



I have considered the factors mandated by the National Environmental Policy Act (NEPA). This environmental assessment represents the Bureau of Land Management's (BLM's) good-faith effort to fulfill NEPA's requirements by prioritizing documentation of the most important relevant considerations within the statutorily mandated page limits and timeline. This prioritization reflects the BLM's expert judgment; and any considerations addressed briefly or left unaddressed are, in the BLM's judgment, comparatively non-substantive and would not meaningfully inform the BLM's consideration of environmental effects and the decision to be made. The EA is substantially complete, considers the factors mandated by NEPA, and, in my judgment, contains analysis adequate to inform the BLM's decision regarding the proposed action.

Responsible Official: _____ Date: _____

Utah State Office
440 West 200 South, Suite 500
Salt Lake City, Utah 84101

Contents

CHAPTER 1. Introduction.....	1
1.1 Background.....	1
1.2 Purpose and Need	2
1.3 Decision to be Made	3
1.4 BLM Land Use Plan Conformance.....	3
1.5 Relationship to Statutes, Regulations, Policies, and Other Plans	3
1.5.1 Non-Federal Plans.....	6
1.6 Internal Scoping.....	7
1.7 External Scoping.....	7
1.8 Issues.....	8
1.9 Public Protest Period.....	8
CHAPTER 2. Description of Alternatives	9
2.1 Introduction.....	9
2.2 Alternative A – Proposed Action.....	9
2.3 Alternative B – Graham’s and White River Penstemon Avoidance.....	9
2.4 Alternative C – Greater Sage-grouse Avoidance Alternative.....	9
2.5 Alternative D – No Action Alternative.....	10
2.6 Alternatives Considered but Eliminated from Detailed Analysis.....	10
2.6.1 No New Greenhouse Gas Emissions	10
2.6.2 Low Preference Parcel Avoidance Alternative.....	10
2.6.1 LWC Avoidance Alternative	10
2.6.1 Big Game Habitat Avoidance Alternative	11
CHAPTER 3. Affected Environment and Environmental Effects.....	12
3.1 Introduction.....	12
3.2 Analysis Assumptions.....	12
3.2.1 Methods Used for Estimating Number of Oil and Gas Wells, Surface Disturbance and Production Volumes	13
3.2.2 Short-Term and Long-Term Effects	14
3.3 Relevant Past, Present, and Reasonably Foreseeable Future Actions	14
3.4 No Action Alternative Impacts for All Issues.....	18
3.5 Issues Analyzed in Brief (AIB).....	18
3.6 Issues Analyzed in Detail.....	18

3.6.1	Issue 1: Air Quality	18
3.6.2	Issue 2: Greenhouse Gas	29
3.6.3	Issues Three to Five Assumptions and Similarities	40
3.6.4	Issue 3: Graham’s [Beardtongue] Penstemon (<i>Penstemon grahamii</i>).....	41
3.6.5	Issue 4: White River [Beardtongue] Penstemon (<i>Penstemon albifluvis</i>).....	50
3.6.6	Issue 5: Penstemon Conservation Areas	56
3.6.7	Issue 6: Greater Sage-grouse	61
CHAPTER 4.	Consultation and Coordination	71
4.1	Endangered Species Act Consultation	71
4.2	Tribal Consultation	72
4.3	National Historic Preservation Act Consultation.....	73
CHAPTER 5.	Literature Cited	76
A.1	Issues Analyzed in Brief	84
AIB 1.	Cultural Resources	84
AIB 1.	Dark Night Skies.....	86
AIB 2.	Minerals	87
AIB 3.	Public Health and Safety.....	89
AIB 4.	Invasive Species (Noxious Weeds).....	92
AIB 5.	Lands with Wilderness Characteristics.....	93
AIB 6.	Livestock Grazing.....	98
AIB 7.	Migratory Birds.....	100
AIB 8.	Native American Concerns	103
AIB 9.	Old Spanish National Historic Trail	103
AIB 10.	Quality of Life.....	105
AIB 11.	Paleontological Resources	107
AIB 12.	Recreation	111
AIB 13.	Riparian, Wetland, Floodplain, and Non-special Status Aquatic Species	112
AIB 14.	Soils.....	113
AIB 15.	Socioeconomics	115
AIB 16.	Soundscapes.....	119
AIB 17.	Threatened, Endangered, and Proposed Species.....	121
AIB 18.	Utah BLM Sensitive Species	132
AIB 19.	Vegetation Communities	143
AIB 20.	Visual Resources.....	145

AIB 21.	Water Resources (Groundwater and Surface water).....	147
AIB 22.	Wild and Scenic Rivers (WSR)	158
AIB 23.	Wilderness Study Area (WSA).....	161
AIB 24.	Wildlife - Big Game.....	162
AIB 25.	Woodland and Forest Resources.....	166
A.2	Resources Not Analyzed in this EA.....	168
Appendix B	Figures/Maps.....	169
Appendix C	Stipulations and Notices	176
C.1	Lease Stipulations and Notices by Parcel	176
	Moab Field Office	176
	Monticello Field Office	182
	Vernal Field Office.....	183
C.2	Description of Lease Stipulations and Notices	243
	Standard Lease Notices (from H-3120 – Competitive Leasing Handbook)*.....	243
Appendix D	Comments and BLM Responses	307
Appendix E	Leasing Preference Rating for Nominated Lease Parcels.....	309
Appendix F	Summary of the Typical Phases of Oil and Gas Development.....	319
Appendix G	General Conformity Applicability	325
Appendix H	Emissions Tables	327
Appendix I	Sage-grouse Prioritization.....	334
I.1	Prioritization Process Outline	335
I.2	Evaluation for Quarter 1(2026) Nominated Parcels:	339
I.3	Habitat Assessment Framework	343
Appendix J	Methods Used for Estimating Number of Oil and Gas Wells, Surface Disturbance and Production Volumes.....	1
J.1	Production and Disturbance Estimates	1
J.2	Estimate of the Number of Wells Developed	1
J.3	Estimate of Oil and Gas Production.....	1
J.4	Estimate of Produced Water	2
J.5	Estimate of Surface Disturbance.....	2
J.6	Estimate of Reasonably Foreseeable Development for the Lease Sale	2
Appendix K	Abbreviations and Contributors.....	6

List of Tables

Table 1 Surface Ownership.....	1
Table 2 Applicable Federal, State, and Local Laws	4
Table 3 Estimated Number of Wells and Surface Disturbance	14
Table 4 Estimated Ultimate Recovery (EUR) of Produced Oil, Gas, and Water	14
Table 5 HUC 10 Watershed encompassing proposed parcels	15
Table 6 Existing Well and APD Status by Watershed.....	17
Table 7. Existing Criteria Air Pollutant and VOC Emissions in Tons Per Year (TPY)	19
Table 8. County-Level Design Values for the Averaging Period of 2022-2024.	20
Table 9. 2020 Hazardous Air Pollutant Emissions by County in Tons Per Year (TPY).....	20
Table 10. Total Cancer Risk and Noncancer Respiratory Hazard from Existing HAP Emissions (2019 Reporting Year)	21
Table 11. Modeled Circa 2032 (New Plus Existing Wells) Oil and Gas Emissions in Utah by Mineral Owner in Tons Per Year (TPY).....	22
Table 12. Annual Emissions Estimates from Well Development and Production Operations of Lease Parcels by Field Office for Alternative A (TPY)	26
Table 13. Annual Emissions Estimates from Well Development and Production Operations of Lease Parcels by Field Office for Alternative B (TPY).....	27
Table 14. Annual Emissions Estimates from Well Development and Production Operations of Lease Parcels by Field Office for Alternative C (TPY).....	28
Table 15 U.S. and State Fossil Fuel GHG Emissions 2018- 2022 (Mt CO ₂ e/yr)	30
Table 16 GHG Emissions from Past, Present, and Reasonably Foreseeable Federal Onshore Lease Development (Megatonnes CO ₂ e)	31
Table 17 Estimated Direct and Indirect Emissions from Lease Parcels on an Annual and Life of Lease Basis (tonnes)	36
Table 18 Estimated Life of Lease Emissions from Well Development, Well Production Operations, Mid-stream, and End-use (tonnes)	36
Table 19 Comparison of Lease Sale Emissions to Other Sources (Megatonnes).....	37
Table 20 Estimated Life of Lease Emissions from Well Development, Well Production Operations, Mid-stream, and End-use (tonnes)	38
Table 21 Estimated Life of Lease Emissions from Well Development, Well Production Operations, Mid-stream, and End-use (tonnes)	39

Table 22: Acreage (and percentage of occupied habitat) of existing fluid mineral leases within overlapping occupied habitat subpopulations	42
Table 23 Acres and Estimated Disturbance (in Parenthesis) of Graham’s Penstemon Occupied Habitat by Subpopulation	43
Table 24: Graham’s Penstemon Suitable Habitat and Estimated Disturbance from Future Parcel Development	44
Table 25: Graham’s Penstemon Suitable Habitat and Estimated Disturbance from Future Parcel Development	46
Table 26 Acres and Estimated Disturbance (in Parenthesis) of Graham’s Penstemon Occupied Habitat by Subpopulation	48
Table 27: Graham’s Penstemon Suitable Habitat and Estimated Disturbance from Future Parcel Development	49
Table 28: Acreage (and percentage of occupied habitat) of existing fluid mineral leases within overlapping occupied habitat subpopulations	51
Table 29 Acres and Estimated Disturbance (in Parathesis) of White River Penstemon Occupied Habitat by Subpopulation	51
Table 30: White River Suitable Habitat and Estimated Disturbance from Future Parcel Development	52
Table 31: White River Penstemon Suitable Habitat and Estimated Disturbance from Future Parcel Development	53
Table 32 Acres and Estimated Disturbance (in Parathesis) of White River Penstemon Occupied Habitat by Subpopulation	54
Table 33: White River Penstemon Suitable Habitat and Estimated Disturbance from Future Parcel Development	55
Table 34: Acreage (and percentage of the Conservation Area) of existing fluid mineral leases within overlapping Penstemon Conservation Areas	57
Table 35: Acres and Estimated Disturbance (in parenthesis) of BLM White River Penstemon Conservation Areas by Nominated Parcel and Conservation Unit	58
Table 36 Acres and Estimated Disturbance of BLM Graham’s Penstemon Conservation Areas by Nominated Parcel and Conservation Unit	59
Table 37: Acres and Estimated Disturbance (in parenthesis) of BLM White River Penstemon Conservation Areas by Nominated Parcel and Conservation Unit	60
Table 38 Acres and Estimated Disturbance of BLM Graham’s Penstemon Conservation Areas by Nominated Parcel and Conservation Unit	60
Table 39 Acres of GHMA, Seasonal Habitat Values and Leks associated with the Lease Parcels	64

Table 40 Production by Alternative (Alternative D would be zero production)	88
Table 41 Percent of the lands Leased and potential increases (Alternative D would be zero increase)	88
Table 42 Projected Surface Disturbance for Parcels within LWC Units.....	95
Table 43 Total Projected Surface Disturbance for LWC Units with Multiple Nominated Parcels	96
Table 44 Potential AUM impact by allotment.....	98
Table 45 The Utah Partners in Flight: Colorado Plateau Species.....	101
Table 46 Summary of Nominated Lease Parcel Acreage and Known Paleontological Localities by Field Office.	108
Table 47 Acreage within the 58 Nominated Lease Parcels by Potential Fossil Yield Classification.....	108
Table 48 Soil Rating (Road,Trail) Summary by Rating Value.....	114
Table 49 Economic Impact of \$1 million spending on oil well drilling (\$2025)	117
Table 50 Economic Impact of \$1 million spending on oil extraction (\$2025).....	117
Table 51 Economic Impact of \$1 million spending on support activities (\$2025).....	118
Table 52 Noise Levels Associated with Oil and Gas Activity.....	119
Table 53 Reduction in Listening Area Due to Increase from Background Sound Levels.....	120
Table 54. Estimated disturbance to white-tailed prairie dog colonies & black-footed ferret habitat within the black-footed ferret Management Area.....	123
Table 55: Acres of suitable habitat and estimated disturbance (in paranthesis) of global and local importance for the western monarch during the spring migration.....	127
Table 56: Acres of suitable habitat and estimated disturbance (in paranthesis) of global and local importance for the western monarch during the fall migration	127
Table 57: Acres of potential habitat for the Western bumble bee and Suckley’s cuckoo bumble bee	129
Table 58. Acres of potential habitat for Ute-ladies’ tresses and potential disturbance.....	131
Table 59 Terrestrial Sensitive Species Animals	135
Table 60 Sensitive Plant Species with Potential to Occur within Lease Parcels but Not Present	141
Table 61. Acres and Estimated Disturbance (in Parathesis) of Barneby’s Cryptantha Occupied Habitat by Subpopulation	142
Table 62: National Vegetation Classification (NVC) Macro-Group Acres ¹ within Parcels	143

Table 63 Utah Department of Water Quality Beneficial Use Classification and EPA Assessment Category Surface Waters	151
Table 64 - Parcels within watersheds Assessment Units/Classifications/Description (2024 DEQ 305b list)	152
Table 65 Percentage of Designated Habitat within Parcels	164
Table 66 Estimated Disturbance in Designated Habitat	164
Table 67 Resources not Analyzed in this EA	168
Table 68: Descriptions of Stipulations.....	244
Table 69: Description of Lease Notices.....	264
Table 70. Public submissions with assigned commentor codes and resource/topic areas.....	307
Table 71. Comment summary and BLM response.	308
Table 72 Preference determination by parcel based on 43 CFR 3120.32 criteria for BLM's Utah Lease Sale	310
Table 73. Common Wastes Produced during Oil and Gas Development.....	323
Table 74. Single Well Emissions Factors in Tons Per Year (TPY) and Metric Tonnes (t).....	327
Table 75. Annual CAP and HAP Emissions for the Proposed Action Alternative (Alternative A) in Tons Per Year	328
Table 76 Annual GHG Emissions for Proposed Action Alternative (Alternative A) in Metric Tonnes.....	329
Table 77 Annual Cap and HAP Emissions for the Graham's and White River Penstemon avoidance Alternative (Alt B) in Tons per.....	330
Table 78 Annual GHG Emissions for the Graham's and White River Pentsemon Avoidance Alternative (Alternative B) in Metric Tonnes.....	331
Table 79 Annual CAP and HAP Emissions for the Greater Sage-grouse Avoidance Alternative (Alt C) in Tons per year	332
Table 80 Annual GHG Emissions for the Greater Sage-grouse Avoidance Alternative (Alternative C) in Metric Tonnes.....	333
Table 81 Estimated Number of Wells and Surface Disturbance	3
Table 82 Estimated Ultimate Recovery (EUR) of Oil, Gas, and Water	3
Table 83 Surface Disturbance Estimates for Each Parcel.....	3

List of Figures

Figure 1 Estimated GHG Emissions Profile over the Life of a Lease	37
Figure 2 (Climate Engine, 2025)	150
Figure 3 Q1 Map 1	169
Figure 4 Q1 Map 2	170
Figure 5 Q1 Map 3	171
Figure 6 Q1 Map 4	172
Figure 7 Q1 Map 5	173
Figure 8 Q1 Map 6	174

CHAPTER 1. INTRODUCTION

1.1 BACKGROUND

This Environmental Assessment (EA) documents the Bureau of Land Management’s (BLM) review of the anticipated environmental impacts of leasing 58 lease parcels (totaling 71,586.52 acres) on public lands managed by the BLM’s Vernal (VFO), Moab (MbFO), and Monticello (MtFO) Field Offices which have been nominated for leasing and are being considered as part of the BLM Utah First Quarter 2026 Competitive Oil and Gas Lease Sale (Lease Sale). Table 1 Surface Ownership shows the breakdown of acres and surface ownership of the individual nominated parcels. Maps of the nominated lease parcels are contained in Appendix B.

Table 1 Surface Ownership

Field Office	County	Parcel Number	Surface Management Entity (SME)	Acres
MbFO	Grand	1662	BLM	1,161.88
MbFO	Grand	1672	BLM	280.00
MbFO	Grand	1673	BLM & Split Estate – State	1,775.84
VFO	Uintah	1674	BLM & Split Estate - State	2,240.00
VFO	Uintah	1678	BLM	1,280.00
VFO	Uintah	1680	BLM	2,159.38
VFO	Uintah	1681	BLM	960.00
VFO	Uintah	1683	BLM	160.00
VFO	Uintah	1684	BLM	1,151.54
VFO	Uintah	1687	BLM	40.00
VFO	Uintah	1688	BLM	160.00
VFO	Uintah	1689	BLM	480.00
VFO	Uintah	1691	BLM	1,280.00
VFO	Uintah	1696	BLM	280.00
VFO	Uintah	1698	BLM	1,570.36
VFO	Uintah	1702	BLM	1,040.00
VFO	Uintah	1703	BLM & Split Estate - State	2,080.00
VFO	Uintah	1705	BLM	2,143.85
VFO	Uintah	1715	BLM & Split Estate - State	2,161.20
VFO	Uintah	1717	BLM	627.88
VFO	Uintah	1719	BLM	1,980.40
VFO	Uintah	1734	BLM	2,462.92
VFO	Uintah	1742	BLM	1,172.34
VFO	Uintah	1765	BLM	2,560.00
VFO	Uintah	1767	BLM & Split Estate - State	2,520.00
VFO	Uintah	1789	BLM	2,039.04
VFO	Uintah	1791	BLM	2,040.00
VFO	Uintah	1792	BLM	1,280.00
VFO	Uintah	1798	Split Estate - State	10.00
VFO	Uintah	1799	BLM	1,469.96
VFO	Uintah	1808	BLM	1,880.00

Field Office	County	Parcel Number	Surface Management Entity (SME)	Acres
VFO	Uintah	1810	BLM	2,040.00
VFO	Uintah	1815	BLM	160.00
VFO	Uintah	1816	BLM	40.00
VFO	Uintah	1817	Split Estate - Private	80.00
VFO	Uintah	1818	BLM & Split Estate - Private	2,396.72
VFO	Uintah	1823	BLM	80.00
VFO	Uintah	1825	BLM	1,280.00
MbFO	San Juan	7772	BLM	412.12
VFO	Uintah	7778	BLM	640.00
VFO	Uintah	7779	BLM	240.00
VFO	Uintah	7781	BLM	2,545.88
VFO	Uintah	7782	BLM	1,748.52
VFO	Uintah	7784	BLM	1,880.00
VFO	Uintah	7785	BLM	2,556.39
VFO	Uintah	7786	BLM	2,236.60
VFO	Uintah	7793	BLM	2,548.24
VFO	Uintah	7809	BLM & Split Estate - State	1,920.00
VFO	Uintah	7813	BLM & Split Estate - Private	320.00
VFO	Uintah	7814	BLM & Split Estate - Private	680.00
VFO	Uintah	7823	BLM	880.00
MbFO	San Juan	7824	BLM	1,160.00
MtFO	San Juan	7825	BLM	120.00
VFO	Uintah	7826	BLM	120.00
VFO	Uintah	7830	BLM	120.00
VFO	Uintah	7833	BLM	120.00
VFO	Uintah	7837	BLM	1,920.00
VFO	Uintah	7840	BLM	895.38
			Total Acres:	71,586.52

Of the 58 parcels included in the Lease Sale, 1 is in the MtFO, totaling 120 acres, and 5 are in the MbFO, totaling 4,789.84 acres. The remaining 52 parcels are in the VFO, totaling 66,676.68 acres. Three parcels from the MbFO, 1662, 1672, and 1673, totaling 3,217.72 acres, are on land that is administered by the VFO and subject to the VFO Resource Management Plan (RMP).

1.2 PURPOSE AND NEED

The BLM's purpose in preparing the EA is to respond to Expressions of Interest (EOIs) to lease federal oil and gas resources through a competitive leasing process. The need for the action is established by the BLM's responsibility under the Mineral Leasing Act of 1920 (MLA), as amended, to make mineral resources, such as oil and gas, available for development and as part of the BLM's multiple-use and sustained-yield mandate under the Federal Land Policy and Management Act of 1976 (FLPMA).

1.3 DECISION TO BE MADE

The BLM Authorized Officer (AO) will decide, consistent with the One Big Beautiful Bill Act (Pub. L. No. 119-21), whether to offer for lease any or all of the nominated lease parcels with or without constraints, in the form of lease stipulations, as provided for in the approved land use plan. If the decision is to offer federal minerals for lease, and to subsequently issue a lease if a successful bid is received, standard terms and conditions under Section 6 of the BLM Lease Form (Form 3100-11, Offer to Lease and Lease for Oil and Gas), herein referred to as “standard terms and conditions,” would apply as well as any additional terms and conditions as necessary. The BLM AO also has the authority to defer parcels based on the analysis of potential effects presented in this EA. The Decision Record will identify whether the BLM decided to offer for lease any of the nominated lease parcels and the rationale for the decision.

1.4 BLM LAND USE PLAN CONFORMANCE

The Proposed Action complies with the Vernal Field Office Resource Management Plan (Vernal RMP) October 2008, as amended (BLM, 2008), the Moab Field Office Resource Management Plan (MbFO RMP) October 2008 (BLM, 2008), and the Monticello Field Office Resource Management Plan (MtFO RMP) November 2008 (BLM, 2008).

The nominated lease parcels are in areas open to leasing under the Vernal RMP (decisions MIN-10, MIN-11, MIN-12), the MbFO RMP (decisions MIN-12, MIN-14, MIN-19), and the MtFO RMP (decisions MIN-1, 3, 6, 7, & 9). The Vernal RMP Appendix K, the MbFO RMP Appendix C, and the MtFO RMP Appendix B provide surface stipulations applicable to all surface-disturbing activities. Stipulations attached to the nominated lease parcels are identified and summarized in Appendix C of this EA.

The Proposed Action also complies with the Record of Decision and Utah Approved Resource Management Plan Amendments (ARMPA) for the Great Basin Region Including the Greater Sage-Grouse Sub-Region of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah (BLM, 2015). More specifically, the Proposed Action complies with the following decision in the ARMPA:

- General Habitat Management Area (GHMA): Open to fluid mineral leasing, subject to existing planning decisions, which include closed to fluid minerals leasing, no surface occupancy (NSO), controlled surface use (CSU), and timing limitation (TL) stipulations and open to leasing, subject to standard stipulations.

1.5 RELATIONSHIP TO STATUTES, REGULATIONS, POLICIES, AND OTHER PLANS

Purchasers of oil and gas lease parcels are required to comply with all applicable federal, state, and local laws and regulations, including obtaining all necessary permits prior to any lease development activities. A listing of relevant statutes, regulations, and policies is provided in Table 2. Non-Federal plans are discussed in Section 1.5.1.

