS (EPA, 2018d). Compliance with the NAAQS is typically demonstrated by monitoring for ground-level atmospheric air pollutant concentrations. The DAQ operates and maintains a network of ambient air monitoring stations across the state to collect air quality data and to evaluate compliance with the NAAQS. No air monitoring stations exist in Emery or Wayne Counties; therefore, there are no air monitoring stations in the planning area.

An emissions inventory is a summary of emissions for a particular source during a given time period. The DAQ compiles statewide emission inventories to assess the level of pollutants released into the air from various sources. **Table 3-2** summarizes criteria pollutant emissions in Emery and Wayne Counties from the 2014 statewide emission inventory. \

Table 3-2 2014 Criteria Pollutant Emissions in Emery and Wayne Counties by Source

County	Source	Emissions (tons per year)					
		CO	NO_x	PM_{10}	$PM_{2.5}$	SO_x	VOCs
Emery	Area Sources	157.7	254.7	3,332.0	374.3	0.7	148.1
	Area Sources: Oil and Gas	160.5	158.1	8.9	8.4	1.2	482.5
	Mobile Sources: Non-road	475.8	227.4	16.3	15.7	1.3	103.7
	Mobile Sources: On-road	2,270.0	1390.0	272.8	98.8	3.8	238.7
	Point Sources	7,146.0	18,372.6	1,516.4	752.7	6,420.1	208.3
	Biogenics	7,627.0	0.0	0.0	0.0	0.0	34,859.9
	Wildfires	0.0	0.0	0.0	0.0	0.0	0.0
	Total	17,837.0	20,402.8	5,146.4	1,249.9	6,427.1	36,041.2
Wayne	Area Sources	48.6	164.4	1,138.3	143.9	1.2	46.5
	Area Sources: Oil and Gas	0.0	0.0	0.0	0.0	0.0	0.0

County	Source	Emissions (tons per year)					
		CO	NO_x	PM_{10}	$PM_{2.5}$	SO_x	VOCs
	Mobile Sources: Non-road	785.8	35.2	12.1	11.2	0.1	288.4
	Mobile Sources: On-road	449.2	124.8	31.0	10.4	0.5	45.4
	Point Sources	0.0	0.0	0.0	0.0	0.0	0.0
	Biogenics	4,692.6	0.0	0.0	0.0	0.0	21,802.1
	Wildfires	0.0	0.0	0.0	0.0	0.0	0.0
	Total	5,976.2	324.4	1,181.3	165.5	1.9	22,182.4

Source: (DAQ, 2014a)

.*Note*: Biogenics are emissions from natural, living sources such as vegetation and organisms

As shown in **Table 3-2**, Emery County had higher criteria pollutant emissions than Wayne County in 2014. Point sources are a large contributor to Emery County emissions. They consist of the Energy West Mining Company (Cottonwood Coal Prep Plant and Deer Creek Mine), Nielson Construction Company's Mill Flat Asphalt and Aggregate Pit, and PacifiCorp's Hunter Power Plant and Huntington Power Plant. The Hunter Power Plant and Huntington Power Plant are major sources of pollution in Emery County and the analysis area. No significant point sources exist in Wayne County (DAQ, 2014b). Wayne County also has no emissions from the oil and gas industry, unlike Emery County. There are no active oil and gas wells in the planning area; all previously existing wells have been abandoned and plugged.

Naturally occurring and prescribed fires may occur in the planning area. Prescribed fire or controlled burning is an important management tool used to reduce the risk of large, uncharacteristically severe wildfires; increase public and firefighter safety; and meet multiple resource management objectives. Such objectives may include habitat restoration, maintenance of vegetation treatments, and restoration or maintenance of ecosystem health. However, because fire produces short-term air pollution (including PM, carbon dioxide [CO_2], O_3-forming chemicals, and VOCs), smoke management is a priority during prescribed fires. Because of the type and quantity of vegetation in the planning area, wildfire is generally uncommon. No wildfire emissions are shown for either county in the 2014 emission inventory data. Historical emission inventories report wildfire emissions in Emery County in 2002 and 2005.

3.3.1.1 Ozone Conditions and Trends

Although the planning area does not have any air quality monitoring stations, nearby stations provide information about O_3 current conditions and trends. The National Park Service (NPS) evaluated long-term trends in O_3 concentrations for 27 national parks using the annual fourth-highest 8-hour maximum O_3 concentration, which reflects the form of the O_3 NAAQS. Of the three national parks near the planning area, only Canyonlands National Park was included in the evaluation. No significant upward or downward trends in O_3 concentrations were identified for this park from 1993 through 2008 (NPS, 2010). **Table 3-3** summarizes O_3 monitoring data from Canyonlands National Park post-2008.

Table 3-3 O_3 Concentrations in Canyonlands National Park, 2009–2015

Year	O_3 NAAQS (parts per million)		O_3 Concentrations in Canyonlands National Park (parts per million)
	2008 NAAQS (in effect at the time of monitoring)	Current NAAQS (effective December 28, 2015)	
2009	0.075	0.070	0.068
2010	0.075	0.070	0.068
2011	0.075	0.070	0.069
2012	0.075	0.070	0.072
2013	0.075	0.070	0.066
2014	0.075	0.070	0.064
2015	0.075	0.070	0.065

Source: (NPS, 2017a) *Note*: No data were available for Arches or Capitol Reef National Parks

These data reflect a statistically significant improving trend in O_3 concentrations in Canyonlands National Park. The NPS indicates that human health risks from O_3 concentrations at Canyonlands National Park warrant moderate concern, based on several factors, including the 2011–2015 estimated O_3 concentration of 0.0691 parts per million. O_3 concentration trends at Canyonlands National Park show a statistically significant improvement for 2006-2015. The NPS also indicates that the vegetation health risk warrants moderate concern, but is showing a statistically significant improvement trend (NPS, 2017a).

3.3.1.2 Hazardous Air Pollutants

Hazardous air pollutants (HAPs), also known as toxic air pollutants, are known or suspected to cause cancer or other serious health effects, or adverse environmental effects. HAPs emitted by the oil and gas industry include benzene, toluene, ethyl benzene, mixed xylenes, formaldehyde, normal-hexane, acetaldehyde, and methanol. The EPA regulates 187 listed HAPs through emission standards, a risk and technology review program, mobile source rules, and other regulations.

The Clean Air Act (CAA) requires the EPA to publish a list of source categories that emit certain levels of HAPs. The list of source categories includes major sources emitting 10 tons per year (tpy) of any one HAP, or 25 tpy of any combination of HAPs, and area sources (i.e., smaller sources, such as dry cleaners). Section 112(d) of the CAA requires the EPA to promulgate regulations establishing emission standards (National Emission Standards for Hazardous Air Pollutants [NESHAPs]) for each listed source category. The standards must require the maximum degree of emission reduction determined to be achievable by each particular source category, through the application of maximum achievable control technology (MACT). Different criteria for MACT apply to different sources. Source categories for which NESHAP (MACT) standards have been promulgated include oil and natural gas production facilities, and natural gas transmission and storage.

HAP pollutant emissions in Emery and Wayne Counties are included in the 2014 statewide

emission inventory. No HAP emissions were reported for Wayne County. In Emery County, 45 HAPs were reported as being emitted from Nielson Construction Company's Mill Flat Asphalt and Aggregate Pit and PacifiCorp's Hunter Power Plant and Huntington Power Plant (DAQ, 2014c). **Table 3-4** shows HAP emissions in Emery County greater than 1,000 pounds per year or 0.5 tpy.

Table 3-4 2014 HAP Emissions in Emery County (greater than 0.5 tpy)

HAP	Emery County Emissions (tpy)
Allyl chloride	0.7
Cyanide	8.6
Hydrochloric acid (hydrogen chloride)	34.2
Hydrofluoric acid (hydrogen fluoride)	45.9
Manganese (total suspended particulates)	0.5
Methyl bromide (bromomethane)	0.6
Methyl chloride (chloromethane)	1.8
Methyl hydrazine	0.6
Methylene chloride (dichloromethane)	1.0
Selenium (total suspended particulates)	0.8
Sulfuric acid	29.0

Source: (DAQ, 2014c) Hydrochloric acid, hydrofluoric acid, sulfuric acid, and cyanide constitute the largest HAP emissions in Emery County and are emitted from the Hunter and Huntington Power Plants

3.3.1.3 Air Quality–Related Values

The Prevention of Significant Deterioration (PSD) is a CAA permitting program for new and modified major sources of air pollution that are located in attainment areas. It is designed to prevent NAAQS violations, preserve and protect air quality in sensitive areas, and protect public health and welfare. Under PSD regulations, the EPA classifies airsheds as Class I, Class II, or Class III. Congress designated certain existing areas as mandatory Class I areas, which preclude redesignation to a less restrictive class. Class I areas are those areas allowing for very little deterioration of air quality and Class II areas allow moderate deterioration. They are areas of special national or regional natural, scenic, recreational, or historic value for which PSD regulations provide extra protection. In all cases, pollutant concentrations cannot violate any of the NAAQS (NPS, 1981).

A PSD increment prevents the air quality in clean areas from deteriorating and is the maximum allowable increase in ambient pollutant concentrations. Significant deterioration is said to occur when the amount of new pollution would exceed the applicable PSD increment (EPA, 2016c). The allowable PSD increments of new pollution are very small in Class I areas.

Utah has five Class I areas (all national parks) (EPA, 2017d). The closest Class I areas to the planning area are as follows: Canyonlands National Park, approximately 7 miles to the southeast

of the planning area (the Horseshoe Canyon unit of Canyonlands National Park, which is separate from the main park boundaries, is about 1.3 miles from the nearest parcel); Arches National Park, approximately 22 miles east of the project area; and Capitol Reef National Park, approximately 24 miles west of the project area. All portions of Utah outside Class I areas are designated Class II areas. The project area is located in a Class II area. Industrial growth is allowed in these areas; however, the air quality will not be allowed to degrade to the level of the NAAQS in many parts of the state where the air is exceptionally clean (State of Utah, 2006).

PSD requirements are applicable to a source if it has the potential to exceed the major source thresholds of either 100 or 250 tpy of a regulated pollutant, depending on the type of pollutant. For stationary source categories listed in the regulation, the threshold is 100 tpy. For unlisted source categories, such as oil and gas operations, the threshold is 250 tpy. At the projected amount of oil and gas development in the reasonably foreseeable development scenario in the affected area (11 wells) (see Appendix A), PSD regulations would not likely be triggered because such development would not have the potential to emit 250 tpy of any air pollutant.

An air quality–related value (AQRV) is defined as a resource "for one or more Federal areas that may be adversely affected by a change in air quality. The resource may include visibility or a specific scenic, cultural, physical, biological, ecological, or recreational resource" identified by a federal land manager for a particular area" (Federal Land Managers, 2010). The requirement to assess impacts to AQRVs is established in the PSD rules. The federal land manager for each Class I area has the responsibility to define and protect the AQRVs at such areas, and to consider whether new emissions from proposed major facilities (or modifications to major facilities) would have an adverse impact on those values. Visibility is a common AQRV for national parks. Although the planning area does not have any air quality monitoring stations, nearby stations in national parks provide information about AQRV current conditions and trends.

3.3.1.4 Visibility Conditions and Trends

Section 169A of the CAA established a national visibility goal to prevent future visibility impairment and remedy any existing impairment in national parks and wilderness areas (Class I areas). *Visibility* refers to the clarity with which scenic vistas and landscape features are perceived at great distances. *Impairment* refers to human-caused air pollution. In 1999, the EPA promulgated the Regional Haze Rule to address regional haze, which refers to haze that impairs visibility in all directions over a large area. Haze forms when sunlight encounters particle pollution in the air. The Regional Haze Rule calls for state and federal agencies to work together to establish goals and emission reduction strategies to improve visibility in Class I areas (EPA, 2017d). States are required to address visibility in their state implementation plans.
Visibility is affected by pollutant concentrations in the air. PM pollution is the major cause of reduced visibility in many federal mandatory Class I areas, with $PM_{2.5}$ being most responsible for impacts (EPA, 2001). The five key contributors to visibility impairment in the form of $PM_{2.5}$ are sulfate, nitrate, organic carbon, elemental carbon, and crustal material. Three metrics are typically used to describe visibility: visual range (the greatest distance at which a large dark object can be seen against the background sky), light extinction coefficient (the attenuation of light per unit distance due to the scattering and absorption by gases and aerosols between the source and receptor), and the deciview (dv) haze index (derived from calculated light extinction

measurements) (EPA, 2001). One dv represents the minimal perceptible change in visibility to the average person, approximately a 10% change in light extinction. A dv scale is near zero for a pristine atmosphere and increases as visibility degrades.

Interagency Monitoring of Protected Visual Environments (IMPROVE) is a visibility monitoring program that has been collecting data since 1987 to support the visibility protection regulations for mandatory Class I areas. The closest IMPROVE site to the planning area is in Canyonlands National Park.

The NPS evaluated long-term trends in visibility for 29 national parks using annual dv on the haziest and clearest days for the period of record for each park. Of the three national parks near the planning area, only Canyonlands National Park was evaluated. From 1990 through 2008, a statistically significant trend of improving air quality was noted at Canyonlands National Park on the haziest and clearest days. However, visibility at all of the analyzed parks suffered from at least some impairment, particularly on the haziest days. In addition, visibility conditions on the clearest days were also impaired, although to a lesser degree (NPS, 2010). **Table 3-5** summarizes IMPROVE data at Canyonlands National Park post-2008. Data for Capitol Reef National Park are also included (similar data were not available for Arches National Park).

Table 3-5 IMPROVE Visibility Data on the Haziest and Clearest Days in Canyonlands and Capitol Reef National Parks, 2009–2015

Year	Canyonlands National Park		Capitol Reef National Park	
	Haziest Days* (dv)	Clearest Days* (dv)	Haziest Days (dv)	Clearest Days (dv)
2009	11.5	3.3	10.3	2.7
2010	10.7	2.7	9.6	2.1
2011	9.9	2.7	9.3	2.9
2012	11.6	3.2	11.8	2.4
2013	10.4	3.4	9.9	2.9
2014	9.1	2.6	9.1	2.1
2015	9.8	2.5	9.5	2.6

Source: (NPS, 2017a).

Note: For Canyonlands National Park, the natural condition (i.e., before human activities) haze index on the haziest days is 6.4 dv. The natural condition haze index for the clearest days is 1 dv. For Capitol Reef National Park, the natural condition haze index on the haziest days is 5.7 dv. The natural condition haze index for the clearest days is 1.2 dv.

* Haziest days are the 20% of days where visibility is most limited. Clearest days are the 20% of days where visibility is most clear.

IMPROVE data from 2006 through 2015 for Canyonlands National Park indicate that there is no statistically significant trend in visibility on the 20% of clearest days. However, visibility improved on the 20% of haziest days during this time period. Overall, visibility shows impairment based on comparisons with the natural condition haze index (see Table 3-6 and table note) (NPS, 2017b). For Capitol Reef National Park from 2006 through 2015, there is no statistically significant trend in visibility on the 20% of clearest days, but there is a statistically

significant improving trend on the 20% of haziest days (NPS, 2017c). Visibility at Capitol Reef National Park is also impaired, as shown by comparisons with the natural condition haze index.

The NPS indicates that visibility at Canyonlands National Park warrants moderate concern, based on several factors, including the 2011–2015 estimated visibility on mid-range days of 2.7 dv above natural conditions (NPS, 2017d). Visibility effects at the park include a reduction of the average natural visual range from about 170 miles without pollution to approximately 130 miles with pollution, and a reduction of the visual range to below 80 miles on high-pollution days (NPS, 2017e).

3.3.1.5 Deposition Conditions and Trends

Atmospheric deposition is the process by which airborne pollutants are deposited on the ground. These pollutants include SO_2, NO_x, ammonia, and mercury. Wet deposition, commonly known as acid rain, occurs when pollutants are deposited in combination with precipitation, such as rain, snow, fog, or hail. Dry deposition of particles and gases can occur when chemicals are incorporated into dust or smoke in the absence of moisture, and are then deposited on the earth's surface by settling, impaction, or adsorption. Atmospheric deposition of air pollutants can increase the acidity of soils and water resources (e.g., lakes and streams). Dry and wet deposition are combined to estimate the total deposition of pollutants to the earth's surface.

3.3.1.6 Wet Deposition

The National Atmospheric Deposition Program (NADP) monitors wet deposition. The NPS used NADP monitoring data to evaluate long-term trends in concentrations of ammonium, nitrate, and sulfate in wet deposition for 29 national parks. Of the national parks near the planning area, only Canyonlands National Park has an NADP monitor. From 1998 through 2008, a statistically significant degrading trend in ammonium concentrations was noted at Canyonlands National Park. During this same time period, no statistically significant trends at the park were noted for nitrate or sulfate concentrations in precipitation (NPS, 2010). **Table 3-6** summarizes NADP deposition data for Canyonlands National Park post-2008.

Table 3-6 NDAP Wet Deposition Data for Canyonlands National Park, 2009–2015

Year	**Wet Atmospheric Deposition in Canyonlands National Park**		
	Ammonium	**Nitrate**	**Sulfate**
	Precipitation Weighted Mean (milliequivalents per liter [μeq/L])		
2009	15.4	16.9	27.5
2010	10.8	13.7	8.0
2011	16.2	15.1	12.8
2012	12.9	13.2	8.4

Year	Wet Atmospheric Deposition in Canyonlands National Park		
	Ammonium	Nitrate	Sulfate
	Precipitation Weighted Mean (milliequivalents per liter [μeq/L])		
2013	14.2	13.4	9.7
2014	16.6	12.5	8.7
2015	13.0	10.8	7.2

Source: (NPS, 2017f) (NPS, 2017g)

Note: No data were available for Arches or Capitol Reef National Parks.

The NDAP data from 2009 through 2015 indicate that there is no statistically significant trend for ammonium in precipitation or sulfate in precipitation, but that the trend for nitrate in precipitation is improving. The NPS indicates that wet nitrogen deposition warrants significant concern at Canyonlands National Park, based on several factors, including the 2011–2015 estimated wet nitrogen deposition of 1.4 kilograms per hectare per year and the very highly sensitive ecosystems at the park. (NPS, 2017h) Wet sulfur deposition is in good condition at Canyonlands National Park, based on factors including the 2011–2015 estimated wet sulfur deposition of 0.5 kilograms per hectare per year (NPS, 2017i).

3.3.1.7 Dry Deposition

The Clean Air Status and Trends network (CASTNet) monitors dry deposition of sulfur and nitrogen species, as well as rural O_3 concentrations. The only CASTNet station near the planning area is in Canyonlands National Park. **Table 3-7** summarizes recent CASTNet dry deposition data for Canyonlands National Park.

Table 3-7 CASTNet Dry Deposition Data for Canyonlands National Park, 2009–2014

Year	Dry Atmospheric Deposition in Canyonlands National Park	
	Total Dry Nitrogen Deposition* (kilograms of nitrogen per hectare)	Total Dry Sulfur Deposition† (kilograms of sulfur per hectare)
2009	0.71	0.17
2010	0.67	0.17
2011	0.67	0.17
2012	0.71	0.17
2013	0.72	0.17
2014	0.58	0.15

Source: EPA (EPA, 2017g).

Note: No data were available for Arches or Capitol Reef National Parks.

* Includes dry nitric acid (HNO_3), dry ammonium (NH_4), and dry nitrate (NO_3).

† Includes dry SO_2 and dry sulfate (SO_4).

Table 3-7 shows that dry deposition of nitrogen and sulfur has been relatively unchanged or slightly decreasing in Canyonlands National Park from 2009–2014; however, it is not known whether these trends are statistically significant.

3.3.2 Areas of Critical Environmental Concern

Areas of Critical Environmental Concern (ACECs) are special management areas designated by BLM to protect significant historic, cultural, or scenic values; fish and wildlife resources; natural process or systems; and/or natural hazards that have more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. ACECs have qualities or circumstances that make them fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change. They have been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of Federal Lands Policy and Management Act (FLMPA) and have qualities which warrant highlighting in order to satisfy public or management concerns about safety and public welfare. Nominated parcel 106 is within the Dry Lake Archaeological District ACEC, which was designated for relevant and important cultural values. Oil and gas leasing within the Dry Lakes ACEC is open but subject to No Surface Occupancy (BLM, 2008a, p. 131). Additionally, block cultural surveys are required before all surface disturbing activities within the ACEC.

3.3.3 Cultural Resources

Cultural resources are definite locations of human activity, occupation, or use identifiable though field survey, historical documentation, or oral history. The term includes archaeological, historic, and architectural sites, structures, and places with important public and scientific uses, and may include locations (sites or places) of traditional, religious, and cultural importance to specified social and/or cultural groups. Cultural resources are material places and things that are located, classified, ranked, and managed though the system of identifying, protecting, and utilizing for public benefit (BLM 8110 Manual: Glossary). Throughout this document, National Historic Preservation Act Section 106 terminology is used for cultural resources (e.g., eligible sites, historic properties, and not eligible sites), the process to identify them (e.g., Area of Potential Effect), and analysis of impacts to these resources (e.g., determination of no adverse effect) as a result of this lease sale. Terminology and definitions are available in the Section 106 implementing regulations at 36 CFR 800.

To identify cultural resources within and near the parcels, Price and Richfield archaeologists completed a records review and analysis for all parcels. The Area of Potential Effects for this undertaking is the area bounded by each parcel as well as a half-mile buffer to better account for potential indirect effects. Each parcel was analyzed for whether disturbance associated with a single well pad (the area disturbed being estimated by BLM's determined reasonably foreseeable development scenarios) could be accommodated within each parcel without adverse effects to historic properties. Both archaeologists compiled cultural resources data from their respective field office cultural resource libraries, GIS data (CURES), and the Preservation Pro database. These data sources contain information of all of the recorded cultural resource sites and cultural

resource survey data for the area available to BLM and the Utah Division of State History. Additional data sources used as appropriate include the Price and Richfield FO cultural resources planning models, which extrapolate extant cultural resources data to areas not previously surveyed; various ethnographies available for both field offices; cultural resources research data; and data from the San Rafael Desert Master Leasing Plan Class II survey and model.

In addition, the field offices are seeking additional cultural resources information from tribes, the public, and consulting parties through the Section 106 process. BLM received cultural resources location information from one consulting party; those data are included in this analysis.

Across the parcels, 70 Class III – Intensive Pedestrian Surveys (Class III survey) have been completed; survey coverage varies widely across the parcels, ranging from 0% to 39%. Known and expected site types within the parcels run a wide spectrum of human activity. From the records review it is clear that human beings have lived on this landscape for thousands of years. The cultural resources that are present within the parcels represent nomadic and seminomadic hunting and gathering activities, lithic source material acquisition and production, and historic mining and ranching. Cultural resource sites from the prehistoric period include a number of paleo-archaic sites with possible Paleo-Indian components. From the records review, a total of 333 sites have been recorded within these parcels. A total of 102 have been determined to be eligible to the National Register of Historic Places. The types of eligible and non-eligible prehistoric sites that are present include lithic scatters, lithic quarries, temporary camps, and rock art. The types of eligible and non-eligible historic sites include structures, roads and trails, inscriptions, and artifact scatters

3.3.4 Greenhouse Gas Emissions/Climate Change

Climate is the composite of generally prevailing weather conditions of a particular region throughout the year, averaged over a series of years such as temperature and precipitation. Climate change includes both historic and predicted climate shifts that are beyond normal weather variations.

Climate change is defined by the Intergovernmental Panel on Climate Change (IPCC) as “a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use” (IPCC, 2013).

The IPCC states: “Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased” (IPCC, 2013). The global average surface temperature has increased approximately 1.5°F from 1880 to 2012 (IPCC, 2013). Warming has occurred on land surfaces, oceans and other water bodies, and in the troposphere (lowest layer of earth’s atmosphere, up to 4-12 miles above the earth).

Earth's atmosphere has a natural greenhouse effect wherein naturally occurring gases such as water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O) and fluorinated gases[4] absorb and retain heat. Without the natural greenhouse effect, earth would be approximately 60°F cooler (URS, 2010). Current ongoing global climate change is caused, in part, by the atmospheric buildup of GHGs, which may persist for decades or even centuries. Based on their concentrations, retentions, and strengths, GHGs vary in how they act and remain in the atmosphere. (EPA, 2017f). Each GHG has a global warming potential (GWP) that accounts for the intensity of each GHG's heat trapping effect and its longevity in the atmosphere.

The buildup of GHGs such as CO_2, CH_4, N_2O, and other less common gases since the start of the industrial revolution has substantially increased atmospheric concentrations of these compounds compared to background levels. At such elevated concentrations, these compounds absorb more energy from the earth's surface and re-emit a larger portion of the earth's heat back to the earth rather than allowing the heat to escape into space than would be the case under more natural conditions of background GHG concentrations.

A number of activities contribute to the phenomenon of climate change, including emissions of GHGs (especially CO_2 and CH_4) from fossil fuel development, large wildfires, activities using combustion engines, changes to the natural carbon cycle, and changes to radiative forces and reflectivity (albedo). It is important to note that GHGs will have a sustained climatic impact over different temporal scales due to their differences in global warming potential (described above) and lifespans in the atmosphere. For example, CO_2 may last 50 to 200 years in the atmosphere while CH_4 has an average atmospheric lifetime of 12 years (URS, 2010).

The IPCC concluded that "warming of the climate system is unequivocal" and "most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic GHG concentrations." (IPCC, 2007). Extensive research and development efforts are underway in the field of carbon capture and sequestration (CCS) technology, which could help direct management strategies in the future. The IPCC has identified a target worldwide "carbon budget" to estimate the amount of CO_2 the world can emit while still having a likely chance of limiting global temperature rise to 2°C above pre-industrial levels. The international community estimates this budget to be 1 trillion tonnes of carbon (WRI, 2016).

Global mean surface temperatures have increased nearly 1.0°C (1.8°F) from 1890 to 2006 (NASA, 2018). In 2001, the IPCC (2007) indicated that by the year 2100, global average surface temperatures would increase 1.4 to 5.8°C (2.5 to 10.4°F) above 1990 levels. The National Academy of Sciences (Hansen, et al., 2006) has confirmed these findings, but also indicated that there are uncertainties regarding how climate change may affect different regions. Observations and predictive models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. Data indicate that northern latitudes (above 24° N) have exhibited temperature increases of nearly 1.2°C (2.1°F) since 1900, with nearly a 1.0°C (1.8°F) increase since 1970 alone. It also shows temperature and precipitation trends for the conterminous United States. For both parameters, varying rates of change are shown, but overall increases in both temperature and precipitation.

[4] Accessed online at: https://www.epa.gov/ghgemissions/overview-greenhouse-gases

As stated by EPA, (EPA, 2017e) the GWP was developed to allow comparisons of the global warming impacts of different GHGs. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of CO_2. The GWP was introduced in the IPCC First Assessment Report, where it was also used to illustrate the difficulties in comparing components with differing physical properties using a single metric. The 100-year GWP (GWP100) was adopted by the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol and is now used widely as the default metric. It is only one of several possible emission metrics and time horizons (IPCC, 2014).

The choice of emission metric and time horizon depends on type of application and policy context; hence, no single metric is optimal for all policy goals. All metrics have shortcomings, and choices contain value judgments, such as the climate effect considered and the weighting of effects over time (which explicitly or implicitly discounts impacts over time), the climate policy goal and the degree to which metrics incorporate economic or only physical considerations. There are significant uncertainties related to metrics, and the magnitudes of the uncertainties differ across metric type and time horizon. In general, the uncertainty increases for metrics along the cause–effect chain from emission to effects (IPCC, 2014). Proposals have been made for the UNFCCC to adopt a duel-term GHG accounting standard; using the 20-year GWP (GWP20) alongside the accepted GWP100. It is argued that doing this would increase the weighting of short-lived GHG in reductions goals. However, doing so would be counterproductive as the relative cooling effect from short-lived GHG's would diminish with time and be massively outweighed by warming over subsequent decades and centuries caused by higher concentrations of CO2 and other long-lived GHG's (Analytics, 2018). The GWP100 strikes a compromise between short-lived and long-lived GHG, as warming effect will be manifest over many hundreds of years, opposed to short-lived GHG's exerting warming over only a few decades.

Shown in **Table 3-8**, are the GWPs from IPCC AR5 (IPCC, 2014) GHGs are presented using the unit of Metric Tons of CO_2 equivalent (MT CO_2e),[5] a metric to express the impact of each different GHG in terms of the amount of CO_2 making it possible to express GHGs as a single number. For example, 1 ton of CH_4 would be equal to 28 tons of CO_2 equivalent, because it has a GWP over 28 times that of CO_2. The GWP accounts for the intensity of each GHG's heat trapping effect and its longevity in the atmosphere. The GWP provides a method to quantify the cumulative effects of multiple GHGs released into the atmosphere by calculating CO_2 equivalent for the GHGs.

Table 3-8 Greenhouse Gases and Their Global Warming Potentials

Pollutant	Carbon Dioxide (CO_2)	Methane (CH_4)	Nitrous Oxide (N_2O)	Hydrofluorocarbons (HFCs)	Perfluorocarbons (PFCs)	Sulfur hexafluoride (SF_6)
GWP	1	28	265	Up to 12,400	6,630-11,100	23,500

Source: IPCC, AR5 (IPCC, 2014)

[5] GHGs can also be measured as Million Metric Tons (MMT CO2e).

Because GHGs circulate freely throughout Earth's atmosphere, climate change is a global issue. The largest component of global anthropogenic GHG emissions is CO_2. Global anthropogenic carbon emissions reached about 7,000,000,000 MT per year in 2000 and an estimated 9,170,000,000 MT per year in 2010 (Boden, Marland, & Andres, 2013). Oil and gas production contributes to GHGs such as CO_2 and CH_4. Natural gas systems were the second largest anthropogenic source category of CH_4 emissions in the United States in 2015 with 162.4 MMT CO_2e of CH_4 emitted into the atmosphere. Those emissions have decreased by 31.6 MMT CO_2e (16.3 percent) since 1990 (EPA, 2017c)

3.3.5 Lands with Wilderness Characteristics

Lands with wilderness characteristics are areas having at least 5,000 acres in a natural or undisturbed condition, and provide outstanding opportunities for solitude and/or primitive forms of recreation. All or portions of 62 nominated parcels , totaling approximately 106,271.07 acres, and five leases totaling 4093.24 acres overlap lands with wilderness characteristics. **Table 3-9** displays the overlap of lands with wilderness characteristics and nominated lease parcels.