Table 2 Applicable Federal, State, and Local Laws

Relevant Statute, Regulation, or Policy	Relationship to the Proposed Action
43 CFR Part 3100 and 43 CFR Subpart 3120	The regulations at 43 CFR Part 3100 govern onshore oil and gas leasing, development, and production of federal minerals. The regulations at 43 CFR Subpart 3120 govern competitive oil and gas lease sales. The BLM recently updated these oil and gas leasing regulations to implement provisions of the Inflation Reduction Act (IRA) pertaining to royalty rates, rentals, and minimum bids; update the bonding requirements for leasing, development, and production; and revise certain operating requirements.
Clean Air Act (CAA)	The CAA of 1963 [42 U.S.C. § 1857 et seq.], as amended and recodified [42 U.S.C. § 7401 et seq.] is the primary Federal legislation and provides the framework for protecting and enhancing the quality of the Nation’s air resources to promote the public health and welfare and the productive capacity of its population (Section 101(b)(1) of the Act). Provisions of the CAA that are relevant to the development of lease parcels are listed below: National Ambient Air Quality Standards (NAAQS) Attainment and Non-Attainment Area Designations New Source Review Permitting New Source Performance Standards (NSPS) National Emission Standards for Hazardous Air Pollutants (NESHAP) General Conformity Rule The CAA’s General Conformity Rule mandates that Federal agencies evaluate reasonably foreseeable emissions that result from its actions in a nonattainment area to determine if they conform with the applicable regulatory agency implementation plans (40 CFR 93.153). The rule considers air pollution emissions associated with Federal oil and gas leases, and that “no department, agency or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an applicable implementation plan (40 CFR 93.150).” In short, general conformity refers to the process of evaluating plans, programs, and projects to determine and demonstrate they meet the requirements of the CAA and an applicable implementation plan, and do not prevent achievement of state or federal air quality standards.
Clean Water Act (CWA)	The CWA (33 U.S.C. § 1251 et seq.) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. The “Clean Water Act” became the Act’s common name with amendments in 1972.
Endangered Species Act (ESA)	The ESA requires all federal departments and agencies to consult with the U.S. Fish and Wildlife Service (USFWS) on all actions authorized, funded, or carried out by the agency to ensure that the action will not likely jeopardize the continued existence of any threatened and endangered species or adversely modify critical habitat. The USFWS Consultation Handbook provides that USFWS regulations “do not prevent evaluating on-shore mineral leasing activities through incremental-step consultation.” (USFWS, 1998). See the text of lease notice HQ-TES-1 in Appendix B.2 Description of Lease Stipulations and for details on compliance with the ESA.

Relevant Statute, Regulation, or Policy	Relationship to the Proposed Action
Executive Order 14154/Secretary's Order 3418	Executive Order (EO) 14154 and the subsequent Secretary's Order (SO) 3418, are intended "...to encourage energy exploration and production on Federal lands and waters, including on the Outer Continental Shelf, in order to meet the needs of our citizens and solidify the United States as a global energy leader long into the future;"
Federal Land Policy and Management Act (FLPMA)	FLPMA establishes guidelines to provide for the management, protection, development, and enhancement of public lands (Pub. L. No. 94-579). Section 103 of FLPMA defines public lands as any lands and interest in lands owned by the United States. For split-estate lands where the mineral estate is an interest owned by the United States, the BLM has limited authority over use of the surface by the surface owner; however, the BLM is required to disclose potential effects connected to the authorization to lease and develop federal mineral estate and to declare how federal mineral estate is managed in the RMP, including identification of all appropriate lease stipulations (43 CFR 3101.13 and 43 CFR 1601.0-7(b); BLM Handbooks H-1601.09 and H-1624-1).
Federal Onshore Oil and Gas Leasing Reform Act (FOOGLRA)	The FOOGLRA states that lease sales shall be held for each state where eligible lands are available at least quarterly and more frequently if the Secretary of the Interior determines such sales are necessary.
Mineral Leasing Act (MLA)	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, the National Environmental Policy Act of 1969, as amended (NEPA; Pub. L. No. 91-90, 42 United States Code [U.S.C.] Section 4321 et seq.), and other applicable laws, regulations, and policies.
National Historic Preservation Act (NHPA)	Leasing is considered an undertaking pursuant to 54 U.S.C. Section 300101 et seq., commonly known as the NHPA, as amended, and 54 U.S.C. Section 306108, commonly known as Section 106 of the NHPA (Section 106). Section 106 requires all federal agencies to take into account the effects on historic properties from a federal undertaking. As a part of Section 106, federal agencies consult with the State Historic Preservation Office (SHPO) on all undertakings authorized, funded, or carried out by the agency. Agencies may follow a phased approach to Section 106 compliance. At the leasing level, BLM conducts an existing records review and consultation with SHPO, Native American Tribes, consulting parties, and public-driven identification of historic properties. Class III cultural resource surveys are an important part of identification at the lease-development level. See the text of lease notice HQ-CR-1 in Appendix B.2 for details. All nominated lease parcels within the VFO for this Lease Sale lie within the exterior boundary ¹ of the reservation of the Ute Indian Tribe of the Uintah & Ouray Reservation (Ute Indian Tribe). The Ute Indian Tribe entered into an agreement with the National Park Service and the U.S. Department of the Interior to establish a Tribal Historic Preservation Office (THPO) on September 22, 2021, and thereby assumed the functions of a SHPO overseeing Section 106 responsibilities and undertakings that lie within the exterior boundary of their

¹ The term "exterior boundary" of a reservation refers to the initial boundary established by the first applicable treaty between the United States government and the affected Tribe(s). The originally established exterior boundary for a reservation may be larger than the present-day boundaries. The United States restructured land status and ownership of Tribal lands through various mechanisms such as the Dawes Act (1887), which reduced reservation lands for many Tribes, including the Ute Indian Tribe. Land within a current "exterior boundary" of a reservation may not be administered by Tribes or held in trust for them; many are owned either by private parties or other federal and state agencies.

Relevant Statute, Regulation, or Policy	Relationship to the Proposed Action
	reservation. Per 36 CFR 800.2(c)(2)(i)(A), an agency consults with the THPO “in lieu of the SHPO regarding undertakings occurring on or affecting historic properties on tribal lands.”
One Big Beautiful Bill Act (Public Law 119-21)	Pursuant to Section 50101: each fiscal year, the Secretary of the Interior shall conduct a minimum of 4 oil and gas lease sales of available land in each of the following States: Wyoming, New Mexico, Colorado, Utah, Montana, North Dakota, Oklahoma, Nevada, Alaska. In conducting a lease sale, the Secretary of the Interior— (A) shall offer not less than 50 percent of available parcels nominated for oil and gas development under the applicable resource management plan in effect for relevant Bureau of Land Management resource management areas within the applicable State; and (B) shall not restrict the parcels offered to 1 Bureau of Land Management field office within the applicable State unless all nominated parcels are located within the same Bureau of Land Management field office.

1.5.1 Non-Federal Plans

There are four non-federal resource management planning documents that have a relationship to the Proposed Action. Each of these is identified and discussed below. The Proposed Action directly aligns with these plans because it contemplates making available for competitive leasing nominated oil and gas lease parcels.

- **State of Utah Resource Management Plan** (State of Utah, 2023). The State RMP defines the State’s policies, goals, and objectives for the management of natural resources on public lands. With respect to energy production (including petroleum and natural gas), the State RMP indicates that “Utah’s general policy on energy production is that it supports all forms of energy. Utah is an ‘all-of-the-above’ state and believes there is room in its energy portfolio for all forms of energy” (p. 40).
- **Uintah County Resource Management Plan** (Uintah County, 2022). The Uintah County RMP was updated on October 31, 2022. The objectives from chapter six “Energy” include:
 - “Support balanced and responsible natural-resource development that benefits the public and generates revenues for public service providers to help pay for public infrastructure improvements needed to achieve economic diversity” (p. 19).
 - “Expedite the processing, granting, and streamlining of mineral and energy leases and applications to drill, extract, and otherwise develop all existing energy and mineral resources located within the Uintah Basin Energy Zone, including oil, natural gas, oil shale, oil sands...” (p. 21).
- **Grand County Resource Management Plan** (County, Grand, 2017). The Grand County RMP states the following:

Grand County Resource Management Plan (County, Grand, 2017). The Grand County RMP states the following: “2. (Relevant existing policies found in the 2012 Grand County General Plan)

iii. “Goal 5 - Minimize impacts to ecology and scenery from fluid and solid mineral development while still allowing such development to continue to benefit the economy.”

1. Strategy A - Encourage oil, gas and mining companies to use the best technology and mitigation techniques to protect natural amenities and natural resources.

iv. Goal 1 - Make the County attractive for a wide range of economic sectors.

• Strategy G - Encourage businesses to develop solid and fluid mineral resources while using the best technology and mitigation techniques to protect natural amenities and natural resources” (p. 85).

- **San Juan County Resource Management Plan** (San Juan county, 2022). The San Juan County RMP state the following:

Policies

"Support balanced and responsible natural-resource development. Lands with mineral and energy potential should be open to development with stipulations designed to mitigate impacts and or protect lands and significant resource values. Any restrictions imposed on energy development should be the minimum required for reasonable mitigation of impacts. Provide appropriate opportunities for and manage activities related to locating, leasing, exploration, development, and production of mineral and energy resources” (p. 66).

1.6 INTERNAL SCOPING

Beginning on June 17, 2025, the BLM interdisciplinary team (IDT) conducted internal scoping to identify issues, potential alternatives, and data needs by reviewing the leasing actions within the context of the applicable land use plans under the NEPA framework. Weekly meetings were held with IDT members during the parcel review process. The IDT met from November 3-7, 2025, to work cooperatively to draft the initial EA. In addition, other resource-specific meetings with resource specialists were held to aid in refining issues related to the nominated lease parcels.

1.7 EXTERNAL SCOPING

The BLM held a public scoping period from September 24, 2025, until October 27, 2025. The BLM received 1,690 comment submittals via ePlanning during the scoping period. Comment submittals contained comments on the following topics:

- Objections to oil and gas leasing in general
- Impacts to aquatic habitat, planned restoration activities, greater sage-grouse (GRSG), big game habitat, visual resources, cultural resources, National Monuments, Lands with Wilderness Characteristics
- Climate and greenhouse gas emissions
- Concern for declining air quality, contributions to water shortages, and public health
- General support for resource extraction
- NEPA Alternatives to consider
- Legal requirements

The BLM reviewed and considered the comments received during the scoping period in the identification of issues to analyze and in the development of alternatives.

The BLM made the preliminary Lease Sale EA available for a public comment period from December 1 to January 2, 2026. The BLM will respond to substantive comments only, which will be included in Appendix D of the final version of this EA.

1.8 ISSUES

Through internal and external scoping, the following issues were identified for detailed analysis in this EA:

- What quantities and types of air pollutants could be produced from potential development of the nominated lease parcels? How would air pollutant emissions affect air quality and air quality related values?
- How could potential development of the nominated lease parcels contribute to greenhouse gas (GHG) emissions at multiple scales?
- How would potential development of the nominated lease parcels affect modeled suitable and occupied habitat for Graham's penstemon?
- How would potential development of the nominated lease parcels affect modeled suitable and occupied habitat for White River penstemon?
- How would potential development of the nominated lease parcels affect conservation areas established for Graham's and White River penstemon?
- How would future potential development of the nominated lease parcels impact Greater Sage-grouse (GRSG) in the McCoy Flat, Deadman Bench, East Bench, and Book Cliffs GHMA portion of the Uintah Population Area?

An additional 26 issues were identified, considered, and analyzed in brief (AIB) during review of the Proposed Action. These issues, and rationale for why they were not analyzed in detail, are presented in Appendix A.

1.9 PUBLIC PROTEST PERIOD

In compliance with 43 CFR 3120.1-3, the Notice of a Competitive Lease Sale (NCLS) will be made available for a 30-day protest period at least 60 days before the lease sale date, preliminarily scheduled for March 31, 2026.

CHAPTER 2. DESCRIPTION OF ALTERNATIVES

2.1 INTRODUCTION

The lease parcels are primarily in the Book Cliffs in southeastern Uintah and northern Grand Counties. A few parcels extend north of the Book Cliffs in Uintah County. Three parcels are in northern Grand County and northeastern San Juan County. The maps of the nominated lease parcels are found in Appendix B Figures/Maps.

2.2 ALTERNATIVE A – PROPOSED ACTION

Under the Proposed Action, the BLM would offer for competitive leasing federal oil and gas resources associated with the 58 nominated lease parcels (see Appendix B Figures/Maps). Surface ownership/management, the legal land description of the nominated lease parcels (totaling 71,586.52 acres), and lease stipulations and notices that would be attached to the parcels are included in Appendix C.

Issued leases may be held for up to ten years, after which the lease expires unless oil or gas is being produced in paying quantities (43 CFR 3107.21). The drilling of wells on leased parcels is not permitted until the leaseholder submits, and the BLM approves (subsequent to additional site-specific environmental review documentation), a complete Application for Permit to Drill (APD) package (Form 3160-3) following the requirements specified under Onshore Oil and Gas Orders listed in 43 CFR 3162.3(f). The BLM has authority, according to the standard terms and conditions of the leases, to attach conditions of approval (COAs) to an APD that reduce or avoid negative impacts to BLM-managed public lands, resources, and/or resource values.

Under 43 CFR 3101.12, “Such reasonable measures may include, but are not limited to, relocation or modification to siting or design of facilities, timing of operations, specification of interim and final reclamation measures, and specification of rates of development and production in the public interest. At a minimum, modifications that are consistent with lease rights include, but are not limited to, requiring relocation of proposed operations by up to 800 meters and prohibiting new surface disturbing operations for a period of up to 90 days in any lease year.”

2.3 ALTERNATIVE B – GRAHAM’S AND WHITE RIVER PENSTEMON AVOIDANCE

Under this alternative, 47 parcels (57,772.58 acres) would be offered for competitive leasing. Eleven nominated lease parcels (1684, 1689, 1717, 1734, 1767, 1798 1808, 1810, 1815, 7779, and 7786) would not be offered (13,808.94 acres) because all or portions of these parcels contain occupied Graham’s or White River Penstemon habitat or intersect the Conservation Areas established for these species. These eleven parcels would not be included in this Lease Sale but could be considered in a future sale.

2.4 ALTERNATIVE C – GREATER SAGE-GROUSE AVOIDANCE ALTERNATIVE

Under this alternative, 26 parcels (38,366.88 acres) would be offered for competitive leasing. Thirty-two nominated lease parcels (1662, 1672, 1673, 1674, 1678, 1681, 1683, 1684, 1687, 1688, 1691, 1696, 1698, 1702, 1715, 1742, 1810, 1815, 1816, 1817, 1818, 1823, 1825, 7781,

7782, 7784, 7813, 7823, 7826, 7833, 7837, and 7840) would not be offered (33,219.64 acres) because all or portions of these parcels contain GRSG GHMA. These 32 parcels would not be included in this Lease Sale but could be considered in a future sale.

2.5 ALTERNATIVE D – NO ACTION ALTERNATIVE

Under the No Action Alternative, the BLM would not offer any of the nominated lease parcels for competitive leasing in this Lease Sale. However, the nominated lease parcels could be considered for inclusion in one or more future competitive oil and gas lease sales.

2.6 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

The BLM considered four action alternatives in addition to Alternatives A-D but eliminated these alternatives from detailed analysis. These alternatives, along with rationale for their dismissal from detailed analysis, are discussed below.

2.6.1 No New Greenhouse Gas Emissions

Under this alternative, the BLM would defer all lease parcels so that no new greenhouse gas emissions would occur. This alternative was dismissed from detailed analysis because it is the same as the No Action Alternative (Alternative D), which is already analyzed.

2.6.2 Low Preference Parcel Avoidance Alternative

This alternative would involve offering for competitive leasing only high-potential lands for oil and gas development, which have limited multiple-use conflicts, if any. The alternative would defer offering parcels that either pose potential resource conflicts or have only moderate or low potential for oil and gas development. Resource conflicts identified for the nominated parcels have been addressed in this EA. The lease stipulations and notices presented in Chapter 3 provide adequate protections for the resources from potential conflicts resulting in no unmitigated resource conflicts. Therefore, this separate alternative is not needed. Additionally, removal of parcels from lease consideration would not contribute to the fulfillment of EO 14154, Unleashing American Energy.

Regulations (see 43 CFR § 3120.32) describe the parcel preference review process based on specific criteria. This regulation does not prohibit leasing parcels of lower preference even if no parcels meet any or all criteria for a high preference lease parcel. See Appendix E. Leasing Preference Rating for Nominated Lease Parcels.

2.6.1 LWC Avoidance Alternative

Under this alternative, the BLM would not offer any parcels which are within the lands with wilderness characteristics (LWC) inventory units found to possess wilderness characteristics. The following parcels occur either wholly or partially within LWC units: 1680, 1681, 1703, 1705, 1719, 1734, 1765, 1767, 1789, 1791, 1792, 1799, 7785, 7793, 7809, 7830.

LWC inventory findings are only a resource determination and are not a special land use allocation or designation. The LWC units affected under the proposed action do not have protected land use status that requires avoidance per statute, regulation, policy, or a public planning decision. A small portion of parcel 7830 overlaps with the White River Natural Area; per the Vernal RMP, the natural area is a protected LWC unit, and this parcel has lease stipulation UT-S-87: No Surface Occupancy (NSO) – White River BLM Natural Area applied. The other parcels are in LWC units that the BLM is not managing for the protection of their wilderness characteristics per the applicable RMP. However, these lease parcels also have NSO stipulations for fragile soils/slopes greater than 40%, CSU stipulations for fragile soils/slopes between 21-40%, and numerous additional stipulations and notices for cultural resources, visual resources, wild and scenic rivers, riparian areas, sensitive or endangered plants, and/or wildlife.

BLM's analysis of the proposed action assessed potential LWC impacts as limited in both time, intensity, and spatial scope. Most of the nominated lease parcels only partially overlap their respective LWC units; therefore, potential lease development outside many LWC units may be possible. At the leasing stage, it is not possible to determine when or where potential development will occur within a lease parcel; it is possible that all, some, or none of such development may occur within the LWC unit. It is also possible that the affected parcels will never see development before the lease expires. Applicable lease stipulations and notices would further minimize potential impacts within LWC units. Potential impairment of LWC resources is expected to be minimal or non-existent, as discussed in Appendix A, AIB-7.

The BLM dismissed this alternative from detailed analysis because it applies protective status to LWC resources not provided for via a statutory process, disregards LWC management decisions made in the applicable RMPs, arbitrarily prioritizes LWC without consideration of mitigating factors, and fails to more effectively inform BLM's decision. BLM already analyzes not leasing LWC parcels in the No Action Alternative. Including an LWC avoidance alternative that states the same outcome as the No Action, that potential impacts described in the Proposed Action will not occur in LWC, does not provide new information to the discussion. BLM can make an adequately informed decision on whether to avoid some, all, or none of the potential impacts to LWC units based on the analysis in the Proposed Action alternative.

2.6.1 Big Game Habitat Avoidance Alternative

Under this alternative, the BLM would not offer any parcels with crucial winter range² for mule deer (*Odocoileus hemionus*) and elk (*Cervus canadensis*), crucial habitat² for pronghorn (*Antilocapra americana*), or migratory corridors² for mule deer within the parcel boundary (1662, 1674, 1678, 1680, 1681, 1683, 1684, 1689, 1691, 1696, 1698, 1702, 1703, 1705, 1715, 1717, 1719, 1734, 1742, 1765, 1767, 1791, 1792, 1798, 1808, 1810, 1815, 1817, 1818, 1823, 1825, 7763, 7764, 7778, 7779, 7781, 7782, 7784, 7785, 7786, 7793, 7809, 7813, 7814, 7823, 7824, 7825, 7826, 7830, 7833, 7837, and 7840) As discussed in AIB-25, all of these parcels would have lease stipulations and notices attached that reduce or eliminate impacts to the species through timing restrictions on surface disturbing activities during critical time periods. In

² As identified by Utah Department of Wildlife Resources.

addition, parcels 1673, 1674, 1703, 1715, 1767, and 7805 have at least a portion of the surface acreage managed by UDWR as a State Wildlife Management Area with the purpose of protecting big game winter range. The lessee would need to obtain a Surface Use Easement from UDWR for access to these properties. Therefore, in accordance with NEPA, Sec. 102 (H), there are no unresolved conflicts about the proposed action with respect to big game species that would require consideration under a separate alternative. See analysis provided in Appendix A, AIB-25.

CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

3.1 INTRODUCTION

This chapter contains the effects analysis related to the issues. Section 3.2 describes the analysis assumptions for the future potential development of the nominated lease parcels. Section 3.3 presents the relevant past, present and reasonably foreseeable actions. Section 3.4 describes the effects of the No Action Alternative for all issues. Section 3.5 presents the issues that are analyzed in brief found in Appendix A. Section 3.6 presents the issues that are analyzed in detail.

Lease stipulations and notices (Appendix C) are referred to throughout the analysis in Sections 3.5 and 3.6 in terms of their protective influence on resources that may be impacted by future potential development of the nominated lease parcels. Lease stipulations “are conditions of lease issuance which provide protection for other resources values or land uses by establishing authority for substantial delay or site changes or the denial of operations within the terms of the lease contract” (BLM, 1990). Lease stipulations are enforceable terms of the lease contract and supersede any inconsistent provisions of the standard lease form. Lease notices (also referred to as Information Notices in BLM Handbook H-1624) provide “notice of existing requirements and may be attached to a lease by the AO at the time of lease issuance to convey certain operational, procedural, or administrative requirements relative to lease management within the terms and conditions of the standard lease form” (BLM, 1990). Lease notices may not serve as the basis for denial of lease operations. However, they offer resource protections because they result in information gathering and the identification of resource values and land uses that the BLM, based on its authority under Section 6 of the lease form (Form 3100-011), can require protection for within the constraints enumerated in the lease form (e.g., terms and conditions that would be attached at the Application for Permit to Drill (APD) stage) (also see Section 2.2 for a discussion of the standard terms and conditions).

3.2 ANALYSIS ASSUMPTIONS

While issuance of a lease would not directly authorize any oil and gas development or production, future oil and gas development and production is a reasonable outcome of a granted lease right. There are currently no development proposals for the nominated lease parcels because they have not been leased; therefore, the BLM does not have parcel specific information related to oil and gas development. For the purpose of this analysis, Section 3.2.1. outlines the methods for estimating number of wells, acres of surface disturbance, water use, and potential

production volumes associated with the future potential development of the 58 nominated lease parcels.

It is unknown when, where, or to what extent subsequent well sites, roads, and associated infrastructure would be proposed in the event the BLM decides to lease the nominated lease parcels. Future potential development of the nominated lease parcels could include the following phases (Appendix E provides a summary of the phases of oil and gas development):

- Well Development,
 - Vegetation and soil removal
 - Construction of pads, roads and pipelines
- Drilling
 - Mud/cuttings
 - Well completion
 - Hydraulic Fracturing
- Production and Operation
 - Production
 - Sale of product
 - Hauling of produced fluids such as oil or produced water
 - Inspections
 - Compression to move gas through pipeline systems
 - Well monitoring for the life of the well
 - Workover operations
- Well Reclamation.
 - Plugging and abandonment
 - Reclamation of the pad, roads, pipelines

3.2.1 Methods Used for Estimating Number of Oil and Gas Wells, Surface Disturbance and Production Volumes

The production and disturbance estimate for the Lease Sale EA is based on historical oil and gas development information in Utah. Information from the BLM oil and gas statistics, recent APDs, the S&P Global Enerdeq Browser database, and the Utah Division of Oil and Gas (UDOGM) production reports were used to estimate the number and type of wells, and the potential quantity of oil and gas and water that may be produced from the nominated lease parcels. More details regarding these estimates of potential development are provided in Appendix J. Using this information, estimates of the number of wells developed and surface disturbance is provided in Table 3, and estimates produced oil, gas, and water are provided in Table 4. Parcel-level information on disturbance is provided in Appendix J. While future development may not mirror prior development, the historical data provides a reasonable estimate for development that may occur on lease parcels in the absence of development plans from operators.

Table 3 Estimated Number of Wells and Surface Disturbance

Field Office	Parcels Offered	Acres Offered	Total Estimated Wells	Horizontal Wells	Vertical Wells	Estimated Surface Disturbance (Acres)
Vernal	52	66,701.26	254	183	71	628.6
Moab	5	4,789.84	19	14	5	155.8
Monticello	1	120.00	1	1	0	8.2
Total	58	71,611.10	274	198	76	794.0

Table 4 Estimated Ultimate Recovery (EUR) of Produced Oil, Gas, and Water

Field Office	Single Well EUR (Oil bbl)	Single Well EUR (Gas mcf)	Single Well EUR (Water bbl)	Total EUR (Oil bbl)	Total EUR (Gas mcf)	Total EUR (Water bbl)
Vernal	353,559	1,058,911	938,708	89,803,986	268,963,394	238,431,749
Moab	237,510	149,580	445,368	4,512,690	2,842,020	8,461,984
Monticello	237,510	149,580	445,368	237,510	149,580	445,368

Estimates of water needed per well are based on actual data from recent development (BLM, Programmatic Biological Assessment on Fluid Mineral Development Small Water Depletions of the Upper Colorado River Basin in Utah, 2025). Estimates include water needed for all aspects of oil and gas development and production including dust suppression. Water usage varies based on whether the well is horizontal or vertical and can be decreased if water recycling techniques are used. Vertical well water use can range from 3-15 acre feet per well and horizontal from 11-59 acre feet per well.

3.2.2 Short-Term and Long-Term Effects

For the purposes of this analysis, short-term effects are those that cease after well construction and completion (30–60 days) or cease after interim reclamation (2–5 years). Long-term effects are generally considered to be those associated with operation and production activities over the life of the well (for example, noise) or that otherwise extend beyond the short-term time period (for example, surface disturbance subject to final reclamation). Long-term effects would be resource dependent and discussed individually with each resource.

3.3 RELEVANT PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS

This section outlines past, present, and reasonably foreseeable future actions and environmental trends in the vicinity of the nominated lease parcels that have a relationship to potential resource effects associated with the alternatives. This section appears prior to the impacts analysis because it is intended to provide broad context for those analyses and the activities occurring and trends influencing the environment in the area.

The parcels are located within seventeen Hydrologic Unit Code (HUC) 10 watersheds that are nested within three HUC6 subbasins (Table 5). HUC10s provide an effective means of defining reasonably foreseeable future actions areas because they encompass areas of similar environmental conditions.

In recent decades, the influences on the landscape in the vicinity of the nominated lease parcels include the following:

- Oil, gas, and oil shale development and reclamation
- Bonanza Power Plant
- Gilsonite, Copper, and Uranium Mining
- Parcel 7814 encompasses private surface ownership occupied by the Bonanza Power plant.
- Parcel 7824 is adjacent to the Lisbon Valley Copper Mine.
- Velvet Wood uranium/vanadium mine is adjacent to the south side of Parcel 7824.
 - The Bonanza Gilsonite mine is located approximately 4 miles south of parcel 1514 along state highway 45. The mine is located entirely on private property.
 - There are numerous electrical transmission lines that run close, adjacent to, or through many of the proposed lease parcels.
 - Watershed restoration projects are planned and in progress in the White River corridor, Willow Creek and Bitter Creek Watersheds
 - Livestock grazing: There are 23 allotments associated with the nominated lease parcels. 18 allotments are located within the VFO, three allotments within the MbFO and one allotment within the MtFO. The one remaining allotment, Evacuation Creek, is managed by the White River Field Office. AIB-7 contains a more detailed analysis on the 23 allotments that contain nominated parcels.
- Past vegetations projects associated with the HUC 10 units within the VFO include lop and scatter, mastication, dixie harrow, bull hog, and slashing projects within and adjacent to the following lease parcels: 1674, 1808, 1818, 1678, 1815, 1816, 1703, 7809, 1767, 1765, 1193, 1791, 1792, 1719, 7785, 1705, 7786, 1684, 1742, 7837, 1702, 7840. There are current lop and scatter projects located within VFO parcels: 1684, 1705, 1678, 7786, 1791, 1818, 7785, 1792. Parcels 1715, 1674 and 1662 have a Winter Ridge sagebrush restoration project planned. It is anticipated given the historical and current vegetation treatment practices within the VFO that future lop and scatter, mastication, bull hog, and other vegetation management activities would occur with the proposed sagebrush restoration project. Past and present projects are typically a small percentage of the lease parcel acreage. A small piece of parcel number 7824 in Moab had a historic lop and scatter treatment completed. There are no known current vegetation treatments within MtFO and MbFO that are within the parcels.

Table 5 HUC 10 Watershed encompassing proposed parcels

HUC 10 Number	Subbasin Name	Watershed Name	Acres	Parcels	Parcel Acres per HUC 10
1403000207	Upper Colorado-Dolores	Summit Canyon-Dolores River	118563	7824	203
1403000208	Upper Colorado-Dolores	Coyote Wash	113388	7824	441

HUC 10 Number	Subbasin Name	Watershed Name	Acres	Parcels	Parcel Acres per HUC 10
1403000505	Upper Colorado-Dolores	East Canyon-Hatch Wash	187403	7824, 7825	632
1403000506	Upper Colorado-Dolores	Hatch Wash-Kane Springs Creek	232122	7772	411
1405000705	White-Yampa	Dripping Rock Creek-White River	240525	1689, 1698, 7840	874
1405000706	White-Yampa	Evacuation Creek	184113	1680, 1684, 1688, 1705, 1734, 1791, 1792, 1799, 7779, 7785, 7786	13,460
1405000707	White-Yampa	Asphalt Wash-White River	121848	1630, 1684, 1687, 1719, 1789, 1798, 1798, 7785, 7786, 7830	4,570
1405000708	White-Yampa	Sweet Water Canyon	100288	1678, 1815, 1818, 7778	4,321
1405000709	White-Yampa	Bitter Creek	153680	1687, 1823, 1681, 1683, 7778, 1719, 7785, 1705, 1767, 1765, 7793, 1791, 1703, 7809, 1792	16,991
1405000710	White-Yampa	Coyote Wash	150308	1691, 1696, 1698, 1702, 1742, 7781, 7782, 7784, 7813, 7814, 7826, 7833, 7837	14,235
1405000711	White-Yampa	Cottonwood Wash-White River	185202	1825, 1683, 1816, 1817	1,409
1406000315	Lower Green	Duchesne River	109121	7823	24
1406000602	Lower Green	East Willow Creek-Willow Creek	214653	1715, 1674, 1662, 1672, 1673	7,597
1406000604	Lower Green	Agency Draw-Willow Creek	126974	1717, 1808, 1810	4,546
1406001005	Lower Green	Cliff Creek	106251	7837, 7840	952
1406001010	Lower Green	Twelvemile Wash	80996	7823	9
1406001012	Lower Green	Pelican Lake-Green River	83872	7823	855

As of April 8, 2025, there are 7,546 drilled or drilling oil and gas or service wells, 4,150 plugged and abandoned well locations that may be at various levels of reclamation, and 716 proposed well locations within these seventeen HUC 10 watersheds, as shown in Table 6.

Table 6 Existing Well and APD Status by Watershed

Watershed Name	Proposed Locations ¹	Plugged and Abandoned	Drilled or Drilling Locations ²	Total Number of Wells	Total Number of Well Pads
Summit Canyon-Dolores River	0	26	3	29	28
Coyote Wash	1	24	31	56	49
East Canyon-Hatch Wash	1	56	24	81	77
Hatch Wash-Kane Springs Creek	1	39	11	51	49
Dripping Rock Creek-White River	3	1,354	1,018	2,375	2,044
Evacuation Creek	1	225	114	340	319
Asphalt Wash-White River	67	240	385	692	369
Sweet Water Canyon	0	30	24	54	52
Bitter Creek	1	128	93	222	183
Coyote Wash	53	359	965	1,377	1,141
Cottonwood Wash-White River	87	1,013	3,076	4,176	2,541
Duchesne River	293	98	603	994	603
East Willow Creek-Willow Creek	2	44	19	65	57
Agency Draw-Willow Creek	15	217	491	723	609
Cliff Creek	0	44	2	46	45
Twelvemile Wash	21	59	45	125	109
Pelican Lake-Green River	170	194	642	1,006	636
TOTAL:	716	4,150	7,546	12,412	8,911

1 Includes New and approved APDs

2 Includes Active and Inactive Service wells, producing wells, spudded or actively drilling wells, temporarily abandoned wells, shut-in wells, and drilling operation suspended wells

Uintah, Grand, and San Juan Counties, where the nominated lease parcels are located, have been experiencing intermittent drought conditions for at least the past 24 years. All land within the analysis area is currently in Moderate to Exceptional long-term drought conditions. (BLM, 2025) Droughts such as those experienced in Uintah, Grand, and San Juan Counties are a natural part of Utah's climate. Higher temperatures will amplify the effects of naturally occurring dry spells by increasing the rate of loss of soil moisture. Additionally, higher spring temperature can cause early melting of the snowpack, decreasing water availability during the already dry summer months. The projected increase in the intensity of naturally occurring droughts will increase the occurrence and severity of wildfires.

3.4 NO ACTION ALTERNATIVE IMPACTS FOR ALL ISSUES

Under the No Action Alternative, the BLM would not offer for lease the 58 nominated lease parcels and the existing conditions and trends related to each issue would continue. Potential impacts associated with future potential development of the nominated lease parcels would not occur under this alternative, current land and resource uses would continue, and the federal mineral acreage would remain open to future oil and gas leasing unless land use plan amendments are completed to close these areas to leasing. No natural gas or crude oil from the nominated lease parcels would be produced at this time, and no royalties would accrue to federal or state treasuries.

3.5 ISSUES ANALYZED IN BRIEF (AIB)

Following internal and external scoping, 26 issues were identified, considered, and eliminated from detailed analysis by members of the IDT in review of the Proposed Action. Each of these issues is outlined in Appendix A with a concise discussion regarding the degree of the impact in the context of the affected area for each issue. Lease Notices HQ-TES-1 (compliance with the ESA), HQ-CR-1 (compliance with the NHPA and other cultural resource-related authorities), and HQ-MLA-1 (compliance with the MLA), as well as standard terms and conditions as described in the lease form, would apply to all nominated lease parcels.

3.6 ISSUES ANALYZED IN DETAIL

Consistent with 43 CFR § 3120.32, § 3120.41, and the guidelines set forth in the DOI NEPA implementing procedures (516 DM 1) (BLM, 2025), the BLM identified site-specific resource concerns and lease stipulations for proposed parcels through a preliminary review process conducted prior to a public scoping period. The following resources/issues are analyzed in detail in this EA using input from internal and external scoping. Issues were retained for detailed analysis if that analysis is necessary to make a reasoned choice between alternatives; to determine significance; if there is disagreement about the best way to use a resource; or if there is conflict between resource impacts or uses.

3.6.1 Issue 1: Air Quality

What quantities and types of air pollutants could be produced from potential development of the nominated lease parcels? How would air pollutant emissions affect air quality and air quality related values?

Air quality is determined by the quantity and chemistry of atmospheric pollutants and is affected by meteorological factors (i.e., weather patterns) and topography. These factors influence the dispersion and concentration of these pollutants. The presence of air pollutants is due to several different and widespread sources of emissions. The impact analysis area for air quality is the airsheds in which the lease parcels are located. However, air quality data is reported at the county level instead of by airshed, so county level data is used here as a proxy. The BLM identified this spatial scope of analysis based on the natural dispersion of air pollution and to facilitate analysis using the best available air quality data.

Affected Environment

The BLM Air Resource Management Strategy 2025 Monitoring Report (BLM, 2025), hereafter referred to as the Air Monitoring Report, discusses past, present, and foreseeable emissions and air quality data for Utah. The BLM incorporates by reference information from the Air Monitoring Report to help describe the air quality affected environment in the analysis area. The EPA has primary responsibility for regulating air quality, including six nationally regulated criteria air pollutants (CAPs): carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀ & PM_{2.5}), sulfur dioxide (SO₂) and lead (Pb). Volatile organic compounds (VOCs) are also regulated by the EPA as sunlight causes VOCs to react with NO₂ to form O₃. The National Emissions Inventory (NEI) (EPA, 2024) is a comprehensive and detailed estimate of CAP emissions, criteria precursors, and hazardous air pollutants (HAPs). The NEI is released every three years based primarily upon data provided by state, local, and tribal air agencies for sources in their jurisdictions and is supplemented by data developed by the US EPA. The most recent reporting year for the NEI is 2020. County emissions inventories relevant to the analysis area are listed in Table 7. Total emissions include both natural (e.g., wildfires and biogenic) and anthropogenic (e.g., fuel combustion and mobile) sources. Although lead is identified as a CAP under the Clean Air Act (CAA), it is dismissed from further discussion because statewide emissions reported in the 2020 NEI are less than one ton per year, with major sources of lead emissions coming from ore and metals processing (EPA, 2025) and not oil and gas development. Therefore lead is considered negligible for the purposes of this analysis.

Table 7. Existing Criteria Air Pollutant and VOC Emissions in Tons Per Year (TPY)

County	Source	CO	NO _x **	PM ₁₀	PM _{2.5}	SO ₂	VOC
Grand	Anthropogenic*	4,279.1	1,487.7	1,461.5	224.6	5.5	1,089.7
	Total	6,623.1	2,059.7	1,465.1	227.7	5.9	11,687.5
San Juan	Anthropogenic*	3,874.9	849.5	4,141.7	668.5	43.6	1,239.9
	Total	8,621.9	1,672.2	4,205.2	722.4	49.7	20,814.3
Uintah	Anthropogenic*	10,773.1	7,932.5	5,997.8	1,234.1	135.1	47,429.0
	Total	13,636.0	8,644.4	6,000.1	1,253.1	137.1	58,108.2

Source: The National Emissions Inventory

*Anthropogenic emissions are considered all emissions omitting wildfires and biogenic sources.

**nitrogen oxides(s)

The EPA has established National Ambient Air Quality Standards (NAAQS) for CAPs (EPA, 2024). The NAAQS are protective of human health and the environment. Compliance with the NAAQS is typically demonstrated through monitoring of ground-level concentrations of atmospheric air pollutants. The EPA designates areas where pollutant concentrations do not exceed the NAAQS as either attainment or unclassifiable. Areas designated as unclassifiable for a given NAAQS are those where available monitoring data are insufficient or unavailable to determine compliance; under the CAA, such areas are treated as being in attainment for regulatory purposes. Locations where monitored pollutant concentrations exceed the NAAQS are designated nonattainment, and the EPA considers this air quality as unhealthy. These air pollutant concentrations are reported using design values. A design value is a statistic that describes the air quality status of a given location relative to the level of the NAAQS. Design values are used to designate and classify nonattainment areas, as well as to assess progress towards meeting the NAAQS. Design values that are representative of the airsheds of interest are

listed in Table 8. Based on design values, the EPA has designated portions of Duchesne and Uintah Counties below 6,250 ft. elevation (i.e., Uinta Basin) as nonattainment for O₃. All other counties where lease parcels are located are designated as attainment or unclassifiable for all CAPs. The EPA has classified the Uinta Basin as “moderate” nonattainment area for the 2015 ozone standard. Ozone values have trended down in recent years, but the region is still prone to high ground-level ozone concentrations during winters with considerable snowfall.

Table 8. County-Level Design Values for the Averaging Period of 2022-2024.

Pollutant	County	Averaging Time	2022-2024 Concentration	NAAQS	Percent of NAAQS
PM _{2.5}	Grand	Annual	7.3*	9 µg/m ³	81%
	Uintah		5.6		62%
PM _{2.5}	Grand	24-hour	14*	35 µg/m ³	40%
	Uintah		18		51%
NO ₂	Grand	Annual	4	53 ppb	8%
	Uintah		3		6%
NO ₂	Grand	1-hour	23*	100 ppb	23%
	Uintah		30		30%
O ₃	San Juan	8-hour	0.065	0.070 ppm	93%
	Uintah		0.076		109%

Source: The National Emissions Inventory

¹Concentrations in parts per million (ppm), parts per billion (ppb), and micrograms per cubic meter (µg/m³).

*Indicates that the design value is incomplete for the reporting years. While incomplete values can't be used for attainment determinations, they still provide useful information about air quality in their respective airshed.

HAPs, also known as toxic air pollutants, are known, or suspected, to cause cancer or other serious health effects, or adverse environmental effects (EPA, 2025). The primary HAPs emitted by the oil and gas industry include benzene, toluene, ethyl benzene, mixed xylenes, formaldehyde, normal-hexane, acetaldehyde, and methanol. Statewide, these individual pollutants make up 95% of the HAPs emitted from the oil and gas production. The total HAPs emissions for the State of Utah and the counties where the lease parcels are located are listed in Table 9.

Table 9. 2020 Hazardous Air Pollutant Emissions by County in Tons Per Year (TPY)

County	Total Emissions	Vegetation and Soils	Wildfire	Prescribed Fire	Oil and Gas Production	Anthropogenic Emissions
Grand	2,201.48	2,017.46	2.91	23.22	39.20	181.11
San Juan	4,025.14	3,811.96	49.05	53.76	6.13	164.13
Uintah	4,814.43	2,410.69	16.35	10.05	2,199.96	2,387.39
State Total	83,710.82	39,695.91	26,178.41	798.10	3,946.35	17,836.51

Source: The National Emissions Inventory

The EPA Air Toxics Screening Assessment is used to evaluate impacts from existing HAP emissions in Utah (EPA, 2023). Air Toxics Screening Assessment results for counties relevant to the analysis area are reported in Table 10. The total cancer risk is within the acceptable range published by the EPA of less than 100 in 1 million as discussed in the National Contingency

Plan, 40 CFR § 300.430 (EPA, 1999). A hazard index (HI) is a numerical value that represents the combined potential for non-cancer health effects from exposure to specific air toxics. Hazard index values less than one indicate it is unlikely that these air toxics would cause adverse health effects over a lifetime of exposure. Potential development on the lease parcels would contribute to HAP emissions and associated carcinogenic and noncancer risks.

Table 10. Total Cancer Risk and Noncancer Respiratory Hazard from Existing HAP Emissions (2019 Reporting Year)

County	Total Cancer Risk (per million)	Background Cancer Risk (per million)	Oil and Gas Cancer Risk (per million)	Total Respiratory Hazard Index (HI)
Grand	11.74	2.66	0.01	0.12
San Juan	11.04	2.58	0.14	0.11
Uintah	12.75	2.63	1.32	0.13
State Total	17.80	2.65	0.06	0.23

Source: EPA's Air Toxics Screening Assessment.

The Clean Air Act (CAA) Prevention of Significant Deterioration (PSD) requirements give more stringent air quality and visibility protection to national parks and wilderness areas that are designated as Class I areas, but a PSD designation does not prevent emission increases. Class I areas are areas of special national or regional natural, scenic, recreational, or historic value, and allow very little degradation in air quality, while Class II areas allow for reasonable industrial/economic expansion. The five national parks in Utah are Federally designated Class I areas, and the rest of the state is designated as Class II. Federal land managers are responsible for defining specific Air Quality Related Values (AQRVs) including visual air quality (haze), and acid (nitrogen and sulfur) deposition—for an area and for establishing the criteria to determine an adverse impact on the AQRVs. Federal land managers are responsible for defining specific Air Quality Related Values (AQRVs), including visual air quality (haze), and acid (nitrogen and sulfur) deposition, for any Class I area and for establishing the criteria to determine an adverse impact on the AQRVs (42 U.S.C. § 7475(d)(2)(B)). All the lease parcels in this EA are located within PSD Class II areas. Visibility trends based on air monitoring data from four Utah monitoring sites for the clearest, haziest, and most impaired categories are incorporated by reference from the Air Monitoring Report (see Figures 2 through 5 of the Air Monitoring Report). The marked improvement on the most impaired days at Utah Class I areas demonstrates progress toward Regional Haze Rule goals. The National Park Service monitors and evaluates deposition to determine which parks are most at risk from air pollution and where conditions are declining or improving. At the two deposition monitoring sites in Utah (Bryce Canyon National Park and Canyonlands National Park), nitrogen deposition conditions are fair to poor with a trend that is relatively stable, while sulfur deposition conditions are good with an improving trend at Canyonlands and a relatively unchanging trend at Bryce Canyon (see Table 22 of the Air Monitoring Report).

Reasonably Foreseeable Future Actions

The BLM incorporates by reference the projected changes to air quality and AQRVs that are evaluated in the BLM's Regional Air Quality Model (Ramboll, 2023). This modeling study provides a reference for potential changes to the affected environment occurring from past,

present, and foreseeable emissions producing activities, including development of oil and gas leases, coal mining, and other emission sources in the region.

Emissions Trends

Past and present actions that have affected and would likely continue to affect air quality in the analysis 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. These types of actions and activities can reduce air quality through emissions of CAPs (including fugitive dust), and HAPs, as well as contribute to deposition impacts and to a reduction in visibility. Emissions from these activities are included in the inventory contained in Table 9. In the future, emissions from vehicle exhaust and from residential and commercial activities will likely increase as population and tourist visitation increases in the area.