Table 3-9 Nominated Parcels Overlapping Land with Wilderness Characteristics Units

Parcel ID	UT-020-SRD- 007	Dirty Devil/ French Spring Natural Area	Dirty Devil/ French Spring Unit 28	UT- 020-SRD-Sweetwater Reef A	UT-020-SRD-Labyrinth Canyon A	UT-020-SRD-Labyrinth Canyon B	UT-020-SRD-San Rafael River B	UT-020-SRD-San Rafael River D	UT-020-SRD-San Rafael River E	Total Acres of Parcel Overlapping LWC	Percent of Parcel Overlapping LWC
38								1,172.55	89.66	1,262.21	64.2%
40								285.88	1,437.07	1,722.95	90.1%
41									36.62	36.62	1.9%
42									1,346.90	1,346.90	70.2%
46								222.58		222.58	8.7%
47								1,967.32		1,967.32	100.0 %
48								1,969.40		1,969.40	100.0 %
49								2,006.82		2,006.82	99.5%
50								1,316.01		1,316.01	99.9%
51								2,557.70		2,557.70	100.0 %
52								1,507.60	408.25	1,915.85	99.9%
53								866.13	1,680.96	2,547.08	99.8%
54								1,567.09	9.33	1,576.42	82.2%
55								512.16	1,764.58	2,276.73	89.0%
56								1,788.05		1,788.05	93.3%

Parcel ID	UT-020-SRD- 007	Dirty Devil/ French Spring Natural Area	Dirty Devil/ French Spring Unit 28	UT- 020-SRD-Sweetwater Reef A	UT-020-SRD-Labyrinth Canyon A	UT-020-SRD-Labyrinth Canyon B	UT-020-SRD-San Rafael River B	UT-020-SRD-San Rafael River D	UT-020-SRD-San Rafael River E	Total Acres of Parcel Overlapping LWC	Percent of Parcel Overlapping LWC
61				303.02						303.02	12.4%
67								1,118.92		1,118.92	56.7%
68								1,966.26		1,966.26	100.0 %
69								2,005.24		2,005.24	100.0 %
70								1,323.30		1,323.30	100.0 %
71				5.57				179.70		185.27	7.2%
72				167.32				1,574.37		1,741.69	90.8%
73								2,550.13		2,550.13	100.0 %
74				1,093.82						1,093.82	57.1%
75				2,182.12				371.03		2,553.15	99.9%
76				22.05				1,746.22		1,768.27	92.3%
77				1,950.64						1,950.64	100.0 %
78				1,951.41						1,951.41	100.0 %
79				1,650.49						1,650.49	83.3%
80				334.03						334.03	27.0%
81				2,556.16						2,556.16	100.0 %
82				1,918.31						1,918.31	100.0 %
83				2,466.58						2,466.58	99.0%
84				1,913.13						1,913.13	99.8%
85				2,244.75						2,244.75	87.8%
86				980.35						980.35	52.8%
87							1,075.62			1,075.62	55.5%
88							1,617.30			1,617.30	82.5%
89							521.92	15.84		537.76	26.7%
90								269.40		269.40	20.4%
91				1,497.87						1,497.87	58.6%
92				224.46			101.20			325.66	17.0%
93				2.29						2.29	0.1%
94				1,916.66						1,916.66	100.0 %
95				2,536.86						2,536.86	99.3%

Parcel ID	UT-020-SRD- 007	Dirty Devil/ French Spring Natural Area	Dirty Devil/ French Spring Unit 28	UT- 020-SRD-Sweetwater Reef A	UT-020-SRD-Labyrinth Canyon A	UT-020-SRD-Labyrinth Canyon B	UT-020-SRD-San Rafael River B	UT-020-SRD-San Rafael River D	UT-020-SRD-San Rafael River E	Total Acres of Parcel Overlapping LWC	Percent of Parcel Overlapping LWC
96				266.72						266.72	13.9%
97				1,874.41						1,874.41	100.0 %
98				2,468.59						2,468.59	100.0 %
99				2,420.77						2,420.77	99.8%
100				2,558.20						2,558.20	100.0 %
101				1,919.63						1,919.63	100.0 %
102				2,514.96						2,514.96	100.0 %
103				1,918.05						1,918.05	100.0 %
104				2,557.23						2,557.23	100.0 %
105				1,880.67						1,880.67	100.0 %
106	349.22									349.22	38.5%
107				532.94	66.39		1,320.26			1,919.58	98.5%
108				2,496.97	14.84					2,511.81	98.4%
109				2,554.13						2,554.13	99.9%
110				2,382.91						2,382.91	100.0 %
111				2,542.18						2,542.18	100.0 %
112				2,456.08		52.41				2,508.49	99.9%
113				600.01		1,656.54				2,256.55	99.6%
UTU 081458				183.23						183.23	7.4%
UTU 084401				2.91						2.91	0.1%
UTU 081463		0.02								0.02	0.0%
UTU 084706			41.20							41.20	0.9%
UTU 085329					398.93		2,070.77	1,396.18		3,865.88	60.1%
Unit Totals	**349.22**	**0.02**	**41.20**	**62,048.45**	**480.16**	**1,708.95**	**6,707.07**	**32,255.87**	**6,773.36**	**110,364.31**	**54.1%**

Two of the lands with wilderness characteristics units (San Rafael River E and UT-020-SRD-007) are units that were identified by BLM after the completion of the 2008 PFO RMP. Therefore, these two units have not been analyzed in a land use planning process. Parcels 38, 40, 41, 42, 52, 53, 54, 55 and 106 overlap lands with wilderness characteristics that have not been analyzed in a land use plan.

All other lands with wilderness characteristics units were analyzed in land use plans. The Sweetwater Reef (Subunit A), Labyrinth Canyon (Subunits A&B), and San Rafael Reef (Subunits B&D) are within the Price Field Office. The PFO ROD selected an alternative that emphasizes other multiple uses as a priority over protecting wilderness characteristics within these lands with wilderness characteristics units (BLM, 2008a)

The Dirty Devil/French Springs Unit 28 and natural area are within the Richfield Field Office. Approximately 0.02 acres of Parcel UTU 081463 overlaps the Dirty Devil-French Springs natural area, which is managed for protection of wilderness characteristics in the Richfield RMP (BLM, 2008b) The natural area is available for leasing with a No Surface Occupancy stipulation. For the remainder of the Dirty Devil/French Springs Unit 28, the RFO ROD selected an alternative that emphasizes other multiple uses as a priority over protecting wilderness characteristics within these lands with wilderness characteristics units (BLM, 2008b).

3.3.6 Pollinators

Bees and other pollinators play an important role in sustaining the nation's food supply and contributing to the agricultural sector and the health of the environment. Due to significant declines in some pollinator groups, the White House issued a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators in May 2015, with the goals of reducing stressors on pollinator health, including pests and pathogens, reduced habitat, lack of nutritional resources, and exposure to pesticides. In November 2015, the BLM released Instruction Memorandum (IM) No. 2016-013 to implement the strategy. It directs Federal departments and agencies to evaluate and use their resources, facilities, and land management responsibilities to expand knowledge of pollinator health and increase habitat quality and availability. The BLM IM and the May 2015 Pollinator-Friendly Best Management Practices for Federal Lands lists actions that BLM is committed to taking to improve habitats for pollinators on BLM-administered lands. Among those commitments are:

- using pollinator friendly native plant species in vegetation management and restoration projects,
- working toward providing a suite of early blooming to late blooming flowering plants to ensure floral resources are available for pollinators throughout the growing season,
- working with the Seeds of Success program and the National Seed Strategy to collect plant species most important for pollinators locally and increase their availability in plant materials programs,
- consider the use of native milkweed seed or plugs in restoration projects within monarch butterfly migration routes,
- identify and remove invasive plants to improve pollinator habitat.

BLM does not have policy that requires inventories for pollinators prior to management actions and inventories have not been conducted to locate and identify pollinators within the parcels in the September 2018 oil and gas lease sale. However, past general surveys in the San Rafael Desert have discovered a higher than average presence of native and endemic bees (Griswold, Parker, & Tepedino, 1997).

No insect pollinators have yet been listed as Federally endangered, threatened, candidate, or proposed species or as BLM Sensitive species. The Monarch butterfly was petitioned for listing in 2014 and a status review for this species will be completed in 2019. There are several Sensitive bat species that are suspected of occurring in the project area (see IDT Checklist, Wildlife: BLM Sensitive) and these species would receive protection through the implementation of the Special Status species program. If other pollinators are added to the threatened, endangered, candidate, proposed, or Sensitive lists in the future, the BLM would manage them and their habitats to protect them from impacts of management actions through the Sensitive Species and Endangered Species Act (ESA) programs.

Pollinators associated with Special Status plants, including Jones cycladenia (*Cycladenia humilis* var. *jonesii*), Navajo sedge (*Carex specuicola*), and Ute ladies-tresses (*Spiranthes diluvialis*) would receive protection through the avoidance and minimization measures outlined in their lease notices. These measures include establishing no disturbance buffers around plants, dust abatement actions, revegetating disturbed areas with native species, monitoring and treating invasive species, protecting riparian habitats from disturbance, using directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in plant habitat, some timing limitations during the flowering period, limiting new road construction, and restricting vehicles to existing roads. These measures would protect not only Special Status plants, but all native plant species that occur around them, as well as their pollinators.

3.3.7 Recreation

The Recreation Opportunity Spectrum (ROS) is a widely used planning and management framework for classifying and defining recreation opportunity environments ranging from the primitive to the urban. This continuum recognizes variation among the components of any landscape's physical, social, and operational characteristics. The ROS was developed as a tool to facilitate recreation inventory, evaluation, management, planning, and decision making. The parcels involved in this lease sale are located within ROS classification semi-primitive motorized, semi-primitive non-motorized, and roaded natural.

3.3.8 Visual Resources

In accordance with its mandate in the FLPMA, the BLM inventories and manages the scenic values of the public lands in accordance with national level policies established in BLM Manual Series 8400: Visual Resource Management (VRM). The BLM's VRM system uses four types of management classes (Classes I through IV) and their associated objectives to describe the different degrees of surface disturbance or modification allowed on the public lands (**Table 3-10**). VRM classes for the parcels included in this analysis were last established in the 2008 Approved Richfield and Price Field Office RMPs.

The 4.6 million-acres of public lands administered by the Richfield and Price Field Offices contain areas that possess a high degree of scenic quality and a high level of visual sensitivity. The visual attributes of the region have made the Price and Richfield Field Office a popular outdoor recreation destinations, and each year, an increasing number of recreational visitors come to the field offices' to recreate and sightsee. In general, high scenic quality within the field

offices results from the extraordinarily diverse and distinct topography, geology, and cultural history. The area possesses scenically unique vistas and river ways; rare and unusual geologic formations of sandstone, limestone, and shale; colorful and highly contrasting sandstone cliffs, arches, canyons, and spires; and an extraordinary concentration of prehistoric rock art, and prehistoric and historic structures.

Sensitive viewsheds that could potentially be impacted by future development of the parcels being proposed for leasing include those parcels within the San Rafael Desert, Robbers Roost, Green River, and Canyonlands National Park Horseshoe Canyon unit. These viewsheds were considered sensitive because introduced changes in these landscapes from future mineral resource development could affect the experiences of recreational visitors to these local, regional, national, and/or international outdoor recreation destinations. **Table 3-10** identifies the acreages of each VRM Class and their corresponding RMP objectives for the proposed parcels located within sensitive viewsheds.

Table 3-10 VRM Class Objectives within Parcels with Sensitive Viewsheds

VRM Class	**VRM Objective**	**BLM Acreages of VRM Classes within Parcels with Sensitive Viewsheds**
Class I	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and should not attract attention.	106: 0 acres 111: 0 acres 112: 0 acres 113: 0 acres SNI-Suspended 85328: 0 acres
Class II	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.	106: 0 acres 111: 0 acres 112: 0 acres 113: 496 acres SNI-Suspended 85328: 0 acres
Class III	The objective of class III is to partially retain the existing character of the landscape. The level of change to the landscape should be moderate. Management activities may attract the attention of the casual observer, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.	106: 813 acres 111: 2,542 acres 112: 2,506 acres 113: 1,763 acres SNI-Suspended 85328: 2,439 acres
Class IV	The objective of Class IV is to provide for management activities that require	106: 0 acres 111: 0 acres

Table 3-10 VRM Class Objectives within Parcels with Sensitive Viewsheds		
VRM Class	**VRM Objective**	**BLM Acreages of VRM Classes within Parcels with Sensitive Viewsheds**
	major modifications to the existing character of the landscape. The level of change to the landscape can be high. The management activities may dominate the view and may 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 repetition of the basic visual elements of form, line, color, and texture.	112: 0 acres 113: 0 acres SNI-Suspended 85328: 0 acres

Since completion of the 2008 PFO and RFO RMPs. BLM has since updated the Visual Resources Inventory (VRI) for the project area, in accordance with BLM Handbook 8410-1, Visual Resource Inventory. Scenic quality is a measure of the visual appeal of a tract of land. In the visual resource inventory process, public lands are given an A, B, or C rating based on the apparent scenic quality which is determined using seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. Further, BLM Handbook 8410 directs, "Inventory classes are informational in nature and provide the basis for considering visual values in the RMP process. They do not establish management direction and should not be used as a basis for constraining or limiting surface disturbing activities."

Although some parcels may have been inventoried containing a higher relative value of visual resources (e.g., VRI Class II or Scenic Quality Rating A), these areas are still managed under the assigned VRM classes established in the governing land use plans. VRM Classes are established during a land use planning decision making process. Changing the VRM classes is outside the scope of this EA and any changes would require a land use plan amendment .

All but two of the parcels and leases are completely within areas tentatively classified VRI Class III and IV. Parcel 106 and lease UTU-085328 both intersect areas tentatively classified VRI Class II.

3.3.9 Dark Night Sky/Soundscape

The night skies within the leasing area remains relatively unaffected by light pollution or "artificial skyglow" *Skyglow is the result of scattered artificial light in the atmosphere; it raises night sky luminance and creates the most visible negative effect of light pollution (Falchi et al. 2016).* The surrounding communities and parks (Capitol Reef National Park, Torey, UT, Canyonlands National Park, and Dead Horse State Park) have designated areas that support dark sky protection and are receiving an increased amount of astrotourism.

4 ENVIRONMENTAL IMPACTS

4.1 INTRODUCTION

This chapter discusses the environmental consequences of implementing the alternatives described in Chapter 2. Under NEPA, actions with the potential to affect the quality of the human environment must be disclosed and analyzed in terms of direct and indirect impacts—whether beneficial or adverse and short or long term—as well as cumulative impacts. Direct impacts are caused by an action and occur at the same time and place as the action. Indirect impacts are caused by an action but occur later or farther away from the resource. Beneficial effects are those that involve a positive change in the condition or appearance of a resource or a change that moves the resource toward a desired condition. Adverse effects involve a change that moves the resource away from a desired condition or detracts from its appearance or condition. Cumulative impacts are the effects on the environment that result from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions.

No Action Alternative

The BLM assumes that the No Action Alternative (no lease option) may result in a slight reduction in domestic production of oil and gas. This reduction would diminish federal and state royalty income, and increase the potential for federal lands to be drained by wells on adjacent private or state lands. The public's demand for oil and gas is not expected to change; oil and gas consumption is driven by a variety of complex interacting factors including energy costs, energy efficiency, availability of other energy sources, economics, demographics, and weather or climate. If the parcels are not leased, energy demand would continue to be met by other sources such as imported fuel, alternative energy sources (e.g., wind, solar), and other domestic fuel production. This displacement of supply could offset any reductions in emissions and disturbance achieved by not leasing the subject tracts in the short term.

The No Action Alternative would not meet the purpose and need for the Proposed Action.

4.2 INDIRECT IMPACTS

4.2.1 Air Quality

4.2.1.1 Impacts of No Action Alternative

Under the no Action alternative, the parcels would not be sold and the leases would not be issued or have their suspensions lifted. They could not be developed, thus no impacts to air quality would occur.

4.2.1.2 Impacts of Proposed Action Alternative

Moab Master Leasing Plan

The air quality analysis for the EIS prepared for the Moab Master Leasing Plan is incorporated by analysis. It is summarized as follows:

Far-Field Dispersion Modeling Analysis

The Moab MLP far-field modeling analysis examined multiple source impacts to NAAQS and air quality–related values (AQRVs) in the planning area using the CALMET/CALPUFF dispersion modeling system. Three years of meteorological datasets were used to evaluate year-to-year variability and how variability impacts modeled concentrations.

The analysis modeled for three emissions scenarios, each assuming the drilling of 232 wells (BLM, 2016a):

High scenario: no aggregation of wells on pads, 100% of wells go into production (232 wells), 50% dust control, more unpaved roads

Medium scenario: no aggregation of wells on pads, 60% of wells go into production (140 wells), 50% dust control, fewer unpaved roads

Low scenario: aggregation of four wells per one pad, 60% of wells go into production (140 wells), 70% dust control, smallest amount of unpaved roads

The projected oil and gas development in the affected area is substantially lower than the action alternative scenario for oil and gas development, which is 7 producing wells which comprises 3.0% of the wells in the Moab MLP's high scenario and 5.0% of the wells in the low scenario. Based on these percentages, the use of the Moab MLP's modeling results for this analysis is conservative.

NAAQS

Maximum modeled concentrations at Arches and Canyonlands National Parks showed no exceedances of the NAAQS for any criteria pollutant for any of the modeled scenarios (BLM, 2016a) Based on these modeling results, no NAAQS exceedances are expected from planning area oil and gas development for any of the alternatives.

Prevention of Significant Deterioration

Emissions from oil and gas development are unlikely to trigger the PSD requirement of the CAA. For informational purposes the PSD analysis used in the Moab MLP is presented. The Moab MLP modeled emission rates for the highest emitting 12-month period of oil and gas development (annual NO_2 and annual PM_{10}) to assess PSD. Modeled emission rates for the 24-hour PM10 assessment were based on the highest emitting calendar day. All predicted impacts were well below associated increments, with annual NO2 at 16%, Annual PM10 at 8.8%, and 24-hour PM10 at 56.3% of the PSD increment (BLM, Moab Master Leasing Plan and Final Environmental Impact Statement, 2016a).

Visibility

The Moab MLP calculated visibility impacts from potential 24-hour primary PM_{10}, secondary sulfate and nitrate PM, and elemental carbon concentrations in Arches and Canyonlands National Parks. Results were compared to natural background conditions as recommended in the *Federal Land Managers' Air Quality Related Values Group (FLAG) Phase I Report – Revised 2010* (Federal Land Managers, 2010). Both the BLM 10% change in extinction (1.0 deciview [dv])

"just noticeable change" threshold and the National Park Service 5% change in extinction (0.5 dv) "half a noticeable change" adverse impacts threshold were used to assess the significance of potential impacts (BLM, 2016a).

Visibility impacts ranged from greater than 0.5 dv on 159 days at Canyonlands National Park during the 2008 meteorological year for the high emissions scenario, to no visibility impacts greater than 1.0 dv at any park for any meteorological year under the low emissions scenario. Under the low emissions scenario, visibility was impaired only in the 2008 meteorological year in Canyonlands National Park, where there were 22 days exceeding 0.5 dv (no days exceeded 1.0 dv) (BLM, 2016a). PM_{10}, primarily road dust from truck traffic on unpaved roads, was the main pollutant of concern under both the high and medium emissions scenarios. NO_x played a greater role in visibility impacts in the low emissions scenario. The specific meteorological year used in the analysis also influenced modeled impacts. Meteorology in 2008 had substantially greater levels of impacts compared to the previous 2 years of data, which indicates sensitivity to meteorological variability. Because of the large role particulates play, adverse visibility impacts can most likely be tied to drier, hotter, and/or windier conditions (BLM, 2016a).

As discussed in Section 3.3.1.4 and shown in **Table 3-5**, visibility for Canyonlands National Park from 2006 to 2015 indicates that there is no statistically significant trend on the 20% of clearest days. Visibility improved on the 20% of haziest days during this time period. Overall, visibility shows impairment based on comparisons with the natural condition haze index. The NPS indicates that visibility at Canyonlands National Park warrants moderate concern.

Because the action alternative (Alternative A) of proposed comprise 12.1% of the producing wells in the low scenario in the Moab MLP, visibility impacts are expected to be below the 1.0-dv threshold under all four alternatives. Although it is possible that visibility impacts from oil and gas development in the planning area could exceed the 0.5-dv threshold on certain days in years with dry, hot, and/or windy conditions, it is considered unlikely based on the low number of wells for all alternatives. The Moab MLP notes that visibility impacts in the area appear to be especially sensitive to emissions of PM_{10} (e.g., road dust), and to a lesser extent elemental carbon (e.g., diesel soot) and NO_x. The proximity of emission sources, particularly PM sources, plays a large role in the magnitude and frequency of modeled adverse visibility impacts to the AQRVs of the national parks (BLM, 2016a).

Deposition

All modeled values of sulfur and nitrogen deposition were near or below the deposition analysis thresholds (DATs) of 0.005 kilogram per hectare per year for total nitrogen and total sulfur for all of the modeled scenarios, with the exception of the high and medium emissions scenarios for nitrogen deposition in Arches and Canyonlands National Parks for the 2008 meteorological year (BLM, 2016a). Under the low emissions scenario, all modeled values were below the DAT for both total nitrogen and total sulfur, with the exception of the 2008 value for nitrogen deposition in Canyonlands National Park (0.00857 kilogram per hectare per year) (BLM, 2016a). The DATs are NPS screening level values for the additional modeled amount of sulfur and nitrogen deposition within federal areas from new or modified sources (Federal Land Managers, 2010).

As discussed in Section 3.3.1.6 and shown in **Table 3-6**, wet deposition data for Canyonlands National Park from 2009 to 2015 indicate that there is no statistically significant trend for sulfate in precipitation. The trend for nitrate in precipitation is improving during this time period.

However, NPS indicates that wet nitrogen deposition warrants significant concern at Canyonlands National Park based on the highly sensitive park ecosystem. Dry deposition of nitrogen and sulfur has been relatively unchanged or slightly decreasing in Canyonlands National Park from 2009 to 2014; however, it is not known if this trend is statistically significant.

Because the maximum projected producing wells in Alternative A comprise 12.1% of the producing wells in the low scenario in the Moab MLP, total sulfur and total nitrogen deposition from oil and gas development in the planning area are not expected to exceed the DATs.

Near-Field Dispersion Modeling Analysis

Near-field modeling evaluates impacts of single or closely grouped sources to nearby receptors, typically those less than 1 kilometer (0.6 mile) away. Specific characteristics of the source to be modeled (e.g., emission rates, stack heights) are required for this type of modeling. This type of data was not available for the Moab MLP because of its programmatic nature (the Moab MLP is a planning document for oil, gas, and potash leasing rather than a specific analysis of one leasing project). Instead, the BLM evaluated previous near-field modeling for specific projects in and near the Moab MLP planning area for relevance to management decisions. The previous projects consisted of the Fidelity Cane Creek project (the addition of nine exploratory wells to eight producing wells) and the Monument Buttes project (a proposal for drilling 5,750 wells) (BLM, 2016a). Based on its large size, air quality impact data from the Monument Buttes project are not applicable to the MLP/EA and are not included here.

For the Fidelity Cane Creek project, the Moab MLP indicated that predicted impacts to air quality in Canyonlands and Arches National Parks from this project's emissions were "minimal and generally below guideline criteria" (BLM, 2016a). Modeling results indicated no adverse effect on visibility from the proposed project in Canyonlands and Arches National Parks. Predicted nitrogen deposition worst-case project emissions were comparably low but slightly above the DAT. The deposition modeling represented a short-term, worst-case prediction and was "not directly comparable to the long-term deposition impacts reflected in the DAT" (BLM, 2016a). Additionally, deposition modeling used a simplified 1-year meteorological dataset instead of a three-dimensional wind field-based dataset for 3 years, which would likely show lower deposition rates than presented (BLM, 2016a).

Based on its size and location, the Fidelity Cane Creek project air quality modeling results would be applicable to proposed oil and gas development in the planning area.

Ozone Analysis

The 2013 *Western Regional Air Partnership (WRAP) West-wide Jump-start Air Quality Modeling Study (WestJumpAQMS)* was designed to provide regional technical analysis and support for O_3 and particulate transport and attainment demonstrations across the West (WRAP, 2013). The goals of the study included incorporating all of the recent western modeling analyses into a single modeling database; performing a comprehensive model performance evaluation in an open technical forum; performing a comprehensive source apportionment analysis to evaluate local, regional, international, and natural source impacts on O_3 and $PM_{2.5}$ concentrations across the West; and developing a modeling platform to be used to conduct regional air quality planning, National Environmental Policy Act (NEPA) analyses, and state implementation plan analyses in the West.

The Moab MLP used the WestJumpAQMS modeling study to evaluate O_3 impacts from oil and gas development in the Moab MLP planning area. Canyonlands National Park was chosen as a source receptor to evaluate local and regional emission source impacts on O_3. Key points from this analysis include the following (BLM, 2016a):

- A modeled highest O_3 day at Canyonlands National Park on May 10, 2008, showing large-scale regional background data, indicated that almost 90% of modeled O_3 on that day was from outside the region, with sources in Utah making up the next largest contribution at 3.4%. For comparison, the Utah contribution was 29.7% on the modeled highest O_3 day that same year for Salt Lake City, a large metropolitan area, which reflects a much larger number of emission sources in Salt Lake City compared to the Moab MLP planning area.
- Meteorological conditions can play a dominant role in source contributions to monitored or modeled values. Predominant winds can transport O_3 from outside the Moab MLP planning area into the Moab MLP planning area.
- Based on source apportionment by state contribution data, sources in the Moab MLP planning area are unlikely to significantly contribute to modeled or monitored O_3 concentrations. However, they do contribute *incrementally* to both Moab MLP planning area and regional O_3 concentrations.
- The WestJumpAQMS source apportionment tool allows the user to specify source contributions by type (e.g., mobile source, fire, oil and gas). In a modeled Moab MLP planning area O_3 concentration of 70.0 parts per billion (ppb), 11.7 ppb or 16.7% are from regional sources, indicating that regional sources may play an important role in ozone levels for a particular area like the Moab MLP planning area. Oil and gas emissions account for less than 1% of the regional source category emissions. Mobile sources such as cars and trucks make up the largest single category, followed by natural sources and by point sources such as power plants. This is not an unusual source category breakdown for rural airsheds in the western United States.
- Emissions of O_3 precursor gases in the Moab MLP cumulative impact analysis area (which includes airsheds adjacent to the Moab MLP planning area) were found to contribute a relatively minor amount to modeled O_3 concentrations. The largest contributors of O_3 precursor gases were mobile sources, followed by point sources.
- The ratio of emissions in the Moab MLP planning area to total regional emissions is unlikely to change to a significant degree over the life of the Moab MLP planning period. Overall, oil, gas, and potash emissions may increase observed monitored values in the Moab MLP planning area, but the region will continue to be only slightly impacted by emissions in the Moab MLP planning area.
- Contributions from ozone-precursor-generating activities in the Moab MLP planning area will not be a determinant factor in O_3 concentrations approaching or exceeding the NAAQS.
- Reasonable controls to reduce the emissions of O_3 precursors from oil and gas activities should be required to reduce the relatively minor contribution that emission sources in the Moab MLP cumulative impact analysis area have on regional O_3 formation and transport.

Emissions from Potential Development of the Proposed Parcels

Should development on the parcels be proposed, and prior to authorizing specific proposed projects on the subject leases, emission inventories would need to be developed. Air quality dispersion modeling, which may also be required at that time, includes direct and cumulative impact analysis for demonstrating compliance with the NAAQS, plus analysis of impacts to Air Quality Related Values (i.e. deposition, visibility), particularly as they might affect nearby Class 1 areas (National Parks and Wilderness areas). At present, control technology on some emissions sources (e.g. drill rigs) is not required by regulatory agencies. Possible future development would result in different emission sources associated with two project phases: well development and well production.

An emissions inventory (EI) for the Lease Sale are calculated for a "typical well" and are based on the following assumptions:

- Each oil and gas well would cause 10.4 acres of surface disturbance. This acreage includes well pad, road and pipeline construction. The average pad is about 4.1 acres in size. Access and pipeline acreage can vary. Eleven acres is used here and is from the RFD (section 2.2).
- Construction activity for each well is assumed to be 10 days. It is further assumed that, based on the acreage disturbed, 4.5 days would be spent in well pad construction and 5.5 days would be spent in road and pipeline construction.
- Control efficiency of 25% for dust suppression would be achieved as a result of compliance with Utah Air Quality regulation R307-205.
- Post construction particulate matter (dust) emissions are likely to occur on a short-term basis due to loss of vegetation within the construction areas. Assuming appropriate interim reclamation, these emissions are likely to be minimal to negligible and will not be considered in this EA.
- Drilling operations would require 14 days.
- Completions and testing operations would require 3 days.
- Well pad, road, and pipeline construction activity emissions (PM_{10}) will be considered. Off road mobile exhaust emissions from drilling activities will be considered.
- Off road mobile exhaust emissions from heavy equipment and on road mobile emissions will not be considered as they are dispersed, sporadic, temporary, and not likely to cause or contribute to exceedance of the NAAQS.

Emission factors for activities of the proposed action were based on information contained in the EPA's Emission Factors & AP 42, Volume I, Fifth Edition (EPA.1995), available at: https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors.

The production emissions from oil storage tanks was estimated based on the emission factor contained in the Colorado Department of Public Health and Environment PS Memo 05-01, Oil & Gas Atmospheric Condensate Storage Tank Batteries Regulatory Definitions and Permitting Guidance (CDPHE 2017), available at: https://environmentalrecords.colorado.gov/HPRMWebDrawer/RecordHtml/901875.

Table 4-1: Emissions inventory summary

	Construction Emissions (Tons)	Drilling Emissions (Tons)			Completions Emissions (Tons)				Ongoing Production Emissions (Tons/year)			
	PM10	NOX	CO	VOC	VOC	NOx	CO	PM10	NOX	CO	VOC	PM10
Typical Well	0.81	13.31	1.83	0.23	0.85	0.07	0.07	0.00	0.11	0.09	241.36	0.00

	PM10	NOx	CO	VOC	
Activity Emissions × 11 wells (15 year period)	8.91	147.18	20.9	11.88	**Tons**
Annual ongoing production emissions (7 wells)	0.00	0.77	0.63	1689.52	**tpy**

Based on these data and the current NAAQS attainment status of both counties (see Section 3.2.2.1 and Tables 3-2 and 3-3), the projected emissions from oil and gas development shown in Table 4-1 would not contribute to exceedances of the NAAQS.

As discussed in Section 3.3.1.1 and shown in **Table 3-3**, Canyonlands National Park O_3 monitoring data from 2009 to 2015 reflect a statistically significant improving trend. During this time period, there were no exceedances of the 2008 O_3 NAAQS and one exceedance of the 2015 O_3 NAAQS (in 2012). Based on this trend, the analysis and conclusions reached in the Moab MLP, and the lower level of development projected for the planning area (than that proposed in the Moab MLP), oil and gas development in the planning area is not expected to noticeably contribute to regional O_3 formation and transport. It could have a minor contribution to monitored O_3 concentrations in Canyonlands National Park. Because these concentrations are currently showing an improving trend, it is unlikely that the proposed oil and gas development would contribute to NAAQS exceedances in the park.

The BLM has developed Best Management Practices (BMPs), which are mitigation measures applied to oil and natural gas drilling and production to help ensure that energy development is conducted in an environmentally responsible manner. The BLM encourages industry to incorporate and implement BMPs to reduce impacts to air quality through reduction of emissions, surface disturbances, and dust from field production and operations. Typical measures include:

- Open burning of garbage or refuse would not occur at well sites or other facilities;
- Drill rig would be equipped with Tier II or better diesel engines;
- Vent emissions for stock tanks and natural gas TEG dehydrators would be controlled by routing the emission to a flare or similar control device which would reduce emissions by 95% or greater;
- All internal combustion equipment would be kept in good working order;
- Flared hydrocarbon gases at high temperatures in order to reduce emissions of incomplete combustion through the use of multi-chamber combustors;
- Watering dirt roads during periods of high use to reduce fugitive dust emissions;
- Co-location of wells and production facilities to reduce new surface disturbances;
- Use of natural gas fired or electric drill rig engines;
- The use of selective catalytic reducers and low-sulfur fuel for diesel-fired drill rig engines;

- Adherence to BLM's Notice to Lessees' (NTL) 4a concerning the venting and flaring of gas on Federal leases for natural gas emissions that cannot be economically recovered;
- Protecting hydraulic fracturing sand from wind erosion;
- Implementation of directional drilling and horizontal completion technologies whereby one well provides access to petroleum resources that would normally require the drilling of several vertical wellbores;
- Requiring that vapor recovery systems be maintained and functional in area where petroleum liquids are stored; and
- Preforming interim reclamation to reclaim area of the pad not required for production facilities and to reduce the amount of dust from the pads

Additionally, the BLM encourages oil and natural gas companies to adopt other proven, cost-effective technologies and practices that improve operational efficiency and reduce natural gas emissions.

Application of Stipulation UT-S-01 and Notices UT-LN-96, UT-LN-99, and UT-LN-102 to each of the leases on federal surface would be adequate for the leasing stage to disclose potential future restrictions and to facilitate the reduction of potential impacts upon receipt of a site specific APD through application of BMPs and other technologies that may improve operational efficiency and reduce natural gas emissions.