Estimates of future criteria and hazardous emissions are made in the BLM Regional Air Quality Model (Ramboll, 2023). Emissions estimates are based on the EPA2016v2 modeling platform (Ramboll, 2023), the Western Regional Air Partnership Oil and Gas Working Group emission inventory, and BLM RFD estimates for oil, gas, and coal production. Sources included coal mining, coal combustion, oil and gas development, other anthropogenic sources (mobile and non-point), and natural emissions (open land fires, biogenic). The effects of these emissions are evaluated in the modeled air quality projections section below. Emissions in the oil and gas sector are provided in Table 11. Oil and gas sector emissions are roughly parallel to oil and gas production. Development and production estimates associated with these emissions projections for oil, gas, and coal are listed in the Air Monitoring Report (see Appendix D of the Air Monitoring Report). Comparison of the average oil and gas activity over the last five years to the BLM Regional Air Quality Model shows that oil production, producing wells, and new wells (spud) are less than what was modeled, and the 5-year gas production is about the same as what was modeled. This information indicates that air quality projections from the BLM Regional Model should still be representative of Federal oil and gas activity in Utah. The modeled air quality projections fully capture past and present oil and gas development, including potential development on these lease parcels and beyond.

Table 11. Modeled Circa 2032 (New Plus Existing Wells) Oil and Gas Emissions in Utah by Mineral Owner in Tons Per Year (TPY)

Mineral Ownership	NO _x	VOC	CO	SO ₂	PM _{2.5}	PM ₁₀	HAPs
Federal (Excluding Tribal)	10,113	117,584	9,540	288	489	489	7,227
Non-Federal	5,449	26,535	5,670	185	267	267	1,985
Tribal	3,763	30,953	3,651	156	189	189	1,673
Total	19,325	175,071	18,861	629	944	944	10,885

Modeled Air Quality Projections

Results from the BLM Regional Air Modeling Study show there are no projected exceedances of the NAAQS for NO₂, SO₂, and CO. Source apportionment analysis shows that exceedances of the PM_{2.5} and PM₁₀ standards are due to wildfires, and there are no exceedances due to anthropogenic emissions. Modeled concentrations of O₃ throughout Utah, including counties where lease parcels are located, are in the 55-65 ppb range, which is also below the NAAQS. The existing federal oil and gas sources in the BLM Green River District (Carbon, Daggett, Duchesne, Emery, and Uintah counties) contribute up to 3.7 ppb of O₃, while the new federal oil and gas sources, including the development of the subject lease parcels, in the Green River District contribute up to 2.5 ppb to the O₃ concentrations. The model source apportionment results show that emissions sources outside of Utah have a large contribution to the maximum ozone concentrations in Utah.

Model results were further analyzed to evaluate if NO_x or VOC emissions from oil and gas activities have the largest contribution to O₃ formation in the Uinta Basin. This analysis found that during days of high cumulative O₃ concentrations, the O₃ formed from new federal oil and gas development is predominantly VOC sensitive. In other words, VOC emissions have a major effect on the ozone formed in the Uinta Basin, and reducing VOC emissions could reduce ozone concentrations.

The BLM used the Regional Model Study modeling platform to evaluate the cumulative health effects of specific HAPs originating from oil and gas production (Ramboll, 2023). A photochemical model is used to estimate the cumulative ambient air concentrations of six HAPs (benzene, toluene, ethylbenzene, xylenes, n-hexane, and formaldehyde) resulting from emissions from federal and non-federal oil and gas sources. These six HAPs were selected by BLM for study as they are subject to emissions standards (New Source Performance Standards [NSPSs] and National Emissions Standards for Hazardous Air Pollutants [NESHAPs]) regulated for the oil and gas sectors. Cancerous and non-cancerous risk factor results from the HAPs modeling are provided in the Air Monitoring Report (see Tables 29 and 30 of the Air Monitoring Report) and are incorporated by reference here. The health-based inhalation thresholds used in the BLM HAPs modeling study are the same as those used in EPA's AirToxScreen (EPA, 2023). Total human cancer risk from oil and gas production is highest in Uintah County with a risk factor of 29.8 in a million people, which is below EPA's 100 in 1 million cumulative threshold. Cancer risks factors from oil and gas in other counties where lease parcels are located are: Grand 1.3 in a million and San Juan 4.2 in a million, Chronic noncancer health effects from oil and gas production are also below levels of concern.

Air Quality Related Values

Regional Haze modeling (WRAP/WAQS, 2021) was performed by the EPA and Western Region Air Partnership states to evaluate if reasonable progress is being made toward natural visibility conditions to be achieved by the year 2064 (40 CFR 51.308(d)(1)(i)(B)). The model uses source apportionment to isolate the contributions of U.S. anthropogenic emissions, along with other sources (e.g., international anthropogenic emissions, fires, and natural sources), to visibility extinction at monitoring sites representing Class I areas in the western U.S. This allows for the

estimation of the changes in visibility impairment due to U.S. anthropogenic emissions at Class I areas over time and whether they are trending toward no impairment due to U.S. anthropogenic emissions by 2064. The modeling study shows that the current trendline would reach the no impairment goal before 2064.

The BLM Regional Model Study also evaluated deposition of nitrogen and sulfur. A critical load is considered the maximum level of atmospheric deposition of a pollutant that an ecosystem can receive without experiencing harmful environmental effects. The critical load for deposition is 5 kg/ha/yr, and projected deposition rates for both nitrogen and sulfur are below the critical load value. Aggregate annual nitrogen deposition over the Utah analysis area varies between 0.6 and 4.5 kg N/ha. Deposition values are less than 4 kg N/ha throughout most of Utah. Aggregate annual sulfur deposition over Utah varies between 0.01 and 1.1 kg S/ha within Utah, with the maximum deposition occurring near the Carbon-Emery County border.

Environmental Effects

There are four general phases of lease development that would generate air pollutant emissions: 1) well development (well site construction, well drilling, and well completion), 2) well production operations (extraction, separation, gathering), 3) mid-stream (refining, processing, storage, and transport/distribution), and 4) end-use (combustion or other uses) of the fuels produced. While well development and production operations emissions (phases 1 and 2) occur on-lease and the BLM has program authority over these activities, mid-stream and end-use emissions (phases 3 and 4) typically occur off-lease where the BLM has no program authority. During well development, there could be emissions from earth-moving equipment, vehicle traffic, drilling, and completion activities. NO₂, SO₂, and CO would be emitted from vehicle tailpipes. Fugitive dust concentrations would increase with additional vehicle traffic on unpaved roads and from wind erosion in areas of soil disturbance. Drill rig and fracturing engine operations would result mainly in NO₂ and CO emissions, with lesser amounts of SO₂. These temporary emissions would be short-term during the drilling and completion phases, which is expected to last between 30 to 60 days. During well production and operations there could be continuous emissions from separators, condensate storage tanks, flares or combustors, and daily tailpipe and fugitive dust emissions from operations traffic. During the operational phase of a well, NO₂, CO, VOC, and HAP emissions would result from the long-term use of storage tanks, pumps, separators, and other equipment. Additionally, dust (PM₁₀ and PM_{2.5}) would be produced due to wind erosion on well pads and roads, and by vehicles servicing the wellsite infrastructure. Single well emission estimates for well development and production operations are based on typical development and production operations scenarios identified in the Air Monitoring Report (BLM, 2025). The single well emissions (well development and production operations) and assumptions for analysis are used to calculate the annual emissions over the anticipated production life of all leases (approximately 30 years), see Appendix H.

Actual development of individual leases may result in higher or lower emissions for various reasons including differences with geologic formations, proximity to existing support infrastructure, differences in pace of development, different development methods and control technology used by a lessee, and other reasons. A lessee has 10 years to produce in paying quantities on a lease. If production is not established within the 10-year timeframe, the lease would be terminated with no development or emissions occurring.

Emissions of CAPs would also occur outside the impact analysis area from transport, processing, distribution, and end-use. These emissions fall outside the BLM's authority to permit or control and are regulated by other state, local, and federal agencies and for these reasons will not be evaluated in detail.

At the leasing stage it is not possible to accurately estimate potential air quality impacts by modeling development on each lease parcel due to the variation in emission control technologies as well as construction, drilling, and production technologies applicable to oil versus gas production and utilized by various operators. Should development on the lease parcels be proposed, and prior to authorizing specific proposed projects on the subject lease parcels, emission inventories may need to be developed. Nearfield 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 AQRVs (i.e., deposition, visibility), particularly as they might affect nearby (within 31.1 miles or 50 kilometers) Class I areas (some National Parks and Wilderness areas). The subject lease parcels are 20.5 miles or farther from nearby Class I areas.

Studies have demonstrated that oil and gas activity is a primary contributor to wintertime O₃ NAAQS exceedances in the Uinta Basin (Mansfield, 2021). While emissions from an individual well or well pad are too small to have a substantial impact on O₃ concentrations, they contribute alongside emissions from other local and regional oil and gas operations to produce an aggregate O₃ impact. These impacts are discussed in the air quality affected environment (Air Quality: Reasonably Foreseeable Future Actions) section. Impacts to AQRVs from existing oil and gas wells and future lease development are projected to be minimal (deposition is below the critical loads and visibility will meet goals before 2064). See Section 3.6.1, Affected Environment: Reasonably Foreseeable Future Actions.

Some lease parcels are located partially or fully within the Uinta Basin O₃ nonattainment area. The Clean Air Act general conformity rule (40 CFR 93 Subpart B) provides Federal agencies with a method for determining if the emissions in a nonattainment area, from an action under consideration, will delay an area from attaining the NAAQS. This is done by showing that emissions are either de minimis or conform to a State or Federal Implementation Plan. The BLM has prepared a general conformity applicability assessment, which is documented in Appendix G. This assessment demonstrates that the emissions associated with this action are not reasonably foreseeable as defined by the Clean Air Act and general conformity is not applicable to this leasing action. Another conformity applicability assessment will be needed at the permitting stage when information is available (location with respect to nonattainment area, non-permitted emissions sources, control technology, emissions offsets, new implementation plans, etc.) to create an emissions inventory based on actual plans for development.

The BLM does not anticipate substantial air resource impacts from leasing as this proposal is an administrative action. Lease development has the potential to contribute to O₃ exceedances in the Uinta Basin. Emission estimates associated with each alternative are provided below and would be part of the air quality analysis provided in the reasonably foreseeable future actions section. At the permitting stage, a precise emissions inventory will be developed and analyzed to ensure emissions are below de minimis levels or conform to state or Federal implementation plans that

are in effect at the time. As identified in notice UT-LN-102, additional analysis or mitigation may be required when leases are developed to ensure no adverse impacts occur.

Impacts of the Proposed Action (Alternative A)

Short-term, long-term, and average year emissions estimates for each BLM FO for Alternative A are provided in Table 12. Short-term emissions are those that occur primarily from exploration and well development and are from the maximum emissions year over the first ten years that a lease must be developed in order to continue to be held by production. The long-term emissions are those that occur primarily from well production. More details on the emissions estimates are provided in Appendix H, as well as the annual emissions breakdown for all lease development. Additionally, Table 12 shows average year emissions compared to existing anthropogenic emissions in the airshed (i.e., county).

Table 12. Annual Emissions Estimates from Well Development and Production Operations of Lease Parcels by Field Office for Alternative A (TPY)

Development of Lease Parcels in the Moab Field Office							
	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs
Max Year Short-Term Emissions	5.91	1.77	3.39	33.24	15.93	0.21	0.36
Max Year Long-Term Emissions	13.49	4.37	149.53	40.09	65.55	0.19	12.16
Average Year Emissions	11.34	3.65	115.57	36.24	53.01	0.180	9.412
Average Year Percent of Grand County Anthropogenic*	0.8%	1.6%	10.6%	2.4%	1.2%	3.3%	5.2%
Development of Lease Parcels in the Monticello Field Office							
	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs
Max Year Short-Term Emissions	1.97	0.59	1.13	11.08	5.31	0.07	0.12
Max Year Long-Term Emissions	0.71	0.23	7.87	2.11	3.45	0.01	0.64
Average Year Emissions	0.78	0.23	7.87	2.48	3.63	0.012	0.644
Average Year Percent of San Juan County Anthropogenic*	0.0%	0.0%	0.6%	0.3%	0.1%	0.0%	0.4%
Development of Lease Parcels in the Vernal Field Office							
	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs
Max Year Short-Term Emissions	70.92	21.24	40.68	398.88	191.16	2.52	4.32
Max Year Long-Term Emissions	180.34	58.42	1,998.98	535.94	876.30	2.54	162.56
Average Year Emissions	151.55	48.78	1,545.04	484.42	708.66	2.410	125.828
Average Year Percent of Uintah County Anthropogenic*	2.5%	4.0%	3.3%	6.1%	6.6%	1.8%	5.3%

See Appendix H for yearly emissions tables.

*Anthropogenic emissions are considered all emissions omitting wildfires and biogenic sources.

As previously stated, potential development on the lease parcels would not cause existing development to exceed those that were projected in the BLM Regional Air Quality model. The modeled air quality projections fully capture past and present oil and gas development, including potential development associated with the Proposed Action and beyond. The analysis assumptions estimate that 274 new wells would be developed from these lease parcels, which averages out to approximate 27 wells drilled each year over a 10-year period. The BLM Regional Air Quality model accounted for 2,784 new wells and 214 wells drilled each year. Model projected air quality impacts show no exceedances of NAAQS from new and existing oil and gas development. As the modeling analysis did not result in any NAAQS exceedances, and the Proposed Action indicates less oil and gas activity than that captured within the model, the BLM concludes that the Proposed Action would not be expected to result in NAAQS exceedances. Additionally, since the maximum projections from this Proposed Action are less than what is accounted for in the model, the cancer risk factor and non-cancer chronic health effect results from the HAP model are also valid and do not produce a substantial adverse health impact.

Impacts of the Graham's and White River Penstemon Avoidance Alternative (Alternative B)

The BLM performed an identical analysis as Alternative A for the Graham's and White River Penstemon Avoidance Alternative (Alternative B). The BLM calculated CAP and HAP emissions for all lease parcels included in this Alternative. While emissions in the Moab and Monticello FOs don't change, emissions for every pollutant are less in this Alternative compared to Alternative A for the Vernal FO. Emissions estimated for Alternative B are provided in Table 13 as short-term, long-term, and average year emissions. Additionally, Table 14 shows average year emissions compared to existing anthropogenic emissions in the airshed (i.e., county).

Table 13. Annual Emissions Estimates from Well Development and Production Operations of Lease Parcels by Field Office for Alternative B (TPY)

Development of Lease Parcels in the Moab Field Office							
	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs
Max Year Short-Term Emissions	5.91	1.77	3.39	33.24	15.93	0.21	0.36
Max Year Long-Term Emissions	13.49	4.37	149.53	40.09	65.55	0.19	12.16
Average Year Emissions	11.34	3.65	115.57	36.24	53.01	0.180	9.412
Average Year Percent of Grand County Anthropogenic*	0.8%	1.6%	10.6%	2.4%	1.2%	3.3%	5.2%
Development of Lease Parcels in the Monticello Field Office							
	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs
Max Year Short-Term Emissions	1.97	0.59	1.13	11.08	5.31	0.07	0.12
Max Year Long-Term Emissions	0.71	0.23	7.87	2.11	3.45	0.01	0.64
Average Year Emissions	0.78	0.23	7.87	2.48	3.63	0.012	0.644

Average Year Percent of San Juan County Anthropogenic*	0.0%	0.0%	0.6%	0.3%	0.1%	0.0%	0.4%
Development of Lease Parcels in the Vernal Field Office							
	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs
Max Year Short-Term Emissions	57.13	17.11	32.77	321.32	153.99	2.03	3.48
Max Year Long-Term Emissions	142.71	46.23	1,587.87	424.11	693.45	2.01	128.64
Average Year Emissions	119.93	38.60	1,222.65	383.34	560.79	1.907	99.572
Average Year Percent of Uintah County Anthropogenic*	2.0%	3.1%	2.1%	4.4%	4.1%	1.4%	2.1%

See Appendix H for yearly emissions tables.

*Anthropogenic emissions are considered all emissions omitting wildfires and biogenic sources.

Impacts of the Greater Sage-grouse Avoidance Alternative (Alternative C)

The BLM performed an identical analysis as Alternative A for the Grater Sage-grouse Avoidance Alternative (Alternative C). The BLM calculated CAP and HAP emissions for all lease parcels included in this Alternative. While emissions in the Monticello FOs don't change, emissions for every pollutant are less in this Alternative compared to Alternative A for the Moab and Vernal FOs. Emissions estimated for Alternative C are provided in Table 14 as short-term, long-term, and average year emissions. Additionally, Table 14 shows average year emissions compared to existing anthropogenic emissions in the airshed (i.e., county).

Table 14. Annual Emissions Estimates from Well Development and Production Operations of Lease Parcels by Field Office for Alternative C (TPY)

Development of Lease Parcels in the Moab Field Office							
	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs
Max Year Short-Term Emissions	1.97	0.59	1.13	11.08	5.31	0.07	0.12
Max Year Long-Term Emissions	4.26	1.38	47.22	12.66	20.70	0.06	3.84
Average Year Emissions	3.77	1.21	38.47	12.06	17.64	0.060	3.133
Average Year Percent of Grand County Anthropogenic*	0.3%	0.5%	3.5%	0.8%	0.4%	1.1%	1.7%
Development of Lease Parcels in the Monticello Field Office							
	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs
Max Year Short-Term Emissions	1.97	0.59	1.13	11.08	5.31	0.07	0.12
Max Year Long-Term Emissions	0.71	0.23	7.87	2.11	3.45	0.01	0.64
Average Year Emissions	0.78	0.23	7.87	2.48	3.63	0.012	0.644
Average Year Percent of San Juan County Anthropogenic*	0.0%	0.0%	0.6%	0.3%	0.1%	0.0%	0.4%
Development of Lease Parcels in the Vernal Field Office							

	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs
Max Year Short-Term Emissions	39.40	11.80	22.60	221.60	106.20	1.40	2.40
Max Year Long-Term Emissions	99.40	32.20	1,101.80	295.40	483.00	1.40	89.60
Average Year Emissions	83.53	26.89	851.59	267.01	390.60	1.328	69.354
Average Year Percent of Uintah County Anthropogenic*	1.4%	2.1%	1.5%	3.1%	2.9%	1.0%	1.4%

See Appendix H for yearly emissions tables.

*Anthropogenic emissions are considered all emissions omitting wildfires and biogenic sources.

Impacts of the No Action Alternative

Under the No Action Alternative, the BLM would not offer any of the nominated parcels in this Lease Sale. However, in the absence of a Land Use Plan Amendment closing the lands to leasing, they could be considered for inclusion in future lease sales. No new emissions associated with new Federal oil and gas development for the subject lease parcels would occur under the No Action Alternative in the foreseeable future. Other activities authorized within the project area would continue to occur, such as previously authorized and sold oil and gas leases. Additionally, existing county-level emissions that would decrease in the absence of new development. For example, oil and gas production declines as a well ages, reducing operation emissions over time with emissions for a well eventually going to zero once it is plugged.

3.6.2 Issue 2: Greenhouse Gas

How could potential development of the nominated lease parcels contribute to greenhouse gas (GHG) emissions at multiple scales?

Future development of lease parcels under consideration could lead to emissions of carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O); the three most common greenhouse gases associated with oil and gas development. These GHG emissions would be emitted from activities occurring on the leased parcels and from the consumption of any fluid minerals produced. However, the BLM cannot reasonably determine at the leasing stage whether, when, and in what manner a lease would be explored or developed. The uncertainty that exists at the time the BLM offers a lease for sale includes crucial factors that would affect actual GHG emissions and associated impacts, including, but not limited to the future feasibility of developing the lease, well density, geological conditions, development type (vertical, directional, or horizontal), hydrocarbon characteristics, specific equipment used during construction, drilling, and production, abandonment operations, product transportation, and potential regulatory changes over the 10-year primary lease term. Actual development on a lease is likely to vary from what is analyzed in this EA and will be evaluated through a site-specific NEPA analysis when an operator submits an APD or plan of development to the BLM.

For the purposes of this analysis, the BLM has evaluated the projected potential GHG emissions from oil and gas development on the parcels. Projected emissions estimates are based on past actual oil and gas development analyses and any available information from existing development within the State.

Further discussion of BLM’s oil and gas leasing actions and methodologies are included in the 2023 *BLM Specialist Report on Annual Greenhouse Gas Emissions Trends* (BLM, 2024) (Annual GHG Report). This report presents the estimated emissions of greenhouse gases attributable to development and consumption of fossil fuels produced on the lands and mineral estate managed by the BLM. The Annual GHG Report is incorporated by reference as an integral part of this analysis and is available at <https://www.blm.gov/content/ghg/>

Affected Environment

The Earth’s climate system is very complex as there are many factors that can influence atmospheric conditions at multiple scales. A discussion of past, current, and projected global, U.S., and state GHG emissions is described in Chapters 4 and 5 of the Annual GHG Report. The incremental contribution to cumulative global GHGs from a single proposed land management action cannot be accurately translated into any localized effects in the area specific to the action. Currently, global climate models are unable to forecast local or regional effects on resources resulting from a specific subset of emissions.

Table 15 shows the total estimated GHG emissions from fossil fuels at the national, and state scales over the most recently available five last six years. Emissions are shown in megatonnes (Mt) per year of carbon dioxide equivalent (CO₂e). Chapter 3 of the Annual GHG Report contains additional information on GHGs and an explanation of CO₂e. State and national energy-related CO₂ emissions include emissions from fossil fuel use across all sectors (residential, commercial, industrial, transportation, and electricity generation) and are released at the location where the fossil fuels are consumed.

Additional information methodology and parameters for estimating emissions from BLM fossil fuel authorizations and cumulative GHG emissions are included in Chapters 5 and 6 of the Annual GHG Report.

Table 15 U.S. and State Fossil Fuel GHG Emissions 2018- 2022 (Mt CO₂e/yr)

Scale	2018	2019	2020	2021	2022
Global	37,832.0	37,825.0	35,944.0	38,082.0	38,522.0
U.S.	4,988.2	4,852.6	4,341.7	4,654.3	4,699.4
Utah	58.2	60.0	60.4	56.7	61.3

Source: Chap. 5, Table 5-1 (U.S.) and GHG DB (2024) state_ei, (State).

Mt (megatonne) = 1 million metric tons

NA = Not Available

The analysis of GHGs contained in this EA includes estimated emissions from the lease parcels as described above. An assessment of GHG emissions from other BLM fossil fuel authorizations, including coal leasing and oil and gas leasing and development, is included in the Annual GHG Report. The Annual GHG Report includes estimates of reasonably foreseeable GHG emissions related to BLM lease sales anticipated during the fiscal year, as well as the best estimate of emissions from ongoing production, and development of parcels sold in previous lease sales. It is, therefore, an estimate of cumulative GHG emissions from the BLM fossil fuel leasing program based on actual production and statistical trends as they are presently known.