4.2.2 Areas of Critical Environmental Concern

4.2.2.1 Impacts of No Action Alternative

The No Action alternative would not result in potential impacts because the parcels would not be leased or developed.

4.2.2.2 Impacts of Proposed Action Alternative

The issuance of leases would not directly impact the ACEC's relevant and important cultural values. No surface occupancy stipulation UT-S-319 would be applied within the ACEC and mitigate impacts of oil and gas development on ACEC values. BLM would add the lease stipulation UT-S-319 - No Surface Occupancy to parcel 106. Leasing the parcels under a No Surface Occupancy stipulation will prevent any future associated development from occurring within these parcels. Thus, no direct impacts to relevant and important cultural values within the Dry Lake ACEC are anticipated as a result of the proposed action. For a more detailed explanation of anticipated impacts to the specific relevant and important resource, please refer to the Cultural section in Chapter 4 of this document.

4.2.3 Cultural Resources

4.2.3.1 Impacts of No Action Alternative

The No Action Alternative would result in no impact to cultural resources because the parcels would not be leased or developed.

4.2.3.2 Impacts of Proposed Action Alternative

Section 106 of the National Historic Preservation Act (NHPA) specifically requires federal agencies to consider the potential effects of undertakings on historic properties (cultural resources, which are listed or eligible for listing on the National Register of Historic Places (NRHP)), in the process defined in its implementing regulations at 36 CFR 800. As part of the Section 106 analysis, BLM has completed a draft intensive records review which takes into account a wide variety of data, including the parcel size, location, current and past oil and gas leasing and development data for the area, landscape data (e.g., topography, water sources) and cultural resources data, including all previously recorded site data and survey records for the area, cultural resources potential models for the San Rafael Desert MLP, Price, and Richfield Field Offices, ethnographic data, and information gathered through formal consultation with tribes and consulting parties, and through public participation. Although Section 106 is primarily concerned with historic properties the information from the records review is used in considering impacts to all cultural resources.

Reasonably foreseeable development resulting from leasing within the proposed area has the potential to impact cultural resources, both directly and indirectly. Potential direct effects are physical disturbance of a site from the construction of a well pad, associated access roads, or associated infrastructure (e.g., pipelines). Given the types of cultural resources known and expected in the area, potential indirect effects include changes to the landscape which result in impacts to a site's setting, feeling, or association; increased rock art exposure to dust resulting from increased traffic on roads; visual impacts to sensitive rock art sites; and the potential to increase public access, potentially leading to increased vandalism and looting.

The Criteria for Adverse Effect found at 36 CFR 800.5(a)(1) are used in this section to analyze the potential effects to historic properties. This regulation states: "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association." Under Section 106, when effects from an undertaking to historic properties reach the adverse effects threshold, they must be avoided, minimized or mitigated.

In the literature review and analysis, the field offices used a reasonably foreseeable development (RFD) scenario to understand the potential impacts to cultural resources. As used in this section, RFD is defined as the expected area of surface disturbance for one well pad. RFD encompasses the total surface disturbance for construction of a well pad, access (road(s)), and associated pipelines. For purposes of this analysis, the RFD for the San Rafael Desert outlined in the San Rafael Desert Master Leasing Plan was used. If 10.4 acres of disturbance can be accommodated within a lease parcel without adverse effects, then BLM determines that that parcel can be leased without adverse effect to historic properties.

Using these data, BLM analyzed whether reasonably foreseeable development could occur somewhere within each parcel without adverse effects to historic properties. Analysis of the

above data demonstrates that there is room for reasonably foreseeable development within all parcels without causing adverse effects, whether the result of direct effects or indirect effects. Regarding direct effects, for many parcels these effects can be avoided because there are large or moderate sized areas with known or expected site densities that can easily accommodate the appropriate acreage of disturbance without adverse effects. For the remaining parcels where site densities are higher, there are still sufficient areas to accommodate reasonably foreseeable development and stipulations attached to each parcel will ensure well pad placement will not have adverse effects to historic properties, these stipulations are discussed below. For those parcels where there are sites sensitive to indirect effects, parcels are sufficiently large and topographically complex that these effects can be avoided through judicious placement of a well pad.

The rock art brought forward by consulting parties is within canyons. While some parcels include portions of these canyons, large portions also encompass the surrounding landscape, above and outside the canyon walls and bottoms. While parcels encompass potentially sensitive rock art, impacts to setting are avoidable by placing development elsewhere in these large parcels, specifically outside and away from canyons. When a lease is sold, BLM retains control over future development plans though lease stipulations, giving BLM the authority to accomplish the types of avoidance discussed above

Meeting lease stipulation requirements is a critical component of having any future proposed development approved by the BLM. All stipulations will be enforced during any future authorization to conduct exploration or operational activities under a lease. Through the Cultural Resource Protection Stipulation attached to all leases, BLM has the authority to require modification of, or disapprove, parcel development plans if cultural resource conflicts cannot be satisfactorily resolved. This gives BLM the authority to control future development to avoid adverse effects, including, but not limited to, those caused by a degradation of setting and other indirect effects. Although there may be impacts to non-eligible sites as discussed above, no adverse effects are predicted for historic properties from exploration/development of the lease parcels.

4.2.4 Greenhouse Gas Emissions/Climate Change

4.2.4.1 Impacts of No Action Alternative

If the parcels are not leased, there would be no additional Greenhouse Gas emitted from exploration/development of the parcels, nor from combustion of any hydrocarbons extracted from the lease.

4.2.4.2 Impacts of Proposed Action Alternative

At this time, the BLM is disclosing the likelihood and potential magnitude of indirect and downstream GHG emissions but is not able to disclose potential impacts to climate change from the estimated downstream GHG emissions related to the proposed lease sale. The inconsistency in results of scientific models used to predict climate change at the global scale, coupled with the lack of scientific models designed to predict climate change on regional or local scales, limits the ability to quantify potential future impacts of decisions made at this level. It is therefore beyond

the scope of existing science to relate a specific source of GHG emission or sequestration with the creation or mitigation of any specific climate-related environmental effects. Although the effects of GHG emissions in the global aggregate are well-documented, it is currently impossible to determine what specific effect GHG emissions resulting from a particular activity might have on the environment. Analysis of impacts at this leasing stage would be speculative and would be not be based "reasonable projections and assumptions".

Availability of Input Data

There are many uncertain factors that affect the potential for GHG emissions estimates: a lease may not be sold, so no GHG emissions would be expected; a lease may be sold but never explored, so again there would be no GHG emissions; a lease may be sold and an exploratory well drilled that showed no development potential, so minimal GHG emissions would occur; or a lease may be sold, explored, and developed. GHG emission estimates also would change due to specific production volumes and variability in flaring, construction, and transportation. At this stage, it is difficult to discern with certainty what end uses for the fuels extracted from a particular leasehold might be reasonably foreseeable.

Accurate assessments of GHG emissions are not possible at the leasing stage since emissions are dependent on factors such as specific equipment used and duration of use, applicant-committed emission controls, and the expected production rate from the oil or gas well. These factors are not known at the leasing stage. Furthermore, additional infrastructure such as pipelines, roads, compressor stations, gas plants and evaporation ponds are also not reasonably foreseeable at the leasing stage and are dependent on the level of development that may occur if a parcel is leased.

GHG emissions are a potential effect of the subsequent fluid mineral exploration and/or development of any leases that are issued. Oil and gas activities may lead to the installation and production of new wells, which may consequently produce an increase in GHG emissions. The primary sources of GHG emissions related to exploration or development could include the following:

- Fossil fuel combustion for construction and operation of oil and gas facilities – vehicles driving to and from production sites, engines that drive drill rigs, etc. These produce CO2 in quantities that vary depending on the age, types, and conditions of the equipment as well as the targeted formation, locations of wells with respect to processing facilities and pipelines, and other site-specific factors;
- Fugitive CH_4 – CH_4 that escapes from wells (both gas and oil), oil storage, and various types of processing equipment. This is a source of global CH_4 emissions. These emissions have been estimated for various aspects of the energy sector, and starting in 2011, producers are required under 40 CFR 98, to estimate and report their CH_4 emissions to the EPA; and
- Combustion of produced oil and gas – it is assumed that future operations would produce marketable quantities of oil and/or gas. Combustion of the oil and/or gas would release CO_2 into the atmosphere.

In recent years, many states, tribes, and other organizations have initiated GHG inventories, tallying GHG emissions by economic sector. The U.S. EPA provides links to statewide GHG emissions inventories (EPA, 2017c). Estimates of GHG emissions were made by incorporating production and consumption data and emissions factors [Energy Information Administration (EIA, 2018), Utah Division of Oil Gas and Mining (UDOGM, 2018), (EPA, 2018e), and (IPCC, 2006) to equate potential activities to GHG emissions in the form of carbon dioxide equivalent (CO_{2e}). Some additional data, including the projected volume of oil or natural gas produced for an average well, number of wells (as well as other factors described in Section 3.3.1 Air Quality) were used to provide GHG estimates.

Emissions from potential development

Total Greenhouse GWP, which includes direct emissions of carbon dioxide, methane, and nitrous oxide from an oil or gas producing well is estimated based on using a generic emissions calculator resulting in emissions of 1,676 tons per year CO2-e for a single operational well, and 2,606 tons per year CO2-e for a single drill rig. Accurate assessments of GHG emissions are not possible at the leasing stage since emissions are dependent on factors such as specific equipment used and duration of use, applicant-committed emission controls, and the expected production rate from the oil or gas well. These factors are not known at the leasing stage. Furthermore, additional infrastructure such as pipelines, roads, compressor stations, gas plants and evaporation ponds are also not reasonably foreseeable at the leasing stage and are dependent on the level of development that may occur if the parcels are leased.

Downstream Greenhouse Gas Emissions

GHG emissions are estimated based on historical production rates of existing nearby wells. Due to large variability in amounts of product a well could produce downstream GHG emissions are presented as low, average, and high production scenarios estimated from current oil and gas production from nearby wells. Low production estimates are for dry wells or parcels that are not drilled, average estimates are the mean annual production of nearby wells, and the high estimate is the maximum producing nearby well. Well production data was obtained from UDOGM (UDOGM, 2018).

Indirect GHG emissions are only calculated for carbon dioxide based on combustion of the product. It is impossible to know which of these scenarios (if any) would actually occur, so emissions numbers are presented to estimate the range of possible indirect emissions that could result from the well. Using an RFD of seven producing wells for the lease sale and emission factors from the EPA (EPA, 2018e), EIA (EIA, 2018b), and IPCC (IPCC, 2006), speculated GHG emissions care presented in **Table 4-1**.

Table 4-1 Downstream Annual GHG Emissions Estimates for Seven Wells

	Annual Oil Production (bbl)	GHG Emissions (MT CO_2 per year) [3]	Annual Gas Production (Mcf)	GHG Emissions (MT CO_2 per year)[4]	Total GHG Emissions (MT CO_2 per year)
Low[1]	0	0	0	0	0
Average[2]	286,076	123,011	168,553	9,366	132,384
High[2]	1,211,105	520,772	689,633	38,332	559,104

1. Assumes well is non-productive
2. Well production information obtained from (UDOGM, 2018)
3. Oil well GHG indirect emission factor: 0.43 MT CO_2 per barrel (EPA 2018d)
4. Gas well GHG indirect emission factor are averaged from: 0.054717 MT CO_2 per million cubic feet (EPA, 2018e) ,117.1 lbs of CO2/MCF (EIA, 2018b), and 56,100 kg CO2/TeraJoule (IPCC, 2006) emission factors

Actual GHG emissions may range from zero (assuming no lease parcels sold or developed) to an indeterminate upper range based on realized production rates, control technology, and physical characteristics of any oil produced.

As it is not possible to assign a "significance" value or impact to these numbers, the emissions estimates themselves are presented as a proxy for impact.

Uncertainties of GHG Calculations

Although this EA presents a quantified estimate of potential GHG emissions associated with reasonably foreseeable oil and gas development, there is significant uncertainty in GHG emission estimates due to uncertainties with regard to eventual production volumes and variability in flaring, construction, and transportation. Additionally it is difficult to discern with certainty what end uses for the fossil fuels extracted from a particular leasehold might be reasonably foreseeable. For instance, some end uses of fossil fuels extracted from Federal leases include: combustion of transportation fuels, fuel oils for heating and electricity generation, as well as production of asphalt and road oil, and the feedstocks used to make chemicals, plastics, and synthetic materials. The BLM does not exercise control over the specific end use of the oil and gas produced from any individual federal lease and has no authority to direct or regulate the end use of the produced products. As a result, the BLM can only provide an estimate of potentialGHG emissions by assuming that all produced products would eventually be combusted.

The direct and indirect emission estimates above provide an estimate of the full potential for GHGs released into the atmosphere from initial wellsite construction, well drilling and completion, production, and end use. A rough estimate was possible using publicly available information and using estimates from future production for reasonably foreseeable development.

Possible Future Best Management Practices, Standard Operating Procedures, and/or Mitigation Measures

The BLM holds regulatory jurisdiction over portions of natural gas and petroleum systems, identified in the USEPA *Inventory of U.S. Greenhouse Gas Emissions and Sinks* [EPA 2016d]. Exercise of this regulatory jurisdiction has led to development of Best Management Practices (BMPs), which are state-of-the-art mitigation measures applied to oil and natural gas drilling and production to help ensure that energy development is conducted in an environmentally responsible manner. BMPs used to reduce air pollutant emissions have an additional benefit of reducing GHG emissions. The BLM encourages industry to incorporate and implement BMPs to reduce impacts to climate through reduction of GHG emissions from field production and operations. Typical measures are mentioned in section 4.2.1.

Additionally, the BLM encourages oil and natural gas companies to adopt proven, cost-effective technologies and practices that improve operational efficiency and reduce natural gas emissions. In October 2012, USEPA promulgated air quality regulations for completion of hydraulically fractured gas wells (EPA, 2017a). These rules required air pollution mitigation measures that

reduced the emissions of volatile organic compounds during gas well completions. Mitigation included utilizing a process known as a "green" completion in which natural gas brought up during flowback is captured in tanks rather than in open fluid pits. Among other measures to reduce emissions include the USEPA's Natural Gas STAR program. The USEPA U.S. inventory data shows that industry's implementation of BMPs proposed by the program has reduced emissions from oil and gas exploration and development (EPA, 2018a).

4.2.5 Lands with Wilderness Characteristics

4.2.5.1 Impacts of No Action Alternative

4.2.5.2 The No Action alternative would not result in potential impacts because the nominated parcels would not be leased or developed. Impacts of Proposed Action Alternative

Although the issuance of the lease would not directly impact the wilderness characteristics (naturalness, solitude, and primitive unconfined recreation) of the area, the issuance of leases does convey an expectation that exploration drilling and development would occur. The potential development of a lease intersecting or adjacent to lands with wilderness characteristics would likely cause indirect impacts to wilderness characteristics even if the development occurred outside the lands with wilderness characteristics. A number of variables would influence the degree of impact to lands with wilderness characteristics, including where surface-disturbing activities occur, land form or topography, vegetation type, sequence of development, and reclamation time. Impacts could include loss of naturalness and loss of opportunities for solitude or primitive unconfined recreation. According to Section 2.2 of the EA up to 18.2 acres of land remain unreclaimed for the long term with the entire area encompassed by the parcels and leases. Depending on the location of the unreclaimed acreage, from 0 to 18.2 acres of lands with wilderness characteristics may be directly impacted long term from development of the leases. In addition to the impacts disclosed above, if drilling and development were to occur in lands with wilderness characteristics, the wilderness characteristics in that area would likely be reduced. Additional impacts from development could include a reduction in the size of the unit. Development associated with oil and gas leasing (e.g., well pads, access roads) could bisect or fragment a portion of the wilderness characteristics unit so that all or part of the unit no longer meets the size criteria.

The portion of parcel 106 that overlaps lands with wilderness characteristics is within an area subject to No Surface Occupancy stipulations to protect relevant and important values in the Dry Lake ACEC. Approximately 0.02 acres of Parcel UTU 081463 overlaps the Dirty Devil-French Springs natural area, which is available for leasing with a No Surface Occupancy stipulation. Leasing the parcels under a No Surface Occupancy stipulation will prevent any future associated development from occurring within these parcels. Thus, no direct impacts to wilderness characteristics within lease parcel 106 or UTU 081463 are anticipated as a result of the proposed action.

Potential impacts to wilderness characteristics as a result of oil and gas development were disclosed in the Price FEIS (BLM, 2008c, pp. 4 190-97) and the Richfield FEIS (BLM, 2008d, pp. 4 248-256). Impacts to wilderness characteristics for the UT-020-SRD-007 and San Rafael

Reef Subunit E have not been analyzed within a land use plan. The impacts from the development of a lease within these two units would be similar to those described above and in the Price FEIS (BLM, 2008c)

- **Suspended and Protested Lease Decisions**

The protested leases are located within the San Rafael River group (approximately 3,467 acres) and Labyrinth group (approximately 399 acres). A small portion of the suspended leases overlaps the Sweetwater Reef group (approximately 186 acres). The suspended leases are also adjacent to LWCs in the Dirty Devil/French Springs natural area and the Dirty Devil WSA. If the leases were issued and subsequently developed, the impacts to LWCs would be the same as the impacts to LWCs from managing them as open to leasing subject to standard terms and conditions described in this section. In areas where mineral development occurs, soil and vegetation disturbance and the presence of permanent structures would degrade the scenic values and naturalness of LWCs. The noise of construction and operation of oil and gas facilities, including the presence of work crews, vehicles, and equipment, would degrade opportunities for solitude and conflict with primitive recreational opportunities. Surface-disturbing activities could affect the size of LWCs by reducing or eliminating portions of LWCs where mineral development occurs. Some units could be bisected, or mineral development could result in the need to eliminate areas from the LWC unit through the creation of cherry stems. This could result in some areas of the affected LWC units or portions of them no longer meeting the minimum size criterion (5,000 acres); the creation of cherry stems could also affect size and naturalness of LWCs. Oil and gas leasing could also lead to the development of roads and facilities that would increase traffic, noise, and dust that could diminish wilderness characteristics.

4.2.6 Pollinators

4.2.6.1 Impacts of No Action Alternative

The No Action Alternative would not create impacts to pollinators in the project area because it would not create ground disturbance or alter habitats that pollinators depend upon.

4.2.6.2 Impacts of Proposed Action Alternative

The act of issuing oil and gas leases does not authorize ground disturbing or habitat altering actions that could impact pollinators. However, it is anticipated that oil and gas development will occur in the parcels in the future after an Application for Permit to Drill is submitted to the BLM.

Many pollinators that occur in desert habitats are ground dwelling species. Actions that cause ground disturbance could negatively impact them by damaging their nests, removing vegetation that pollinators depend upon for food sources or nesting substrate, and fragmenting habitat. The construction of roads and well pads would remove native plant communities and reduce the extent of habitat that supports pollinators, either in the short term or permanently. Vehicles that travel on natural surface roads create dust that clog plant pores and negatively affect plant reproduction, consequently reducing the extent of flower resources available to pollinators. Ground disturbance creates open areas that are vulnerable to invasion by nonnative plants and noxious weeds. Vehicles and equipment traveling in and out of the project area create avenues for the introduction or spread of invasive plants and noxious weeds. Many nonnative invasive plants and noxious weeds are not adapted to native pollinators and do not provide the floral resources they need.

Implementing the mitigation measures in Lease Notice #UT-LN-156 Pollinators and Pollinator Habitat, along with other mitigation measures and BLM actions, would minimize potential direct and indirect effects to pollinators and would improve pollinator habitat over the long-term.

BLM management actions that protect pollinators or minimize impacts:

- Lease Notice UT-LN-156 Pollinators and Pollinator Habitat – minimize ground disturbance where feasible, protect Monarch butterfly habitat within Monarch migration routes, revegetate disturbed areas with pollinator friendly native plants.
- BMPs implemented at the APD stage for preventing the introduction and spread of invasive plants and noxious weeds, such as washing equipment and using certified weed free seed during revegetation of disturbed areas.
- Protection of Special Status plants and their habitats through implementation of lease stipulations and notices.
- Protection of BLM Sensitive bats through implementation of lease notices.
- Focus on collection of well-adapted and ecologically appropriate native pollinator friendly forbs through the Seeds of Success and National Seed Strategy programs. Increasing native seed availability for commercial production and use in restoration projects.
- BMPs for reclamation and revegetation of disturbed areas.
- Minimize the use of pesticides that negative affect pollinators.

4.2.7 Recreation

4.2.7.1 Impacts of No Action Alternative

The No Action alternative would not result in potential impacts because the parcels would not be leased, and therefore, not developed.

4.2.7.2 Impacts of Proposed Action Alternative

If parcels 077, 078, 081, 082, 084, 085, 094, 097, 098, 099, 100, 101, 102, 103, 104, 105, 109, 110, 111, and 112 were developed the ROS classification would shift from a semi-primitive non-motorized classification to a semi-primitive motorized classification. This would lead to a different recreational experience for people recreating in those parcels that overlap with the semi-primitive non-motorized classifications. If a recreationist is seeking a more primitive/ non-motorized type of recreational experience, the development of these parcels could lead to their displacement.

4.2.8 Visual Resources

4.2.8.1 Impacts of No Action Alternative

The No Action alternative would not result in potential impacts because the parcels would not be leased, and therefore, not developed.

4.2.8.2 Impacts of Proposed Action Alternative

The issuance of the proposed leases would not directly impact Visual Resources, however, the issuance of the leases does convey an expectation that drilling and development would eventually occur within the parcels in accordance with the reasonably foreseeable development scenario outlined in this EA. These impacts would result from future development in the form of oil wells/pads, pipelines, compressors, power lines, constructed roads, and other linear features. These impacts would include modifications to the existing landscape's form, line, color, and texture.

Such proposed development and modifications to the existing landscape would be allowable so long as it conforms to the VRM Class objectives established in the 2008 Approved RMPs. In addition, a variety of best management practices, design features, and RMP-approved stipulations for future mineral resource development would likely mitigate, limit, and/or prevent such impacts to visual resources. Further detailed analysis of the potential impacts to visual resources would be analyzed as appropriate when oil and gas development plans and permits to drill are submitted.

BLM conducted viewshed analysis from Key Observation Points (KOPs) to determine which portions of parcels would be visible to the recreational visitors. The viewshed analysis was based on a visitor standing at the KOP and observing anything within a 10-mile radius and at 50 feet above ground level. The 10-mile radius was based on public comments and the curvature of the earth was taken into account when running the viewshed analysis. **Impacts to Visual Resources at Horseshoe Canyon NPS unit and the Green River would be from parcels (Parcels 106, 111, 112, 113, and 85328)**

The BLM completed a viewshed analysis to determine whether future mineral resource development within Parcels 106, 111, 112, 113, and 85328 would be visible to recreational visitors to Horseshoe Canyon NPS unit and the Green River. This analysis included the consideration of viewshed impacts from five Key Observation Points (KOP). Only two of the five KOPs had parcels visible from their locations: (1) the Green River at the mouth of the San Rafael River; and (2) the turn off for Horseshoe Canyon Trailhead from the Lower San Rafael Road. Figure 2 Viewshed Map identifies the lands that would be visible from the two KOPs, and **Table 4-2** identifies the acreages and percentages of each parcel that would be visible from the two KOPs.

Table 4-2

	KOP 1: Green River at the mouth of the San Rafael River	**KOP 2: Horseshoe Canyon Turn Off**	**All KOPs**
Acreage of Parcel 106 Visible from KOP	113 acres		**113 acres (14% of parcel)**
Acreage of Parcel 111 Visible from KOP	0 acres	80 acres	**80 acres (3% of parcel)**
Acreage of Parcel 112 Visible from KOP	0 acres	852 acres	**852 acres** (33% of parcel)
Acreage of Parcel 113 Visible from KOP	0 acres	1,319 acres	**1,319 acres** (58% of parcel)
Acreage of Parcel 85328 from KOP	555 acres	0 acres	**555 acres (22% of parcel)**

Parcel 111: The analysis concluded that 80 acres of Parcel 111, or 3%, would be collectively visible from the KOPs, which is displayed on Figure 2 Viewshed Map. Therefore, the 19.5 acres that would be involved in the reasonably foreseeable development scenario could potentially be accommodated throughout approximately 2,432 acres of Parcel 111 that would not be visible to the casual observer recreating along the Green River or from the trailhead for Horseshoe Canyon. The use of standard best management practices at the permitting phase of development, including strategic siting, color camouflaging, and vegetative screening of facilities, would also decrease the likelihood that any future development would attract the attention of the casual observer recreating along the Green River or from the trailhead for Horseshoe Canyon. Because Parcel 111 was designated as a VRM Class III in the 2008 Price RMP, leasing the parcel would conform to all applicable RMP-established VRM objectives, even if future development introduced a moderate level of change to the landscape.

Parcel 112: The analysis concluded that 852 acres of Parcel 112, or 33%, would be collectively visible from the KOPs, which is displayed on Figure 2 Viewshed Map. Therefore, the 19.5 acres that would be involved in the reasonably foreseeable development scenario could potentially be accommodated throughout approximately 1,658 acres of Parcel 112 that would not be visible to the casual observer recreating along the Green River or from the trailhead for Horseshoe Canyon. The use of standard best management practices at the permitting phase of development, including strategic siting, color camouflaging, and vegetative screening of facilities, would also decrease the likelihood that any future development would attract the attention of the casual observer recreating along the Green River or from the trailhead for Horseshoe Canyon. Because Parcel 112 was designated as a VRM Class III in the 2008 Price RMP, leasing the parcel would conform to all applicable RMP-established VRM objectives, even if future development introduced a moderate level of change to the landscape.

Parcel 113: The analysis concluded that 1,319 acres of Parcel 113, or 58%, would be collectively visible from the KOPs, which is displayed on Figure 2 Viewshed Map Therefore, the 19.5 acres that would be involved in the reasonably foreseeable development scenario could be accommodated throughout approximately 946 acres of Parcel 113 that would not be visible to the casual observer recreating along the Green River or from the trailhead for Horseshoe

Canyon. The use of standard best management practices at the permitting phase of development, including strategic siting, color camouflaging, and vegetative screening of facilities, would also decrease the likelihood that any future development would attract the attention of the casual observer recreating along the Green River or from the trailhead for Horseshoe Canyon. Because Parcel 113 was designated as VRM Class II and III in the 2008 Price RMP, leasing the parcel would conform to all applicable RMP-established VRM objectives, including UT-S-160 CSU for visual resources located in VRM II and for lands managed as VRM III the future development could introduced a moderate level of change to the landscape.

Parcel 85328: The analysis concluded that 555 acres of Parcel SNI-Suspended 85328, or 22%, would be collectively visible from the KOPs, which is displayed on Figure 1 Overview Map. Therefore, the 19.5 acres that would be involved in the reasonably foreseeable development scenario could be accommodated throughout approximately 1,923 acres of parcel 85328 that would not be visible to the casual observer recreating along the Green River or from the trailhead for Horseshoe Canyon. The use of standard best management practices at the permitting phase of development, including strategic siting, color camouflaging, and vegetative screening of facilities, would also decrease the likelihood that any future development would attract the attention of the casual observer recreating along the Green River or from the trailhead for Horseshoe Canyon. Because Parcel 85328 was designated as VRM Class III in the 2008 Price RMP, leasing the parcel would conform to all applicable RMP-established VRM objectives, even if future development introduced a moderate level of change to the landscape.

Future development of Parcel 106 would be required to meet all applicable RMP-approved NSO stipulations that were established for the Dry Lake Area of Critical Environmental Concern (UT-S-319), Fragile Soils/Slopes Greater than 40 Percent (UT-S-97), and Natural Springs and Intermittent and Perennial Streams (UT-S-126/127). These stipulations would likely require any future development of Parcel 106 to occur further away from the river itself, and increasing the distance of potential development from the river would also decrease the likelihood that any such development would attract the attention of the casual observer boating on the river. In addition, the use of standard best management practices at the permitting phase of development, including strategic siting, color camouflaging, and vegetative screening of facilities, would also decrease the likelihood that any future development would attract the attention of the casual observer boating on the Green River.

Future development of Parcel 113 would be required to meet all applicable RMP- approved NSO that were established for Fragile Soils/Slopes Greater than 40 Percent (UT-S-97), and Natural Springs and Intermittent and Perennial Streams (UT-S-126/127); as well as all RMP-approved CSU stipulations that were established for Visual Resources- VRM II (UT-S-160). Approximately 496 acres of Parcel 113 was designated as a VRM Class II in the 2008 Price RMP, future development could still be accommodated on the remaining 1,796 acres, or 78%, of the parcel that was designated as a VRM Class III. Because the portions of Parcel 113 that would likely be developed were designated as a VRM Class III in the 2008 Price RMP, leasing

the parcel would conform to all applicable RMP-established VRM objectives, even if future development had a moderate level of change.

The issuance of the proposed leases would not directly impact Visual Resources, however, the issuance of the leases does convey an expectation that drilling and development would eventually occur within the parcels in accordance with the reasonably foreseeable development scenario outlined in this EA. These impacts could result from future development in the form of oil wells/pads, pipelines, compressors, power lines, constructed roads, and other linear features. These impacts would include modifications to the existing landscape's form, line, color, and texture. Development would be assessed under the criteria for cultural modifications, which may detract from the scenery in the form of a negative intrusion. As a result of development, areas currently rated as Scenic Quality A or B could be downgraded to a lower scenic quality rating. Such proposed development and modifications to the existing landscape would be allowable so long as it conforms to the VRM Class objectives established in the Approved land use plans. In addition, a variety of best management practices, design features, and land use plan-approved stipulations for future mineral resource development would likely mitigate, limit, and/or prevent such impacts to visual resources. Further detailed analysis of the potential impacts to visual resources would be analyzed as appropriate when oil and gas development plans and permits to drill are submitted.

4.2.9 Dark Night Sky/Soundscape

4.2.9.1 Impacts of No Action Alternative

The No Action alternative would not result in potential impacts because the parcels would not be leased, and therefore, not developed and the current dark night skies would remain intact.

4.2.9.2 Impacts of Proposed Action Alternative

If development of lease parcels 103, 112 and 113 was to occur (the RFD projects 11 wells would be drilled over the 96 parcels/leases offered in the sale) nights skies could be affected.

A sound model was produced to see how noise levels associated with future mineral resource development would impact recreationists at the Canyonlands National Park Horseshoe Canyon Unit ("Unit") near parcels 112 and 113, the two closest units to the Unit. Maps in the administrative record identifies, if a pump jack was located in a feasible location within parcels 112, or 113 and the trailhead for Horseshoe Canyon (which is within the Unit) was used as the key listening point. This sound model demonstrates what the decibel level would be from that point. BLM determined, based on past NEPA analysis that a pump jack during drill pad operations generated on average 82 decibels (db) @ 400 megahertz (MHz) from a distance of 50 feet. The model concluded by the time the sound from the pumpjack located in parcel 103 reached the key observation point the decibels (db) would be 10, which is the same as breathing. The same model concluded by the time the sound from the pumpjack located on parcel 112 reached the key observation point the decibels (db) would be 18 which is less than a whisper.

Lease Notice 78, requiring best available technology to be applied to mitigate light and sound impacts to Canyonlands National Park will be attached to the lease parcels, The practices described in the Lease Notice would substantially reduce any impacts from to the Unit.

4.3 CUMULATIVE IMPACTS

4.3.1 Introduction

NEPA requires federal agencies to consider the cumulative effects of proposals under their review. Cumulative effects are defined in the Council on Environmental Quality (CEQ) regulations 40 CFR §1508.7 as "the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency . . . or person undertakes such other actions." The CEQ has stated that the "cumulative effects analyses should be conducted on the scale of human communities, landscapes, watersheds, or airsheds" using the concept of "project impact zone" (i.e., the area that might be influenced by the Proposed Action).

Offering and issuing leases for the subject parcels, in itself, would not result in cumulative impacts to any resource. Nevertheless, future development of the leases could be an indirect effect of leasing. The RMP/EISs, provides the BLM's analysis of cumulative effects of oil and gas development based on the reasonably foreseeable oil and gas development scenario. This analysis is hereby incorporated by reference and is available at http://go.usa.gov/xUPAP (Price RMP) or http://go.usa.gov/xnUHK (Richfield RMP) The cumulative impacts analysis in the RMP/EIS accounted for the potential impacts of development of lease parcels in the planning area as well as past, present and reasonably foreseeable actions known at that time. This analysis expands upon the RMP/EIS analysis by incorporating new information.

4.3.2 Cumulative Impacts

4.3.2.1 Air Quality

The CIAA used to analyze cumulative impacts to air quality is the San Rafael Desert Master Leasing planning area, which encompasses approximately 525,000 acres of land, along with the states of Utah, Colorado, Arizona, and New Mexico. These states, which share regional air quality issues with the planning area, are included in the analysis area for the consideration of cumulative impacts.

Past and present actions that have affected and would likely continue to affect air quality in the planning area include surface disturbance resulting from oil and gas development and associated infrastructure, geophysical exploration, ranching and livestock grazing, range improvements, recreation (including OHV use), authorization of ROWs for utilities and other uses, and road development. Past and present actions in Utah, Colorado, Arizona, and New Mexico that have affected and would likely continue to affect air quality in the CIAA are too numerous to list here but would include the development of power plants; the development of energy sources such as oil, gas, and coal; the development of highways and roads; and the development of various

industries that emit pollutants. The reasonably foreseeable future activities listed in Section 4.19.2, especially oil and gas development, could also result in impacts to air quality. These types of actions and activities can reduce air quality through emissions of criteria pollutants (including fugitive dust), VOCs, and HAPs, as well as contribute to deposition impacts and to a reduction in visibility.

As discussed in Section 3.3.1.1, O_3 and PM are of particular concern in the southwestern United States. Section 4.2.1.2 summarizes key points from a regional O_3 analysis conducted for the Moab MLP. In particular, meteorological conditions can play a major role in source contributions to monitored or modeled values: predominant winds can transport O_3 across the region. In addition, for O_3, sources outside the region can contribute to high O_3 concentrations. Finally, oil and gas emissions account for a small amount of regional O_3 source category emissions (BLM, Moab Master Leasing Plan and Final Environmental Impact Statement, 2016a). With regard to PM, the Moab MLP concludes that regional ambient $PM_{2.5}$ concentrations are likely well below the NAAQS, based on IMPROVE monitoring at Canyonlands National Park, the lack of large emission sources, and the dispersed population. However, it was noted that little monitoring data exist to validate this conclusion and that $PM_{2.5}$ can contribute to regional haze and visibility degradation in Class I areas at lower ambient concentrations than the NAAQS (BLM 2015).

The Moab MLP also examines the state contribution to light extinction as a way to evaluate contributions to visibility from the Moab MLP planning area. Arizona is the dominant source of visibility-reducing components (over 21%), followed by Utah (less than 2%), New Mexico (approximately 1%), then Colorado (less than 0.5%) (BLM 2015). From a regional perspective, Utah's contribution to light extinction is relatively small.

4.3.2.2 Areas of Critical Environmental Concern

The cumulative impact area for this resource is the entire Dry Lakes ACEC (~18,000 acres). The rationale is that special management considerations are placed on the entire ACEC to protect the relevant and important (R&I) values. Past, present, and reasonably foreseeable activities within the parcels that could have potential cumulative impacts on cultural resources include increased visitation and motorized access into previously inaccessible areas. Cumulative impacts include dust accumulation and its impact on cultural resources, changes in visitation, inadvertent or advertent (i.e., vandalism and looting) damage to cultural resources, impacts to unidentified Traditional Cultural Properties and increased recreational use. Surface disturbance resulting from mineral exploration and development including road, pipeline and utility line construction could potentially cause the greatest amount of cumulative impacts to cultural resources in the parcels. These activities have the potential to increase visual, noise, atmospheric and other such intrusions that affect the cultural setting of historic properties, which may contribute to their National Register of Historic Places eligibility determinations. The Proposed Action adds the potential for development to occur in these areas. The No Action alternative would not contribute any cumulative impacts.

4.3.2.3 Cultural Resources

The CIAA for cultural resources is the entirety of the proposed lease parcels and a 0.5-mile buffer around each parcel. Sporadic oil and gas exploration has occurred in the CIAA, and may

have physically disrupted sites and or , impacted the setting and feeling of both the individual sites and landscapes surrounding them. Exploration and possible development of the lease parcels may contribute to impacts from the past and present development to non eligible sites.

4.3.2.4 Greenhouse Gas Emissions/Climate Change

There are no boundaries with which to identify a CIAA for climate change. The proposed action could result in a slight incremental increase in GHG emissions, thus contribute to the global impacts. It is now well established that rising global atmospheric GHG emission concentrations are affecting the Earth's climate. These conclusions are built upon a scientific record that has been created with substantial contributions from the United States Global Change Research Program (USGCRP).

Based primarily on the scientific assessments of the USGCRP, the National Research Council, and the Intergovernmental Panel on Climate Change, in 2009 the Environmental Protection Agency (EPA) issued a finding that the changes in our climate caused by elevated concentrations of greenhouse gases in the atmosphere are reasonably anticipated to endanger the public health and public welfare of current and future generations. Broadly stated, the effects of climate change observed to date and projected to occur in the future include more frequent and intense heat waves, longer fire seasons and more severe wildfires, degraded air quality, more heavy downpours and flooding, increased drought, greater sea-level rise, more intense storms, harm to water resources, harm to agriculture, ocean acidification, and harm to wildlife and ecosystems.

It is unknown if the No Action Alternative would result in decreased emissions, thus a reduced global climate change impact. It cannot be predicted if any oil and gas extracted from the proposed action would be combusted as fuel, or used as manufacturing material. In addition, other sources of fossil fuels may be extracted and combusted to meet the energy demands not met by extracting hydrocarbons from the parcels.

Research on climate change impacts is an emerging and rapidly evolving area of science, but given the lack of adequate analysis methods it is not possible to identify specific local, regional, or global climate change impacts based on potential GHG emissions from any specific project's incremental contributions to the global GHG burden. The climate change research community has not yet developed tools specifically intended for evaluating or quantifying end-point impacts attributable to the emissions of GHGs from a single source, and we are not aware of any scientific literature to draw from regarding the climate effects of individual, facility-level GHG emissions. The current tools for simulating climate change generally focus on global and regional-scale modeling. Global and regional-scale models lack the capability to represent explicitly many important small-scale processes. As a result, confidence in regional- and sub-regional-scale projections is lower than at the global scale. There is thus limited scientific capability in assessing, detecting, or measuring the relationship between emissions of GHGs from a specific single source and any localized impacts. As a consequence, impact assessment of effects of specific anthropogenic activities cannot be performed. Additionally, specific levels of significance have not yet been established. Therefore, climate change analysis for the purpose of this document is limited to accounting and disclosing of factors that contribute to climate change. In the coming decades, climate change may lead to changes in the Mountain West and Colorado

Plateau such as warmer temperatures, less snowfall, more frequent or severe drought, increased wildland fire potential, and other potential impacts.

4.3.2.5 Lands with Wilderness Characteristics

The CIAA for Lands with Wilderness Characteristics includes the planning area for the San Rafael Desert MLP, LWC inventory units that extend outside the planning area, and other adjacent lands that the BLM manages for the preservation of wilderness character (i.e., WSAs).

Past, present, and reasonably foreseeable actions within the CIAA that have affected and will likely continue to affect wilderness characteristics in the planning area include oil and gas development, increasing recreational demands on public lands, OHV use, issuance of rights-of-way, and ongoing travel management planning for both the Price Field Office and Richfield Field Office. These activities could introduce sights, noises, and infrastructure in or adjacent to LWCs, which could impair the feeling of solitude and degrade naturalness. Increasing visitor use in the planning area will likely intensify use of BLM-administered lands, including natural areas and LWCs, potentially impacting wilderness characteristics by reducing opportunities for solitude. As part of the travel management process, the BLM may designate additional routes as closed and open to motor vehicles. Use of these designated travel routes by OHVs and other vehicles in LWCs would also introduce sights and noises that could impair the feeling of solitude and degrade naturalness. Any of these actions could also result in surface-disturbing activities that could affect the size of LWCs by reducing or eliminating portions of LWCs. Some units could be bisected or surface disturbance could result in the need to eliminate areas from the LWC unit through the creation of cherry stems. This could result in some areas, or entire LWC units, no longer meeting the minimum size criterion (5,000 acres).

Of all of the reasonably foreseeable future actions in the planning area, oil and gas exploration and development are anticipated to have the largest magnitude of road construction and surface disturbance and therefore the largest impact to wilderness characteristics in the planning area over the next 15 to 20 years.

4.3.2.6 Pollinators

The analysis area for pollinators is the project area containing the lease parcels. Land ownership is predominantly federal and state, with a small area of private ownership around parcels 106 in the northeast part of the project area.

It is unknown exactly what actions are currently occurring or will occur in the future in the project area, but it is reasonable to assume that oil and gas development will occur on BLM and state administered lands. Recreation is also likely to continue and potentially expand in the area and may involve OHVs that travel off existing roads. Insecticides that impact pollinators could be used on private lands, although this would be a small area. These activities could negatively impact pollinators if minimization and mitigation measures are not implemented. The September 2018 lease sale could contribute additional cumulative effects to pollinators if development occurs in the future on the parcels. However, it is expected that implementing the mitigation measures in Lease Notice #UT-LN-156 Pollinators and Pollinator Habitat, along with other mitigation measures and BLM actions, would minimize direct effects from development to pollinators and would improve pollinator habitat over the long-term.

4.3.2.7 Recreation

Oil and Gas development is the only foreseen action to affect recreation. The cumulative impacts are essentially the same as described in Section 4.2.7.2.

4.3.2.8 Visual Resources

The cumulative impacts to visual resources would be the same as the impacts to the Night Dark Skies. The CIAA for visual resources is the entirety of the proposed lease parcels and key observation points were the casual visitor could notice visual contrasts. Sporadic oil and gas development has occurred in the CIAA, most of which is not active, and exploration and possible development of the lease parcels may contribute to impacts from the past and present development

Past and present actions causing cumulative impacts to visual resources include mineral exploration, development, and extraction. If parcels were to be lease there would be surface disturbances and it would create visual contrasts, which would, resulted in contrasts of texture, form, line, and color that would be visible to the casual observer at varying distances.

Reasonably foreseeable future actions within the lease sale include these same types of actions, which would continue to create visual contrasts within the landscape.

4.3.2.9 Dark Night Skies/Soundscapes

The region surrounding the Horseshoe Canyon Unit and the Green River is relatively pristine. There are essentially no activities that would are currently affecting the Night skies and soundscape, so there is essentially no cumulative impact.

5 COORDINATION AND CONSULTATION

Public and agency involvement has occurred as described below.

External scoping was conducted by posting the proposed parcel list and maps for a 15-day period from March 30 to April 16, 2018, on BLM's ePlanning website at: http://go.usa.gov/xQrVg. The results are summarized in 6.3Appendix A

5.1 LIST OF PERSONS, AGENCIES, AND ORGANIZATIONS CONSULTED

Table 5-1 List of Persons, Agencies, and Organizations Consulted for Purposes of this EA

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Utah State Historic Preservation Officer (SHPO)	Consultation as required by Section 106 of the NHPA	SHPO Consultation is currently ongoing
Native American Tribes	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531)	Consultation letters were mailed on March 28, 2018 for Price and April 18, 2018 for Richfield. The Hopi and Southern Ute Tribes responded to the initial letter. Tribal consultation is currently on going.
Southern Utah Wilderness Alliance, Utah Rock Art Research Assocaition, …	Consultation as required by Section 106 of the NHPA	The Price and Richfield Offices mailed letters with information about the parcels on xx. A consulting party meeting was held on June 20, 2018.
Utah Division of Wildlife Resources	Letters were sent to Stakeholders on April 3, 2018 requesting comments on the proposed parcels and leases.	UDWR sent a list of potential wildlife conflict via email on April 20, 2018
National Park Service		The NPS sent a Memo on April 20, 2018
PLPCO		PLPCO responded with a letter dated April 16, 2018
U.S. Fish and Wildlife Service	Consultation as required by the Endangered Species Act	On April 3, 2018, BLM sent a memorandum to the Utah Field Office of the Fish and Wildlife Service (FWS) enclosing the San Rafael Desert parcels to be offered at the lease sale. On April 12, the memo was followed up with an email transmitting Geographic Information System (GIS) shape files of the parcels to the FWS. On June 4, 2018, BLM sent an email to FWS with biological and botany reports attached. The reports where summarized in a memo that was also attached to the email. The memo requested agreement with the BLM that leasing the San Rafael parcels would result in a finding of "may affect, but is not likely to adversely affect"

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
		FWS responded to BLM that it agreed with its finding for the parcels within the Price Field Office, but that Richfield's BO for it RMP had not included Colorado River Endangered Fish, and so requested informal consultation. On July 23, 2018, BLM sent FWS a memo initiating informal consultation for Colorado River fishes. The memo determined the lease sale "may affect, but is not likely to adversely affect" the fore-named species. On August 3, 2018, the FWS concurred with the finding, concluding consultation for the RFO.

6 REFERENCES, AND APPENDICES

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6.2 LIST OF PREPARERS

For a full list of the interdisciplinary reviewers, please see Appendix F

Table 6-1 List of Preparers

Name	Title	Resource
Erik Vernon	Air Quality Scientist	Air Quality/Greenhouse Gas
Allison Ginn	National Landscape Conservation System Lead	Areas of Critical Environmental Concern, Lands with Wilderness Characteristics.
Nicole Lohman	Archaeologist	Cultural Resources
Marcia Wineteer	Wildlife Biologist	Pollinators
Matt Blocker	Natural Resource Specialist	Recreation

6.3 LIST OF APPENDICES

Appendix A – Scoping Report
Appendix B – Proposed Action with Stipulations for Lease
Appendix C – Recommended Parcel Deferrals
Appendix D – Stipulation and Notice Exhibits
Appendix E – Maps
Appendix F – Interdisciplinary Team Checklist
Appendix G – Stipulations and Notices Originally on the SNI and Suspended Parcels

Appendix A **SCOPING REPORT**

Issue 1: Development Potential –

According to the San Rafael MLP RFD, the development potential for the parcels is greater than anticipated in the 2008 Price and Richfield RMPs (SUWA page 4 and 5)

Issue 2- Lands with Wilderness Characteristics

Since completion of the 2008 RMPs, new information on Lands with Wilderness Characteristics has been brought forth. (SUWA page 5)

Issue 3 – Air Quality – Canyonlands National Park

Since completion of the 2008 RMPs, new information on impacts to air quality in CNP has been brought forth. BLM must analyze those impacts (SUWA page 5 and 6) The BLM should consult with the NPS to alleviate potential adverse impacts to air quality, and air quality related values (AQRVs) such as viewsheds as addressed in the relevant MOU (NPCA page 6, NPS page 1)

Issue 4 – Night Skies – Canyonlands National Park

Since completion of the 2008 RMPs, new information on impacts to night skies in CNP has been brought forth. BLM must analyze those impacts. (SUWA page 5 and 6, NPS page 1) A stipulation requiring a Lightscape Management Plan should be added to the parcels. (NPCA pages 8 and 9)

Issue 5 – Scenic Viewsheds – Canyonlands National Park

Since completion of the 2008 RMPs, new information on impacts to scenic viewsheds in CNP has been brought forth BLM must analyze those impacts. (SUWA pages 5, 6 and 10)

Issue 6 – Recreational Resources - Canyonlands National Park

Since completion of the 2008 RMPs, new information on impacts to recreational resources in CNP has been brought forth. BLM must analyze those impacts. (SUWA page 5 and 6). Development of the lease parcels could fundamentally change the backcountry experience of visitors to the Horseshoe Canyon unit of the Canyonlands National Park (NPCA page 10)

Issue 7 – Impacts to Glen Canyon National Recreational Area
BLM must analyze potential direct, indirect, and cumulative impacts to Glen Canyon National Recreation Area. This includes, but is not limited to, air quality, recreational opportunities, dark night skies, viewsheds and soundscapes. (SUWA pages 6 and 10)

Issue 8 – Impacts to Water Quality of the San Rafael River –

The segment of the San Rafael River potentially affected by a leasing decision, referred to as the San Rafael Lower, is on the state of Utah's list of 303(d) impaired waters. It is impaired due to OE Bioassessment and total dissolved solids (TDS). *Id.* The Utah Division of Water Quality (DWQ) has prepared – and EPA approved – a total maximum daily load (TMDL) for the San Rafael River for TDS. DWQ has not prepared a TMDL for OE Bioassessment. The potential impacts to this impaired waterway, including impacts to DWQ's TMDL, must be addressed by BLM. (SUWA page 7) Leases closest to to the San Rafael River (UTU-085328 and UTU085329) should receive strong buffer protections due to the significance of perennial and intermittent stream drainages in the area and the locations of springs (Trout Unlimited pages 12 and 13)

Issue 9 –Impacts to Water Quality - Parcel 106

Potential impacts from development of Parcel 106 to the Green River must be analyzed. (SUWA page 7), (Trout Unlimited pages 10-11)

Issue 10 – Impacts to Water Quality
BLM must analyze impacts from potential oil and gas development from development, including fracking. (SUWA page 8) (Trout Unlimited pages 11 and 12)

Issue 11 – Air Quality

BLM must prepare a quantitative air quality analysis. BLM must use the RFD for the San Rafael Desert MLP and the updated ARMS being prepared for the air quality analysis. BLM must consider the Uinta Basin non attainment status in the analysis. (SUWA page 9) Under NEPA, BLM is required to assess AQRVs and not allow any violations of CAA standards. (NPCA page 7)

Issue 12 – Downstream GHG emissions/Climate Change
BLM must disclose downstream GHG emissions. BLM must consider direct, indirect, and cumulative impacts to climate change from the proposed oil and gas leasing and development, including the Social Cost of Carbon (SUWA page 9 and 10)

Issue 13 – Viewsheds
BLM must analyze impacts to the viewshed of recreational users on the Green River, Goblin Valley State Park, WSA, and the Dry Lake ACEC. (SUWA page 10)

Issue 14 – Endemic Bees –
BLM must analyze potential direct, indirect, and cumulative impacts to the San Rafael Desert's endemic bee population. (SUWA, Pages 11-12)

Issue 15 – Cultural Resources –
BLM must comply with the NHPA (SUWA pages 12-14). The area contains a long standing relationship to native communities (NPCA page 6)

Issue 16 – Wild and Scenic Rivers

Parcel 106 could potentially impact a segment of the Green River found suitable for inclusion in the National Wild and Scenic Rivers System. (SUWA page 14)

Issue 17 – Water Resources

Use of water and disposal of produced water should be considered in the EA (NPCA pages 5 and 6)

Issue 18 – Paleontological Resources –

Paleontological Resources require thorough analysis. (NPCA page 6)

Issue 19 Soundscapes –

BLM must analyze impacts from soundscapes to CNP (SUWA page 6). In order to retain the existing, remote character of the San Rafael Desert landscape and adjacent national park units and the natural soundscape, a stipulation requiring an operator to submit a Noise Reduction Plan as a component of the APD should be added to the parcels. (NPCA page 10) Oil and Gas exploration and drilling activities could impact the Horseshoe Canyon Unit of the CNP. (NPS page 1)

Issue 20 Access

BLM should ensure that development would not preclude public access to backcountry landscapes. (NPCA page 11)

Issue 21- Wildlife

All nominated parcels except for 106 contain crucial yearlong pronghorn habitat. Kit fox have been documented in parcels 041, 044, 062, 063, 091, 106, and 107. Burrowing owls have documented in parcels 076, 079, 080, and 106. Parcel 106 has several sensitive fish species recorded in its vicinity in the Green River. Section 106 also has wild turkey habitat. (UDWR)

Proposed Alternatives

5. A “leasing outside of wilderness-caliber lands” alternative. Under this alternative, BLM would not offer for lease any parcels in BLM-identified non-WSA lands with wilderness characteristics. (SUWA page 17) (SUWA p 17)
6. A “no-surface occupancy” alternative. Under this alternative, BLM would only offer BLM-identified non-WSA lands with wilderness characteristics for lease with non-waivable no surface occupancy stipulations. (SUWA page 17)
7. A “phased development-leasing” alternative. Under this alternative, BLM would require lessees and operators to first explore and develop land outside of BLM-identified non-

WSA lands with wilderness characteristics – and to prove that such areas are capable of production in paying quantities – prior to developing in BLM-identified non-WSA lands with wilderness characteristics. (SUWA page 17)

8. A "mitigation leasing" alternative. Under this alternative, BLM would attach additional mitigation measures and best management practices (BMP) to each lease. This would include controlled surface use and NSO stipulations to protect sensitive resources including cultural resources and BLM-identified non-WSA lands with wilderness characteristics. (SUWA pages 17 and 18)

Other Comments and Requests

1. Scoping reports for the San Rafael MLP are attached and incorporated in SUWAs comment letter. (SUWA page 4)
2. BLM should remove all parcels in the lease sale identified as possessing wilderness characteristics (SWUA page 8)
3. BLM must prepare an EIS (SUWA page 18 and 19)
4. The BLM is requested to provide a 30 public comment period on the EA/EIS (SUWA page 19, NPCA 04-19 Letter to Ed Roberson)
5. NPCA urges BLM to consult with other stakeholders, including NPS and outdoor recreation interests, to collaboratively determine where leasing can occur without harming Utah's cultural, natural and economic assets.
6. BLM should prepare an "Activity Plan" prior to offering the leases.

Appendix B **List of Parcels and Leases with Stipulations and Notices**

NOMINATED PARCELS

UT0918 – 038
T. 25 S., R. 12 E., SLM
Secs. 1, 11 and 12: All.
1,967.64 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat
UT-LN-157: San Rafael Swell SRMA

UT0918 – 039
T. 25 S., R. 12 E., SLM
Sec. 3: Lots 1, 2, 6-8, S2NE, S2NW, S2;
Secs. 10 and 15: All.
1,904.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%

UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-253: Timing Limitation – Desert and Rocky Mountain Bighorn Sheep
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-21: Bighorn Sheep Habitat
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat
UT-LN-157: San Rafael Swell SRMA

UT0918 – 040
T. 25 S., R. 12 E., SLM
Sec. 13: All;
Sec. 14: N2, N2SW, E2SWSW, N2NWSWSW, S2SWSWSW, SE;
Sec. 23: All.
1,910.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors

UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51 Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat
UT-LN-157: San Rafael Swell SRMA

UT0918 – 041
T. 25 S., R. 12 E., SLM
Secs. 22, 27 and 34: All.
1,920.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: RaptorsUT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51 Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat
UT-LN-157: San Rafael Swell SRMA

UT0918 – 042
T. 25 S., R. 12 E., SLM
Secs. 25, 26 and 35: All.
1,920.00 Acres
Emery County, Utah
Price Field Office
Stipulations:

UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 043
T. 26 S., R. 12 E., SLM
Secs. 1, 11 and 12: All.
1,952.60 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 044
T. 26 S., R. 12 E., SLM
Secs. 13, 14, 23 and 24: All.
2,560.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 045
T. 26 S., R. 12 E., SLM
Secs. 25, 26 and 35: All.
1,920.00 Acres
Emery County, Utah (1,838.56 acres)
Price Field Office
Wayne County, Utah (81.35 acres)
Richfield FO

Stipulations:
UT-S-01: Air Quality

UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 046
T. 24 S., R. 13 E., SLM
Secs. 31, 33, 34 and 35: All.
2,555.12 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat
UT-LN-157: San Rafael Swell SRMA

UT0918 – 047
T. 25 S., R. 13 E., SLM
Secs. 1, 11 and 12: All.
1,969.20 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 048
T. 25 S., R. 13 E., SLM
Secs. 3, 9 and 10: All.
1,970.28 Acres
Emery County, Utah
Price Field Office

Stipulations:

UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 049
T. 25 S., R. 13 E., SLM
Secs. 4, 5 and 8: All.
2,019.64 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird

UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 050
T. 25 S., R. 13 E., SLM
Secs. 6 and 7: All.
1,319.99 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 051
T. 25 S., R. 13 E., SLM
Secs. 13, 14, 23 and 24: All.
2,560.00 Acres
Emery County, Utah
Price Field Office

Stipulations:

UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 052
T. 25 S., R. 13 E., SLM
Secs. 15, 21 and 22: All.
1,920.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird

UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-72: High Potential Paleontological Resources
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 053
T. 25 S., R. 13 E., SLM
Secs. 17, 18, 19 and 20: All.
2,555.40 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 054
T. 25 S., R. 13 E., SLM
Secs. 25, 26 and 35: All.
1,920.00 Acres
Emery County, Utah
Price Field Office

Stipulations:

UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-104: Burrowing Owl Habitat
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 055
T. 25 S., R. 13 E., SLM
Secs. 27, 28, 33 and 34: All.
2,560.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird

UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 056
T. 25 S., R. 13 E., SLM
Secs. 29, 30 and 31: All.
1,918.96 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 057
T. 26 S., R. 13 E., SLM
Secs. 1, 11, 12: All.
1,951.12 Acres
Emery County, Utah
Price Field Office

Stipulations:

UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 058
T. 26 S., R. 13 E., SLM
Secs. 3, 9 and 10: All.
1,950.48 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species

UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 059
T. 26 S., R. 13 E., SLM
Secs. 4, 5 and 8: All.
1,982.36 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 060
T. 26 S., R. 13 E., SLM
Secs. 6 and 7: All.
1,269.16 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality

UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 061
T. 26 S., R. 13 E., SLM
Secs. 13 and 14: All;
Sec. 23: N2, NWSW, SE;
Sec. 24: All.
2,440.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-269: NSO-Mexican Spotted Owl
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-06: Mexican Spotted Owl
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog

UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 062
T. 26 S., R. 13 E., SLM
Secs. 15, 21 and 22: All.
1,920.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-269: NSO-Mexican Spotted Owl
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-06: Mexican Spotted Owl
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 063
T. 26 S., R. 13 E., SLM
Secs. 17, 18, 19 and 20: All.

2,520.28 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 064
T. 26 S., R. 13 E., SLM
Sec. 25: All;
Sec. 26: NE, SW, N2SE, W2SWSE, E2SESE;
Sec. 35: W2NE, W2, W2SE, SESE.
1,600.00 Acres
Emery County, Utah (1,494.96 ac.)
Price Field Office
Wayne County, Utah (105.04 ac.)
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-269: NSO-Mexican Spotted Owl
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-06: Mexican Spotted Owl
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 065
T. 26 S., R. 13 E., SLM
Sec. 27: NWNE, W2SWNE, W2, SE;
Secs. 28, 33 and 34: All.
2,460.00 Acres
Emery County, Utah (2,249.92 ac.)
Price Field Office
Wayne County, Utah (210.08 ac.)
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 066
T. 26 S., R. 13 E., SLM
Secs. 29, 30 and 31: All.
1,882.16 Acres
Emery County, Utah (1,777.15 ac.)
Price Field Office
Wayne County, Utah (105.01 ac.)
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 067
T. 25 S., R. 14 E., SLM
Secs. 1, 11 and 12: All.
1,974.48 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality

UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 068
T. 25 S., R. 14 E., SLM
Secs. 3, 9 and 10: All.
1,968.74 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species

UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 069
T. 25 S., R. 14 E., SLM
Secs. 4, 5 and 8: All.
2,014.60 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 070
T. 25 S., R. 14 E., SLM
Secs. 6 and 7: All.
1,324.84 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 071
T. 25 S., R. 14 E., SLM
Secs. 13, 14, 23 and 24: All.
2,560.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors

UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 072
T. 25 S., R. 14 E., SLM
Secs. 15, 21 and 22: All.
1,920.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 073
T. 25 S., R. 14 E., SLM
Secs. 17, 18, 19 and 20: All.
2,556.96 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-51 Special Status Plants: Not Federally Listed
UT-LN-49: Utah Sensitive Species
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 074
T. 25 S., R. 14 E., SLM
Secs. 25, 26 and 35: All.
1,920.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog

UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 075
T. 25 S., R. 14 E., SLM
Secs. 27, 28, 33 and 34: All.
2,560.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 076
T. 25 S., R. 14 E., SLM
Secs. 29, 30 and 31: All.
1,919.04 Acres
Emery County, Utah

Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-104: Burrowing Owl Habitat
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 077
T. 26 S., R. 14 E., SLM
Secs. 1, 11 and 12: All.
1,953.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species

T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 078
T. 26 S., R. 14 E., SLM
Secs. 3, 9 and 10: All.
1,952.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 079
T. 26 S., R. 14 E., SLM
Secs. 4, 5 and 8: All.