The methodologies used in the Annual GHG Report provide estimates of foreseeable short-term and projected long-term GHG emissions from activities across the BLM’s oil and gas portfolio.

The foreseeable short-term methodology includes a trends analysis of (1) leased federal lands that are held-by-production³, (2) approved applications for permit to drill (APDs), and (3) leased lands from competitive lease sales projected to occur over the next annual reporting cycle (12 months). The data is used to provide a 30-year life of lease projection of potential emissions from all Federal oil and gas activities and potential lease actions over the next 12 months. The projected long-term methodology uses oil and gas production forecasts from the Energy Information Administration (EIA) to estimate GHG emissions out to 2050 that could occur from past, present, and future development of Federal fluid minerals. For both methodologies, the emissions are calculated using life-cycle-assessment data and emission factors. These analyses are the basis for projecting GHG emissions from lease parcels that are likely to go into production during the analysis period of the Annual GHG Report and represent both a hard look at GHG emissions from oil and gas leasing and the best available estimate of reasonably foreseeable cumulative emissions related to any one lease sale or set of quarterly lease sales that could occur annually across the entire federal onshore mineral estate.

Table 16 presents the summation of the 30-year life-of-project emissions estimates for both the short and long-term as previously described for each state where federal mineral actions have been authorized. The differences between the short- and long-term emissions estimates can be thought of as an approximation of additional leasing that could occur on federal lands and does not take into consideration additional policies, technological advancements in production or end-use efficiency standards.

A detailed explanation of the short-term and long-term emissions estimate methodologies are provided in sections 5.6 and 5.7 of the Annual GHG Report.

Table 16 GHG Emissions from Past, Present, and Reasonably Foreseeable Federal Onshore Lease Development (Megatonnes CO₂e)

State	Existing Wells (Report Year)	Existing Wells (Projected)	Approved APDs	New Leasing	Short-Term Foreseeable Totals	Long-Term Projected Totals
AL	0.63	9.48	0.00	0.18	9.65	18.73
AK	1.27	19.11	30.07	43.96	93.14	35.64
AZ	0.00	0.00	0.00	0.00	0.00	0.00
AR	0.61	9.63	0.71	0.24	10.57	18.00
CA	4.92	68.59	0.32	2.26	71.18	124.75
CO	41.66	361.42	19.23	14.34	394.99	1,205.41
ID	0.00	0.00	0.00	0.29	0.30	0.00
IL	0.01	0.09	0.00	0.02	0.11	0.16

³ [held-by-production](#) - A provision in an oil or natural gas property lease that allows the lessee to continue drilling activities on the property as long as it is economically producing a minimum amount of oil or gas. The held-by-production provision thereby extends the lessee's right to operate the property beyond the initial lease term.

State	Existing Wells (Report Year)	Existing Wells (Projected)	Approved APDs	New Leasing	Short-Term Foreseeable Totals	Long-Term Projected Totals
IN	0.00	0.00	0.00	0.02	0.02	0.00
KS	0.22	3.24	0.05	0.27	3.57	6.29
KY	0.01	0.07	0.00	0.03	0.10	0.24
LA	4.79	59.44	28.10	16.86	104.40	140.76
MD	0.00	0.00	0.00	0.00	0.00	0.00
MI	0.05	1.05	0.00	0.29	1.34	1.58
MS	0.19	2.57	0.19	0.38	3.14	4.80
MT	2.06	21.01	1.80	2.08	24.90	53.94
NE	0.01	0.21	0.00	0.03	0.24	0.35
NV	0.11	0.82	0.01	0.04	0.87	2.63
NM	463.78	3,298.82	795.77	89.69	4,184.28	12,321.64
NY	0.00	0.00	0.00	0.00	0.01	0.01
ND	37.69	315.95	24.48	7.14	347.56	985.07
OH	0.17	1.60	0.00	2.65	4.25	4.97
OK	1.09	10.74	1.66	1.18	13.58	30.83
OR	0.00	0.00	0.00	0.12	0.12	0.00
PA	0.00	0.03	0.00	0.67	0.70	0.07
SD	0.08	1.41	0.21	0.11	1.72	2.19
TN	0.00	0.00	0.00	0.00	0.00	0.00
TX	2.72	30.11	11.79	3.28	45.17	80.01
UT	17.54	220.02	17.98	2.35	240.35	493.60
VA	0.01	0.13	0.00	0.03	0.15	0.24
WV	0.00	0.04	0.00	0.59	0.62	0.08
WY	107.01	946.69	120.38	105.55	1,172.61	3,005.64
<i>Total Onshore Federal</i>	687	5,382	1,053	295	6,730	18,538

Source: BLM Annual GHG Report, Section 7

Recent short-term energy outlook reports (STEO) published by the EIA (<https://www.eia.gov/outlooks/steo/data>) (EIA, 2025) predict that the world's oil and gas supply and consumption will increase over the next 18-24 months. The STEO projections are useful for providing context for the cumulative discussion as the global forecast models used for the STEO are not dependent on whether the BLM issues onshore leases but are based on foreseeable short-term global supply and demand and include oil and gas development /operations on existing U.S. onshore leases. Recent STEOs include the following projections for the next two years:

- U.S. liquid fuels consumption is projected to increase to 20.5 million barrels per day (b/d)

- in 2025 and 2026, up from 20.3 million b/d in 2024
- U.S. crude oil production is expected to average 13.5 million b/d in 2025 and 2026
- Global liquid fuels consumption is expected to grow from 104.0 million barrels per day in 2025 and increase to 105.1 million barrels per day in 2026.
- U.S. LNG exports are expected to increase to 14.7 billion cubic feet/day (Bcf/d) in 2025 and 16.3 Bcf/d in 2026.
- U.S. Coal production is expected to total 531.3 million short tons (MMst) in 2025, a 3.75% increase from 512.1 MMst in 2024.

The EIA 2023 Annual Energy Outlook (<https://www.eia.gov/outlooks/aeo/>) projects energy consumption increases through 2050 as population and economic growth outweighs efficiency gains. As a result, U.S. production of natural gas and petroleum and liquids will rise amid growing demand for exports and industrial uses. Further discussion of past, present and projected global and state GHG emissions can be found in Chapter 5 of the Annual GHG Report.

At present, no national or Federal agency carbon budgets have been established, primarily due to the lack of consensus on how to allocate the global budget to each nation, and as such the global budgets are not useful for BLM decision making, particularly at the leasing stage, as it is unclear what portion of the budget applies to emissions occurring in the United States.

Environmental Effects

While the leasing action does not directly result in development that would generate GHG emissions, emissions from future potential development of the leased parcels can be estimated for the purposes of this analysis. There are four general phases of post-lease development processes that would generate GHG emissions: 1) well development (well site construction, well drilling, and well completion), 2) well production operations (extraction, separation, gathering), 3) mid-stream (refining, processing, storage, and transport/distribution), and 4) end-use (combustion or other uses) of the fuels produced. While well development and production operation emissions (phases 1 and 2) occur on-lease and the BLM has authority over these activities, mid-stream and end-use emissions (phases 3 and 4) typically occur off-lease where the BLM has little to no authority.

Emissions inventories at the leasing stage are imprecise due to uncertainties including the type of mineral development (oil, gas, or both), scale, and duration of potential development, types of equipment (drill rig engine tier rating, horsepower, fuel type), and the mitigation measures that a future operator may propose in their development plan. Due to these uncertainties, the BLM applies several assumptions to estimate emissions at the leasing stage. The number of estimated well numbers per parcel are based on State data for past lease development combined with per-well drilling, development, and operating emissions data from representative wells in the area. The amount of oil or gas that may be produced if the offered parcels are developed is unknown. For purposes of estimating production and end-use emissions, potential wells are assumed to produce oil and gas in similar amounts as existing nearby wells. While the BLM has no authority to direct or regulate the end-use of the products, for this analysis, the BLM assumes all produced oil or gas will be combusted (such as for domestic heating or energy production). The BLM acknowledges that there may be additional sources of GHG emissions along the distribution, storage, and processing chains (commonly referred to as midstream operations) associated with

production from the lease parcels. These sources may include emissions of methane (a more potent GHG than CO₂ in the short term) from pipeline and equipment leaks, storage, and maintenance activities. These sources of emissions are highly speculative at the leasing stage, therefore, the BLM has chosen to assume that mid-stream emissions associated with lease parcels for this analysis would be similar to the national level emissions identified by the Department of Energy's National Energy Technology Laboratory (NETL, 2009) (NETL, 2019). Section 5.5 of the Annual GHG Report includes a more detailed discussion of the methodology for estimating midstream emissions.

The emission estimates calculated for this analysis were generated using the assumptions previously described above in the BLM Lease Sale Emissions Tool and lease development analysis. Emissions are presented for each of the four phases of post-lease development processes described above.

- Well development emissions occur over a short period and may include emissions from heavy equipment and vehicle exhaust, drill rig engines, completion equipment, pipe venting, and well treatments such as hydraulic fracturing.
- Well production operations, mid-stream, and end-use emissions occur over the entire production life of a well, which is assumed to be 30 years for this analysis based on the productive life of a typical oil/gas field.
 - Production operation emissions may result from storage tank breathing and flashing, truck loading, pump engines, heaters and dehydrators, pneumatic instruments or controls, flaring, fugitives, and vehicle exhaust. Production operation emissions are estimated by multiplying the estimated ultimate recovery (EUR) of produced oil and gas with emissions factors from NETL life cycle analysis of U.S. oil and natural gas. Additional information on emission factors can be found in Chapter 5 of the Annual GHG Report.
- Mid-stream emissions occur from the transport, refining, processing, storage, transmission, and distribution of produced oil and gas. Mid-stream emissions are estimated by multiplying the estimated ultimate recovery (EUR) of produced oil and gas with emissions factors from NETL life cycle analysis of U.S. oil and natural gas. Additional information on emission factors can be found in Chapter 5 of the Annual GHG Report.
- For the purposes of this analysis, end-use emissions are calculated assuming all produced oil and gas is combusted for energy use. End-use emissions are estimated by multiplying the EUR of produced oil and gas with emissions factors for combustion established by the EPA (Tables C-1 and C-2 to Subpart C of 40 CFR § 98). Additional information on emission factors and EUR factors can be found in Chapter 5 of the Annual GHG Report.

Emission controls (e.g., vapor recovery devices, no-bleed pneumatics, leak detection and repair, etc.) can substantially limit the amount of GHGs emitted to the atmosphere while carbon capture and sequestration can remove GHGs from the atmosphere.

The EPA is the Federal agency charged with regulation of air pollutants and establishing standards for protection of human health and the environment. The EPA has issued regulations

that will reduce GHG emissions from any development related to the proposed leasing action. These regulations include the New Source Performance Standard for Crude Oil and Natural Gas Facilities (40 CFR 60, OOOOa), Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After December 6, 2022 (40 CFR 60, OOOOb) and Waste Emissions Charge for Petroleum and Natural Gas Systems (40 CFR 99). These regulations impose emission limits, equipment design standards, and monitoring requirements on oil and gas facilities and a waste emissions charge on methane emissions that exceed 25,000 metric tonnes of CO₂e for applicable petroleum and natural gas facilities currently required to report under the Greenhouse Gas Reporting Rule. In December of 2023, the EPA released a separate rule under the Clean Air Act (CAA) to reduce methane and other harmful air pollutants from new and existing oil and gas operations nationwide, which includes the Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced after December 6, 2022, 40 C.F.R. § 60, Subpart OOOOb; and Emissions Guidelines for Greenhouse Gas Emissions from Existing Crude Oil and Natural Gas Facilities, Subpart OOOOc. These regulations impose emission limits, equipment design standards, and monitoring requirements on oil and gas facilities and a waste emissions charge on CH₄ emissions that exceed 25,000 metric tonnes of CO₂e for applicable petroleum and natural gas facilities currently required to report under the GHG Reporting Rule. A detailed discussion of existing regulations and Executive Orders that apply to BLM management of federal lands as well as current Federal and state regulations that apply to oil and gas development and production can be found in Chapter 2 of the Annual GHG Report.

The EPA approved a Federal Implementation Plan (FIP) that covers existing, new, and modified oil and gas emissions sources for the Uintah and Ouray (U&I) Reservation and surrounding Indian Country (EPA, 2022). The purpose of the U&I FIP is threefold: (1) improve air quality in the Uinta Basin by controlling sources that contribute to O₃ formation, (2) provide consistency between Indian Country air permitting regulations and State of Utah regulations in other parts of the Uinta Basin, and (3) provide streamlined oil and gas authorizations while ensuring emissions reductions. Details concerning the FIP are provided in the Air Monitoring Report (BLM, 2025) and include emissions control devices (e.g., combustors, closed loop systems), leak detection and repair, and equipment maintenance.

The Utah Department of Environmental Quality established the administrative code R307-500 Series which applies to all oil and natural gas exploration, production, and transmission operations; well production facilities; natural gas compressor stations; and natural gas processing plants in Utah (not applicable on Indian Lands). These rules adopt emissions control standards established in 40 CFR Part 60, Subpart OOOO. Controls are required for pneumatic controllers, venting and flaring, tank truck loading, storage vessels, dehydrators, VOC control devices, stationary natural gas engines, and leak detection and repair requirements.

The majority of GHG emissions resulting from federal fossil fuel authorizations occur outside of the BLM's authority and control. These emissions are referred to as indirect emissions and generally occur off-lease during the transport, distribution, refining, and end-use of the produced federal minerals. The BLM's regulatory authority is limited to those activities authorized under the terms of the lease, which primarily occur in the "upstream" portions of natural gas and petroleum systems (i.e., the well-development and well-production phases). This decision authority is applicable when development is proposed on public lands and the BLM assesses the

specific location, design and plan of development. In carrying out its responsibilities under NEPA, the BLM has developed Best Management Practices (BMPs) designed to reduce emissions from field production and operations. BMPs may include limiting emissions from stationary combustion sources, mobile combustion sources, fugitive sources, and process emissions that may occur during development of the lease parcel. Additional measures proposed at the project development stage may be incorporated as applicant-committed measures by the project proponent or added to necessary air quality permits.

Impacts of the Proposed Action (Alternative A)

Table 17 shows the estimated maximum year and average year GHG emissions over the life of the lease parcel for both 100-yr and 20-yr CO₂e time scales.

Table 17 Estimated Direct and Indirect Emissions from Lease Parcels on an Annual and Life of Lease Basis (tonnes)

	CO ₂	CH ₄	N ₂ O	CO ₂ e (100-yr)	CO ₂ e (20-yr)
Max Year	2,079,425	4,125.10	15.749	2,206,652	2,424,045
Average Year	580,367	1,207.35	4.272	617,512	681,139
Life of Lease	22,597,216	47,028.28	166.278	24,044,052	26,522,443

Table 18 lists the estimated direct (well development and production operations) and indirect (mid-stream and end-use) GHG emissions in metric tonnes (t) for the subject lease parcels over the average 30-year production life of the lease. In summary, potential GHG emissions from the Proposed Action could result in GHG emissions of 24,044,052 t CO₂e over the life of the lease, with 9.4% of emissions occurring on lease and within BLM's decision authority.

Table 18 Estimated Life of Lease Emissions from Well Development, Well Production Operations, Mid-stream, and End-use (tonnes)

Activity	CO ₂	CH ₄	N ₂ O	CO ₂ e (100-yr)	CO ₂ e (20-yr)
Well Development	409,101	76.72	2.740	412,135	416,179
Well Production Operations	1,098,611	25,216.40	18.876	1,855,213	3,184,117
Mid-Stream	2,628,357	21,143.83	39.755	3,269,296	4,383,576
End-Use	18,461,147	591.33	104.907	18,507,408	18,538,571
Total (Life of Lease)	22,597,216	47,028.28	166.278	24,044,052	26,522,443

GHG emissions vary annually over the production life of a well due to declining production rates over time. Figure 1 shows the estimated GHG emissions profile over the production life of a typical lease including the four phases of lease development processes: well development, well production operations, mid-stream, end-use, and gross (total of well development, well production, mid-stream, and end-use) emissions.

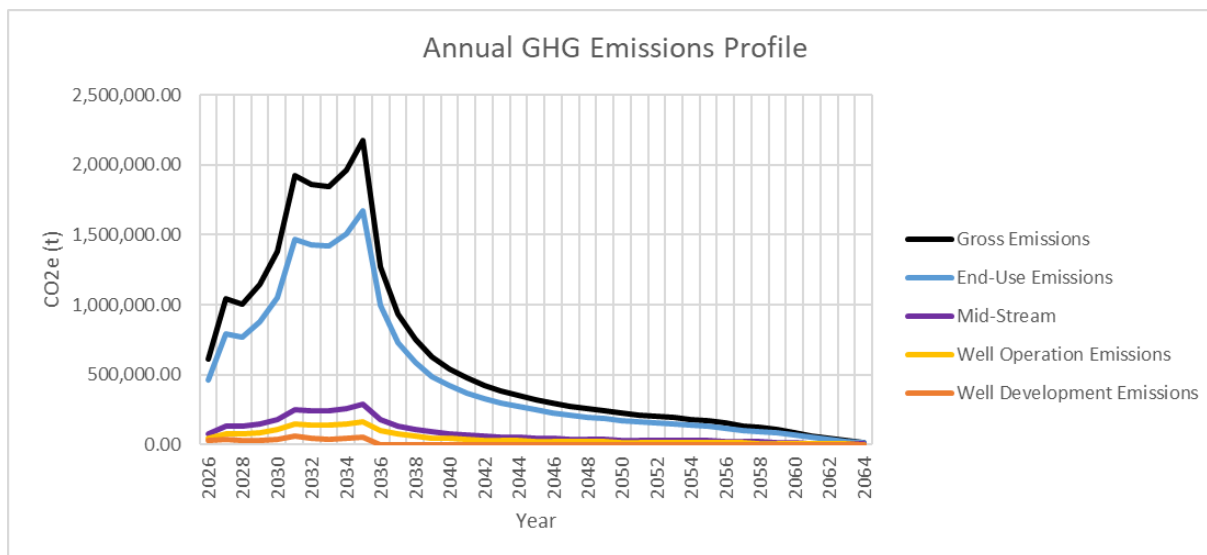


Figure 1 Estimated GHG Emissions Profile over the Life of a Lease

To put the estimated GHG emissions for this lease sale in a relatable context, potential emissions that could result from development of the lease parcels for this sale can be compared to other common activities that generate GHG emissions. The EPA GHG equivalency calculator (EPA , 2022) can be used to express the potential average year GHG emissions on a scale relatable to everyday life (<https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>). For instance, the projected average annual GHG emissions from potential development of the subject lease parcel are equivalent to 143,942 gasoline-fueled passenger vehicles driven for one year, the emissions from 128,702 homes' electricity use for one year, 0.16 coal-fired power plants operating for one year, or could supply 1.62 natural gas-fired power plants for one year.

Table 19 compares the estimated annual lease sale emissions to existing Federal fossil fuel (oil, gas, and coal) emissions, State, and U.S. total GHG emissions.

Table 19 Comparison of Lease Sale Emissions to Other Sources (Megatonnes)

Reference	Mt CO ₂ e ¹ (Per Year)
Lease Emissions (Average Year)	0.618
UT Onshore Federal (Oil & Gas) ²	17.54
U.S. Onshore Federal (Oil & Gas) ²	686.62
U.S. Federal-All (Oil & Gas) ²	1,092.94
U.S. Federal Onshore (Oil, Gas and Coal) ²	1,066.14
UT Fossil Fuel Emissions ³	61.30
U.S. Total	7,213.47

1 – Mt (megatonne) = 1 million metric tons. Estimates are based on 100-GWP values.

2 – Federal values come from the BLM Specialist Report on Annual Greenhouse Gas Emission Trends. Tables ES-1 and ES-2 and Figure ES-1. U.S Federal-All includes offshore and onshore oil and gas production.

3 - Total state emissions from all sectors is found in Table 5-2 of the BLM Specialist Report on Annual GHG Emissions Trends.

Impacts of the Graham's and White River Penstemon Avoidance Alternative (Alternative B)

The emissions for this alternative are presented in Table 20 and are calculated using the same methodology as described for the Proposed Action emissions. Potential GHG emissions from the Graham's and White River Penstemon Avoidance Alternative could result in GHG emissions of 19,568,277 t CO₂e over the life of the lease, with 9.4% of emissions occurring on lease and within BLM's decision authority. More emissions detail is provided in Appendix H. Projected annual emissions can be compared to existing Federal fossil fuel (oil, gas, and coal) emissions, State, and U.S. total GHG emissions in Table 21. The projected average annual GHG emissions from expected development following the proposed lease sale are equivalent to 117,191 gasoline-fueled passenger vehicles driven for one year, the emissions from 104,783 homes' electricity use for one year, 0.13 coal-fired power plants operating for one year or could supply 1.32 natural gas-fired power plants for one year.

Table 20 Estimated Life of Lease Emissions from Well Development, Well Production Operations, Mid-stream, and End-use (tonnes)

Activity	CO ₂	CH ₄	N ₂ O	CO ₂ e (100-yr)	CO ₂ e (20-yr)
Well Development	329,968	61.88	2.210	332,416	335,677
Well Production Operations	895,239	20,503.95	15.531	1,510,497	2,591,055
Mid-Stream	2,134,684	16,975.94	32.327	2,649,392	3,544,024
End-Use	15,038,071	483.69	86.033	15,075,972	15,101,462
Total (Life of Lease)	18,397,963	38,025.45	136.101	19,568,277	21,572,219

Impacts of the Greater Sage-grouse Avoidance Alternative (Alternative C)

The emissions for this alternative are presented in Table 21 and are calculated using the same methodology as described for the Proposed Action emissions. Potential GHG emissions from the Greater Sage-grouse Avoidance Alternative could result in GHG emissions of 12,730,741 t CO₂e over the life of the lease, with 9.4% of emissions occurring on lease and within BLM's decision authority. More emissions detail is provided in Appendix H. Projected annual emissions can be compared to existing Federal fossil fuel (oil, gas, and coal) emissions, State, and U.S. total GHG emissions in Table 21. The projected average annual GHG emissions from expected development following the proposed lease sale are equivalent to 76,575 gasoline-fueled passenger vehicles driven for one year, the emissions from 68,467 homes' electricity use for one year, 0.09 coal-fired power plants operating for one year or could supply 0.86 natural gas-fired power plants for one year.