1,983.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-104 Burrowing Owl Habitat
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 080
T. 26 S., R. 14 E., SLM
Secs. 6 and 7: All.
1,238.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:

T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-104 Burrowing Owl Habitat
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 081
T. 26 S., R. 14 E., SLM
Secs. 13, 14, 23 and 24: All.
2,560.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 082
T. 26 S., R. 14 E., SLM
Secs. 15, 21 and 22: All.
1,920.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 083
T. 26 S., R. 14 E., SLM
Secs. 17, 18, 19 and 20: All.
2,492.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 084
T. 26 S., R. 14 E., SLM
Secs. 25, 26 and 35: All.
1,920.00 Acres
Emery County, Utah (1,814.60 ac.)
Price Field Office
Wayne County, Utah (105.40 ac.)
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-15: Wright Fishhook Cactus (*Sclerocactus wrightiae*)
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 085
T. 26 S., R. 14 E., SLM
Secs. 27, 28, 33 and 34: All.
2,560.00 Acres
Emery County, Utah (2,348.22 ac.)
Price Field Office
Wayne County, Utah (211.78 ac.)
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-15: Wright Fishhook Cactus (*Sclerocactus wrightiae*)
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 086
T. 26 S., R. 14 E., SLM
Secs. 29, 30 and 31: All.
1,855.00 Acres
Emery County, Utah (1,712.54 ac.)
Price Field Office
Wayne County, Utah (142.46 ac.)
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 087
T. 25 S., R. 15 E., SLM
Secs. 1, 11 and 12: All.
1,939.05 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird

UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 088
T. 25 S., R. 15 E., SLM
Secs. 3, 9 and 10: All.
1,963.22 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 089
T. 25 S., R. 15 E., SLM
Secs. 4, 5 and 8: All.
2,018.76 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 090
T. 25 S., R. 15 E., SLM
Secs. 6 and 7: All.
1,322.23 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird

UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 091
T. 25 S., R. 15 E., SLM
Secs. 13, 14, 23 and 24: All.
2,560.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 092
T. 25 S., R. 15 E., SLM
Secs. 15, 21 and 22: All.
1,920.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 093
T. 25 S., R. 15 E., SLM
Secs. 17, 18, 19 and 20: All.
2,556.12 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird

UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 094
T. 25 S., R. 15 E., SLM
Secs. 25, 26 and 35: All.
1,920.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 095
T. 25 S., R. 15 E., SLM
Secs. 27, 28, 33 and 34: All.
2,560.00 Acres
Emery County, Utah
Price Field Office

Stipulations:

UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 096
T. 25 S., R. 15 E., SLM
Secs. 29, 30 and 31: All.
1,918.84 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species

UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 097
T. 26 S., R. 15 E., SLM
Secs. 1, 11 and 12: All.
1,874.52 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51 Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 098
T. 26 S., R. 15 E., SLM
Secs. 3, 4, 9 and 10: All.
2,471.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%

UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 099
T. 26 S., R. 15 E., SLM
Secs. 5, 6, 7 and 8: All.
2,429.84 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 100
T. 26 S., R. 15 E., SLM
Secs. 13, 14, 23 and 24: All.
2,560.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

UT0918 – 101
T. 26 S., R. 15 E., SLM
Secs. 15, 21 and 22: All.
1,920.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality

UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 102
T. 26 S., R. 15 E., SLM
Secs. 17, 18, 19 and 20: All.
2,519.88 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources

UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 103
T. 26 S., R. 15 E., SLM
Secs. 25, 26 and 35: All.
1,920.00 Acres
Emery County, Utah (1,892.24 ac.)
Price Field Office
Wayne County, Utah (27.76 ac.)
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-78: Light and Sound Areas Proximate to Canyonlands National Park
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 104
T. 26 S., R. 15 E., SLM
Secs. 27, 28, 33 and 34: All.
2,560.00 Acres
Emery County, Utah (2,504.48 ac.)
Price Field Office
Wayne County, Utah (55.52 ac.)
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 105
T. 26 S., R. 15 E., SLM
Secs. 29, 30 and 31: All.
1,883.36 Acres
Emery County, Utah (1,856.75 ac.)
Price Field Office
Wayne County, Utah (26.61 ac.)
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*

UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 106
T. 23 S., R. 16 E., SLM
Sec. 11: Lots 3, 9-11, 14, NWNW, W2SW;
Sec. 14: All.
896.97 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-169: CSU- Cultural Resource Inventories
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed
UT-S-319: NSO-Cultural ACEC

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-07: Southwestern Willow Flycatcher
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-113: Western Yellow-billed Cuckoo
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 107
T. 25 S., R. 16 E., SLM
Secs. 5, 6 and 7: All.
1,948.91 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 108
T. 25 S., R. 16 E., SLM
Secs. 8, 17, 18 and 19: All.
2,555.48 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 109
T. 25 S., R. 16 E., SLM
Secs. 20, 29, 30 and 31: All.
2,558.56 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 110
T. 26 S., R. 16 E., SLM
Secs. 4, 5, 6 and 7: All.
2,384.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 111
T. 26 S., R. 16 E., SLM
Secs. 8, 9, 17 and 18: All.
2,541.00 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:

T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-78: Light and Sound Areas Proximate to Canyonlands National Park
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 112
T. 26 S., R. 16 E., SLM
Secs. 19, 20, 30 and 31: All.
2,512.48 Acres
Emery County, Utah (2,480.43 ac.)
Price Field Office
Wayne County, Utah (32.05 ac.)
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-78: Light and Sound Areas Proximate to Canyonlands National Park
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

UT0918 – 113
T. 26 S., R. 16 E., SLM
Secs. 21, 28 and 29: All;
Sec. 33: W2NE, NW, N2SW, SWSW.
2,280.00 Acres
Emery County, Utah (2,273.08 ac.)
Price Field Office
Wayne County, Utah (6.92 ac.)
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-160: CSU- Visual Resources-VRM II
UT-S-253: Timing Limitation – Desert and Rocky Mountain Bighorn Sheep
UT-S-269: NSO-Mexican Spotted Owl
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-06: Mexican Spotted Owl
T&E-07: Southwestern Willow Flycatcher
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-21: Bighorn Sheep Habitat
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-113 Western Yellow-billed Cuckoo
UT-LN-156 Pollinators and Pollinator Habitat

SOLD BUT NOT ISSUED LEASES

UTU85328
T. 24 S., R. 16 E., SLM
Sec. 3: E2SE;
Sec. 4: Lots 1-4, S2NE;
Sec. 9: S2;

Sec. 10: E2NE, SWNE, S2;
Sec. 11: NWNW;
Sec. 15: W2NE, W2;
Sec. 21: All;
Sec. 22: W2.
2,478.24 Acres
Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-269: NSO-Mexican Spotted Owl
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-06: Mexican Spotted Owl
T&E-07: Southwestern Willow Flycatcher
T&E-17: San Rafael Cactus (*Pediocactus Despainii*)
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-113 Western Yellow-billed Cuckoo
UT-LN-126 Navajo Sedge
UT-LN-156 Pollinators and Pollinator Habitat

UTU85329
T. 24 S., R. 13 E., SLM
Secs. 25, 26, 27 and 28: All;

T. 24 S., R. 14 E., SLM
Sec. 1: W2SW;
Sec. 11 and 12: All.
3920.00 Acres

Emery County, Utah
Price Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-97: NSO-Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101: CSU- Fragile Soils/Slopes 20-40 Percent
UT-S-126: NSO- Natural Springs
UT-S-127: NSO- Intermittent and Perennial Streams
UT-S-225: TL- Crucial Fawning Pronghorn Habitat
UT-S-285: TL-Migratory Bird Nesting
UT-S-305: CSU- Noxious Weed

Notices:
T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05: Listed Plant Species
T&E-07: Southwestern Willow Flycatcher
T&E-17: San Rafael Cactus (*Pediocactus Despainii*)
T&E-19: Jones Cycladenia *(cycladenia hymilis var jonesii)*
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-113 Western Yellow-billed Cuckoo
UT-LN-156 Pollinators and Pollinator Habitat

SUSPENDED LEASES

UTU81031
T. 27 S., R. 13 E., SLM
Secs. 27, 28, 29 and 31: All.
2,547.00 Acres
Wayne County, Utah
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-102: CSU- Fragile Soils/Slopes 30 Percent or Greater
UT-S-225: TL- Crucial Fawning Pronghorn Habitat
UT-S-293: California Condor

Notices:
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51 Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat
T&E-25 Mexican Spotted Owl
T&E-28 California Condor

UTU81032
T. 27 S., R. 13 E., SLM
Secs. 33, 34 and 35: All.
1,920.00 Acres
Wayne County, Utah
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-102: CSU- Fragile Soils/Slopes 30 Percent or Greater
UT-S-225: TL- Crucial Fawning Pronghorn Habitat
UT-S-293: California Condor

Notices:
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51 Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat
T&E-06 Mexican Spotted Owl
T&E-11 California Condor

UTU81033
T. 28 S., R. 13 E., SLM
Sec. 3: N2NE, SENE, NENW;
Sec. 4: N2NE, NW.
399.00 Acres
Wayne County, Utah
Richfield Field Office

Stipulations:
UT-S-01: Air Quality

UT-S-102: CSU- Fragile Soils/Slopes 30 Percent or Greater
UT-S-225: TL- Crucial Fawning Pronghorn Habitat
UT-S-293: California Condor

Notices:
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat
T&E-06 Mexican Spotted Owl
T&E-11 California Condor

UTU81034
T. 28 S., R. 13 E., SLM
Sec. 5: N2.
316.00 Acres
Wayne County, Utah
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-102: CSU- Fragile Soils/Slopes 30 Percent or Greater
UT-S-225: TL- Crucial Fawning Pronghorn Habitat

UT-S-293: California Condor

Notices:
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51 Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat
T&E-06 Mexican Spotted Owl
T&E-11 California Condor

UTU81426
T. 27 S., R. 13 E., SLM
Secs. 1, 11, 12 and 13: All.
2,485.00 Acres

Wayne County, Utah
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-102: CSU- Fragile Soils/Slopes 30 Percent or Greater
UT-S-105: CSU- Soils (High Potential for Wind Erosion)
UT-S-225: TL- Crucial Fawning Pronghorn Habitat
UT-S-293: California Condor

Notices:
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat
T&E-11: California Condor

UTU81427
T. 27 S., R. 13 E., SLM
Secs. 3, 4, 9 and 10: All.
2,410.00 Acres
Wayne County, Utah
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-102: CSU- Fragile Soils/Slopes 30 Percent or Greater
UT-S-105: CSU- Soils (High Potential for Wind Erosion)
UT-S-225: TL- Crucial Fawning Pronghorn Habitat
UT-S-293: California Condor

Notices:
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51 Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat

T&E-11: California Condor

UTU81428
T. 27 S., R. 13 E., SLM
Secs. 14, 15, 21 and 22: All.
2,560.00 Acres
Wayne County, Utah
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-102: CSU- Fragile Soils/Slopes 30 Percent or Greater
UT-S-105: CSU- Soils (High Potential for Wind Erosion)
UT-S-225: TL- Crucial Fawning Pronghorn Habitat

UT-S-293: California Condor

Notices:
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat
T&E-11: California Condor

UTU81429
T. 27 S., R. 13 E., SLM
Secs. 23, 24, 25 and 26: All.
2,560.00 Acres
Wayne County, Utah
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-102: CSU- Fragile Soils/Slopes 30 Percent or Greater
UT-S-105: CSU- Soils (High Potential for Wind Erosion)
UT-S-225: TL- Crucial Fawning Pronghorn Habitat

UT-S-293: California Condor

Notices:
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird

UT-LN-49: Utah Sensitive Species
UT-LN-51 Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat
T&E-11: California Condor

UTU81455
T. 27 S., R. 13. E., SLM
Secs. 5, 6, 7 and 8: All.
2,378.00 Acres
Wayne County, Utah
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-102: CSU- Fragile Soils/Slopes 30 Percent or Greater
UT-S-105: CSU- Soils (High Potential for Wind Erosion)
UT-S-225: TL- Crucial Fawning Pronghorn Habitat
UT-S-293: California Condor

Notices:
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51 Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat
T&E-11: California Condor

UTU81456
T. 27 S., R. 13 E., SLM
Secs. 17, 18, 19 and 20: All.
2,529.00 Acres
Wayne County, Utah
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-102: CSU- Fragile Soils/Slopes 30 Percent or Greater
UT-S-105: CSU- Soils (High Potential for Wind Erosion)
UT-S-225: TL- Crucial Fawning Pronghorn Habitat
UT-S-293: California Condor

Notices:
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51 Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat
T&E-11 California Condor

UTU81458
T. 27 S., R. 14 E., SLM
Secs. 1, 11, 12 and 13: All.
2,483.68 Acres
Wayne County, Utah
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-102: CSU- Fragile Soils/Slopes 30 Percent or Greater
UT-S-184: Upper Colorado River Fish
UT-S-225: TL- Crucial Fawning Pronghorn Habitat
UT-S-293: California Condor

Notices:
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51 Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat
T&E-03: Colorado River Endangered Fish
T&E-11: California Condor

UTU81459
T. 27 S., R. 14 E., SLM
Secs. 14, 15, 21 and 22: All.
2,560.00 Acres
Wayne County, Utah
Richfield Field Office

Stipulations:

UT-S-01: Air Quality
UT-S-184: Upper Colorado River Fish
UT-S-225: TL- Crucial Fawning Pronghorn Habitat
UT-S-293: California Condor

Notices:
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat
T&E-03: Colorado River Endangered Fish
T&E-11: California Condor

UTU81460
T. 27 S., R. 14 E., SLM
Secs. 17, 18, 19 and 20: All.
2,499.12 Acres
Wayne County, Utah
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-102: CSU- Fragile Soils/Slopes 30 Percent or Greater
UT-S-105: CSU- Soils (High Potential for Wind Erosion)
UT-S-225: TL- Crucial Fawning Pronghorn Habitat
UT-S-293: California Condor

Notices:
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat
T&E-11: California Condor

UTU81463
T. 27 S., R. 14 E., SLM
Sec. 28: All;
Sec. 29: N2, N2N2, S2SE;
Sec. 30: All;

Sec. 31: Lots 1, 2, NENW.
1,916.20 Acres
Wayne County, Utah
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-86: NSO- Non WSA Lands With Wilderness Characteristics
UT-S-102: CSU- Fragile Soils/Slopes 30 Percent or Greater
UT-S-293: California Condor

Notices:
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51 Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat
T&E-11: California Condor

UTU84401
T. 27 S., R. 14 E., SLM
Secs. 3, 4, 5, 6, 7, 8, 9 and 10: All.
4,756.95 Acres
Wayne County, Utah
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-102: CSU- Fragile Soils/Slopes 30 Percent or Greater
UT-S-184: Upper Colorado River Fish
UT-S-225: TL- Crucial Fawning Pronghorn Habitat
UT-S-293: California Condor

Notices:
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51 Special Status Plants: Not Federally Listed
UT-LN-72: High Potential Paleontological Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156 Pollinators and Pollinator Habitat

T&E-06: Colorado River Endangered Fish
T&E-11: California Condor

UTU84706
T. 27 S., R. 14 E., SLM
Secs. 23, 24, 25, 26 and 27: All;
Sec. 33: NE, NESE;
Sec. 34: N2, N2S2, SESW, SWSE;
Sec. 35: N2, N2S2, SESW, S2SE.
4,560.00 Acres
Wayne County, Utah
Richfield Field Office

Stipulations:
UT-S-01: Air Quality
UT-S-102: CSU- Fragile Soils/Slopes 30 Percent or Greater
UT-S-105: CSU- Soils (High Potential for Wind Erosion)
UT-S-184: Upper Colorado River Fish
UT-S-225: TL- Crucial Fawning Pronghorn Habitat
UT-S-293: California Condor

Notices:
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Raptors
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-156: Pollinators and Pollinator Habitat
T&E-03: Colorado River Endangered Fish
T&E-11: California Condor

Appendix C **Deferred Parcels**

No Parcels have been deferred at the time the Notice of Competitive Lease Sale was Released

Appendix D Stipulation and Notice Exhibits

STIPULATIONS	
UT-S-01	**AIR QUALITY** All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horsepower shall not emit more than 2 grams of NO_x per horsepower-hour. **Exception:** This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower. **Modification**: None **Waiver**: None **AND** All new and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gram of NO_x per horsepower-hour. **Exception**: None **Modification**: None **Waiver**: None
UT-S-86	**NO SURFACE OCCUPANCY – NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS** No surface occupancy within the lands managed as non-WSA lands with wilderness characteristics to protect, preserve, and maintain their wilderness characteristics. **Exception:** None **Modification:** None **Waiver:** None
UT-S-97	**NO SURFACE OCCUPANCY – FRAGILE SOILS/SLOPES GREATER THAN 40 PERCENT** No surface occupancy on slopes greater than 40 percent. **Exception:** If after an environment analysis the authorized officer determines that it would cause undue or unnecessary degradation to pursue other placement alternatives; surface occupancy in the area may be authorized. In addition, a plan from the operator and BLM's approval of the plan shall be required before construction and maintenance could begin. The plan would have to include: An erosion control strategy; GIS modeling; Proper survey and design by a certified engineer. **Modification**: None **Waiver**: None

STIPULATIONS	
UT-S-101	**CONTROLLED SURFACE USE – FRAGILE SOILS/SLOPES 20-40 PERCENT** In surface disturbing proposals regarding construction on slopes of 20 percent to 40 percent, include an approved erosion control strategy and topsoil segregation/restoration plan. Such construction must be properly surveyed and designed by a certified engineer and approved by the BLM prior to project implementation, construction, or maintenance. **Exception:** If after an environment analysis the authorized officer determines that it would cause undue or unnecessary degradation to pursue other placement alternatives; surface occupancy in the area may be authorized. In addition, a plan from the operator and BLM's approval of the plan would be required before construction and maintenance could begin. The plan must include: An erosion control strategy; GIS modeling; Proper survey and design by a certified engineer. **Modification:** Modifications also may be granted if a more detailed analysis is conducted and shows that impacts can be mitigated, e.g., Order I soil survey conducted by a qualified soil scientist, finds that surface disturbance activities could occur on slopes between 20 and 40 percent while adequately protecting areas from accelerated erosion. **Waiver**: None
UT-S-102	**CONTROLLED SURFACE USE – FRAGILE SOILS/SLOPES 30 PERCENT OR GREATER** No surface disturbing proposed projects involving construction on slopes greater than 30. If the action cannot be avoided, rerouted, or relocated than a proposed project will include an erosion control strategy, reclamation and a site plan with a detailed survey and design completed by a certified engineer. This proposed project must be approved by the BLM prior to construction and maintenance. **Exception:** None **Modification:** None **Waiver**: None

STIPULATIONS	
UT-S-105	**CONTROLLED SURFACE USE – SOILS (HIGH POTENTIAL FOR WIND EROSION)** No surface disturbing activities on soils that have been identified by the NRCS as having high potential for wind erosion through research studies or monitoring. If surface disturbing activities cannot be avoided on areas identified as having high potential for wind erosion, require a plan of operation that addresses erosion control strategies or mitigation measures, such as signing along roadways. **Exception:** None **Modification:** Consider modification if site-specific environmental analysis shows that alternatives would cause undue or unnecessary degradation to surface resources and impacts from wind erosion would not affect long-term soil productivity, would not impact air quality in nearby Class I airsheds, nor pose safety hazards to recreationists or motorists. **Waiver**: None
UT-S-126	**NO SURFACE OCCUPANCY – NATURAL SPRINGS** No surface disturbance or occupancy will be maintained around natural springs to protect the water quality of the spring. The distance would be based on geophysical, riparian, and other factors necessary to protect the water quality of the springs. If these factors cannot be determined, a 660-foot buffer zone would be maintained. **Exception:** An exception could be authorized if (a) there are no practical alternatives, (b) impacts could be fully mitigated, or (c) the action is designed to enhance the riparian resources. **Modification:** None **Waiver**: None
UT-S-127	**NO SURFACE OCCUPANCY – INTERMITTENT AND PERENNIAL STREAMS** No new surface disturbance (excluding fence lines) will be allowed in areas within the 100-year floodplain or 100 meters (330 feet) on either side from the centerline, whichever is greater, along all perennial and intermittent streams, streams with perennial reaches, and riparian areas. **Exception:** The authorized officer could authorize an exception if it could be shown that the project as mitigated eliminated the need for the restriction. An exception could be authorized if (a) there are no practical alternatives, (b) impacts could be fully mitigated, or (c) the action is designed to enhance the riparian resources. **Modification:** None **Waiver:** None

STIPULATIONS	
UT-S-160	**CONTROLLED SURFACE USE – VISUAL RESOURCES - VRM II** Within VRM II areas, surface disturbing activities will comply with BLM Manual Handbook 8431-1 to retain the existing character of the landscape. **Exception:** Recognized utility corridors are exempt. Temporary exceedance may be allowed during initial development phases. **Modification**: None **Waiver**: None
UT-S-184	**CONTROLLED SURFACE USE/TIMING LIMITATIONS – ENDANGERED FISH OF THE UPPER COLORADO RIVER DRAINAGE BASIN** The Lessee/Operator is given notice that the lands in this parcel contain Critical Habitat for the Colorado River fish (bonytail chub, humpback chub, Colorado pike minnow, and razorback sucker, listed as endangered under the Endangered Species Act (ESA), or these parcels have watersheds that are tributary to designated habitat. Critical habitat was designated for the four endangered Colorado River fishes on March 21, 1994 (59 FR 13374-13400). Designated critical habitat for all the endangered fishes includes those portions of the 100-year floodplain that contain primary constituent elements necessary for survival of the species. Avoidance or use restrictions may be placed on portions of the lease. The following avoidance and minimization measures have been designed to ensure activities carried out on the lease comply with the ESA. Integration of, and adherence to, these measures will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of ESA Section 7 consultation at the permit stage. Current avoidance and minimization measures include the following: 1. Surveys will be required prior to operations, unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s). 2. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. 3. Water production will be managed to ensure maintenance or enhancement of riparian habitat. 4. Avoid loss or disturbance of riparian habitats. 5. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and

STIPULATIONS	
	eliminate drilling in suitable riparian habitat. Ensure that such directional drilling does not intercept or degrade alluvial aquifers. 6. Conduct watershed analysis for leases in designated critical habitat and overlapping major tributaries in order to determine toxicity risk from permanent facilities. 7. Implement the Utah Oil and Gas Pipeline Crossing Guidance (from BLM National Science and Technology Center). 8. Drilling will not occur within 100-year floodplains of rivers or tributaries to rivers that contain listed fish species or critical habitat. 9. In areas adjacent to 100-year floodplains, particularly in systems prone to flash floods, analyze the risk for flash floods to impact facilities, and use closed loop drilling, and pipeline burial or suspension according to the Utah Oil and Gas Pipeline Crossing Guidance, to minimize the potential for equipment damage and resulting leaks or spills. Water depletions from *any* portion of the Upper Colorado River drainage basin above Lake Powell are considered to adversely affect or adversely modify the critical habitat of the four resident endangered fish species, and must be evaluated with regard to the criteria described in the Upper Colorado River Endangered Fish Recovery Program. Formal consultation with USFWS is required for all depletions. All depletion amounts must be reported to BLM. Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the USFWS between the lease sale stage and lease development stage to ensure continued compliance with the ESA. **Exception**: None **Modification**: None **Waiver**: None
UT-S-225	**TIMING LIMITATION - CRUCIAL FAWNING PRONGHORN HABITAT** No surface disturbing activities in crucial pronghorn antelope habitat from **May 15 through June 15** to protect species sensitivity during fawning season. **Exception:** The authorized officer may grant an exception if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated. **Modification:** The authorized officer may modify the boundaries of the stipulation area (1) if a portion of the area is not being used as crucial pronghorn habitat during kidding season or (2) if habitat outside of stipulation boundaries is being used for crucial pronghorn habitat and needs to be protected.

STIPULATIONS	
	Waiver: A waiver may be granted if the habitat is determined as unsuitable for crucial pronghorn habitat and there is no reasonable likelihood of future use as crucial pronghorn habitat
UT-S-253	**TIMING LIMITATION – DESERT AND ROCKY MOUNTAIN BIGHORN SHEEP** No surface disturbing or otherwise disruptive activities within Desert bighorn sheep and Rocky Mountain bighorn sheep spring/lambing within crucial yearlong range from **April 15 to June 15**. **Exception:** Upon review and monitoring, the authorized officer may grant exceptions because of climatic and/or range conditions if certain criteria are met and if activities would not cause undue stress to Desert bighorn sheep and Rocky Mountain bighorn sheep populations or habitats. **Modification:** Season may be adjusted depending on climatic and range conditions. **Waiver:** A waiver may be granted if the habitat is determined to be unsuitable for lambing and there is no reasonable likelihood of future use as bighorn lambing grounds.
UT-S-269	**NO SURFACE OCCUPANCY – MEXICAN SPOTTED OWL NESTS** No surface occupancy within 1/2 mile of known Mexican Spotted Owl (MSO) nests. **Exception:** The authorized officers may grant an exception if an environmental analysis demonstrates that the action would not impair the function or utility of the site for nesting or other owl-sustaining activities. **Modification:** The authorized officers may modify the NSO area in extent if an environmental analysis finds that a portion of the area is nonessential to site utility or function or if natural features provide adequate visual or auditory screening. **Waiver:** A waiver may be granted if the MSO is de-listed and the area is determined as not necessary for the survival and recovery of the MSO.
UT-S-285	**TIMING LIMITATION – MIGRATORY BIRD NESTING** Migratory bird nesting areas will be closed seasonally from **April 15 to August 1**. Areas with migratory birds designated as BLM Special Status Species will have the highest priority. **Exception:** Upon review and monitoring, the authorized officer may grant exceptions because of climatic and/or habitat conditions if activities would not cause undue stress to migratory bird populations. **Modification:** Season may be adjusted depending on climatic and range conditions. Distance may be adjusted if natural features provide adequate visual screening. **Waiver**: None

STIPULATIONS	
UT-S-293	**CONTROLLED SURFACE USE/TIMING LIMITATIONS – CALIFORNIA CONDOR** The Lessee/Operator is given notice that the lands located in this parcel contain potential habitat for the California Condor, a federally listed species. Avoidance or use restrictions may be placed on portions of the lease if the area is known or suspected to be used by condors. Application of appropriate measures will depend on whether the action is temporary or permanent, and whether it occurs within or outside potential habitat. A temporary action is completed prior to the following important season of use, leaving no permanent structures and resulting in no permanent habitat loss. This would include consideration for habitat functionality. A permanent action continues for more than one season of habitat use, and/or causes a loss of condor habitat function or displaces condors through continued disturbance (i.e. creation of a permanent structure requiring repetitious maintenance, or emits disruptive levels of noise). The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act (ESA). Integration of, and adherence to these measures will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of ESA, Section 7 consultation at the permit stage. Current avoidance and minimization measures include the following: 1. Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All Surveys must be conducted by qualified individual(s) approved by the BLM, and must be conducted according to approved protocol. 2. If surveys result in positive identification of condor use, all lease activities will require monitoring throughout the duration of the project to ensure desired results of applied mitigation and protection. Minimization measures will be evaluated during development and, if necessary, Section 7 consultation may be reinitiated. 3. Temporary activities within 1.0 mile of nest sites will not occur during the breeding season. 4. Temporary activities within 0.5 miles of established roosting sites or areas will not occur during the season of use, August 1 to November 31, unless the area has been surveyed according to protocol and determined to be unoccupied. 5. No permanent infrastructure will be placed within 1.0 mile of nest sites.

STIPULATIONS	
	6. No permanent infrastructure will be placed within 0.5 miles of established roosting sites or areas. 7. Remove big game carrion from within 100 feet from lease roadways occurring within foraging range. 8. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in suitable habitat utilize directional drilling to avoid direct impacts to large cottonwood gallery riparian habitats. Ensure that such directional drilling does not intercept or degrade alluvial aquifers. 9. Re-initiation of section 7 consultation with the Service will be sought immediately if mortality or disturbance to California condors is anticipated as a result of project activities. Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA. Additional measures may also be employed to avoid or minimize effects to the species between the lease sale and lease development stages. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA. **Exception**: None **Modification**: None **Waiver**: None
UT-S-305	**CONTROLLED SURFACE USE – NOXIOUS WEED** Continue implementation of noxious weed and invasive species control actions in accordance with national guidance and local weed management plans, in cooperation with State, federal, affected counties, adjoining private land owners, and other partners or interests directly affected. Implement Standard Operating Procedures and Mitigation Measures for herbicide use as well as prevention measures for noxious and invasive plants identified in the Record of Decision Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States PEIS and associated documents. **Exception**: None **Modification**: None **Waiver**: None

STIPULATIONS	
UT-S-319	**NO SURFACE OCCUPANCY – CULTURAL ACEC** NSO for cultural values within areas of critical environmental concern (ACEC) to retain the cultural character and context of the area. **Exception:** The AO may grant an oil and gas exception if it is determined that no other economic and technical feasible access is available to reach and drain the fluid mineral resources of the area. A block cultural survey must be completed and a treatment plan developed and submitted to BLM and the State Historic Preservation Office (SHPO) for their approval. The plan must contain measures to mitigate surface disturbance and reduce visual intrusion. **Modification:** None **Waiver:** None

NOTICES	
UT-LN-21	**BIGHORN SHEEP HABITAT** The Lessee/Operator is given notice that the lands in this parcel contains habitat for desert bighorn sheep. Modifications to the surface use plan may be required in order to protect habitat from surface disturbing activities. These modifications may include such measures as timing restrictions to avoid surface use in bighorn sheep habitat during the crucial season (April 15 – June 15). Measure may also include avoidance of certain areas such as water sources and talus slopes.
UT-LN-25	**WHITE-TAILED AND GUNNISON PRAIRIE DOG** The lessee/operator is given notice that this lease parcel has been identified as containing white-tailed or Gunnison prairie dog habitat. Modifications to the Surface Use Plan of Operations may be required in order to protect white-tailed or Gunnison prairie dog from surface disturbing activities in accordance with the Endangered Species Act and 43 CFR 3101.1-2.

NOTICES	
UT-LN-44	**RAPTORS** Appropriate seasonal and spatial buffers shall be placed on all known raptor nests in accordance with Utah Field Office Guidelines for Raptor Protection from Human and Land use Disturbances (USFWS 2002) and Best Management Practices for Raptors and their Associated Habitats in Utah (BLM 2006). All construction related activities will not occur within these buffers if pre-construction monitoring indicates the nests are active, unless a site-specific evaluation for active nests is completed prior to construction and if a BLM wildlife biologist, in consultation with USFWS and UDWR, recommends that activities may be permitted within the buffer. The BLM will coordinate with the USFWS and UDWR and have a recommendation within 3-5 days of notification. Any construction activities authorized within a protective (spatial and seasonal) buffer for raptors will require an on-site monitor. Any indication that activities are adversely affecting the raptor and/or its' young the on-site monitor will suspend activities and contact the BLM Authorized Officer immediately. Construction may occur within the buffers of inactive nests. Construction activities may commence once monitoring of the active nest site determines that fledglings have left the nest and are no longer dependent on the nest site. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43CFR3101.1-2.
UT-LN-45	**MIGRATORY BIRD** The lessee/operator is given notice that surveys for nesting migratory birds may be required during migratory bird breeding season whenever surface disturbances and/or occupancy is proposed in association with fluid mineral exploration and development within priority habitats. Surveys should focus on identified priority bird species in Utah. Field surveys will be conducted as determined by the authorized officer of the Bureau of Land Management. Based on the result of the field survey, the authorized officer will determine appropriate buffers and timing limitations.
UT-LN-49	**UTAH SENSITIVE SPECIES** The lessee/operator is given notice that no surface use or otherwise disruptive activity would be allowed that would result in direct disturbance to populations or individual special status plant and animal species, including those listed on the BLM sensitive species list and the Utah sensitive species list. The lessee/operator is also given notice that lands in this parcel have been identified as containing potential habitat for species on the Utah Sensitive Species List. Modifications to the Surface Use Plan of Operations may be required in order to protect these resources from surface disturbing activities in accordance with Section 6 of the lease terms, Endangered Species Act, Migratory Bird Treaty Act and 43 CFR 3101.1-2.

NOTICES	
UT-LN-51	**SPECIAL STATUS PLANTS: NOT FEDERALLY LISTED** The lessee/operator is given notice that lands in this lease have been identified as containing special status plants, not federally listed, and their habitats. Modifications to the Surface Use Plan of Operations may be required in order to protect the special status plants and/or habitat from surface disturbing activities in accordance with Section 6 of the lease terms, Endangered Species Act, and 43 CFR 3101.1-2.
UT-LN-72	**HIGH POTENTIAL PALEONTOLOGICAL RESOURCES** The lessee/operator is given notice that lands in this lease have been identified as having high potential for paleontological resources. Surveys will be required and modifications to the Surface Use Plan of Operations may be required in order to protect paleontological resources from surface disturbing activities in accordance with Section 6 of the lease terms and 43 CFR 3101.1-2. In addition, monitoring may be required during surface disturbing activities.
UT-LN-78	**LIGHT AND SOUND - AREAS PROXIMATE TO CANYONLANDS NATIONAL PARK** Minimize noise and light pollution in areas adjacent with Canyonlands National Park using best available technology such as installation of multi-cylinder pumps, hospital sound reducing mufflers, and placement of exhaust systems to direct noise away from the National Park. Additionally, there would be a requirement to reduce light pollution by using methods such as limiting height of light poles, timing of lighting operations (meaning limiting lighting to times of darkness associated with drilling and work over or maintenance operations), limiting wattage intensity, and constructing light shields. However, this requirement is not applicable if it affects human health and safety. Movement of operations to mitigate sound and light impacts would be required to be at least 200 meters from the boundary of the National Park in areas with the objectives of Visual Resource Management classifications of II, III and IV.
UT-LN-99	**REGIONAL OZONE FORMATION CONTROLS** To mitigate any potential impact oil and gas development emissions may have on regional ozone formation, the following Best Management Practices (BMPs) would be required for any development projects: • Tier II or better drilling rig engines • Stationary internal combustion engine standard of 2g NOx/bhp-hr for engines <300HP and 1g NOx/bhp-hr for engines >300HP • Low bleed or no bleed pneumatic pump valves • Dehydrator VOC emission controls to +95% efficiency • Tank VOC emission controls to +95% efficiency

NOTICES	
UT-LN-102	**AIR QUALITY ANALYSIS** The lessee/operator is given notice that prior to project-specific approval, additional air quality analyses may be required to comply with the National Environmental Policy Act, Federal Land Policy Management Act, and/or other applicable laws and regulations. Analyses may include dispersion modeling for deposition and visibility impacts analysis, control equipment determinations, and/or emission inventory development. These analyses may result in the imposition of additional project-specific air quality control measures.
UT-LN-104	**BURROWING OWL HABITAT** The lessee/operator is given notice that lands in this lease have been identified as containing Burrowing Owl Habitat. Modification to the Surface Use Plan of Operations may be required in order to protect the Burrowing Owl and/or habitat from surface disturbing activities in accordance with Section 6 of the lease terms, Endangered Species Act, and 43 CFR 3101.1-2.

UT-LN-113	**WESTERN YELLOW-BILLED CUCKOO** The Lessee/Operator is given notice that the lands in or adjacent to this parcel contain potentially suitable habitat that falls within the range for western yellow-billed cuckoo, a federally listed species. Avoidance or use restrictions may be placed on portions of the lease. Application of appropriate measures will depend upon whether the action is temporary or permanent, and whether it occurs within or outside the breeding and nesting season. A temporary action is completed prior to the following breeding season leaving no permanent structures and resulting in no permanent habitat loss. A permanent action could continue for more than one breeding season and/or cause a loss of habitat or displace western yellow-billed cuckoos through disturbances. The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act. Integration of, and adherence to, these measures will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of Endangered Species Act, Section 7 consultation at the permit stage. Avoidance and minimization measures include the following: 1. Habitat suitability within the parcel and/or within a 0.25 mile buffer of the parcel will be identified prior to lease development to identify potential survey needs. 2. Protocol Breeding Season Surveys will be required in suitable habitats prior to operations unless species occupancy and distribution information is complete and available. All Surveys must be conducted by permitted individual(s), and be conducted according to protocol. 3. For all temporary actions that may impact cuckoo or suitable habitat: a. If action occurs entirely outside of the cuckoo breeding season (June 1 – Aug 31), and leaves no structure or habitat disturbance, action can proceed without a presence/absence survey. b. If action is proposed between June 1 and August 31, presence/absence surveys for cuckoo will be conducted prior to commencing activity. If cuckoo are detected, activity should be delayed until September 1. c. Eliminate access routes created by the project through such means as raking out scars, revegetation, gating access points, etc. 4. For all permanent actions that may impact cuckoo or suitable habitat: a. Protocol level surveys by permitted individuals will be conducted prior to commencing activities. b. If cuckoos are detected, no activity will occur within 0.25 mile of occupied habitat. c. Avoid drilling and permanent structures within 0.25 mile of suitable habitat unless absence is determined according to protocol level surveys conducted by permitted individual(s). d. Ensure noise levels at 0.25 mile from suitable habitat do not exceed baseline conditions. Placement of permanent noise-generating facilities should be determined by a noise analysis to ensure noise does not encroach upon a 0.25 mile buffer for suitable habitat.

NOTICES	
	5. Temporary or permanent actions will require monitoring throughout the duration of the project to ensure that western yellow-billed cuckoo or its habitat is not affected in a manner or to an extent not previous considered. Avoidance and minimization measures will be evaluated throughout the duration of the project. 6. Water produced as a by-product of drilling or pumping will be managed to ensure maintenance or enhancement of riparian habitat. 7. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in suitable habitat. Ensure that such directional drilling does not intercept or degrade alluvial aquifers. 8. Ensure that water extraction or disposal practices do not result in change of hydrologic regime that would result in loss or degradation of riparian habitat. 9. Re-vegetate with native species all areas of surface disturbance within riparian areas and/or adjacent uplands. Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service between the lease sale stage and lease development stage to ensure continued compliance with the ESA.

UT-LN-126	**WESTERN YELLOW-BILLED CUCKOO** The Lessee/Operator is given notice that the lands in or adjacent to this parcel contain potentially suitable habitat that falls within the range for western yellow-billed cuckoo, a federally listed species. Avoidance or use restrictions may be placed on portions of the lease. Application of appropriate measures will depend upon whether the action is temporary or permanent, and whether it occurs within or outside the breeding and nesting season. A temporary action is completed prior to the following breeding season leaving no permanent structures and resulting in no permanent habitat loss. A permanent action could continue for more than one breeding season and/or cause a loss of habitat or displace western yellow-billed cuckoos through disturbances. The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act. Integration of, and adherence to, these measures will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of Endangered Species Act, Section 7 consultation at the permit stage. Avoidance and minimization measures include the following: 10. Habitat suitability within the parcel and/or within a 0.25 mile buffer of the parcel will be identified prior to lease development to identify potential survey needs. 11. Protocol Breeding Season Surveys will be required in suitable habitats prior to operations unless species occupancy and distribution information is complete and available. All Surveys must be conducted by permitted individual(s), and be conducted according to protocol. 12. For all temporary actions that may impact cuckoo or suitable habitat: a. If action occurs entirely outside of the cuckoo breeding season (June 1 – Aug 31), and leaves no structure or habitat disturbance, action can proceed without a presence/absence survey. b. If action is proposed between June 1 and August 31, presence/absence surveys for cuckoo will be conducted prior to commencing activity. If cuckoo are detected, activity should be delayed until September 1. c. Eliminate access routes created by the project through such means as raking out scars, revegetation, gating access points, etc. 13. For all permanent actions that may impact cuckoo or suitable habitat: a. Protocol level surveys by permitted individuals will be conducted prior to commencing activities. b. If cuckoos are detected, no activity will occur within 0.25 mile of occupied habitat. c. Avoid drilling and permanent structures within 0.25 mile of suitable habitat unless absence is determined according to protocol level surveys conducted by permitted individual(s). d. Ensure noise levels at 0.25 mile from suitable habitat do not exceed baseline conditions. Placement of permanent noise-generating facilities should be determined by a noise analysis to ensure noise does not encroach upon a 0.25 mile buffer for suitable habitat.

NOTICES	
	14. Temporary or permanent actions will require monitoring throughout the duration of the project to ensure that western yellow-billed cuckoo or its habitat is not affected in a manner or to an extent not previous considered. Avoidance and minimization measures will be evaluated throughout the duration of the project. 15. Water produced as a by-product of drilling or pumping will be managed to ensure maintenance or enhancement of riparian habitat. 16. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in suitable habitat. Ensure that such directional drilling does not intercept or degrade alluvial aquifers. 17. Ensure that water extraction or disposal practices do not result in change of hydrologic regime that would result in loss or degradation of riparian habitat. 18. Re-vegetate with native species all areas of surface disturbance within riparian areas and/or adjacent uplands. Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service between the lease sale stage and lease development stage to ensure continued compliance with the ESA.

NOTICES	
UT-LN-156	**POLLINATORS AND POLLINATOR HABITAT** In order to protect pollinators and pollinator habitat, in accordance with BLM policy outlined in Instruction Memorandum No. 2016-013, Managing for Pollinators on Public Lands, and Pollinator-Friendly Best Management Practices for Federal Lands (2015), the following avoidance, minimization, and mitigation measures would apply to this parcel: 1. Give a preference for placing well pads in previously disturbed areas, dry areas that do not support forbs, or areas dominated by nonnative grasses. 2. Utilize existing well pads where feasible. 3. Avoid disturbance to native milkweed patches within Monarch migration routes to protect Monarch butterfly habitat. 4. Avoid disturbance of riparian and meadow sites, as well as small depressed areas that may function as water catchments and host nectar-producing species, to protect Monarch butterfly habitat and nectaring sites. 5. Minimize the use of pesticides that negatively impact pollinators. 6. During revegetation treatments: a. Use minimum till drills where feasible. b. Include pollinator-friendly site-appropriate native plant seeds or seedlings in seed mixes. c. Where possible, increase the cover and diversity of essential habitat components for native pollinators by: ▪ Using site-appropriate milkweed seeds or seedlings within Monarch migration routes through priority sage-grouse habitat. ▪ Using seed mixes with annual and short-lived perennial native forbs that will bloom the first year and provide forage for pollinators. ▪ Using seed mixes with a variety of native forb species to ensure different colored and shaped flowers to provide nectar and pollen throughout the growing season for a variety of pollinators. ▪ Seeding forbs in separate rows from grasses to avoid competition during establishment. Avoiding seeding non-native forbs and grasses that establish early and out compete slower-growing natives.

NOTICES	
UT-LN-157	**SAN RAFAEL SWELL SRMA** The lessee/operator is given notice that this lease occurs within the San Rafael Swell Special Recreation Management Area (SRMA). The Price Field Office Resource Management Plan (RMP) requires the SRMA to be managed to provide the following benefits, experiences, and opportunities: undeveloped recreation tourism with portions that are destination strategy associated with OHV routes (***REC-11:*** *Within SRMAs, manage for Recreation Opportunity Spectrum (ROS), as identified in the ROS inventory. Recreation facilities will be developed only in response to resource management needs and will be appropriate to the managerial setting identified for each ROS class).* Development that interferes with the SRMAs goals and objectives should be avoided to the extent practicable. Modifications to the Surface Use Plan of Operations may be required in order to protect remote, expansive, intact landscapes from surface disturbing activities in accordance with section 6 of the lease terms and 43 CFR 3110.1-2
T&E-03	**ENDANGERED FISH OF THE UPPER COLORADO RIVER DRAINAGE BASIN** The Lessee/Operator is given notice that the lands in this parcel contain Critical Habitat for the Colorado River fish (bonytail, humpback chub, Colorado pike minnow, and razorback sucker) listed as endangered under the Endangered Species Act, or these parcels have watersheds that are tributary to designated habitat. Critical habitat was designated for the four endangered Colorado River fishes on March 21, 1994(59 FR 13374-13400). Designated critical habitat for all the endangered fishes includes those portions of the 100-year floodplain that contain primary constituent elements necessary for survival of the species. Avoidance or use restrictions may be placed on portions of the lease. The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act. Integration of and adherence to these measures will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of Endangered Species Act, Section 7 consultation at the permit stage. Current avoidance and minimization measures include the following: 1. Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s). 2. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. 3. Water production will be managed to ensure maintenance or enhancement of riparian habitat.

NOTICES	
	4. Avoid loss or disturbance of riparian habitats. 5. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in suitable riparian habitat. Ensure that such directional drilling does not intercept or degrade alluvial aquifers. 6. Conduct watershed analysis for leases in designated critical habitat and overlapping major tributaries in order to determine toxicity risk from permanent facilities. 7. Implement Appendix B (Hydrologic Considerations for Pipeline Crossing Stream Channels, Technical Note 423). 8. Drilling will not occur within 100 year floodplains of rivers or tributaries to rivers that contain listed fish species or critical habitat. 9. In areas adjacent to 100-year flood plains, particularly in systems prone to flash floods, analyze the risk for flash floods to impact facilities, and use closed loop drilling, and pipeline burial or suspension according to Appendix B (Hydrologic Considerations for Pipeline Crossing Stream Channels, Technical Note 423, to minimize the potential for equipment damage and resulting leaks or spills. Water depletions from *any* portion of the Upper Colorado River drainage basin above Lake Powell are considered to adversely affect or adversely modify the critical habitat of the four resident endangered fish species, and must be evaluated with regard to the criteria described in the Upper Colorado River Endangered Fish Recovery Program. Formal consultation with USFWS is required for all depletions. All depletion amounts must be reported to BLM. Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service between the lease sale stage and lease development stage to ensure continued compliance with the ESA.
T&E-05	**LISTED PLANT SPECIES** The Lessee/Operator is given notice that the lands in this parcel contain suitable habitat for federally listed plant species under the Endangered Species Act. The following avoidance and minimization measures have been developed to facilitate review and analysis of any submitted permits under the authority of this lease 1. Site inventories: a. Must be conducted to determine habitat suitability, b. Are required in known or potential habitat for all areas proposed for surface disturbance prior to initiation of project activities, at a time when the plant can be detected, and during appropriate flowering periods, c. Documentation should include, but not be limited to individual plant locations and suitable habitat distributions, and

NOTICES	
	d. All surveys must be conducted by qualified individuals. 2. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. 3. Project activities must be designed to avoid direct disturbance to populations and to individual plants: a. Designs will avoid concentrating water flows or sediments into plant occupied habitat. b. Construction will occur down slope of plants and populations where feasible; if well pads and roads must be sited upslope, buffers of 300 feet minimum between surface disturbances and plants and populations will be incorporated. c. Where populations occur within 300 ft. of well pads, establish a buffer or fence the individuals or groups of individuals during and post-construction. d. Areas for avoidance will be visually identifiable in the field, e.g., flagging, temporary fencing, rebar, etc. e. For surface pipelines, use a 10 foot buffer from any plant locations: f. If on a slope, use stabilizing construction techniques to ensure the pipelines don't move towards the population. 4. For riparian/wetland-associated species, e.g. Ute ladies-tresses, avoid loss or disturbance of riparian habitats. 5. Ensure that water extraction or disposal practices do not result in change of hydrologic regime. 6. Limit disturbances to and within suitable habitat by staying on designated routes. 7. Limit new access routes created by the project. 8. Place signing to limit ATV travel in sensitive areas. 9. Implement dust abatement practices near occupied plant habitat. 10. All disturbed areas will be re-vegetated with native species comprised of species indigenous to the area. 11. Post construction monitoring for invasive species will be required. 12. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in plant habitat. Ensure that such directional drilling does not intercept or degrade alluvial aquifers. 13. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated.

NOTICES	
	Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service between the lease sale stage and lease development stage to ensure continued compliance with the Endangered Species Act.
T&E-06	**MEXICAN SPOTTED OWL** The Lessee/Operator is given notice that the lands in this parcel contain suitable habitat for Mexican spotted owl, a federally listed species. The Lessee/Operator is given notice that the lands in this lease contain Designated Critical Habitat for the Mexican spotted owl, a federally listed species. Critical habitat was designated for the Mexican spotted owl on August 31, 2004 (69 FR 53181-53298). Avoidance or use restrictions may be placed on portions of the lease. Application of appropriate measures will depend whether the action is temporary or permanent, and whether it occurs within or outside the owl nesting season. A temporary action is completed prior to the following breeding season leaving no permanent structures and resulting in no permanent habitat loss. A permanent action continues for more than one breeding season and/or causes a loss of owl habitat or displaces owls through disturbances, i.e. creation of a permanent structure. The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act. Integration of, and adherence to these measures, will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of Endangered Species Act, Section 7 consultation at the permit stage. Current avoidance and minimization measures include the following: 1. Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All Surveys must be conducted by qualified individual(s). 2. Assess habitat suitability for both nesting and foraging using accepted habitat models in conjunction with field reviews. Apply the conservation measures below if project activities occur within 0.5 mile of suitable owl habitat. Determine potential effects of actions to owls and their habitat. a. Document type of activity, acreage and location of direct habitat impacts, type and extent of indirect impacts relative to location of suitable owl habitat. b. Document if action is temporary or permanent. 3. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. 4. Water production will be managed to ensure maintenance or enhancement of riparian habitat.

NOTICES	
	5. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in canyon habitat suitable for Mexican spotted owl nesting. 6. For all temporary actions that may impact owls or suitable habitat: a. If the action occurs entirely outside of the owl breeding season (March 1 – August 31), and leaves no permanent structure or permanent habitat disturbance, action can proceed without an occupancy survey. b. If action will occur during a breeding season, survey for owls prior to commencing activity. If owls are found, activity must be delayed until outside of the breeding season. c. Rehabilitate access routes created by the project through such means as raking out scars, re-vegetation, gating access points, etc. 7. For all permanent actions that may impact owls or suitable habitat: a. Survey two consecutive years for owls according to accepted protocol prior to commencing activities. b. If owls are found, no actions will occur within 0.5 mile of identified nest site. If nest site is unknown, no activity will occur within the designated Protected Activity Center (PAC). c. Avoid drilling and permanent structures within 0.5 mi of suitable habitat unless surveyed and not occupied. d. Reduce noise emissions (e.g., use hospital-grade mufflers) to 45 dBA at 0.5 mile from suitable habitat, including canyon rims. Placement of permanent noise-generating facilities should be determined by a noise analysis to ensure noise does not encroach upon a 0.5 mile buffer for suitable habitat, including canyon rims. e. Limit disturbances to and within suitable habitat by staying on approved routes. f. Limit new access routes created by the project. Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service between the lease sale stage and lease development stage to ensure continued compliance with the Endangered Species Act.
T&E-07	**SOUTHWESTERN WILLOW FLYCATCHER** The Lessee/Operator is given notice that the lands in this parcel contains riparian habitat that falls within the range for southwestern willow flycatcher, a federally listed species. Avoidance or use restrictions may be placed on portions of the lease. Application of appropriate measures will depend whether the action is temporary or permanent, and whether it occurs within or outside the nesting season. A temporary action is completed prior to the following breeding season leaving no permanent structures and resulting in no permanent habitat loss. A permanent action continues for more than one breeding season

NOTICES	
	and/or causes a loss of habitat or displaces flycatchers through disturbances, i.e. creation of a permanent structure. The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act. Integration of, and adherence to these measures, will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of Endangered Species Act, Section 7 consultation at the permit stage. Current avoidance and minimization measures include the following: 1. Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All Surveys must be conducted by qualified individual(s), and be conducted according to protocol. 2. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. 3. Water production will be managed to ensure maintenance or enhancement of riparian habitat. 4. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in suitable riparian habitat. Ensure that such directional drilling does not intercept or degrade alluvial aquifers. 5. Drilling activities will maintain a 300 ft. buffer from suitable riparian habitat year long. 6. Drilling activities within 0.25 mile of occupied breeding habitat will not occur during the breeding season of May 1 to August 15. 7. Ensure that water extraction or disposal practices do not result in change of hydrologic regime that would result in loss or degradation of riparian habitat. 8. Re-vegetate with native species all areas of surface disturbance within riparian areas and/or adjacent uplands. Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service between the lease sale stage and lease development stage to ensure continued compliance with the ESA.
T&E-11	**CALIFORNIA CONDOR** The Lessee/Operator is given notice that the lands located in this parcel contain potential habitat for the California Condor, a federally listed species. Avoidance or use restrictions may be placed on portions of the lease if the area is known or suspected to be used by condors. Application of appropriate measures will depend on whether the action is temporary or permanent, and whether it occurs within or outside potential habitat. A <u>temporary</u> action is completed prior to the following important season of use, leaving no permanent structures and resulting in no permanent habitat loss. This would include consideration for

NOTICES	
	habitat functionality. A permanent action continues for more than one season of habitat use, and/or causes a loss of condor habitat function or displaces condors through continued disturbance (i.e. creation of a permanent structure requiring repetitious maintenance, or emits disruptive levels of noise). The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act. Integration of, and adherence to these measures will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of Endangered Species Act, Section 7 consultation at the permit stage. Current avoidance and minimization measures include the following: 1. Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All Surveys must be conducted by qualified individual(s) approved by the BLM, and must be conducted according to approved protocol. 2. If surveys result in positive identification of condor use, all lease activities will require monitoring throughout the duration of the project to ensure desired results of applied mitigation and protection. Minimization measures will be evaluated during development and, if necessary, Section 7 consultation may be reinitiated. 3. Temporary activities within 1.0 mile of nest sites will not occur during the breeding season. 4. Temporary activities within 0.5 miles of established roosting sites or areas will not occur during the season of use, August 1 to November 31, unless the area has been surveyed according to protocol and determined to be unoccupied. 5. No permanent infrastructure will be placed within 1.0 mile of nest sites. 6. No permanent infrastructure will be placed within 0.5 miles of established roosting sites or areas. 7. Remove big game carrion 100 feet from lease roadways occurring within foraging range. 8. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in suitable habitat. Utilize directional drilling to avoid direct impacts to large cottonwood gallery riparian habitats. Ensure that such directional drilling does not intercept or degrade alluvial aquifers. 9. Re-initiation of section 7 consultation with the Service will be sought immediately if mortality or disturbance to California condors is anticipated as a result of project activities. Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA.

NOTICES	
	Additional measures may also be employed to avoid or minimize effects to the species between the lease sale and lease development stages. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the Endangered Species Act.
T&E-15	**WRIGHT FISHHOOK CACTUS (*SCLEROCACTUS WRIGHTIAE*)** In order to minimize effects to the federally threatened Wright Fishhook Cactus, the Bureau of Land Management (BLM), in coordination with the U.S. Fish and Wildlife Service (Service), has developed the following avoidance and minimization measures. Implementation of these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance operations) are in compliance with the endangered Species Act (ESA). For the purposes of this document, the following terms are so defined: *Potential habitat* is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment. *Suitable habitat* is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain Wright Fishhook Cactus; habitat descriptions can be found in Federal Register Notice and species recovery plan links at <http:www.fws.gov/endangered/wildlife.html>. *Occupied habitat* is defined as areas currently or historically known to support Wright Fishhook Cactus; synonymous with "known habitat." The following avoidance and minimization measures should be included in the Plan of Development: 1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat[1] prior to any ground disturbing activities (including ATV use) to determine if suitable Wright Fishhook Cactus habitat is present. 2. Site inventories will be conducted within suitable habitat to determine occupancy. Where standard surveys are technically infeasible and otherwise hazardous due to topography, slope, etc. suitable habitat will be assessed and mapped for avoidance (hereafter, "avoidance areas"); in such cases, in general, 300' buffers will be maintained between surface disturbance and avoidance areas. However, site-specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat. Where conditions allow, inventories: a. Must be conducted by qualified individuals(s) and according to BLM and Service accept survey protocols, b. Will be conducted in suitable and occupied habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected (usually April 15th to June 5th, however, surveyors should verify that the plant is flowering by contacting a BLM or FWS

NOTICES	
	botanist or demonstrating that the nearest known population is in flower), c. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300' from the perimeter of disturbance for the proposed well pad including the well pad, d. Will include, but not be limited to, plant species lists and habitat characteristics, and e. Will be valid until April 15th the following year. 3. Design project infrastructure to minimize impacts within suitable habitat: a. Where standard surveys are technically infeasible, infrastructure and activities will avoid all suitable habitat (voidance areas) and incorporate 300' buffers, in general; however, site-specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat, b. Reduce well pad size to the minimum needed, without compromising safety, c. Where technically and economically feasible, use directional drilling or multiple wells from the same pad, d. Limit new access routes created by the project, e. Roads and utilities should share common right-of-ways where possible, f. Reduce the width of right-of-ways and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat, g. Place signing to limit off-road travel in sensitive areas, and h. Stay on designated routes and other cleared/approved areas, i. All disturbed areas will be revegetated with native species comprised of species indigenous to the area and non-native species that are not likely to invade other areas. 4. Within occupied habitat, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants: a. Follow the above recommendations (3.) for project design within suitable habitats, b. To avoid water flow and/or sedimentation into occupied habitat and avoidance areas, silt fences, hay bales, and similar structures or practices will be incorporated into the project design; appropriate placement of fill is encouraged, c. Construction of roads will occur such that the edge of the right of way is at least 300' from any plant and 300' from avoidance areas, d. Roads will be graveled with occupied habitat; the operator is encouraged to apply water for dust abatement to such areas from April 15th to June 5th (flowering period); dust abatement applications will be comprised of water only,

NOTICES	
	e. The edge of the well pad should be located at least 300' away from plants and avoidance areas, in general; however, site-specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat, f. Surface pipelines will be laid such that a 300' buffer exists between the edge of the right of way and plants and 300' between the edge of right of way and avoidance areas; use stabilizing and anchoring techniques when the pipeline crossed suitable habitat to ensure pipelines don't move towards the population; site-specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat, g. Construction activities will not occur from April 15th through June 5th within occupied habitat, h. Before and during construction, areas for avoidance should be visually identifiable in the field, e.g., flagging temporary fencing, rebar, etc., i. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and j. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible. 5. Occupied Wright Fishhook Cactus habitats within 300' of the edge of the surface pipelines' right-of-ways, 300' of the edge of the roads' right-of-ways, and 300' from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the Service. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service. 6. Re-initiation of section 7 consultation with the Service will be sought immediately if any loss of plants or occupied habitat for the Wright Fishhook Cactus is anticipated as a result of project activities. Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA.
T&E 17	**SAN RAFAEL CACTUS (*PEDIOCACTUS DESPAINII*)** In order to minimize effects to the federally threatened San Rafael Cactus, the Bureau of Land Management (BLM), in coordination with the U.S. Fish and Wildlife Service (Service), has developed the following avoidance and minimization measures. Implementation of these measures will help ensure the activities carried out during oil and gas development (including but not limited

NOTICES	
	to drilling, production, and maintenance operations) are in compliance with the endangered Species Act (ESA). For the purposes of this document, the following terms are so defined: *Potential habitat* is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment. *Suitable habitat* is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain San Rafael Cactus; habitat descriptions can be found in Federal Register Notice and species recovery plan links at <http:www.fws.gov/endangered/wildlife.html>. *Occupied habitat* is defined as areas currently or historically known to support San Rafael Cactus; synonymous with "known habitat." The following avoidance and minimization measures should be included in the Plan of Development: 1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat[1] prior to any ground disturbing activities (including ATV use) to determine if suitable San Rafael Cactus habitat is present. 2. Site inventories will be conducted within suitable habitat to determine occupancy. Where standard surveys are technically infeasible and otherwise hazardous due to topography, slope, etc. suitable habitat will be assessed and mapped for avoidance (hereafter, "avoidance areas"); in such cases, in general, 300' buffers will be maintained between surface disturbance and avoidance areas. However, site-specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat. Where conditions allow, inventories: a. Must be conducted by qualified individuals(s) and according to BLM and Service accept survey protocols, b. Will be conducted in suitable and occupied habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected (usually April 15th to June 5th, however, surveyors should verify that the plant is flowering by contacting a BLM or FWS botanist or demonstrating that the nearest known population is in flower), c. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300' from the perimeter of disturbance for the proposed well pad including the well pad, d. Will include, but not be limited to, plant species lists and habitat characteristics, and e. Will be valid until April 15th the following year. 3. Design project infrastructure to minimize impacts within suitable habitat: a. Where standard surveys are technically infeasible, infrastructure and activities will avoid all suitable habitat (voidance areas) and incorporate 300' buffers, in general; however, site-specific distances

NOTICES	
	will need to be approved by FWS and BLM when disturbance will occur upslope of habitat, b. Reduce well pad size to the minimum needed, without compromising safety, c. Where technically and economically feasible, use directional drilling or multiple wells from the same pad, d. Limit new access routes created by the project, e. Roads and utilities should share common right-of-ways where possible, f. Reduce the width of right-of-ways and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat, g. Place signing to limit off-road travel in sensitive areas, and h. Stay on designated routes and other cleared/approved areas, i. All disturbed areas will be re-vegetated with native species comprised of species indigenous to the area and non-native species that are not likely to invade other areas. 4. Within occupied habitat, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants: a. Follow the above recommendations (3.) for project design within suitable habitats, b. To avoid water flow and/or sedimentation into occupied habitat and avoidance areas, silt fences, hay bales, and similar structures or practices will be incorporated into the project design; appropriate placement of fill is encouraged, c. Construction of roads will occur such that the edge of the right of way is at least 300' from any plant and 300' from avoidance areas, d. Roads will be graveled with occupied habitat; the operator is encouraged to apply water for dust abatement to such areas from April 15th to June 5th (flowering period); dust abatement applications will be comprised of water only, e. The edge of the well pad should be located at least 300' away from plants and avoidance areas, in general; however, site-specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat, f. Surface pipelines will be laid such that a 300' buffer exists between the edge of the right of way and plants and 300' between the edge of right of way and avoidance areas; use stabilizing and anchoring techniques when the pipeline crossed suitable habitat to ensure pipelines don't move towards the population; site-specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,

NOTICES	
	g. Construction activities will not occur from April 15th through June 5th within occupied habitat, h. Before and during construction, areas for avoidance should be visually identifiable in the field, e.g., flagging temporary fencing, rebar, etc., i. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and j. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible. 5. Occupied San Rafael Cactus habitats within 300' of the edge of the surface pipelines' right-of-ways, 300' of the edge of the roads' right-of-ways, and 300' from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the Service. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service. 6. Re-initiation of section 7 consultation with the Service will be sought immediately if any loss of plants or occupied habitat for the San Rafael Cactus is anticipated as a result of project activities. Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA.
T&E-19	**JONES CYCLADENIA (*CYCLADENIA HYMILIS VAR JONESII*)** In order to minimize effects to the federally threatened Jones Cycladenia, the Bureau of Land Management (BLM), in coordination with the U.S. Fish and Wildlife Service (Service), has developed the following avoidance and minimization measures. Implementation of these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance operations) are in compliance with the endangered Species Act (ESA). For the purposes of this document, the following terms are so defined: *Potential habitat* is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment. *Suitable habitat* is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain Jones Cycladenia; habitat descriptions can be found in Federal Register Notice and species recovery plan links at <http:www.fws.gov/endangered/wildlife.html>. *Occupied habitat* is defined as areas currently or historically known to support Jones Cycladenia; synonymous

NOTICES	
	with "known habitat." The following avoidance and minimization measures should be included in the Plan of Development: 1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat[1] prior to any ground disturbing activities (including ATV use) to determine if suitable Jones Cycladenia habitat is present. 2. Site inventories will be conducted within suitable habitat to determine occupancy. Where standard surveys are technically infeasible and otherwise hazardous due to topography, slope, etc. suitable habitat will be assessed and mapped for avoidance (hereafter, "avoidance areas"); in such cases, in general, 300' buffers will be maintained between surface disturbance and avoidance areas. However, site-specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat. Where conditions allow, inventories: a. Must be conducted by qualified individuals(s) and according to BLM and Service accept survey protocols, b. Will be conducted in suitable and occupied habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected (usually April 15th to June 5th, however, surveyors should verify that the plant is flowering by contacting a BLM or FWS botanist or demonstrating that the nearest known population is in flower), c. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300' from the perimeter of disturbance for the proposed well pad including the well pad, d. Will include, but not be limited to, plant species lists and habitat characteristics, and e. Will be valid until April 15th the following year. 3. Design project infrastructure to minimize impacts within suitable habitat: a. Where standard surveys are technically infeasible, infrastructure and activities will avoid all suitable habitat (voidance areas) and incorporate 300' buffers, in general; however, site-specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat, b. Reduce well pad size to the minimum needed, without compromising safety, c. Where technically and economically feasible, use directional drilling or multiple wells from the same pad, d. Limit new access routes created by the project, e. Roads and utilities should share common right-of-ways where possible,

NOTICES	
	f. Reduce the width of right-of-ways and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat, g. Place signing to limit off-road travel in sensitive areas, and h. Stay on designated routes and other cleared/approved areas, i. All disturbed areas will be re-vegetated with native species comprised of species indigenous to the area and non-native species that are not likely to invade other areas. 4. Within occupied habitat, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants: a. Follow the above recommendations (3.) for project design within suitable habitats, b. To avoid water flow and/or sedimentation into occupied habitat and avoidance areas, silt fences, hay bales, and similar structures or practices will be incorporated into the project design; appropriate placement of fill is encouraged, c. Construction of roads will occur such that the edge of the right of way is at least 300' from any plant and 300' from avoidance areas, d. Roads will be graveled with occupied habitat; the operator is encouraged to apply water for dust abatement to such areas from April 15th to June 5th (flowering period); dust abatement applications will be comprised of water only, e. The edge of the well pad should be located at least 300' away from plants and avoidance areas, in general; however, site-specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat, f. Surface pipelines will be laid such that a 300' buffer exists between the edge of the right of way and plants and 300' between the edge of right of way and avoidance areas; use stabilizing and anchoring techniques when the pipeline crossed suitable habitat to ensure pipelines don't move towards the population; site-specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat, g. Construction activities will not occur from April 15th through June 5th within occupied habitat, h. Before and during construction, areas for avoidance should be visually identifiable in the field, e.g., flagging temporary fencing, rebar, etc., i. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and j. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.

NOTICES	
	5. Occupied Jones Cycladenia habitats within 300' of the edge of the surface pipelines' right-of-ways, 300' of the edge of the roads' right-of-ways, and 300' from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the Service. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service. 6. Re-initiation of section 7 consultation with the Service will be sought immediately if any loss of plants or occupied habitat for the Jones Cycladenia is anticipated as a result of project activities. Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA.