Table 21 Estimated Life of Lease Emissions from Well Development, Well Production Operations, Mid-stream, and End-use (tonnes)

Activity	CO ₂	CH ₄	N ₂ O	CO ₂ e (100-yr)	CO ₂ e (20-yr)
Well Development	219,481	41.16	1.470	221,109	223,278
Well Production Operations	580,595	13,369.26	9.831	981,682	1,686,242
Mid-Stream	1,395,900	11,418.82	21.076	1,741,935	2,343,706
End-Use	9,761,763	310.74	54.915	9,786,015	9,802,391
Total (Life of Lease)	11,957,739	25,139.98	87.292	12,730,741	14,055,618

Impacts of the No Action Alternative

Under the No Action Alternative, the BLM would not offer any of the nominated lease parcels for competitive leasing in this Lease Sale. However, the nominated lease parcels could be considered for inclusion in one or more future competitive oil and gas lease sales unless a Land Use Plan Amendment to close the lands to leasing is completed. Although no new GHG emissions would result under the No Action Alternative, national demand for energy is not expected to differ regardless of BLM decision-making.

The BLM does not have a model to estimate energy market substitutions at a spatial resolution needed for this onshore production scenario. Reductions in oil and natural gas produced from Federal leases may be partially offset by non-Federal production (state and private) in the United States (in which case the indirect GHG emissions would be similar), or overseas, in which case the GHG emissions would likely be higher, to the extent environmental protection requirements for production are less vigorous, and the produced energy would need to be physically transported into the United States. There may also be substitutions of other energy resources to meet energy demand. These substitution patterns will be different for oil and gas because oil is primarily used for transportation, while natural gas is primarily used for electricity production and manufacturing, and to a lesser degree by residential and commercial users (AEO, 2023). The effect of substitution between different fuel sources on indirect GHG emissions depends on the replacement energy source. For example, coal is a relatively more carbon intense fuel than natural gas and hydroelectricity is the least carbon intense energy source (see Table 10-3 of the Annual GHG Report (BLM, 2024)). In the transportation sector, alternatives to oil are likely to be less carbon intensive.

Finally, substitution across energy sources or oil and gas production from other locations may not fully meet the energy needs that would otherwise have been realized through production from these lease parcels. Price effects may lower the market equilibrium quantity demanded for some fuel sources which could lead to a reduction in indirect GHG emissions. These three effects are likely to occur in some combination under the no action alternative, but the relative contribution of each is unknown. Regardless, GHG emissions under the no action alternative are not expected to be zero.

3.6.3 Issues Three to Five Assumptions and Similarities

Issues Three through Five below analyze the impacts to occupied and suitable habitat for two species endemic to the Uinta Basin. This section describes similar assumptions and qualitative effects of fluid mineral development through which the analysis in each Issue should be interpreted.

The potential impacts of fluid mineral development on individuals and populations of rare plants are highly dependent on the actual siting of infrastructure. At each of the levels of potential habitat (i.e. the USFWS AOI for the species), suitable habitat, and occupied habitat (i.e. a current or historic location of an individual plus a 300-foot buffer) impacts from development on the lease parcel can range from no impact (where all activities occur outside of the habitat) to 100% impact where all disturbance occurs within the habitat and under rare instances, where avoidance measures developed and incorporated as Lease Notices cannot be fully incorporated (e.g. topographic pinch points with no alternatives), includes the direct loss of individuals. The identification of the location of future development associated with lease development would be highly speculative as it relates directly amongst other things with the technical capabilities of the operator, the location of the target fluid mineral resource, the location of existing infrastructure, topographic concerns, and the location of competing surface resources. Therefore, to provide an objective comparison between alternatives, a random distribution of disturbance is assumed (equivalent to the modal value of the normal distribution produced if disturbance was repeated under an infinitely large number of scenarios).

For issues three to five, impacts are presented for comparison as disturbance to occupied and suitable habitat. This quantitative measure should be interpreted as a proxy for a wide variety of impacts to individuals and populations of the species. Impacts to individuals would generally be limited to disturbance of occupied habitat, with the caveat that areas of suitable habitat may be found to be occupied habitat in the future.

For each species, occupied habitat is defined as a 300-foot buffer around the location of current or historically known individuals of the species within Utah (due to data sharing restrictions accurate unfuzzed (i.e. precise, unaltered) location information is not available from adjacent states and therefore only the Utah portions of the populations are included in the occupied habitat analysis). Occupied habitat was then delineated into subpopulations using a 2-kilometer separation distance. For ease of discussion, subpopulations of each species that intersect analyzed lease parcels are named for this document using existing publications, where available; nearby geographic location names; or other document specific identifiers.

None of the species have had complete surveys across all potential habitats to determine species presence or habitat suitability. Therefore, the BLM developed ensemble models for each species that consists of models produced using three modeling techniques: logistic regression, random forest, and boosted regression tree. Each relates habitat suitability to a range of terrain attributes (e.g. elevation, slope, surface relief index) at several spatial scales. Each model was classified conservatively using the lower of the threshold that maximizes Cohen's Kappa value or the true skill statistic. For the analyses in this document, suitable habitat is defined as locations within the species AOI that are categorized as suitable by at least two of the produced models.

Appendix E of the Graham's beardtongue and White River beardtongue Biological Status Report (USFWS, 2021) provides an overview of the impacts of surface disturbing activities on rare plants in the Uinta Basin. This document also provides the basis for following a 300-foot avoidance buffer.

Impacts to individuals include the loss of individuals, loss or disturbance to the established seedbank, loss of nesting sites and floral resources for the pollinator community associated with the species, increased fugitive dust deposition which may affect individuals' growth or reproductive potential, and increased competition with introduced non-native plants. As the distance between individuals and disturbance increase, the magnitude and potential for these impacts to occur decreases with measurable effects likely occurring within the first 300 feet (i.e. occupied habitat).

Additional impacts to the species can occur through habitat loss and fragmentation of unoccupied suitable habitat. These impacts include reduced gene flow through reduced pollinator abundance (associated with loss of nesting and foraging habitat) and the loss of unoccupied habitat that may provide areas for species colonization and expansion.

Habitat restoration is difficult in general within the Colorado Plateau and is highly dependent on both restoration techniques used and unpredictable events (including moisture availability). Given that the following endemic species each has specific environmental and biological requirements it is likely that restoration needed to support the species again is even more difficult. As there are no studies that show successful and repeatable re-establishment of these rare species following disturbance, it should be assumed that disturbed areas would permanently not provide habitat for the species.

Future potential disturbance would occur within the framework of existing disturbance to suitable and occupied habitat and previous impacts to individual. Within the Affected Environment section of each Issue, the number of constructed wells and wells pads (Abandoned are all wells with Plugged and Abandoned Status and Existing are all approved well types excluding Plugged and Abandoned or Approved Permit to Drill) and proposed wells and well pads is presented as well as the miles of existing linear features (primarily roads) inventoried by the Vernal FO (including the portions of the MbFO managed under the Vernal RMP) up until 2013, the Price FO up until 2017, and the White River FO up until 2018 as part of travel management planning (the information contained in route inventories is the best available data until comprehensive travel management planning is completed, however both additional routes may exist and routes identified as linear routes may no longer exist and the information should be).

3.6.4 Issue 3: Graham's [Bardtongue] Penstemon (*Penstemon grahamii*)

How would potential development of the nominated lease parcels affect modeled suitable and occupied habitat for Graham's penstemon?

Affected Environment

Graham's penstemon (*Penstemon grahamii*) is a BLM sensitive species and a perennial member of the plantain family endemic to the Green River formation in northeastern Utah (VFO and

Price FO) and adjacent Rio Blanco County, Colorado (White River FO). Additional information on the species is available in the Conservation Agreement and Strategy (Penstemon Conservation Team, 2014) and the Biological Status Report (USFWS, 2021).

Across the Utah portion of the species range there are twenty-eight subpopulations with 10,141 acres of habitat within 300 feet of a known current or historic individual.

Habitat modeling for the species (BLM unpublished) identified 105,253 acres of habitat across the range of the species.

Six subpopulations (found within the Seep Ridge, Evacuation Creek, and White River populations) are within 300 feet of a nominated parcel. The first is a small population primarily in the Crow Roost Canyon-Main Canyon subwatershed (Crow Roost Canyon-Main Canyon). The second is a small population in Sunday School Canyon (Western Sunday School Canyon). The third is the main Seep Ridge population (Seep Ridge). The fourth is a population along Bitter Creek (Bitter Creek). The fifth is the population in the Upper Evacuation Creek (Upper Evacuation Creek). The sixth is a population in the Dripping Rock-White River subwatershed (Dripping Rock – White River).

Existing activities are expected to continue (see Section 3.3). The current setting is described below for the occupied habitat and modeled suitable habitat across the range of the species

Occupied Habitat

Within 300 feet of known Graham's penstemon locations, there are four fluid mineral well pads that have been constructed at some point in the past. There are 6,540 acres of habitat within 300 feet of known locations that are already leased by the BLM or the State of Utah School and Institutional Trust Lands Administration (SITLA now TLA) (Table 22).

Table 22: Acreage (and percentage of occupied habitat) of existing fluid mineral leases within overlapping occupied habitat subpopulations

Subpopulation	Leased - Existing or Proposed Lease Development	Leased - No Existing or Proposed Lease Development	Not Leased	Grand Total
Bitter Creek			29.1 (100%)	29.1
Crow Roost Canyon-Main Canyon			127.7 (100%)	127.7
Dripping Rock - White River	145.1 (7.2%)	838.3 (41.8%)	1,021.3 (50.9%)	2,004.8
Seep Ridge	867.8 (31%)	1,336.7 (47.8%)	593.4 (21.2%)	2,797.9
Upper Evacuation Creek	174.3 (9%)	1,771.7 (91%)		1,946.1
Western Sunday School Canyon			35.6 (100%)	35.6
Other Subpopulations	471.8 (14.6%)	1,851 (57.1%)	919.4 (28.4%)	3,242.2

Subpopulation	Leased - Existing or Proposed Lease Development	Leased - No Existing or Proposed Lease Development	Not Leased	Grand Total
Grand Total	1,659.1 (16.3%)	5,797.8 (56.9%)	2,726.4 (26.8%)	10,183.3

BLM route inventories identified 23 miles of linear routes on BLM managed lands within the Vernal FO within 300 feet of Graham's penstemon.

Modeled Suitable Habitat

Within modeled suitable habitat for Graham's penstemon, there are 90 fluid mineral well pads that have been constructed at some point in the past. An additional two fluid mineral well pads are proposed within modeled suitable habitat. There are 57,985 acres of modeled suitable habitat that are already leased by the BLM or TLA (19,862 acres with existing or proposed lease development [18.8% of suitable habitat] and 38,124 acres with no existing or proposed lease development [36.1% of suitable habitat]). A BLM route inventory identified 218 miles of linear routes on BLM managed lands within modeled suitable habitat for Graham's penstemon (190 miles within the VFO and 28 miles within the White River Field Office).

Environmental Affects

Impacts of the Proposed Action (Alternative A)

Under Alternative A, thirty-one of the parcels intersect modeled suitable habitat for Graham's penstemon. Ten of those parcels intersect known occurrences for the species (and with that occupied habitat).

Occupied Habitat

Acres of occupied habitat, defined here as areas within 300 feet of a plant, is presented in Table 23

Table 23 Acres and Estimated Disturbance (in Parenthesis) of Graham's Penstemon Occupied Habitat by Subpopulation

Parcel	Upper Evacuation Creek	Dripping Rock - White River	Bitter Creek	Seep Ridge	Crow Roost Canyon- Main Canyon	Western Sunday School Canyon	Grand Total
1684	11.9 (0.1)						11.9 (0.1)
1689		15.4 (0.1)					15.4 (0.1)
1717					28.3 (0.3)		28.3 (0.3)
1734	21.9 (0.2)						21.9 (0.2)
1767			29.1 (0.3)				29.1 (0.3)
1808				66.1 (0.6)		35.6 (0.3)	101.7 (1)

Parcel	Upper Evacuation Creek	Dripping Rock - White River	Bitter Creek	Seep Ridge	Crow Roost Canyon- Main Canyon	Western Sunday School Canyon	Grand Total
1810				13 (0.1)			13 (0.1)
1815				20.3 (0.2)			20.3 (0.2)
7779	79.5 (0.8)						79.5 (0.8)
7786	14 (0.1)						14 (0.1)
Outside Parcels	1,818.2	1,982.0	0.0	2,682.4	0.0	0.0	6,482.5
Grand Total	1945.5 (1.2)	1997.4 (0.1)	29.1 (0.3)	2781.7 (0.9)	28.3 (0.3)	35.6 (0.3)	6817.7 (3.2)

Using the foreseeable disturbance assumptions in Section 3.2, and assuming random placement of disturbance within the area, 3.2 acres may be directly disturbed by the development representing between less than 0.1% and 0.9% of the occupied habitat in each subpopulation and less than 0.1% of the total occupied habitat for the species (Table 23).

Given the requirements of lease notice UT-LN-90 to perform surveys and avoid individuals by 300 feet where feasible combined with the BLM's statutory and regulatory authority to require reasonable measures consistent with lease rights, it is expected that impacts to occupied habitat at the lease development stage may be further reduced. However, given the distribution of the populations, topographic constraints, and locations of existing infrastructure (including existing collector roads) it is likely that 100% avoidance of occupied habitat will not be possible.

Modeled Suitable Habitat

Acres of modeled suitable habitat found in the parcels and predicted disturbance is presented in Table 24.

Table 24: Graham's Penstemon Suitable Habitat and Estimated Disturbance from Future Parcel Development

Parcel	Acres Suitable Habitat	Acres Estimated Disturbance
1678	17.1	0.2
1680	1.4	0.0
1681	12.6	0.1
1684	186.7	1.8
1689	355.2	3.3
1698	1.3	0.0
1703	96.6	0.9
1717	261.1	2.5
1719	0.0	0.0
1734	455.9	4.3

Parcel	Acres Suitable Habitat	Acres Estimated Disturbance
1742	0.0	0.0
1765	2.5	0.0
1767	432.7	4.1
1789	18.5	0.2
1791	0.5	0.0
1792	0.1	0.0
1799	244.6	2.3
1808	1,344.9	12.7
1810	1,111.4	10.5
1815	94.8	0.9
1817	2.5	0.0
1818	0.5	0.0
1825	13.1	0.1
7778	303.0	2.8
7779	134.2	1.3
7784	0.0	0.0
7785	0.2	0.0
7786	621.3	5.9
7793	0.0	0.0
7809	25.4	0.2
7830	1.7	0.0
Grand Total	5,739.8	54.1

Using the foreseeable disturbance assumptions in Section 3.2, and assuming random placement of disturbance within the area, 54.1 acres of modeled suitable habitat would be directly disturbed by the development. This represents 0.9% of the suitable habitat within the parcels and 0.1% of the suitable habitat across the range of the species.

To minimize impacts, the following lease notices were applied to the parcels:

Lease Notices

- UT-LN-90 – Graham’s beardtongue (*Penstemon grahamii*): Parcels in Table 24
- UT-LN-49 – Utah Sensitive Species: All Parcels with BLM Managed Surface
- UT-LN-51 – Special Status Plants: Not Federally Listed: All Parcels with BLM Managed Surface
- UT-LN-134 – Graham’s beardtounge (*Penstemon grahamii*) & White River beardtounge (*P. scariosus* var. *albifluvis*) Conservation Area: Parcels in Table 24

The above lease notices combined with Section 6 of the Standard Lease Terms and Conditions (43 CFR § 3101.12) identifies survey, avoidance, and minimization requirements for the species.

Impacts of the Graham's and White River Penstemon Avoidance (Alternative B)

Under Alternative B, eleven parcels would not be offered. Alternative B was developed to avoid occupied habitat for Graham's penstemon. This results in all occupied habitat being avoided and considerably reduces but does not fully avoid suitable habitat for the species. Under Alternative B, twenty-one of the nominated parcels intersect modeled suitable habitat for the species.

Occupied Habitat

Alternative B avoids known occupied habitat for Graham's penstemon. Therefore, there would be no impacts associated with the development of the parcels offered to known occupied habitat for species.

Modeled Suitable Habitat

Acres of modeled suitable habitat found in the parcels and predicted disturbance is presented in Table 25.

Table 25: Graham's Penstemon Suitable Habitat and Estimated Disturbance from Future Parcel Development

Parcel	Acres Suitable Habitat	Acres Estimated Disturbance
1678	17.1	0.2
1680	1.4	0.0
1681	12.6	0.1
1698	1.3	0.0
1703	96.6	0.9
1719	0.0	0.0
1742	0.0	0.0
1765	2.5	0.0
1789	18.5	0.2
1791	0.5	0.0
1792	0.1	0.0
1799	244.6	2.3
1817	2.5	0.0
1818	0.5	0.0
1825	13.1	0.1
7778	303.0	2.8
7784	0.0	0.0
7785	0.2	0.0

Parcel	Acres Suitable Habitat	Acres Estimated Disturbance
7793	0.0	0.0
7809	25.4	0.2
7830	1.7	0.0
Grand Total	741.6	7.0

Using the foreseeable disturbance assumptions in Section 3.2, and assuming random placement of disturbance within the area, 7.0 acres of modeled suitable habitat would be directly impacted by the development. This represents 0.9% of the suitable habitat within the parcels and 0.1% of the suitable habitat across the range of the species.

To minimize impacts, the following lease notices were applied to the parcels:

Lease Notices

- UT-LN-90 – Graham’s beardtongue (*Penstemon grahamii*): Parcels in Table 25
- UT-LN-49 – Utah Sensitive Species: All Parcels with BLM Managed Surface
- UT-LN-51 – Special Status Plants: Not Federally Listed: All Parcels with BLM Managed Surface
- UT-LN-134 – Graham’s beardtounge (*Penstemon grahamii*) & White River beardtongue (*P. scariosus* var. *albifluvis*) Conservation Area: Parcels in Table 25

The above lease notices combined with Section 6 of the Standard Lease Terms and Conditions (43 CFR § 3101.12) identifies survey, avoidance, and minimization requirements for the species.

Impacts of the Greater Sage-Grouse Avoidance Alternative (Alternative C)

Under Alternative C, twenty of the nominated parcels intersect modeled suitable habitat for the species. Seven of those parcels intersect known occurrences for Graham’s penstemon.

Occupied Habitat

Acres of occupied habitat, defined here as areas within 300 feet of a plant, is presented in Table 26.

Table 26 Acres and Estimated Disturbance (in Parenthesis) of Graham's Penstemon Occupied Habitat by Subpopulation

Parcel	Upper Evacuation Creek	Dripping Rock - White River	Bitter Creek	Seep Ridge	Crow Roost Canyon-Main Canyon	Western Sunday School Canyon	Grand Total
1689		15.4 (0.1)					15.4 (0.1)
1717					28.3 (0.3)		28.3 (0.3)
1734	21.9 (0.2)						21.9 (0.2)
1767			29.1 (0.3)				29.1 (0.3)
1808				66.1 (0.6)		35.6 (0.3)	101.7 (1)
7779	79.5 (0.8)						79.5 (0.8)
7786	14 (0.1)						14 (0.1)
Outside Parcels	1818.2	1982.0	0.0	2682.4	0.0	0.0	6482.5
Grand Total	1933.6 (1.1)	1997.4 (0.1)	29.1 (0.3)	2,748. 4 (0.6)	28.3 (0.3)	35.6 (0.3)	6772.4 (2.7)

Using the foreseeable disturbance assumptions in Section 3.2, and assuming random placement of disturbance within the area, 2.7 acres may be directly impacted by the development representing between less than 0.1% and 0.9% of the occupied habitat in each subpopulation and less than 0.1% of the total occupied habitat for the species.

Given the requirements of lease notice UT-LN-90 to perform surveys and avoid individuals by 300 feet where feasible combined with the BLM's statutory and regulatory authority to require reasonable measures consistent with lease rights, it is expected that impacts to occupied habitat at the lease development stage may be further reduced. However, given the distribution of the populations, topographic constraints, and locations of existing infrastructure (including existing collector roads) it is likely that 100% avoidance of occupied habitat will not be possible.

Modeled Suitable Habitat

Acres of modeled suitable habitat found in the parcels and predicted disturbance is presented in Table 27.

Table 27: Graham's Penstemon Suitable Habitat and Estimated Disturbance from Future Parcel Development

Parcel	Acres Suitable Habitat	Acres Estimated Disturbance
1680	1.4	0.0
1689	355.2	3.3
1703	96.6	0.9
1717	261.1	2.5
1719	0.0	0.0
1734	455.9	4.3
1765	2.5	0.0
1767	432.7	4.1
1789	18.5	0.2
1791	0.5	0.0
1792	0.1	0.0
1799	244.6	2.3
1808	1344.9	12.7
7778	303.0	2.8
7779	134.2	1.3
7785	0.2	0.0
7786	621.3	5.9
7793	0.0	0.0
7809	25.4	0.2
7830	1.7	0.0
Grand Total	4,299.7	40.5

Using the foreseeable disturbance assumptions in Section 3.2, and assuming random placement of disturbance within the area, 40.5 acres of modeled suitable habitat would be directly impacted by the development. This represents 0.9% of the suitable habitat within the parcels and 0.1% of the suitable habitat across the range of the species.

To minimize impacts, the following lease notices are applied to the parcels:

Lease Notices

- UT-LN-90 – Graham's beardtongue (*Penstemon grahamii*): Parcels in Table 26
- UT-LN-49 – Utah Sensitive Species: All Parcels with BLM Managed Surface
UT-LN-51 – Special Status Plants: Not Federally Listed: All Parcels with BLM Managed Surface

- UT-LN-134 – Graham’s beardtounge (*Penstemon grahamii*) & White River beardtounge (*P. scariosus* var. *albifluvis*) Conservation Area: Parcels in Table 26

The above lease notices combined with Section 6 of the Standard Lease Terms and Conditions (43 CFR § 3101.12) identifies survey, avoidance, and minimization requirements for the species.

Impacts of the No Action Alternative (Alternative D)

Under Alternative D, the BLM would not offer any of the nominated parcels in this Lease Sale. However, in the absence of a Land Use Plan Amendment closing lands to leasing, they could be considered for inclusion in future lease sales. No new impacts to Graham’s penstemon occupied or suitable habitat associated with new Federal oil and gas development for the nominated parcels would occur under the No Action Alternative in the foreseeable future.

3.6.5 Issue 4: White River [Beardtongue] Penstemon (*Penstemon albifluvis*)

How would potential development of the nominated lease parcels affect modeled suitable and occupied habitat for White River penstemon?

Affected Environment

White River penstemon (*Penstemon* [*scariosus* var.] *albifluvis*) is a BLM sensitive perennial member of the plantain family endemic to the Green River formation in northeastern Utah (VFO and portion of MbFO managed under the VFO RMP) and adjacent Rio Blanco County, Colorado (White River FO). Additional information on the species is available in the Conservation Agreement and Strategy (Penstemon Conservation Team, 2014) and the Biological Status Report (USFWS, 2021)

Across the Utah portion of the range of the species there are nineteen subpopulations with 4,000 acres of habitat within 300 feet of a known occurrence.