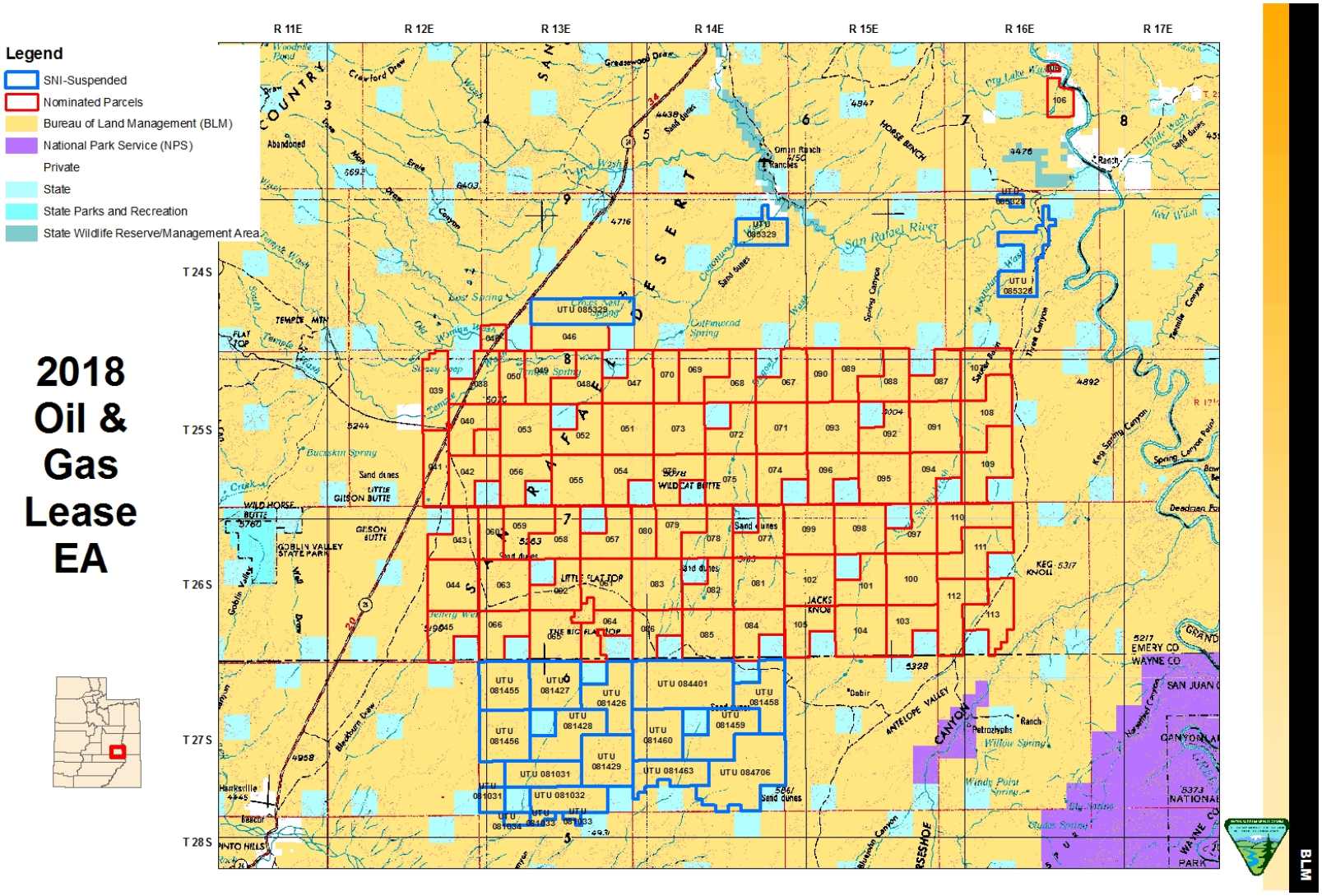

Figure 1 Overview Map

Appendix E

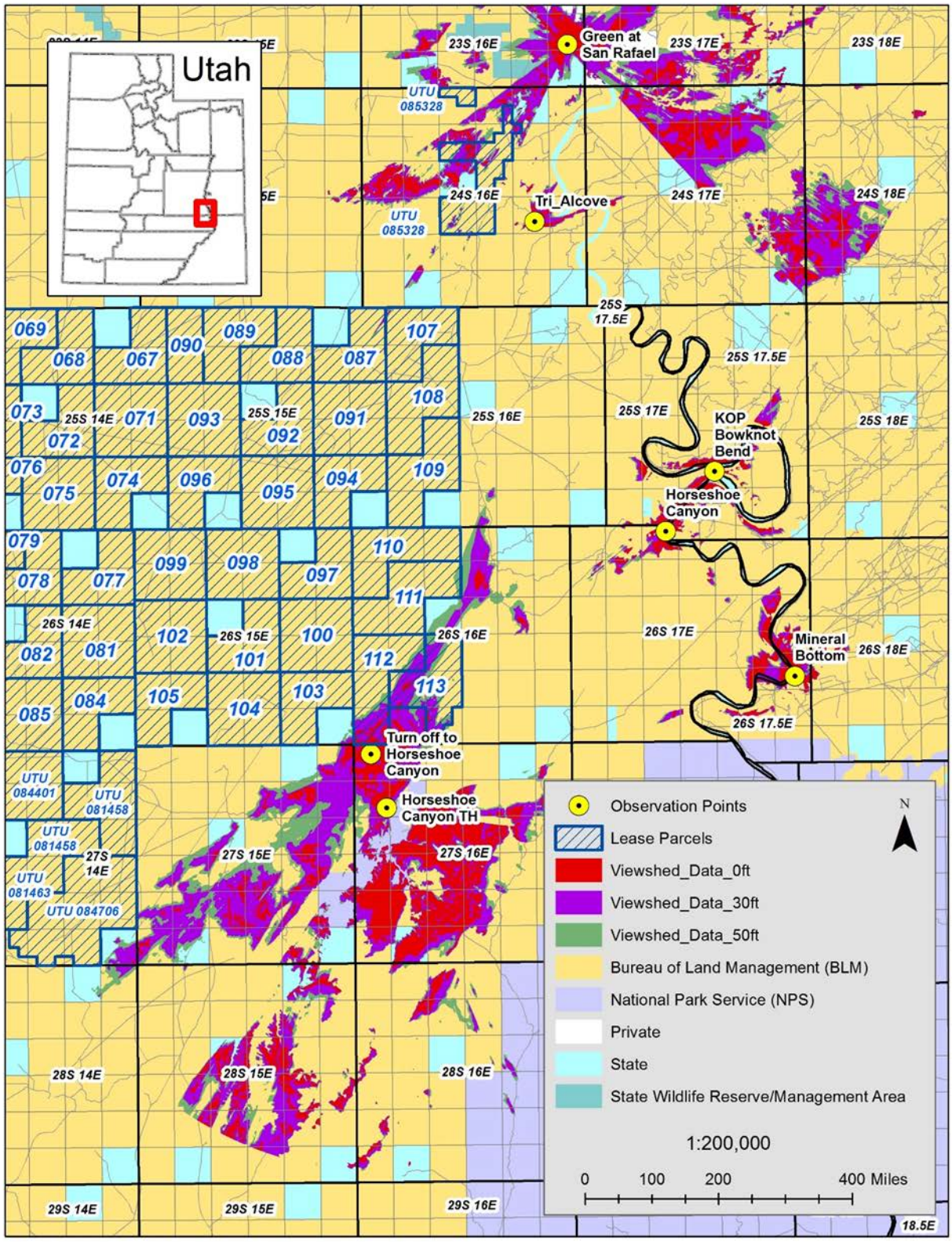

Figure 2 Viewshed Map

Appendix F

INTERDISCIPLINARY TEAM CHECKLIST

Project Title: September 2018 Oil and Gas Lease Sale/San Rafael Desert Parcels and Leases

NEPA Log Number: DOI-BLM-UT-0000-2018-0001EA

File/Serial Number:

Project Leader: Sheri Wysong

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

NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected to a degree that detailed analysis is required
PI = present with potential for relevant impact that need to be analyzed in detail in the EA
NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

Determi-nation	Resource	Rationale for Determination	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
PI	Air Quality/Greenhouse Gas Emissions	Leasing is an administrative action that does not result in emissions of air pollutants and has no direct impacts on air resources. However, if a lease parcel is developed then construction, drilling, and operation of oil and gas wells would result in emissions of criteria pollutants which would need to be analyzed in any subsequent NEPA once specific development plans are presented. A representative emissions inventory for a single well should be included in the EA to disclose the types and likely amounts of emissions that could result from development of the parcel. Parcels are in areas of attainment/unclassifiable for all criteria pollutants. Application of Stipulation UT-S-01 and Lease Notices UT-LN-99 and UT-LN-102 is warranted for all parcels.	Erik Vernon	5/7/18
		If lease parcels are developed it is assumed that greenhouse gases (GHG) would be emitted. GHG emissions could occur from construction, drilling, productions, and from end use combustion of the product. A representative emissions inventory of GHG's should be included and a qualitative description of climate change impacts should be included in the EA.	Erik Vernon	5/7/18
		Leasing itself would not have impacts to air quality and Greenhouse Gas Emissions. However, should development occur on the leases, emissions from earth-moving equipment, vehicle traffic, drilling and completion activities, separators, oil storage tanks, dehydration units, and daily tailpipe and fugitive dust emissions could occur. The lease parcels are located in airsheds that are in attainment with respect to the National Ambient Air Quality Standards, and potential development emissions are unlikely to contribute to air quality issues in airsheds that are designated as non-attainment. Application of stipulation UT-S-01 (Air Quality) and lease notices UT-LN-99 (Regional Ozone Formation Controls), UTLN-102 (Air Quality Analysis) is warranted for all parcels.	Stephanie Howard, Erik Vernon	7/20/18
NP	Designated Areas:	The parcels in the RFO are not within an ACEC designation.	Clay Stewart	4/19/18

Determi-nation	Resource	Rationale for Determination	Signature	Date
PI	Areas of Critical Environmental Concern	The PFO RMP of 2008 was reviewed, as were the current mapping and GIS layers. Nominated parcel 106 is within the Dry Lakes ACEC. Oil and gas leasing within this ACEC is open but subject to major constraints (RMP p. 131. Surface disturbance from potential development of the parcel could result in potential impacts to the ACEC if they are not mitigated. There are no other parcels within or near an ACEC.	Myron Jeffs	4/27/2018
		USO: Parcel 106 overlaps the Dry Lake ACEC in the Price Field Office, which is subject to NSO.	Allison Ginn	5/21/18
	Cultural Resources (Richfield)	A letter was sent to Chris Merritt at SHPO to initiate consultation on April 18, 2018. Letters determining interest in being a consulting party were sent on April 18, 2018 to Steve Bloch with Southern Utah Wilderness Alliance, Laura Peterson with Southern Utah Wilderness Alliance, Hannah Russell with Utah Professional Archaeological Council, Ryan Moreau with Utah Statewide Archaeological Society, Kenny Wintch with SITLA, David Yoder with PLPCO, Johnathan Bailey, Catherine Cannon with Southeast Utah Group NPS, Newell Harward with Wayne County Commissioners, Stanley Wood Wayne County Commissioner Chair, and Dennis Blackburn with Wayne County Commissioners. Consultation letters requested that information regarding cultural resources to be submitted to the BLM by April 30, 2018 for inclusion in the draft report. Consultation on the draft report is planned for May 30, 2018. A meeting with consulting parties is planned for June 20, 2018.	Nicole Lohman	5/31/2018
PI	Cultural Resources	**Price and USO:** Existing surveys, documented cultural resources, and undocumented cultural resources reported to the BLM by private citizens indicate the presence of significant and potentially significant cultural resources within the proposed lease sale areas for the Price and Richfield Field Offices. Cultural resources within the lease sale area include prehistoric artifact scatters, petroglyphs, lithic quarries, historic inscriptions, historic artifact scatters, and historic structures. Large Class III cultural resource inventories conducted in 2017 and 2006 indicate varied site density with the San Rafael Desert, with higher concentrations of sites in the east and central portions of the proposed sale, although a majority of the sites are comprised of lithic scatters and quarry sites considered not eligible to the National Register of Historic Places. Consideration of cultural resource information and other general data including the Class II survey conducted for the San Rafael Desert Master Leasing Plan, the Price and Richfield Class I documents, specific data relating to the parcels such as topographic and soils, as well as personal knowledge and experience with the lands at issue, reasonable development of one 10.4 acre well pad development within each parcel could occur without direct adverse effects to cultural resources. Development of leases sold under the sale holds the potential for cumulative and indirect impacts, however.		

Determi-nation	Resource	Rationale for Determination	Signature	Date
		The BLM will not approve any ground disturbing activities that may affect 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 properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated. Application of stipulation UT-S-169 (cultural resources inventory) is warranted for all parcels. Parcel 106 lies within the Dry Lake ACEC and is subject to No Surface Occupancy constraints (UT-S-10) within the ACEC boundaries. Leasing in and of itself does not directly impact cultural resources though immediate ground disturbing activities. However, leasing is considered a federal undertaking under Section 106 and as refined though IBLA		
NI	Environmental Justice	**Price:** The ethnic composition and economic situation of residents of Carbon and Emery Counties indicate that no minority or low-income populations are experiencing disproportionately high or adverse effects from current management actions (RMP EIS). Leasing would not adversely or disproportionately affect minority, low income or disadvantaged groups	Jaydon Mead	4/27/2018
		Richfield: An analysis using the Environmental Protection Agency's EJSCREEN tool showed that there would be no low income or minority populations that would be disproportionately impacted by the project to a degree requiring analysis.	Brandon Jolley	4/13/2018
NP	Farmlands (Prime or Unique)	**Richfield:** There are no prime/unique farmlands present within any of the parcels according to the Soil Survey of the Henry Mountains Area, Utah (UT631).	Brant Hallows	4/18/18
		Price: According to the NRCS soil survey and knowledge of the soils, there are no prime/unique farmlands within the project area.	Stephanie Bauer	4/26/2018
NI	Floodplains Wetlands/Riparian Zones	**Richfield:** Several of the parcels are intersected by ephemeral streams and associated narrow floodplains are present. It is extremely unlikely that proposed leases would lead to considerable development within these drainages. The sensitivity and potential of floodplain development is low and therefore detailed analysis is not necessary. There are no Wetlands/Riparian Zones present within or near the affected area.	Mark Dean	4/10/2018
		Price: Leasing of the parcels will not directly affect these resources. Because all parcels will have the following stipulations, and notices attached, impacts from development to those resources would be prevented. UT-S-127 NO SURFACE OCCUPANCY – INTERMITTENT AND PERENNIAL STREAMS UT-LN-128 FEDERAL FLOOD RISK MANAGEMENT STANDARD	Jerrad Goodell	4/24/2018
NI	Fire/Fuels Management	**Richfield:** There would be no impact to fire/fuels management	Bob Bate	4/23/18
		Price: There are no current impacts to Fuels/Fire Management (both direct and indirect) at this time. Future	Stuart Bedke	4/26/2018

Determi-nation	Resource	Rationale for Determination	Signature	Date
		impacts would be negligible. Follow any seasonal fire restrictions (including open flame).		
NI	Geology / Mineral Resources/Energy Production	**Richfield:** The 2008 RMP FEIS adequately address the impacts of oil and gas leasing. Oil and gas exploration could lead to an increased understanding of the geologic setting, as subsurface data obtained through lease operations may become public record. This information promotes an understanding of mineral resources as well as geologic interpretation. Depending on the success of future oil and gas drilling, non-renewable oil and/or natural gas may be extracted from productive wells and delivered to market. Production of oil and/or gas would result in the irretrievable loss of these resources. While conflicts could arise between oil and gas operations and other mineral operations, these could generally be mitigated under the regulations 3101.1-2, where proposed oil and gas operations may be moved up to 200 meters or delayed by 60 days and also under the standard lease terms (Sec. 6) where sitting and design of facilities may be modified to protect other resources. As of 4/2/2018, no active unpatented mining claims were found to be located within these parcels. Solid minerals, including coal, were also considered. No coal or mineral materials operations are present within the parcels. There are not any anticipated significant impacts to mineral resources.	Kelsey Zabrusky	4/16/2018
NI		**Price:** There are four free use permits and one community pit for mineral materials (MM) within the lease sale area. Specifically, parcels 042, 050, 080 and 85328 contain these MM sites. It is my opinion that this fact should not affect leasing of the parcels, so long as the new lessee understands that if there is eventually a conflict with an APD and an existing MM site, the MM sites have prior rights. These MM pits are generally small in area and it seems reasonable that an O&G operator would be able to relocate a drill site somewhat, if necessary, to avoid conflicts. There are any number of potential sites within this large lease block where other MM sites could eventually be located, however, it is large enough so that relocation of a MM site could be accomplished. There are not other known locatable or leasable minerals within this block with the exception of uranium. Again, O&G development can generally be accomplished in concert with multiple land uses.	Michael Glasson	4/25/2018
NI	Geology/ Seismic	The majority of flow back water from hydraulic fracturing in Utah is recycled and used in future hydraulic fracturing completions. Therefore, the underground injection of hydraulic fracturing flow back in Utah is very limited and presents little potential for inducing seismic activity. In fact, there has been no reported induced seismicity in Utah that was from water injected into Class II wells. Oil and gas wells produce a great amount of wastewater. The majority this water has high salt brine content and must be disposed of in an environmentally safe manner. In Utah, a majority (95%) of this produced water is pumped into Class II injection wells. In certain parts of the country, water injection has caused some induced seismicity in the form of	Sheri Wysong	6/19/18

Determi-nation	Resource	Rationale for Determination	Signature	Date
		small earthquakes. Two major factors play a role in induced seismicity from water injection. First, the amount of water being injected. Secondly, the local geology of the water injection site. In Utah, the volumes are lower than those states experiencing induced seismicity. Also, the geology is different than those states experiencing induced seismicity. The injection zones are stratigraphically thousands of feet above the basement rock that may contain large unknown faults. Therefore, at this time it appears that induced seismicity from water injection is not a problem in the oil fields of Utah. **(Personal communication from John Rogers, Utah Division of Oil, Gas and Mining (UDOGM), March 27, 2018 to Angela Wadman, BLM).**		
NP	Invasive Species/Noxious Weeds (EO 13112)	**Richfield:** Currently there are no known populations of noxious weeds within any of the listed parcels. Standard operating procedures such as washing of vehicles and annual monitoring and spraying along with site specific mitigation applied as conditions of approval (COA) at the APD stage should be sufficient to prevent the introduction of Invasive, Non-native species. All disturbed areas and piles of top soil should be reseeded with weed free seed the first fall after the disturbance is made to provide competition against weeds. Other constraints, including the use of certified weed free seed and vehicle/equipment wash stations, would be applied as necessary at the APD stage as documented in filing plans and conditions of approval. Control measures would be implemented during any ground disturbing activity. Treatment will occur as part of regular operations, BMPs, SOPs and site specific mitigation applied at the APD stage as COAs. These expectations are required for all parcels in the lease.	Brant Hallows	4/18/18
NI		**Price:** Surface disturbing activities have the potential to introduce/spread invasive species/noxious weeds. Salt cedar and Russian olive are noxious weeds within the project boundaries. These species are located mainly in drainages and low lying areas where water accumulates. Halogeton, Russian thistle and cheatgrass are invasive species located within the project boundaries. These species are located mainly along roads and two-tracks, fence lines and other disturbed areas. Leasing of parcels is an administrative action and will not affect invasive species/noxious weeds, however site specific mitigation, BOPs and stipulations will be addressed and analyzed at the APD stage if these leases are sold.	Stephanie Bauer	4/26/2018
NI	Lands/Access	**Richfield:** As described, the proposed action would not substantially affect access to public land on a permanent basis. No roads providing access to public land would be closed for any extended period of time. The proposal would be subject to valid prior existing rights including county-maintained roads (See BLM internal/public Master Title Plat web site as there are various rights-of-way in the proposed areas). Any operations would need to be coordinated with rights-of-way (RsOW) holders and adjacent non-federal landowners. Off-lease ancillary facilities that cross public land, if any, may require a separate authorization (Generally Access Roads and utility ROW). It is anticipated that existing ROW in proposed operation areas would not be negatively	Michael Utley	4/18/2018

Determi-nation	Resource	Rationale for Determination	Signature	Date
		affected because site-specific mitigation applied at the APD stage, including the ability to move operations up to 200 meters in any direction required. These measures would ensure that existing ROW would be avoided, restored, or replaced if damaged. Seasonal route restrictions should also be dealt with through site-specific mitigation on an as-needed basis. Surface disturbance within and outside described project areas would need to be rehabilitated and reseeded on a site-specific basis as directed by authorizing BLM officials. Plans should be made for removal of any generated trash/debris from public land and discarded at an authorized facility.		
		Price: As described, the proposed action would not affect access to public land. Off-lease ancillary facilities that cross public land, if any, may require separate authorizations. Subsequent projects should coordinate with existing ROW holders and apply operating procedures and site-specific mitigation at the APD stage that would ensure protection of existing rights.	Jaydon Mead	4/19/2018
		USO: NPCA expressed concerns during scoping that, should the parcels be developed, public access could be restricted. The example NPCA gave involved access being restricted across private surface. Since there is no private surface within any of the proposed parcels, it is not an issue with this lease sale.	Sheri Wysong	
NI	Livestock Grazing	**Richfield:** The proposed action would be expected to temporarily remove available forage for livestock in the Pasture Canyon, Sweet water and Jeffery Well Allotment within the RFO Field office. The amount of forage removed is not expected to be significant and livestock grazing rotations and schedules are expected to not be impacted.	Jeff Reese	4/12/18
		Price: The proposed action of leasing the listed parcels will not affect livestock grazing. Any future development of those parcels will need to be analyzed dependent on that development.	Mike Tweddell	4/25/2018
NII	Migratory Birds Wildlife: Migratory Birds (including raptors)	**Richfield:** There will be little to no impact on migratory birds within these leasess. Any surface disturbance within these parcels will result in migratory birds dispersing to adjacent habitat. Once operations within these parcels are completed, areas with surface disturbance will be rehabilitated and reseeded with BLM advised seed mix.	Joe Chigbrow	4/18/2018
		Price: There is potential for raptor nests locations and migratory bird breeding habitats within selected parcels. Lease stipulations and notices are added to those parcels to reduce any future project's impacts. Site-specific effects cannot be analyzed until an exploration or development application is received, after leasing has occurred. Lease Notice UT-LN-45, and UT-S-285 is attached to all parcels (Migratory Birds). Lease Notice UT-LN-44 is attached to all parcels (Raptors). Additional documentation is within the wildlife and botany resources report located in the project files.	Dana Truman	4/26/2018
		USO: There are documented burrowing owl burrows on the corner of parcels 054, 076, 080, 079 and documented peregrine nests and Swainson's hawk observations nearby. Most of the area is suitable foraging habitat for raptors. Lease Notice UT-LN-45, and UT-S-285 is attached to all	Dave Cook	5/30/2018

Determi-nation	Resource	Rationale for Determination	Signature	Date
		parcels (Migratory Birds).Lease Notice LN-44 Raptors all parcels. Lease Notice UT-LN-44 is attached to all parcels (Raptors). UT-LN-104 (Burrowing Owl Habitat)		
NP	Designated Areas: National Historic Trails	**Richfield:** There are no designated National Historic Trails that access the lease parcels.	Clay Stewart	4/17/18
		Price: The PFO RMP of 2008 was reviewed, as were the current mapping and GIS layers. There are no designated historic trails identified within the proposed leasing area.	Myron Jeffs	4/27/2018
NI	Native American Religious Concerns	**Richfield:** Tribal consultation letters were sent on 18 April 2018. Letters were sent to: Kaibab Band of Paiute Indians, Moapa Band of Paiute Indians, Navajo Nation, Paiute Indian Tribe of Utah, Pueblo of Zuni, San Juan Southern Paiute Tribe, Southern Ute Indian Tribe, The Hopi Tribe, Ute Indian Tribe, Ute Mountain Ute Tribe. Consultation letters requested that information regarding cultural resources to be submitted to the BLM by April 30, 2018 for inclusion in the draft report. Consultation on the draft report is planned for May 30, 2018. A meeting with consulting parties is planned for June 20, 2018.	Nicole Lohman	5/31/2018
		Price and USO: Tribal consultation letters were sent for the Price Field Office on 28 March 2018. The Southern Ute Tribe expressed concerns with the leasing of five parcels for cultural and religious reasons. The Hopi Tribe requested continued consultation on the undertaking due to its potential to impact cultural resources of importance to the tribe. The Price Field Office will continue consultation with the two tribes to identify areas of potential religious concerns. The Southern Ute and Hopi also requested continued consultation from the Richfield Field Office.		
NI	Paleontology	**Richfield:** The parcels contain Class II and III PFYC formations. Class III formations are defined as geologic units where fossil content varies in significance, abundance, and predictable occurrence. The RFO RMP ROD Management Decision PAL-6 for paleontological resources requires a paleontological assessment prior to permitting surface disturbing activities in areas where there is a moderate potential to affect scientifically significant paleontological resources. This includes roads, pads, pump stations, pipelines, etc. Site specific analysis will be applied at the APD level by performing a pre-work paleontological inventory/survey to determine if mitigation is potentially necessary. Mitigation can be avoidance or excavation by BLM-permitted paleontologists.	Kelsey Zabrusky	4/16/2018
		Price: None of the surface outcroppings are in formations that are likely to have vertebrate fossils except for the Morrison Fm. exposed on top of the Flattops which are unlikely sites for wellpads. PAL -4 of the Price RMP requires assessments of resources before and during surface disturbing activities, as appropriate.	Michael Leschin	4/27/2018
		Emery County – **Status:** no known localities, parcels contain a small area of PFYC 4, smaller area of PFYC 3 but is mostly PFYC 2 **Recommendations:** In PFYC 4 and 3 pre-survey of areas that will be disturbed and construction crew to report any	Greg McDonald	7/25/18

Determi-nation	Resource	Rationale for Determination	Signature	Date
		finds encountered. In PFYC 4 monitoring should occur during construction. LN 72 will be added to all the appropriate parcels		
PI	Pollinators	**USO**: All parcels contain habitat and may contain pollinators. In accordance with BLM policy to protect pollinators (Instruction Memorandum 2016-013 Managing for Pollinators on Public Lands and Pollinator-Friendly Best Management Practices for Federal Lands [2015]), UT-LN-156-Pollinators and Pollinator Habitat would be attached to all parcels. Implementing the avoidance, minimization, and mitigation measures would minimize impacts from oil and gas development to pollinators.	Marcia Wineteer	5/31/2018
NI	Rangeland Health Standards	**Richfield:** The proposed action would not be anticipated to impact Rangeland Health Standards and Guidelines. Rehabilitated sites should be reseeded with BLM advised seed mix.	Jeff Reese	4/10/18
		Price: The proposed action of leasing the proposed parcels will not affect Rangeland Health. Any future development of those leased parcels will need to be analyzed on the proposed development.	Mike Tweddell	4/25/2018
PI	Recreation	**Richfield:** Recreation use within the lease parcels is not present or considered very low. Recreationists pass through the area on open roads to access hiking and canyoneering destinations within the Dirty Devil Special Recreation Management Area (SRMA). This SRMA is located to the south of the lease parcels. If oil and gas wells were developed there could be some individual negative perceptions related to recreation use and overall experience. However, because of the geographic separation between the lease parcels and popular recreation destinations; recreation activities and experiences in the area would largely remain unchanged.	Clay Stewart	4/19/18
		Price: The lease parcels that fall west of State Route 24 are within the San Rafael Swell Special Recreation Management Area (SRMA). The RMP describes the SRMA as an area offering visitors a "…high-quality sight-seeing adventure in an expansive, undisturbed, and uninhabited natural setting…". Potential future surface disturbance within these parcels would require detailed analysis and may be subject to restrictions. The area east of State Route 24 (the bulk of the parcels) is not within a SRMA. Recreation activity here sporadic, infrequent in some areas, and of low intensity. However, the landscape does offer unique recreation opportunities in a very remote setting. Potential impacts to these opportunities would vary from parcel to parcel depending on it's location and level of proposed development	Myron Jeffs	4/27/2018
NI	Socio-Economics/SCC	**Richfield:** No quantifiable additional or decreased economic impact to the local area would be caused by the proposed action.	Brandon Jolley	4/13/2018
		Price: The nominated parcels are located in rural areas with no commercial and minimal residential development. No impacts to socio-economics are expected to occur as a result of the proposed action.	Jaydon Mead	4/27/2018
		The social cost of carbon protocol (SCC) was developed by a federal Interagency Working Group (IWG) to assist agencies in addressing Executive Order (EO) 12866, which required federal agencies to assess the cost and the benefits of intended regulations as part of their regulatory impact analyses. A recent Executive Order (EO) entitled "Promoting Energy	Sheri Wysong	June 1, 2018

Determi-nation	Resource	Rationale for Determination	Signature	Date
		Independence and Economic Growth," issued March 28, 2017, directed that the IWG be disbanded and that technical documents issued by the IWG be withdrawn as no longer representative of federal policy. It further directed that when monetizing the value of changes in greenhouse gas emissions resulting from regulations, agencies follow the guidance contained in OMB Circular A-4 of September 17, 2003. The SCC is an estimate of the economic impacts associated with an increase in carbon dioxide emissions (typically expressed as the cost in dollars per metric tons of emissions) and generally produces a wide range of costs, with the greatest influence on costs caused by the discount rate. A lack of consensus on the appropriate discount rate often leads to large variations in SCC estimates. Although the SCC can be a helpful tool to assess the benefits of CO2 reductions, it does not reflect all damages or benefits due to current modeling and data limitations. Specifically, as discussed in the comprehensive technical review commissioned by the Electric Power Research Institute (EPRI) (Rose, et al., 2014), a number of fundamental technical issues have been identified with the social cost of carbon modeling approach and estimates. Several of these issues arise from the use of three separate underlying models – with differing frameworks, assumptions, and uncertainties. The EPRI technical review "reveals significant variation across models in their structure, behavior, and results and identifies fundamental issues and opportunities for improvements" (Rose, et al., 2014). It should also be noted that the social cost of carbon protocol does not measure the actual incremental impacts of a project on the environment and does not include all damages or benefits from carbon emissions. NEPA does not require a cost-benefit analysis (40 CFR Part 1502.23) and one has not been conducted. Without a complete monetary cost-benefit analysis, which would include the social benefits of energy production to society as a whole and other potential positive effects, inclusion of a global social cost of carbon analysis would be unbalanced, potentially inaccurate, and not useful. Consequently, the increased economic activity, discussed in terms of revenue, employment, labor income, total value added, and output are simply the economic impacts associated with the Proposed Action. Economic impact is distinct from "economic benefit" as defined in economic theory and methodology, and the socioeconomic impact analysis required under NEPA is distinct from cost-benefit analysis. Detailed analysis is not required for the proposed action because 1) it is not engaged in a rulemaking for which the SCC protocol was originally developed; 2) the IWG, technical supporting documents, and associated guidance have been withdrawn; 3) NEPA does not require cost-benefit analysis and the agency did not undertake one here; and 4) because the full social impacts of oil and gas development		

Determi-nation	Resource	Rationale for Determination	Signature	Date
		have not been monetized, quantifying only the costs of GHG emissions would provide information that is both potentially inaccurate and not useful.		
NI	Soils	**Richfield:** Leasing would not have an impact on these resources; however there is a possibility that exploration/development could occur in the future and could have impacts to soils. These actions would be analyzed in separate NEPA documents at the time of the proposal. SOPs, BMPs and site specific design features including reclamation would be applied at the APD stage as COAs to mitigate soil disturbing actions on soils and watersheds. The application of stipulation UT-S-102 is warranted on all parcels. UT-S-102: "No surface disturbing proposed projects involving construction on slopes greater than 30 percent. If the action cannot be avoided, rerouted, or relocated then a proposed project will include an erosion control strategy, reclamation and a site plan with a detailed survey and design completed by a certified engineer. This proposed project must be approved by the BLM prior to construction and maintenance." In light of existing knowledge and data regarding soils for the subject parcels and the protective measures that would be applied to development on the parcels, significant impacts are not anticipated to occur as a result of leasing the proposed parcels.	Brant Hallows	4/18/18
		Price: The proposed lease sale fall within fragile soil areas, which are typically slow to develop, prone to erosion, highly saline, typically low restoration potential, and have very low organic matter. The following stipulations UT-S-96 and UT-S-100 Lease stipulations would apply to the parcels. Biological soil crusts have been identified on most of these parcels. These communities of organisms should be avoided from potential future ground disturbing actions. Although the lease sale allows for various assumptions on amount of potential wells sited within these leased parcels, the amount of effect to high desert soils is hard to quantify at this time. because we do not know where these potential future actions would be specifically sited, which matters when looking at site-specific impacts to soil resources, including biological soil crusts. Once we receive site specifics within these parcels, we will be able to better understand the potential effects to these fragile soil resources and provide detailed analysis at those times. Recommend adhering to all objectives in the - Green River District Reclamation Guidelines as well for any future potential impacts to soils. Especially those that relate to soil salvage and protection of the resource for restoration purposes.	Jerrad Goodell	4/24/2018
NI	Special Status Plant & Animal Species other than FWS candidate or listed species	**Richfield:** Special Status Species, such as burrowing owl and kit fox, have been observed within these parcels. The RFO RMP requires a site clearance for areas of proposed surface disturbance before those activities could occur. Surface disturbance includes roads, pads, pump stations,	Joe Chigbrow	4/18/2018 5/31/2018

Determi-nation	Resource	Rationale for Determination	Signature	Date
		pipelines, etc. SSS plant and wildlife clearances will determine if mitigation is required and which BMP's, associated with plants and wildlife within the RFO RMP, will take effect. Two Sensitive plants have the potential of occurring within the sixteen parcels - Flat Top wild buckwheat *(Eriogonum corymbosum* var. *smithii*) is likely found in many if not all of Richfield's parcels because it occurs on sandy soils on the Entrada Formation. Utah spurge (*Euphorbia nephradenia*) may be present in parcels UTU-081031 and UTU-081463. The Sensitive Species Plant Lease Notice (UT-LN-51) will be attached to all parcels to notify the Lessee/Operator of the potential presence of these species and that adjustments to the plan of operations may be required to conserve and protect these species..	Dustin Rooks/Marcia Wineteer	
NI	Plants: BLM Sensitive	**Price:** After review of BLM records there is potential habitat for BLM sensitive plants species within the proposed leased parcels. Should any special status plant species be found, the surface use plan of operations may be amended to protect or avoid these species. UT-LN-51 (special status species) applied to all parcels. Additional documentation is within the wildlife and botany resources report located in the project files.	Dana Truman	4/26/2018
NI	Wildlife: BLM Sensitive	**Price:** There is potential habitat for bats, white-tailed prairie dogs and possibly burrowing owls within the parcels nominated for leasing. The 2014 habitat model for Kit fox indicates a high probability of kit fox occurrence within the parcels identified for leasing. According to the ARMPA PHMA and GHMA layers in 2017 no mapped or designated sage grouse habitat occurs within the proposed lease area. Review of soils and vegetation GIS layers confirmed the lack of sagebrush and suitable habitat for sage grouse within the proposed lease area. No effects to sage grouse expected. Lease stipulations and notices will be added to those parcels to reduce any future project's impacts. Site-specific effects cannot be analyzed until an exploration or development application is received, after leasing has occurred. To all parcels – UT-LN-25 (White-tailed Prairie dogs) UT-LN-104 (Burrowing Owl Habitat) UT-LN-49 (BLM Sensitive Species) Additional documentation is within the wildlife and botany resources report located in the project files.	Dana Truman	4/26/2018
NI	Wildlife: BLM Sensitive	**USO:** There are documented kit fox dens and burrowing owl burrows on some parcels. Very likely sensitive species bat habitat such as Townsend's Big-eared bats have been documented nearby. UT-LN-25 (White-tailed Prairie dogs) UT-LN-104 (Burrowing Owl Habitat) UT-LN-49 (BLM Sensitive Species) for kit fox.	Dave Cook	5/30/2018
NP	Threatened, Endangered or Candidate Plant Species	**Richfield:** Wayne County parcels are well outside habitat of the Endangered Wright Fishhook Cactus and do not contain suitable habitat for the Threatened species Jones cycladenia, Navajo sedge, and Ute ladies-tresses, or the Threatened Barneby reed-mustard.	Dustin Rooks	4/23/2018

Determi-nation	Resource	Rationale for Determination	Signature	Date
NI		**Price:** After review of BLM records there is potential habitat for T&E plants within the proposed leased parcels. Should any special status plant species be found, the surface use plan of operations may be amended to protect or avoid these species. T&E-05:Listed Plant Species will apply to all parcels. T&E-19 Jones cycladenia humilis jonesii will be attached to parcels 38, 39, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 112, 113, UT-084328, UT-085329. T&E-15 Wright fishhook cactus will be attached to parcels 84 and 85. UT-LN-126 Navajo Sedge will be applied to parcel UT-085328. Also in accordance to WO IM 2002-174 the ESA/listed species stipulation will be applied. Additional documentation is within the wildlife and botany resources report located in the project files.	Dana Truman	4/26/2018
NI	Wildlife: Threatened, Endangered, Proposed or Candidate	**Richfield:** No aquatic T&E species are present within these parcels; however, drainages in parcels 1458, 1459, 4401, and 4706 flow into the San Rafael River, which is part of the Upper Colorado River drainage basin above Lake Powell. Water depletions are considered to adversely affect or modify critical habitat for the four Endangered Colorado River fish. Lease stipulation UT-S-184 Upper Colorado River Fish and lease notice T&E-23 Colorado River Endangered Fish would be attached to those parcels. T&E species, such as Mexican Spotted Owls have been observed in the slickrock canyons near the UTU 08132, 08133, and 08134 parcels. The RFO RMP Management Decision WL-30 implements Raptor BMP's establishing seasonal and spatial buffers to maintain raptor nesting and foraging habitat. The RFO RMP requires a site clearance for areas of proposed surface disturbance before those activities could occur. Surface disturbance includes roads, pads, pump stations, pipelines, etc. Wildlife clearances will determine if mitigation is required and which BMP's, associated with wildlife within the RFO RMP, will take effect.	Joe Chigbrow	4/18/2018
		Price: The Lease parcels do not contain designated or proposed critical habitat for the following species: Critical habitat for: Mexican spotted owl – approximately 5 miles away Yellow-billed cuckoo – (proposed) approximately 8 miles away Southwestern willow flycatcher – greater than 150 miles away California condor - greater than 150 miles away There is critical habitat adjacent to the two 106 parcels for Colorado pikeminnow and razorback sucker. Lease notice T&E-03 Endangered Fish of the Upper Colorado River Drainage Basin will be attached to all lease parcels because of potential water depletions, which may affect fish in down water locations.	Dana Truman	4/30/18

Determi-nation	Resource	Rationale for Determination	Signature	Date
		There are no large wetland or riparian areas that could provide suitable nesting habitat for the Southwest willow flycatcher or yellow-billed cuckoo within the lease parcels; however, LN-T&E-7 Southwest willow flycatcher and LN-T&E-113 Yellow-billed cuckoo will be applied to parcels UTU-85329, UTU-85328, 106, and 113. All parcels will have the following stipulations and notices attached and impacts from development to the wetland and riparian resources would be prevented. UT-S-127 No surface occupancy – intermittent and perennial steams UT-LN-128 Federal Flood risk management standard WO IM-2002-174 endangered species act stipulation. Additional documentation is within the wildlife and botany resources report located in the project files. LN-T&E-6 Mexican spotted owl and stipulation UT-S-269 Mexican spotted owl will be applied to parcels 061, 062, 064, 113, and UTU-85328.		
		USO: The following stipulations and lease notices will be applied to the Richfield FO parcels for T&E wildlife: UT-S-184 Upper Colorado Fish and T&E-23 Colorado River Endangered Fish to parcels 1458, 1459, 4401, 4706. UT-S-293 California Condor and T&E-28 California condor to parcels 1031, 1032, 1033, 1034, 1426, 1427, 1428, 1429, 1455, 1456, 1458, 1459, 1460, 1463, 4401, 4706. T&E-25 Mexican Spotted Owl to parcels 1031, 1032, 1033, 1034.	Marcia Wineteer	5/31/2018
NI	Wastes (hazardous or solid)	**Richfield:** There are currently no known waste issues associated with the proposed lease areas. If development of roads or well pads occur, potential release from equipment could be possible. State and Federal regulations would govern the use, storage and disposal of any products that could potentially impact persons or environment. Reporting and mitigation efforts would be required should such an event occur.	Dustin Rooks	4/23/2018
		Price: No chemicals subject to reporting under SARA Title III will be used, produced, stored, transported, or disposed of annually in association with the project. Furthermore, no extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities, will be used, produced, stored, transported, or disposed of in association with the project. Trash would be confined in a covered container and disposed of in an approved landfill. No burning of any waste will occur due to this project. Human waste will be disposed of in an appropriate manner in an approved sewage treatment center.	William Civish	4/19/2018
NI	Water Resources/Quality (drinking/surface/ground)	**Richfield:** Oil and Gas development that may occur as a result of this lease sale may affect water resources. The decision to lease is connected to these impacts; however it does not affect water resources to a degree that detailed analysis is required. There are numerous best management practices, standard operating procedures and rules associated	Mark Dean	4/10/2018

Determi-nation	Resource	Rationale for Determination	Signature	Date
		with oil and gas development and exploration that are formulated to protect water resources. Internal scoping has determined that it is generally accepted that these measures would minimize the potential for impacts to water resources and therefore detailed analysis is not required for a lease level EA. It may be necessary to undertake detailed analysis of impacts to water resources when specific plans for development are proposed, but the decision whether to complete NEPA analysis will be made at that time based on scoping, issue sensitivity, and other considerations.		
	Ground Water Quality	**USO** Hydraulic Fracturing (Fracking) is a technique developed in the 1940's. Around 2000, the technique was combined with directional drilling to dramatically increase production from deposits previously considered uneconomical. (EPA, 2016, p. 4) The hydraulic fracturing water cycle describes the use of water in hydraulic fracturing, from water withdrawals to make hydraulic fracturing fluids, through the mixing and injection of hydraulic fracturing fluids in oil and gas production wells, to the collection and disposal or reuse of produced water. These activities can impact drinking water resources under some circumstances. Impacts can range in frequency and severity, depending on the combination of hydraulic fracturing water cycle activities and local- or regional-scale factors. The following combinations of activities and factors are more likely than others to result in more frequent or more severe impacts: o Water withdrawals for hydraulic fracturing in times or areas of low water availability, particularly in areas with limited or declining groundwater resources; o Spills during the management of hydraulic fracturing fluids and chemicals or produced water that result in large volumes or high concentrations of chemicals reaching groundwater resources; o Injection of hydraulic fracturing fluids into wells with inadequate mechanical integrity, allowing gases or liquids to move to groundwater resources; o Injection of hydraulic fracturing fluids directly into groundwater resources; o Discharge of inadequately treated hydraulic fracturing wastewater to surface water resources; and, o Disposal or storage of hydraulic fracturing wastewater in unlined pits, resulting in contamination of groundwater resources. "The above conclusions are based on cases of identified impacts and other data, information, and analyses presented in the report. Cases of impacts were identified for all stages of the hydraulic fracturing water cycle. Identified impacts generally occurred near hydraulically fractured oil and gas production wells and ranged in severity, from temporary changes in water quality to contamination that made private drinking water wells unusable." (EPA 2016 pp 1-2)	Sheri Wysong	June 1, 2018

Determi-nation	Resource	Rationale for Determination	Signature	Date
		If fracking should occur in an area where there is no vertical separation between the hydraulically fractured rock formation and the bottom of the potential underground drinking water source, fracking fluid may be introduced into the source. However, the occurrence of fracking within a potential drinking water source is low, concentrated in a few fields in Wyoming and Montana. (EPA 2016 p. 27) Attachment 1 to this checklist verifies that fracking the parcels is well enough separated from the usable aquifers to prevent impacts from fracking the wells. The measures required (spill containment systems, casing integrity testing, pit lining), etc. for all wells drilled in Utah, fracked or not, are adequate to prevent fracking fluids as well as hydrocarbons and produced water from the wells to prevent ground/surface water contamination. The Utah Division of Oil, Gas and Mining has promulgated rules to prevent environmental impacts from fracking (Utah Administrative Code R649-3-39). Further analysis/mitigation of impacts is not warranted.		
	Water: Municipal Watershed / Drinking Water Source Protection	**Price:** Leasing would not, by itself, authorize any ground disturbances which could affect Municipal Watershed / Drinking Water Source Protection. Site-specific effects cannot be analyzed until an exploration or development application is received, after leasing has occurred.	Jerrad Goodell	4/24/2018
	Water: Surface Water Quality	**Price:** Leasing would not, by itself, authorize any ground disturbances which could contribute runoff affecting surface water quality. Site-specific effects cannot be analyzed until an exploration or development application is received, after leasing has occurred. However, any development proposal on the leases would be subject to the standard lease terms, and all applicable laws, regulations and onshore orders in existence at the time of lease issuance. The before mentioned conditions along with the stipulations and notices applied for floodplain and riparian will protect surface water quality. Site-specific analysis would be required prior to the approval of any ground disturbance proposal on the leases. The company must adopt a spill prevention plan and storm water control plan to control any potential pollutants from reaching the surface water with in the field office, (at the site specific APD stage. If the company plans on affecting these waters directly, a Stream Alteration Permit would be required, and would also require additional NEPA to look at those changes In light of existing knowledge regarding resource values on the subject leases, which is based upon the analysis in the PFO RMP [BLM2008] resource specialist knowledge significant impacts beyond those already addressed in the Record of Decision for the PFO RMP are not anticipated to occur as a result of leasing the proposed parcels.	Jerrad Goodell	4/24/2018

Determi-nation	Resource	Rationale for Determination	Signature	Date
		USO: The segment of the San Rafael River adjacent to lease parcels is listed as impaired due to OE Bioassessment and total dissolved solids (TDS). There is an EPA approved total maximum daily load (TMDL) for this reach. This water quality condition increases sensitivity for impacts to water quality in the NEPA document, but does necessitate detailed discussion in an EA for this case. The TMDL contains recommended projects, buffers, and best management practices to improve water quality conditions. Oil and gas development is not specifically identified as an issue. The types of impacts that would occur from Oil and Gas development (i.e. travel, ground disturbance, etc.) are identified as potential issues but the TMDL expresses that they are fully mitigatable through best management practices. The BLM proposal including future development would meet and exceed these recommendations made by the TMDL. Adequate minimum buffers are already included as a stipulation and BLM would implement any needed additional conditions of approval during the permit stage. Proximity of parcel 106 increases sensitivity for impacts to water quality in the NEPA document, but does necessitate detailed discussion in an EA for this case using the same rationale as above for parcels near San Rafael River. The Green River is not listed as impaired in Utah's 303(d) list.	Mark Dean	5/11/2018
NI NI	Water Rights	**Richfield:** Water Rights are present within the affected area, but they would not be affected by the Proposed Action. Diversions of water affecting existing water rights would not occur during the leasing stage, and it would be very unlikely to occur during operation. Detailed analysis is not necessary.	Mark Dean	4/10/2018
		Price: Leasing itself would not have impacts to water rights. However, should development occur on the proposed lease parcels, water rights could be impacted by the development of oil and/or gas wells. Leasing the proposed parcels would not, by itself, authorize any disturbances. Site-specific effects cannot be analyzed until an exploration or development application is received, after leasing has occurred. However, any development proposal on the lease parcels would be subject to the standard lease terms, and all applicable laws, regulations and onshore orders in existence at the time of lease issuance. Site- specific analysis would be required prior to the approval of any ground disturbance proposal on the lease parcels.	Jerrad Goodell	4/24/2018
NI	Water: Hydrologic Conditions (stormwater)	**Price:** Hydrologic conditions do exist in the Price Field Office, leasing of the proposed leases would not, by itself, authorize any ground disturbances. Site-specific effects cannot be analyzed until an exploration or development application is received, after leasing has occurred. However, any development proposal on the leases would be subject to the standard lease terms, and all applicable laws, regulations and onshore orders in existence at the time of lease issuance. Site-specific analysis would be required prior to the approval of any ground disturbance proposal on the leases. In light of existing knowledge regarding resource values on the subject leases, which is based upon the analysis in the PFO RMP [BLM2008] resource specialist knowledge significant impacts beyond those already addressed in the	Jerrad Goodell	4/24/2018

Determi-nation	Resource	Rationale for Determination	Signature	Date
		Record of Decision PFO RMP are not anticipated to occur as a result of the proposed leases.		
NP	Wilderness/WSA	**Richfield:** The parcels are not within a designated Wilderness Area or Wilderness Study Area.	Clay Stewart	4/17/18
		Price: The PFO RMP of 2008 was reviewed, as were the current mapping and GIS layers. There are no designated wilderness or Wilderness Study Areas within the proposed leasing area.	Myron Jeffs	4/27/2018
PI	Lands with Wilderness Characteristics	**Price:** The area where the parcels are proposed for leasing has been inventoried for wilderness characteristics within the last two years. Although we are not managing these areas to preserve their wilderness characteristics, the inventories found these characteristics are present	Myron Jeffs	4/27/2018
NP		**Richfield:** The parcels overlap the Flat Tops and Cow Patty Ranch inventory units. An updated inventory was completed in 2016. The lands with wilderness characteristics inventory efforts for both units found no areas containing wilderness characteristics.	Clay Stewart	4/19/18
PI		**USO**: The following parcels overlap areas that contain wilderness characteristics in the Price Field Office: 018, 020, 021, 022, 027, 028, 029, 030, 031, 032, 033, 034, 035, 046, 047, 048, 049, 051, 052, 053, 054, 055, 056, 057, 058, 059, 060, 061, 062, 063, 064, 065, 067, 068, 069, 070, 071, 072, 074, 075, 076, 077, 078, 079, 080, 081, 082, 083, 084, 085, 088, 089, 090, 091, 092, 093, 094, and 095. Additionally, a small portion of UTU-081458 and UTU-084401 intersect the UT-020-SRD-Sweetwater Reef lands with wilderness characteristics unit in the Richfield Field Office. This resource will be carried forward for analysis.	Allison Ginn	5/21/18
NP	BLM natural areas	**Price:** The PFO RMP of 2008 was reviewed, as were the current mapping and GIS layers. There are no natural areas identified within the proposed leasing area.	Myron Jeffs	4/27/2018
NP	Wild and Scenic Rivers	**Price:** The PFO RMP of 2008 was reviewed, as were the current mapping and GIS layers. There are no designated wild and scenic rivers within the proposed leasing area.	Myron Jeffs	4/27/2018
NP	Wild & Scenic Rivers	**USO:** Parcel 106 overlaps a segment of the Green River that was determined to be eligible, but not suitable, for Wild & Scenic river designation. Manual 6400 – Wild and Scenic Rivers states, "For all BLM-identified eligible and suitable rivers, the BLM must consider an alternative in the NEPA document for the proposed activity that would maintain the tentative classification **until a suitability determination is made** [emphasis added]. Analysis of suitability and potential impacts to eligible rivers was included in the Price RMP. Impacts to eligible, but not suitable, WSRs will not be carried forward for analysis in this EA. The Price Record of Decision states, "Any eligible segment not determined to be suitable will receive no special protection specifically for its free-flowing values, outstandingly remarkable values, and tentative classifications."	Allison Ginn	5/21/18
NI	Wildlife and Fish Excluding	**Richfield:** No fish species are present within these parcels. Wildlife not designated SSS, such as pronghorn have UDWR designated critical habitat in parcels UTU 81426, 81455,	Joe Chigbrow	4/18/2018

Determi-nation	Resource	Rationale for Determination	Signature	Date
	Designated/Special Status Species	81458, 81460, 84401, and 84706. The RFO RMP Management Decision WL-26 would restrict surface disturbance activities in crucial pronghorn habitat from May 15 through June 15 UT-S-225 Richfield The RFO RMP requires a site clearance for areas of proposed surface disturbance before those activities could occur. Surface disturbance includes roads, pads, pump stations, pipelines, etc. Wildlife clearances will determine if mitigation is required and which BMP's, associated with wildlife within the RFO RMP, will take effect.		
NI	Wildlife: Fish (designated or non-designated)	**Price:** Any water depletion from the Upper Colorado River Basin is likely to adversely affect critical habitat for the endangered fish of the Colorado River System. Lease notice T&E-03 Endangered Fish of the Upper Colorado River Drainage Basin should be applied to all parcels. Not all water sources are considered to be depleting from the Green River Basin the impacts and total depletion will be analyzed in the APD stage. Impacts to habitat and water quality for all fish species are adequately addressed in the Surface Water Quality, and the Steams, Riparian, Wetlands, Floodplains sections of this document. Additional documentation is within the wildlife and botany resources report located in the project files.	Jerrad Goodell	4/24/2018
NI	Wildlife: Non-USFWS Designated	**Price:** according to the recent UDWR shapefiles and the Price RMP, within the parcels there is: Desert Bighorn Sheep – Crucial yearlong Parcel 113 and 039 Bighorn, UT-S-253. Pronghorn – crucial year long No designated habitat for deer or elk within the parcels. The following would be added UT-LN-21 (PFO) BIGHORN SHEEP HABITAT. Parcels- 113, 039 Additional documentation is within the wildlife and botany resources report located in the project files.	Dana Truman	4/30/18
NI	Wildlife: Non-USFWS Designated	**USO:** There is no Crucial deer habitat present. UT-LN-21 (PFO) BIGHORN SHEEP HABITAT. Parcels- 113, 039 There is a small amount of wild turkey habitat on UTU 085328, but the parcel is NSO. A majority of the parcels contain year-long crucial pronghorn habitat and all the remaining parcels save 106 contain year-long substantial pronghorn habitat	Dave Cook	5/30/2018
NP	Woodlands/Forestry	**Richfield:** There are no woodland/forestry areas present within or near the affected area.	Bob Bate	4/23/18
		Price: There are no merchantable woodland/forestry products within the proposed area.	Stephanie Bauer	4/26/2018
NI NI	Vegetation Excluding Designated/Special Status Species	**Richfield:** There will be little to no impact on vegetative resources within these parcels. Any surface disturbance within these parcels will result in the initiation of BMP's within the RFO RMP, along with site specific design features, minimizing vegetation disturbance. Once operations within these parcels are completed, areas with surface disturbance will be rehabilitated and reseeded with BLM advised seed mix.	Joe Chigbrow	4/18/2018
		Price: The proposed action of leasing the proposed parcels will not affect Vegetation. Any future development of those	Mike Tweddell	4/25/2018

Determi-nation	Resource	Rationale for Determination	Signature	Date
		leased parcels will need to be analyzed on the proposed development.		
NI	Visual Resources	**Richfield:** The parcels are located in VRM Class III and IV designations. The objectives of Class III is to partially retain the existing character of the landscape. The level of change to the landscape can be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. The objectives of Class IV is to provide for activities that require major modification of the landscape. The level of change to the landscape can be high. Management activities may dominate the view and be the major focus of attention. Even though oil and gas development would be allowed and consistent with the aforementioned VRM Classes, impacts to visual resources should be minimized through the placement of the wells and service roads, along with selecting a paint color for the well facilities that blend well with the natural surroundings.	Clay Stewart	4/17/18
		Price: Nominated parcel 113 is partially within VRM Class II. Class II management objective is to retain the existing character of the landscape. The remaining lease parcels are within VRM Class III. The management objective for Class III is to partially retain the existing character of the landscape. There can be a moderate level of change to the landscape. The leasing of the parcels is an administrative action. Future development of the leases, and surface disturbance activity would require additional analysis to determine if the actions are consistent with VRM management objectives of Class II and Class III.	Myron Jeffs	4/27/2018
		USO: PI: Sensitive viewsheds were identified on public lands within or adjacent to Parcels 111, 112, and 113. Future development of these parcels could be visible from key observation points and could potentially impact Visual Resources, although such impacts would likely be mitigated through the use of best management practices. Potential future development of all parcels would conform to the Visual Resource Management objectives established in the 2008 Price and Richfield RMP. I viewshed analysis was conducted from a key observation point at Goblin Valley State Park and it was determine the nearest parcel would not be a substantive visually impacted by potential development. Scoping comments requested that viewsheds be analyzed from nearby WSAs and ACECs. Viewsheds outside the boundaries of these designation are not considered sensitive and do not require analysis.	Matt Blocker	5/25/18
PI	Soundscapes/Night Skies	Parcels 103, 112 and 113 is close enough to the Horseshoe Canyon Unit of Canyonlands National Park, and could potentially impact the Unit from noise due to development. The closest Lease to the Glen Canyon Recreation Area (GCRA) is over 5 miles from the GCRA, on the far side of the Horse Canyon Unit and would have lesser impacts than the Unit.	Matt Blocker	5/25/18
NI	Wild Horses and Burros	**Richfield:** The RFO has an agreement with the PFO for management decisions regarding the Robbers' Roost Herd Management Area (HMA), which overlaps with the proposed leases on RFO lands. As per the RFO RMP, "Due to the very	Sue Fivecoat	4/9/2018

Determi-nation	Resource	Rationale for Determination	Signature	Date
		small population (currently estimated at 20 head), which is too small to maintain genetic viability, and lack of dependable water, the herd is not a viable population, and will eventually be allowed to decline to zero population". The proposed leasing would not impact this small population especially considering the RMP decision(s) to zero out the herd. (PFO Approved RMP – Wild Horses and Burros (WHB-6, WHB-11)		
		Price: The proposed action is within the Robbers Roost Herd Area. The RMP has identified this area to be zeroed out of horses. As such the proposed action will not affect Wild Horses.	Mike Tweddell	4/25/2018

FINAL REVIEW:

Reviewer Title	Signature	Date	Comments
Environmental Coordinator			
Authorized Officer			

EPA. (2016). *EPA's Study of Hydraulic Fracturing and Its Potential Impact on Drinking Water Resources* -. Retrieved July 18, 2018, from United States Environmental Protection Agency: https://www.epa.gov/hfstudy/executive-summary-hydraulic-fracturing-study-final-assessment-2016

Rose, S., Turner, D., Blanford, G., Bistine, J., de la Chesnaye, F., & Wilson, T. (2014). *Understanding the Social Cost of Carbon: Executive Summary.* Palo Alto: Energy & Environmental Analysis Research Group

Attachment

Consideration of Hydraulic Fracturing on Water Quality of Price Parcels

in BLM's September 2018 Lease EA

8/29/2018

The BLM is considering offering oil and gas leases in the San Rafael Desert in the Price and Richfield Field Offices. Hydraulic Fracturing (fracking) is unlikely to have occurred in the past in the affected area since there have been no strikes that would encite an operator to complete a well. It is anticipated that future exploration and potential development would be consistent with that that is occurring to the east of the parcels in the Cane Creek Unit where wells are being horizontally drilled and fracked. However, the parcels being evaluated are in an unproven area, and exploratory wells are typically drilled vertically.

If a vertical well should strike a potentially profitable target, it may be fracked as a vertical well, extended horizontally and fracked, or more wells would be drilled and fracked in the vicinity. The BLM has considered the potential fracking and possible impacts to groundwater resources and determined that detailed analysis is not necessary due to de minimus risk to water resources.

The following considerations were used to reach this determination:

1. Connectivity between deep and shallow groundwater zones
2. Sensitivity of existing and potential groundwater resources
3. Reasonably foreseeable development
4. Water quality of oil and gas target zones

1. Alterations to deep groundwater do not affect shallow groundwater resources.
Fracking would occur at depths much deeper than used groundwater zones and therefore impacts to groundwater resources would not be expected. The deepest groundwater well in the area is drilled around 700 ft deep. It appears that all water wells in the lease area are completed in Navajo sandstone which are isolated from deeper groundwater by the Kayenta Formation. The Kayenta Formation is composed of shale, siltstone, and sandstone members and is a confining bed with low to very low hydraulic conductivity. As a result, impacts to water quality or quantity in deeper strata would not reach the Navajo sandstone aquifer. The target depth for oil and gas exploration in the lease parcels has been deeper than 4000 ft which is many strata deeper than the Navajo formation and includes several aquitards which impede migration of deeper groundwater (Weiss, 1987). The wells in the Cane Creek Unit have been drilled to depths around 8,000 ft below the surface.

2. There are no sensitive groundwater resources such as drinking water supply.

Sensitivity of impacts to groundwater resources is low because there are no drinking water protection zones or domestic water sources within or near the lease parcel area. The nearest drinking water system is at Goblin Valley State Park which is about six miles west from the nearest lease parcel. Water for this system is provided from an 855 ft well drilled into Navajo Sandstone. Any future water development within or near the lease parcel area would also likely utilize the shallow Navajo sandstone aquifer which would not be affected by oil and gas development.

3. Reasonably foreseeable development projects limited oil and gas development.
The reasonably foreseeable development scenario indicates a low density of oil and gas development which decreases the potential for negative impacts to groundwater. The predicted rate of less than one well drilled per year is small especially considering that this would be dispersed over an area of about 50 square miles. Only a fraction of these wells would show enough potential to support fracking and therefore any impacts would be dispersed.

4. Oil and gas target zones are not within usable aquifers.
Oil and gas exploration would occur in deep groundwater zones with existing poor water quality and therefore any negative impacts to water quality would have no effect to the human environment. Samples from previously drilled oil and gas wells in the target formations have revealed that this deep groundwater is very saline to briny (Weiss, 1987). There are no saltwater springs or other groundwater anomalies in the project area that would indicate a conduit exists between these deep zones and shallow zones.

BLM has considered these factors along with comments from the public and other agencies to determine whether to conduct a detailed analysis in the EA. For this analysis the BLM has determined that the level of potential impacts does not warrant a detailed analysis and therefore no additional discussion is necessary for this lease level EA.

Works Cited:

Feltis, R.D. 1966. Water From Bedrock in the Colorado Plateau of Utah. Utah State Engineer Technical Publication 15.

Weiss, Emanual, 1987. Ground-Water Flow in the Navajo Sandstone in Parts of Emery, Grand, Carbon, Wayne, Garfield, and Kane Counties, Southeast Utah. USGS Water Resources Investigations report 86-4012

Appendix G Stipulations and Notices Originally on the SNI and Suspended Parcels

SNI initial stipulations UTU85328
UT0506-269-A
UT0206-197
T. 24 S., R 16 E., Salt Lake
Sec. 11: NWNW.
40.00 Acres
Emery County, Utah
Price Field Office

STIPULATIONS
UT-S-103: CSU - Visual resource management (VRM Class II) located on the entire lease.

NOTICES
UT-LN-56: Price Field Office
T&E-01: Bald Eagle
T&E-03: Endangered Fish of the Upper Colorado River Drainage

UT0506-269-F
UT0206-202
T. 24 S., R 16 E., Salt Lake
Sec. 15, W2NE, W2;
Sec. 21, all;
Sec. 22, W2.
1,360.00 Acres
Emery County, Utah
Price Field Office

STIPULATIONS
UT-S-120: Unconditional NSO - No occupancy allowed in portions of the W2NWNE, E2NENW, SENW, N2NWSW Sec. 15; SENENW, SENW, SESWNW, NWNWSW Sec. 21.

UT-S-103: CSU - Visual resource management (VRM Class II) located on the entire lease.

UT-S-07: TL - Crucial antelope fawning habitat located in the NWNW, NWSWNW Sec. 21. Activity allowed from June 16 to May 14.

NOTICES
UT-LN-56: Price Field Office
T&E-06: Mexican Spotted Owl