Habitat modeling for the species (BLM unpublished) identified 89,336 acres of habitat across the range of the species.

Occupied habitat for three subpopulations intersect a nominated parcel. The first is the Evacuation Creek population (Evacuation Creek). The second is a small population in the Southman Canyon-White River subwatershed (Southman Canyon-White River). The third is the White River population (White River).

Existing activities are expected to continue (see Section 3.3). The current setting is described below for the occupied habitat and modeled suitable habitat across the range of the species

Occupied Habitat

Within 300 feet of known White River penstemon locations, there have been three fluid mineral well pads that have been constructed at some point in the past. There are 1,611.8 acres of habitat within 300 feet of known occurrences that are already leased by BLM or TLA (Table 30).

Table 28: Acreage (and percentage of occupied habitat) of existing fluid mineral leases within overlapping occupied habitat subpopulations

Subpopulation	Leased - Existing or Proposed Lease Development	Leased - No Existing or Proposed Lease Development	Not Leased	Grand Total
Evacuation Creek	0 (0%)	199.6 (27.9%)	515.8 (72.1%)	715.4
Southman Canyon-White River	0 (0%)	36.2 (93.3%)	2.6 (6.7%)	38.8
White River	12 (1.8%)	310.4 (47.6%)	329.9 (50.6%)	652.3
Other Subpopulations	376.2 (14.5%)	677.4 (26.1%)	1,540.7 (59.4%)	2,594.4
Grand Total	388.1 (9.7%)	1223.6 (30.6%)	2,389.1 (59.7%)	4,000.9

A BLM route inventory identified 23 miles of linear routes on BLM managed lands within the Vernal Planning Area, White River FO, and Price FO within 300 feet of White River penstemon.

Modeled Suitable Habitat

Within modeled suitable habitat for White River penstemon, there are 66 fluid mineral well pads that have been constructed at some point in the past. One additional well pad is currently proposed within modeled suitable habitat. There are 35,989 acres of modeled suitable habitat that are already leased by the BLM or TLA (13,803 acres intersect leases with existing or proposed lease development [15.5% of suitable habitat] and 22,185 acres intersect leases without existing or proposed lease development [24.8% of suitable habitat]). BLM route inventory identified 130 miles of linear routes on BLM managed lands within modeled suitable habitat for White River penstemon (113 miles within the Vernal Planning Area and 17 miles within the White River Field Office).

Environmental Affects

Impacts of the Proposed Action (Alternative A)

Under Alternative A, twenty-two of the parcels intersect modeled suitable habitat for White River penstemon. Four of those parcels intersect occupied habitat for the species but there are no known occurrences within the parcels.

Occupied Habitat

Acres of occupied habitat, defined here as areas within 300 feet of a plant, is presented in Table 29.

Table 29 Acres and Estimated Disturbance (in Parathesis) of White River Penstemon Occupied Habitat by Subpopulation

Parcel	Evacuation Creek	Southman Canyon-White River	White River	Grand Total
1684	79.6 (0.8)			79.6 (0.8)
1689			6.5 (0.1)	6.5 (0.1)
1798		2.7 (0)		2.7 (0)

Parcel	Evacuation Creek	Southman Canyon-White River	White River	Grand Total
7786	83 (0.8)			83 (0.8)
Outside Parcels	552.8	36.1	598.2	1187.1
Grand Total	715.4 (1.5)	38.8 (0)	604.7 (0.1)	1358.9 (1.6)

Using the foreseeable disturbance assumptions in Section 3.2, and assuming random placement of disturbance within the area, 1.6 acres may be directly impacted by the development representing between less than 0.1% and 0.2% of the occupied habitat in each subpopulation (Table 29) and less than 0.1% of the total occupied habitat for the species.

Given the requirements of lease notice UT-LN-90 to perform surveys and avoid individuals by 300 feet where feasible combined with the BLM's statutory and regulatory authority to require reasonable measures consistent with lease rights, it is expected that impacts to occupied habitat at the lease development stage would be further reduced.

Modeled Suitable Habitat

Acres of modeled suitable habitat found in the parcels and predicted disturbance is presented in Table 30.

Table 30: White River Suitable Habitat and Estimated Disturbance from Future Parcel Development

Parcel	Acres Suitable Habitat	Acres Estimated Disturbance
1674	0.7	0.0
1678	0.1	0.0
1681	104.3	1.0
1684	444.4	4.2
1687	3.5	0.0
1689	456.2	4.3
1703	0.3	0.0
1717	5.4	0.1
1734	126.7	1.2
1767	20.4	0.2
1789	132.3	1.2
1798	1.6	0.0
1799	1.9	0.0
1808	21.3	0.2
1810	0.1	0.0
1816	0.0	0.0
1823	2.3	0.0
1825	0.8	0.0
7778	6.9	0.1
7779	125.8	1.2
7786	198.4	1.9
7830	0.5	0.0
Grand Total	1,653.9	15.6

Using the foreseeable disturbance assumptions in Section 3.2, and assuming random placement of disturbance within the area, 15.6 acres of modeled suitable habitat would be directly impacted by the development. This represents 0.9% of the suitable habitat within the parcels and 0.1% of the suitable habitat across the range of the species.

To minimize impacts, the following lease notices were applied to the parcels:

Lease Notices

- UT-LN-49 – Utah Sensitive Species: All Parcels with BLM Managed Surface
- UT-LN-51 – Special Status Plants: Not Federally Listed: All Parcels with BLM Managed Surface
- UT-LN-134 – Graham’s beardtounge (*Penstemon grahamii*) & White River beardtounge (*P. scariosus* var. *albifluvis*) Conservation Area: Parcels in Table 30.

The above lease notices combined with Section 6 of the Standard Lease Terms and Conditions (43 CFR § 3101.12) identifies survey, avoidance, and minimization requirements for the species.

Impacts of the Graham’s and White River Penstemon Avoidance (Alternative B)

Under Alternative B, eleven parcels would not be offered. Alternative B was developed to avoid occupied habitat for White River penstemon. This results in all occupied habitat being avoided and considerably reduces but does not fully avoid suitable habitat for the species. Under Alternative B, twelve of the nominated parcels intersect modeled suitable habitat for the species.

Occupied Habitat

Alternative B avoids known occupied habitat for White River penstemon. Therefore, there would be no impacts associated with the development of the parcels offered to known occupied habitat for species.

Modeled Suitable Habitat

Acres of modeled suitable habitat found in the parcels and predicted disturbance is presented in Table 31.

Table 31: White River Penstemon Suitable Habitat and Estimated Disturbance from Future Parcel Development

Parcel	Acres Suitable Habitat	Acres Estimated Disturbance
1674	0.7	0.0
1678	0.1	0.0
1681	104.3	1.0
1687	3.5	0.0
1703	0.3	0.0
1789	132.3	1.2

Parcel	Acres Suitable Habitat	Acres Estimated Disturbance
1798	1.6	0.0
1799	1.9	0.0
1816	0.0	0.0
1823	2.3	0.0
1825	0.8	0.0
7778	6.9	0.1
7830	0.5	0.0
Grand Total	255.1	2.4

Using the foreseeable disturbance assumptions in Section 3.2, and assuming random placement of disturbance within the area, 2.4 acres of modeled suitable habitat would be directly impacted by the development. This represents 0.9% of the suitable habitat within the parcels and 0.1% of the suitable habitat across the range of the species.

To minimize impacts, the following lease notices were applied to the parcels:

Lease Notices

- UT-LN-49 – Utah Sensitive Species: All Parcels with BLM Managed Surface
- UT-LN-51 – Special Status Plants: Not Federally Listed: All Parcels with BLM Managed Surface
- UT-LN-134 – Graham’s beardtounge (*Penstemon grahamii*) & White River beardtounge (*P. scariosus* var. *albifluvis*) Conservation Area: Parcels in Table 31.

The above lease notices combined with Section 6 of the Standard Lease Terms and Conditions (43 CFR § 3101.12) identifies survey, avoidance, and minimization requirements for the species.

Impacts of the Greater Sage-Grouse Avoidance Alternative (Alternative C)

Under Alternative C, twenty of the nominated parcels intersect modeled suitable habitat for White River penstemon. Two of those parcels intersect known occurrences for White River penstemon.

Occupied Habitat

Acres of occupied habitat, defined here as areas within 300 feet of a plant, is presented in Table 32.

Table 32 Acres and Estimated Disturbance (in Parathesis) of White River Penstemon Occupied Habitat by Subpopulation

Parcel	Evacuation Creek	White River	Grand Total
1689		6.5 (0.1)	6.5 (0.1)

Parcel	Evacuation Creek	White River	Grand Total
7786	83 (0.8)		83 (0.8)
Outside Parcels	632.4	598.2	1269.4
Grand Total	715.4 (0.8)	604.7 (0.1)	1358.9 (0.8)

Using the foreseeable disturbance assumptions in Section 2.4, and assuming random placement of disturbance within the area, 0.8 acres may be directly impacted by the development representing between less than 0.1% of the occupied habitat in each subpopulation and less than 0.1% of the total occupied habitat for the species.

Given the requirements of lease notice UT-LN-90 to perform surveys and avoid individuals by 300 feet where feasible combined with the BLM's statutory and regulatory authority to require reasonable measures consistent with lease rights, it is expected that impacts to occupied habitat at the lease development stage may be further reduced.

Modeled Suitable Habitat

Acres of modeled suitable habitat found in the parcels and predicted disturbance is presented in Table 33.

Table 33: White River Penstemon Suitable Habitat and Estimated Disturbance from Future Parcel Development

Parcel	Acres Suitable Habitat	Acres Estimated Disturbance
1689	456.2	4.3
1703	0.3	0.0
1717	5.4	0.1
1734	126.7	1.2
1767	20.4	0.2
1789	132.3	1.2
1799	1.9	0.0
1808	21.3	0.2
7778	6.9	0.1
7779	125.8	1.2
7786	198.4	1.9
7830	0.5	0.0
Grand Total	1096.2	10.3

Using the foreseeable disturbance assumptions in Section 2.4, and assuming random placement of disturbance within the area, 10.3 acres of modeled suitable habitat would be directly impacted by the development. This represents 0.9% of the suitable habitat within the parcels and 0.1% of the suitable habitat across the range of the species.

To minimize impacts, the following lease notices were applied to the parcels:

Lease Notices

- UT-LN-49 – Utah Sensitive Species: All Parcels with BLM Managed Surface
- UT-LN-51 – Special Status Plants: Not Federally Listed: All Parcels with BLM Managed Surface
- UT-LN-134 – Graham’s beardtounge (*Penstemon grahamii*) & White River beardtounge (*P. scariosus* var. *albifluvis*) Conservation Area: Parcels in Table 33.

The above lease notices combined with Section 6 of the Standard Lease Terms and Conditions (43 CFR § 3101.12) identifies survey, avoidance, and minimization requirements for the species.

Impacts of the No Action Alternative (Alternative D)

Under Alternative D, the BLM would not offer any of the nominated parcels in this Lease Sale. However, in the absence of a Land Use Plan Amendment closing lands to leasing, they could be considered for inclusion in future lease sales. No new impacts to White River penstemon occupied or suitable habitat associated with new Federal oil and gas development for the nominated parcels would occur under the No Action Alternative in the foreseeable future.

3.6.6 Issue 5: Penstemon Conservation Areas

How would potential development of the nominated lease parcels affect conservation areas established for Graham’s and White River penstemon?

Affected Environment

In 2014, the Conservation Agreement and Strategy for Graham’s Beardtongue and White River Beardtongue was finalized between TLA; Uintah County, Utah; Utah Public Lands Policy Coordination Office; Utah Division of Wildlife Resources; Rio Blanco County, Colorado; BLM, and USFWS “to identify, avoid, minimize potential threats to Graham’s and White River beardtongues and their habitats, and to promote the species’ long-term persistence, thereby preventing the need for listing either species” (Penstemon Conservation Team, 2014). As part of this agreement, Conservation Areas were established within the Vernal Planning Area and White River FO for each species that would “encompass varying site conditions, promote species stability (high-density populations), maintain corridors between populations, and provide redundancy for each species.” On federal lands, the conservation areas are managed to maintain a maximum of 5% new surface disturbance for Graham’s penstemon and 2.5% new surface disturbance for White River penstemon after July 25, 2014, per land ownership by Conservation Unit combination. The Conservation Areas encompass important areas of occupied habitat for each species but do not encompass all occupied habitat. Conversely, the Conservation Areas also encompass surrounding areas of proposed and suitable habitat that has not been found to be occupied to date.

The Conservation Areas were originally grouped into five population units (in 2018, the Book Cliffs Unit representing a disjunct population of White River penstemon was added). The parcels fall within the Seep Ridge (BLM Conservation Area), Evacuation Creek (BLM Conservation Area), and White River Units (BLM and TLA Conservation Areas). In the Seep Ridge Unit there

are 5,448 acres of BLM Conservation Area (192 acres with a 2.5% disturbance cap and 5,256 acres with a 5% disturbance cap). In the Evacuation Creek Unit there are 8,536 acres of BLM Conservation Area (5,407 acres with a 2.5% disturbance cap and 3,128 acres with a 5% disturbance cap). In the White River Unit there are 9,362 acres of BLM Conservation Area (9,311 acres with a 2.5% disturbance cap and 51 acres with a 5% disturbance cap) and 340 acres of TLA Conservation Area (all with a 5% disturbance cap). Since the establishment of the Conservation Areas, the BLM has not authorized disturbance in the Seep Ridge or Evacuation Creek Units and TLA has not authorized disturbance in the White River Unit. In the White River Unit, 11.8 acres of disturbance have been authorized by the BLM White River FO in areas with a 2.5% disturbance cap. This represents an increase in disturbance of 0.1% within the portions of the Unit with an additional 2.5% disturbance cap (Penstemon Conservation Team, 2016; 2017; 2018; 2019) (Penstemon Conservation Team, 2020; 2021; 2022; 2023) (Penstemon Conservation Team, 2024).

Existing activities are expected to continue (see Section 3.3). Within the overlapping Conservation Areas there are 9 well pads that have been constructed at some point in the past (0 within the Seep Ridge BLM Conservation Area, 2 within the Evacuation Creek BLM Conservation Area, 7 within the White River BLM Conservation Area, and 0 within the White River TLA Conservation Area). No additional well pads are currently proposed. There are 18,677.5 acres of the Conservation Areas that are already leased by the BLM or TLA (Table 34).

Table 34: Acreage (and percentage of the Conservation Area) of existing fluid mineral leases within overlapping Penstemon Conservation Areas

Conservation Unit	Leased - Existing or Proposed Lease Development	Leased - No Existing or Proposed Lease Development	Not Leased	Grand Total
Seep Ridge Unit - Graham's penstemon: BLM	9,494.1 (24.3%)	24,580.1 (63%)	4,957.3 (12.7%)	39,031.6 (87.3%)
Evacuation Creek Unit - Graham's penstemon: BLM	25 (0.1%)	42,077.5 (93.1%)	3,102.8 (6.9%)	45,205.3 (93.1%)
White River Unit - Graham's penstemon: BLM	0 (0%)	152.4 (74.9%)	51.1 (25.1%)	203.5 (74.9%)
White River Unit - Graham's penstemon: SITLA	87 (10.9%)	430.3 (54%)	278.9 (35%)	796.2 (65%)
Evacuation Creek Unit - White River penstemon: BLM	4,107.6 (16.2%)	17,092.2 (67.5%)	4,136.8 (16.3%)	25,336.6 (83.7%)
White River Unit - White River penstemon: BLM	16,152.6 (34.4%)	22,041 (47%)	8,734 (18.6%)	46,927.6 (81.4%)

A BLM route inventory identified 15 miles of linear routes on BLM managed lands within the Vernal FO within the Conservation Areas within the Vernal FO.

Environmental Affects

Impacts of the Proposed Action (Alternative A)

Under Alternative A, eight of the parcels intersect Conservation Areas established for Graham's and White River Penstemon.

White River penstemon Conservation Areas (2.5% New Disturbance Cap)

Five parcels intersect conservation areas established to support White River penstemon in two units (Table 35).

Table 35: Acres and Estimated Disturbance (in parenthesis) of BLM White River Penstemon Conservation Areas by Nominated Parcel and Conservation Unit

Parcel	Evacuation Creek BLM Conservation Area	White River BLM Conservation Area	Grand Total
1684	221.3 (2.1)		221.3 (2.1)
1689		395.4 (3.7)	395.4 (3.7)
1734	205.2 (1.9)		205.2 (1.9)
7779	111.8 (1.1)		111.8 (1.1)
7786	777.1 (7.3)		777.1 (7.3)
Outside Parcels	4,092	8,915.2	13,199.3
Grand Total	5,407.4 (12.4)	9,310.5 (3.7)	1,4910 (16.1)

Using the foreseeable disturbance assumptions in Section 3.2. and assuming random placement of disturbance within the area, 16.1 acres of White River Penstemon Conservation Areas may be directly disturbed by the development (Table 35).

Using the assumption of random placement, disturbance to BLM White River Penstemon Conservation Areas within the White River Unit would result in 0.04% disturbance towards the 2.5% cap (Table 36). With the 11.8 acres of disturbance already approved within the Conservation Area in the White River FO, there would be 0.2% disturbance. Therefore, new disturbance would not exceed the new surface disturbance cap for the unit.

Using the assumption of random placement of disturbance, disturbance to BLM White River Penstemon Conservation Areas within the Evacuation Creek Unit would result in 0.23% disturbance towards the 2.5% cap (Table 36). As there has been no new disturbance towards the cap, new disturbance would not exceed the cap for the unit.

Graham's penstemon Conservation Areas (5% New Disturbance Cap)

Four parcels intersect conservation areas established to support Graham's penstemon across three units (Table 36).

Table 36 Acres and Estimated Disturbance of BLM Graham’s Penstemon Conservation Areas by Nominated Parcel and Conservation Unit

Parcel	Seep Ridge BLM Conservation Area	Evacuation Creek BLM Conservation Area	White River TLA Conservation Area	Grand Total
1798			2.7 (0)	2.7 (0)
1808	324.2 (3.1)			324.2 (3.1)
1810	20.4 (0.2)			20.4 (0.2)
7786		99.1 (0.9)		99.1 (0.9)
Outside Parcels	4911.1	3,029.4	427.6	8,368.1
Grand Total	5,255.7 (3.2)	3,128.4 (0.9)	430.3 (0)	8,814.5 (4.2)

Using the foreseeable disturbance assumptions in Section 3.2 and assuming random placement of disturbance within the area, 4.2 acres of Graham’s Penstemon Conservation Areas may be directly disturbed by the development (Table 36).

Using the assumption of random placement, disturbance to BLM Graham’s Penstemon Conservation Areas would result in less than 0.1% disturbance towards the 5% cap in the three intersecting BLM Conservation Area (Table 36). No other disturbance has been approved since the signing of the Conservation Agreement in overlapping Graham’s Penstemon Conservation Areas within the units. Therefore, development of the nominated parcels, even without targeted avoidance, would not exceed the disturbance caps in any of the units.

To minimize impacts, the following lease notice are applied to the parcels:

Lease Notices

- UT-LN-134 – Graham’s beardtounge (*Penstemon grahamii*) & White River beardtongue (*P. scariosus* var. *albifluvis*) Conservation Area: Parcels in Tables Table 35 and Table 36.

The above lease notice combined with Section 6 of the Standard Lease Terms and Conditions (43 CFR § 3101.12) identifies that the lease is subject to the management requirements of Conservation Agreement.

Impacts of the Graham’s and White River Penstemon Avoidance (Alternative B)

Under Alternative B, eleven parcels would not be offered. Alternative B was developed to avoid the Penstemon Conservation Areas. Therefore, there would be no impacts associated with the development of the offered parcels to the Penstemon Conservation Areas Under Alternative B

Impacts of the Greater Sage-Grouse Avoidance Alternative (Alternative C)

Under Alternative C, five of the parcels intersect Conservation Areas established for Graham’s and White River Penstemon.

White River penstemon Conservation Areas (2.5% New Disturbance Cap)

Four parcels intersect conservation areas established to support White River penstemon in two units (Table 37).

Table 37: Acres and Estimated Disturbance (in parenthesis) of BLM White River Penstemon Conservation Areas by Nominated Parcel and Conservation Unit

Parcel	Evacuation Creek BLM Conservation Area	White River BLM Conservation Area	Grand Total
1689		395.4 (3.7)	395.4 (3.7)
1734	205.2 (1.9)		205.2 (1.9)
7779	111.8 (1.1)		111.8 (1.1)
7786	777.1 (7.3)		777.1 (7.3)
Outside Parcels	4,092.0	8,915.2	13,007.2
Grand Total	5,186.1 (10.3)	9,310.5 (3.7)	14,496.6 (14)

Using the foreseeable disturbance assumptions in Section 3.2 and assuming random placement of disturbance within the area, 14.0 acres of White River Penstemon Conservation Areas may be directly disturbed by the development (Table 37).

Using the assumption of random placement, disturbance to BLM White River Penstemon Conservation Areas within the White River Unit would result in 0.04% disturbance towards the 2.5% cap (Table 38). With the 11.8 acres of disturbance already approved within the Conservation Area in the White River FO, there would be 0.2% disturbance. Therefore, new disturbance would not exceed the new surface disturbance cap for the unit.

Using the assumption of random placement of disturbance, disturbance to BLM White River Penstemon Conservation Areas within the Evacuation Creek Unit would result in 0.20% disturbance towards the 2.5% cap (Table 37). As there has been no new disturbance towards the cap, new disturbance would not exceed the cap for the unit.

Graham's penstemon Conservation Areas (5% New Disturbance Cap)

Two parcels intersect conservation areas established to support Graham's penstemon across two units (Table 38).

Table 38 Acres and Estimated Disturbance of BLM Graham's Penstemon Conservation Areas by Nominated Parcel and Conservation Unit

Parcel	Evacuation Creek BLM Conservation Area	White River BLM Conservation Area	Grand Total
1808	324.2 (3.1)		324.2 (3.1)
7786		99.1 (0.9)	99.1 (0.9)
Outside Parcels	4911.1	3029.4	7940.5

Parcel	Evacuation Creek BLM Conservation Area	White River BLM Conservation Area	Grand Total
Grand Total	5235.4 (3.1)	3128.4 (0.9)	8363.8 (4.0)

Using the foreseeable disturbance assumptions in Section 3.2 and assuming random placement of disturbance within the area, 4.0 acres of Graham’s Penstemon Conservation Areas may be directly disturbed by the development (Table 38).

Using the assumption of random placement, disturbance to BLM Graham’s Penstemon Conservation Areas would result in less than 0.1% disturbance towards the 5% cap in the two intersecting BLM Conservation Area (Table 38). No other disturbance has been approved since the signing of the Conservation Agreement in overlapping Graham’s Penstemon Conservation Areas within the units. Therefore, development of the nominated parcels, even without targeted avoidance, would not exceed the disturbance caps in any of the units.

To minimize impacts, the following lease notice are applied to the leases:

Lease Notices

- UT-LN-134 – Graham’s beardtounge (Penstemon grahamii) & White River beardtongue (P. scariosus var. *albifluvis*) Conservation Area: Parcels in Tables Table 37 and Table 38.

The above lease notice combined with Section 6 of the Standard Lease Terms and Conditions (43 CFR § 3101.12) identifies that the lease is subject to the management requirements of Conservation Agreement.

Impacts of the No Action Alternative (Alternative D)

Under Alternative D, the BLM would not offer any of the nominated parcels in this Lease Sale. However, in the absence of a Land Use Plan Amendment closing lands to leasing, they could be considered for inclusion in future lease sales. No new impacts to the Penstemon Conservation Areas associated with new Federal oil and gas development for nominated parcels would occur under the No Action Alternative in the foreseeable future.

3.6.7 Issue 6: Greater Sage-grouse

How would future potential development of the nominated lease parcels impact GRSG and its habitat in the McCoy Flats, Deadman Bench, East Bench, and Book Cliffs GHMA portion of the Uintah Population Area?

The scope for analysis was chosen based on the GHMA and Priority Habitat Management Areas (PHMA) areas identified in the 2015 GRSG ARMPA (BLM 2015), which states, within the Uintah Population Area, there are seven areas with separate habitat and distinct populations. The analysis area for GRSG is contained within the GHMA portions of the Uintah Biologically Significant Unit (BSU). In accordance with the 2015 GRSG ARMPA (BLM 2015), in GHMA, BLM applies the existing management based on the existing RMPs and project-specific mitigation measures associated with existing decisions, net conservation gain, lek buffers, and the fluid mineral required design features (RDFs). The applicability and effectiveness of the

RDFs are evaluated at the site-specific project level during the APD stage when the project location and design are known. As stated in Section 2.2, the issued leases are held for ten years, after which the lease expires unless oil or gas is being produced in paying quantities; therefore, impacts may not be realized until actual development is authorized.

Affected Environment

GRSG and their habitat have been a critical issue for the BLM and partner agencies across the west. GRSG currently occupy about one-half of their historic range (Schroeder, 2004). On October 2, 2015, the U.S. Fish and Wildlife Service (USFWS) published its finding that listing of the GRSG under the Endangered Species Act of 1973 was not warranted. The finding was based in part on the conservation strategies through range-wide planning efforts which led the USFWS to conclude that “the primary threats to greater sage-grouse have been ameliorated by conservation efforts implemented by Federal, State, and private landowners.” (Federal Register, 2015).

In 2021, BLM notified the public of the intent to amend specific GRSG goals, objectives, and management from previous planning efforts in 77 RMPs across ten western states including Utah. The RMP Amendments are still underway, and updated information can be found here: <https://eplanning.blm.gov/eplanning-ui/project/2016719/510>.

GRSG is a BLM-UT sensitive species (managed under BLM Manual 6840). The BLM must ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species under the Endangered Species Act (ESA). Thirty-two (32) of the parcels nominated and available are within the GRSG GHMA in the McCoy Flats, Deadman Bench, East Bench and Book Cliffs portion of the Uintah Population Area within the Vernal and Moab Field Offices. GRSG habitat in the Moab Field Office is managed by the Vernal Field Office. There is no GRSG habitat in the Monticello Field Office. There are no nominated parcels in PHMA. The larger Uintah Population Area comprises approximately 1,558,300 total surface acres (557,400 total BLM surface acres). The scope for the analysis area for GRSG is contained within the GHMA, that is intersected by the thirty-two (32) lease parcels, which is a subset of the GHMA in the larger Uintah Population Area and totals approximately 511,003 total surface acres of GHMA.

Habitat across the Uintah Population Area is diverse, ranging from low, dry elevation sagebrush shrublands to high elevation mountain big sagebrush plateaus mixing with aspens, conifers, and pinyon-juniper. The GHMA that overlaps the lease parcels is primarily Wyoming big sagebrush with some black sagebrush in the lower elevations; greasewood, tamarisk, and cultivated alfalfa in riparian areas; and pinyon-juniper woodlands with small pockets of mountain sagebrush areas in the upper elevations. Dry, lower-elevation areas are dominated by even-aged sagebrush stands with low abundance but diverse forb understory vegetation. Cheatgrass and Halogeton are common, particularly in areas where there has been disturbance.

The Uintah Population Area serves as a stronghold for GRSG in Utah, supporting one of the state’s more resilient, robust, and connected populations. The Diamond Mountain PHMA contains the highest relative abundance of GRSG (Doherty et al. 2016) and the greatest concentration of active leks, providing an important linkage to populations in Wyoming and Colorado (Cross, et al., 2023). Genetic research indicates strong connectivity across the Diamond

and Blue Mountain areas. Fragmentation in GHMA likely contributes to lower effective migration rates and greater genetic delineation (Oyler-McCance, et al., 2022). Since implementation of the 2015 ARMPA (BLM, 2015), no adaptive management habitat or population triggers have been reached within the Uintah PHMA, suggesting relative stability under current management. The adjacent McCoy Flats GHMA provides potential north–south connectivity with low-elevation leks near Diamond Mountain. In contrast, smaller and more isolated subpopulations in the Uintah Basin GHMA—Deadman’s Bench, East Bench, and Book Cliffs—exhibit low genetic connectivity and are not considered key areas for long-term genetic exchange or population persistence. Anthropogenic disturbance, primarily from oil and gas development, may restrict movement.

The Utah Division of Wildlife Resources (UDWR) monitors leks within the Uintah GRSG Population Area. The GRSG populations in Utah fluctuate naturally with populations increasing and decreasing annually with a peak in populations occurring about every 8 to 10 years. In 2024, 68 leks were visited in the Uintah Population Area and an average of 17.6 males per lek were detected on 40 of those leks resulting in a total count of 704 male GRSG documenting an 18% increase from 2023 (Utah Division of Wildlife Resource, 2024). The Uintah population trend shows that the population is stable to increasing since a decline in 2017 which is typical of the natural fluctuation exhibited by GRSG populations in Utah. The nearest occupied lek to the nominated parcels is more than 10.62 miles north of parcel 7823 in the McCoy Flats area. The average distance of leks to the parcels is 27.9 miles. The status of leks on tribal lands is unknown within the Book Cliffs area; however, UDWR lek data does not show any leks within these areas. Declines in the GRSG population in the Deadman Bench, East Bench and Book Cliffs have been documented prior to the 2015 GRSG ARMPA (BLM, 2015). Leks in these isolated GHMA lands overlapping the nominated parcels continue to be monitored by the UDWR who considers all the leks inactive or historical.

Seventeen parcels (1672, 1683, 1687, 1688, 1696, 1698, 1702, 1742, 1816, 1817, 1823, 7781, 7782, 7813, 7823, 7826, and 7833) are wholly contained within GHMA while fifteen remaining parcels (1662, 1673, 1674, 1678, 1681, 1684, 1691, 1715, 1810, 1815, 1818, 1825, 7784, 7837, and 7840) are only partially contained within GHMA. Approximately 12,915 acres in GHMA that overlap the parcels are split estate (private surface) and 11,192 acres are BLM surface for a total of 24,115 acres in GRSG GHMA or approximately 33.7% of the total lease parcels nominated. The primary habitat values based on modeled seasonal habitats includes 4,492 acres of nesting (2,916 acres of BLM and 1,576 acres of split-estate), 14,337 acres of winter (6,247 acres of BLM and 8,090 acres of split-estate) and 7,894 acres of summer (4,236 acres of BLM and 3,658 acres of split-estate) habitat. Refer to Table 39. for acres of GHMA, seasonal habitat values, and proximity of parcels to leks.

Table 39 Acres of GHMA, Seasonal Habitat Values and Leks associated with the Lease Parcels

POPULATION AREA	PARCEL #	PARCEL SIZE (ACRES)	AMOUNT OF PARCEL IN GHMA % (ACRES)	DISTANCE TO NEAREST OCCUPIED LEK (MILES)	SAGE-GROUSE SEASONAL HABITAT VALUES (ACRES) IN GHMA		
					NESTING	WINTER	SUMMER
Uintah – McCoy Flats	7823	880	100%	10.4	245	876	771
Uintah – Deadman Bench	1684	1151.54	5.6%	37.1	0	0	0
Uintah – Deadman Bench	1688	160.00	100%	32.1	0	160	0
Uintah – Deadman Bench	1691	1,280.00	84.3%	24.3	0	0	0
Uintah – Deadman Bench	1696	280.00	100%	25.9	223	278	278
Uintah – Deadman Bench	1698	1,570.36	100%	21.9	1,570	1,570	1,570
Uintah – Deadman Bench	1702	1,040.00	100%	14.1	0	1,041	0
Uintah – Deadman Bench	1742	1,192.34	100%	23.2	878	1,167	1,167
Uintah – Deadman Bench	7781	2,545.78	100%	23.9	0	121	0
Uintah – Deadman Bench	7782	1,748.52	100%	25.8	0	1,032	0
Uintah – Deadman Bench	7784	1,880.00	82.8%	20.2	0	0	0
Uintah – Deadman Bench	7813	320.00	100%	21.7	0	197	0
Uintah – Deadman Bench	7826	120.00	100%	23.6	0	43	0

POPULATION AREA	PARCEL #	PARCEL SIZE (ACRES)	AMOUNT OF PARCEL IN GHMA % (ACRES)	DISTANCE TO NEAREST OCCUPIED LEK (MILES)	SAGE-GROUSE SEASONAL HABITAT VALUES (ACRES) IN GHMA		
					NESTING	WINTER	SUMMER
Uintah – Deadman Bench	7833	120.00	100%	20.9	0	0	0
Uintah – Deadman Bench	7837	1,920.00	79.7%	12.2	0	1,923	1,115
Uintah – Deadman Bench	7840	895.38	99.6%	11.9	344	895	896
Uintah – East Bench	1681	960.00	64.8%	39.5	0	960	450
Uintah – East Bench	1683	160.00	100%	37.5	0	0	0
Uintah – East Bench	1687	40.00	100%	37.3	0	40	0
Uintah – East Bench	1816	40.00	100%	34.8	0	40	0
Uintah – East Bench	1817	80.00	100%	36.9	0	80	0
Uintah – East Bench	1823	80.00	100%	38.8	0	80	45
Uintah – East Bench	1825	1,280.00	75.1%	32.3	1,232	1,280	1,280
Uintah – Book Cliffs	1662	1,161.88	99.5%	28.9	0	0	0
Uintah – Book Cliffs	1672	280.00	100%	31.9	0	0	0
Uintah – Book Cliffs	1673	1,775.84	81.4%	29.8	0	0	0
Uintah – Book Cliffs	1674	2,240.00	48.9%	28.4	0	0	0
Uintah – Book Cliffs	1678	1,280.00	41.2%	40.1	0	0	0
Uintah – Book Cliffs	1715	2,161.20	22.6%	26.8	0	0	0
Uintah – Book Cliffs	1810	2,040.00	0.9%	34.0	0	1,890	270
Uintah – Book Cliffs	1815	160.00	53.8%	30.4	0	160	40
Uintah – Book Cliffs	1818	2,396.72	80.8%	37.6	0	504	12

POPULATION AREA	PARCEL #	PARCEL SIZE (ACRES)	AMOUNT OF PARCEL IN GHMA % (ACRES)	DISTANCE TO NEAREST OCCUPIED LEK (MILES)	SAGE-GROUSE SEASONAL HABITAT VALUES (ACRES) IN GHMA		
					NESTING	WINTER	SUMMER
Total		33,240			4,492	14,337	7,894

Anthropogenic disturbances in the area both within and within close proximity to the parcels are low to high due to existing infrastructure for oil, gas, and oil shale development and reclamation, mining, transmission lines, and pipelines. Parcels 1674, 1678, 1684, 1702, 1742, 1810, 1815, 1816, 1818, 7837, and 7840 have a variety of habitat improvement projects that have been implemented to restore various components of the sagebrush community within the GHMA, primarily mastication and lop and scatter treatments on pinyon pine and juniper. Refer to Appendix I Table 1. Other land uses include grazing, agriculture, dispersed recreation, and hunting.

Prioritization Review

In accordance with the 2015 GRSG ARMPA and BLM policy, the BLM reviewed the priority of leasing parcels within GRSG habitat and prior oil and gas leasing and development. The BLM completed an in-depth review of all parcels within GHMA (Refer to Appendix J). The BLM AO also has the authority to defer parcels based on the analysis of potential effects presented in this EA including the GRSG prioritization.

For GRSG prioritization considerations, the BLM biologists made recommendations that the 26 parcels located entirely outside of PHMA and GHMA should be highest priority for leasing. Twenty-two (22) parcels (1662, 1672, 1673, 1674, 1678, 1681, 1683, 1684, 1687, 1688, 1691, 1702, 1715, 1810, 1815, 7781, 7782, 7784, 7813, 7826, 7833, and 7837) located in GHMA were determined to have a higher priority for leasing because they are generally where fewer biological component(s) are present, and more than one fluid mineral component is also present. All are within an area that has high oil and gas potential as listed in Appendix I Table 2. There are producing wells in close proximity to many of the parcels, ranging from 0.1 miles up to 3.8 miles as listed in Table 2. Therefore, these parcels would be a high priority to lease at this time. Although these parcels are within GHMA, the absence of active leks, degraded habitat, and adjacency to developed leases reduce risk to GRSG, while the parcels' proximity to producing wells and existing anthropogenic disturbance enhances development efficiency.

The BLM biologists determined that parcels 1696, 1698, 1742, 1816, 1817, 1818, 1823, 1825, 7823, and 7840 have a lower priority for leasing because they have a few biological components present (i.e., primarily winter seasonal habitat, habitat improvement projects) and fewer fluid mineral components (i.e., greater distances to active or producing wells). Parcels 1742, 1816, 1818, and 7840 are within habitats where sagebrush restoration projects have been implemented to improve the sage-grouse habitat through pinyon pine and juniper lop and scatter treatments. To protect these investments and the integrity of restored habitats for sage-grouse, the BLM biologists would rate these at a lower priority for leasing from the larger group of parcels listed above. All proposed parcels within this Lease Sale are eligible for leasing with the applicable

Management Actions, stipulations, and notices in conformance with the ARMPA. Application of stipulations have been confirmed by the Utah State Office Leasing Team and include Controlled Surface Use and Timing Limitations. This prioritization process helped to inform which proposed parcels should be carried forward and be analyzed in the NEPA analysis and was prepared in connection with the leasing decision for the Quarter 1 (2026) Lease Sale. In the Decision Record, the Authorized Officer will determine whether all, some, or none of the proposed parcels, will be offered during the Lease Sale based on this prioritization analysis and any other appropriate factors. Please see a complete discussion of the recommended parcel prioritization documentation in Appendix J.

Environmental Affects

Impacts of the Proposed Action (Alternative A)

The ROD prepared for the 2015 GRS G ARMPA (BLM, 2015) implemented GRS G management goals and objectives, including amending leasing categories for managing the mineral estate. The Proposed Action is in conformance with the minerals decisions of the Utah GRS G ARMPA (BLM, 2015). Leasing actions are specifically provided for in those planning decisions (Management Actions for Minerals Resources). Because the lease parcels are within GHMA, the parcels would be offered with lease notices and the analysis assumes implementation of Required Design Features and other Conditions of Approval. Fluid mineral stipulations under the 2015 ARMPA (Exceptions, Modifications, and Waiver Criteria, Appendix G) are specific to management in PHMA which is not impacted in this lease sale.

Under the Proposed Action, the potential parcels were reviewed, and the appropriate leasing stipulations were identified based on the RMP decisions. The management for fluid mineral leasing within the 2015 GRS G ARMPA identifies all or parts of the parcels as being within GHMA and requiring lease notices, as follows:

Parcels 1662, 1672, 1673, 1674, 1678, 1681, 1683, 1684, 1687, 1688, 1691, 1696, 1698, 1702, 1742, 1810, 1815, 1816, 1817, 1818, 1823, 1825, 7781, 7782, 7784, 7813, 7823, 7826, 7833, 7837, and 7840

- UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
- UT-LN-132: Greater Sage-Grouse – Required Design Features
- UT-LN-133: Greater Sage-Grouse - Buffer

Under the Proposed Action, 58 parcels would be offered for sale of which 32 (55.2% of the total lease parcel acreage) are within GHMA. As discussed in the Affected Environment, the majority of the lease parcels are in isolated GHMA not connected to PHMA. Lease issuance would not directly authorize surface disturbance, but subsequent exploration and development could affect GRS G seasonal habitats through vegetation loss, noise, and increased human activity. Any potential effects to GRS G from the sale of lease parcels would occur at such time that any issued leases are developed and not at the leasing stage itself. If leased, drilling of wells on a lease would not be permitted until the BLM approves an APD. Any APD received would be subject to site-specific NEPA review.

Under the Proposed Action, issuance of the nominated parcels would make approximately 24,115 acres of GHMA available for potential exploration and development, representing 33.7 percent of the total lease parcel acreage. Of this, approximately 11,192 acres are BLM-administered surface and 12,915 acres are split estate (private surface). Of the total 24,115 acres of GHMA, there are approximately 4,492 acres of potential nesting habitat, 14,337 acres of winter habitat, and 7,894 acres of summer habitat.

Noise, vehicle traffic, and human presence associated with construction and production could result in displacement of GRSB from seasonal habitats. The nearest occupied lek is more than 10.6 miles north of parcel 7823, and the average distance to occupied leks is 27.9 miles. All leks within or near the parcels are considered inactive or historical. These distances, along with the predominance of existing disturbance and the degraded or marginal condition of GHMA in these areas, indicate low potential for direct effects on active breeding or nesting GRSB and behavioral effects would likely be localized and minor.

Localized loss of sagebrush and herbaceous cover could temporarily reduce habitat suitability within developed areas; however, reclamation and vegetation restoration requirements (including mitigation from oil and gas pipeline development), combined with existing habitat improvement projects (e.g., pinyon-juniper removal, seeding, and mastication), would help maintain or improve overall habitat function. Because all parcels are well outside active lek complexes and the Uintah Population Area has shown recent increases (18 percent increase in males counted from 2023–2024; (Utah Division of Wildlife Resource, 2024), the incremental habitat loss would not likely alter GRSB population level trends in the Uintah Population Area.

Based on the analysis assumptions, production, and disturbance estimates described in Section 3.2, it is expected that well pad, road construction, and associated production and maintenance operations could occur on parcels in GRSB GHMA, which could lead to direct and indirect impacts. Under the Proposed Action, it is estimated that up to 273 oil and gas wells could be developed in the Vernal and Moab Field Office's, resulting in an estimated 785 acres of total surface disturbance. Based on the spatial distribution of the nominated lease parcels, approximately 55.2 percent of the total lease parcel acreage overlaps GRSB GHMA. Assuming development and associated disturbance would occur proportionally across the lease parcel area, up to 151 wells and approximately 433 acres (or 1.8% of the lease parcel acres in GRSB habitat) of surface disturbance could occur within GHMA. This is approximately 0.08% of the GHMA intersected by the lease parcels in the Uintah Population Area.

Such disturbance would primarily affect habitat quality and availability through direct vegetation removal, soil compaction, and increased potential for the spread of invasive annual grasses which can lead to habitat loss and fragmentation within GHMA. Indirect effects could include increased noise, human activity, and predation risk from infrastructure, which can reduce lek attendance and nesting success. Oil and gas development can contribute to declines in lek persistence and male attendance, yearling and adult hen survival, and nest initiation rates miles from the source of disturbance. Oil and gas wells elicit strong avoidance response in yearling age classes, nesting/brooding hens, and wintering birds (Holloran, 2005). Due to the distance to nearest occupied leks, impacts to breeding and nesting/brooding hens is likely to be minor. Winter habitat comprises 14,337 acres of the total seasonal habitat present within the GHMA

intersected by the lease parcels; therefore, it could be that impacts to winter habitat would be more prevalent. Wintering GRSg may use these low elevation sagebrush habitats.

The BLM has the authority under standard terms and conditions to attach COAs at the site-specific level to minimize significant adverse effects on resource values at the time operations are proposed. Examples of potential mitigation measures include design modifications to avoid or minimize effects to sensitive habitats; limiting the number of well pads under simultaneous construction; seasonal restrictions; limiting the number of proposed roads; reclaiming old and/or unnecessary roads; minimizing truck traffic; noise-buffering measures; pre-development surveys; or use of special construction techniques to minimize surface disturbance to sensitive areas within GHMA. Where avoidance and minimization measures cannot fully offset adverse effects, compensatory mitigation consistent with lease notice UT-LN-131 would be applied to achieve a net conservation gain for GRSg. Mitigation could include habitat restoration, enhancement, or protection resulting in a net improvement to the condition, function, or extent of sage-grouse habitats.

Based on the current condition of these isolated GHMAs in the Uintah Basin, the leasing of the 32 GHMA parcels under the Proposed Action could result in localized and minor direct and indirect effects on GRSg habitat quality if development occurs. The risk of disturbance to active breeding populations is low due to the absence of occupied leks within or adjacent to the parcels, the degraded or marginal habitat condition of the GHMA in these areas, and the distance from PHMA. With the application of Lease Notices, potential impacts to GRSg and its habitat would be minimized, and the action is not expected to result in measurable population-level effects to the Uintah population of GRSg.

Impacts of the Graham's and White River Penstemon Avoidance Alternative (Alternative B)

Under Alternative B, 11 nominated parcels would not be offered they contain occupied Graham's or White River Penstemon habitat or intersect Conservation Areas established for these species. These parcels are 1684, 1689, 1717, 1734, 1767, 1798 1808, 1810, 1815, 7779, and 7786. With respect to GRSg, Alternative B overlaps only three parcels - 1684, 1810, and 1815 which intersect GRSg GHMA. Leasing the remaining parcels (3,349 total acres, including 168 acres of GRSg GHMA, would result in impacts that are similar to those described in the Proposed Action. Leasing the three GRSg parcels would result in a loss of 0.03% of the GHMA intersected by the lease parcels in the Uintah Population Area. As noted under the Proposed Action, development of nearby existing leases could still result in indirect impacts to GRSg.

Impacts of the Greater Sage-Grouse Avoidance Alternative (Alternative C)

For GRSg, Alternative C would be essentially the same as a No Action Alternative with respect to impacts to GRSg and its habitat. The BLM would not offer the parcels for lease that fall within GHMA; therefore, no new foreseeable oil and gas development would occur on the subject lease parcels or off-parcel on adjacent BLM lands within GHMA. As discussed under the Proposed Action, impacts from development of nearby leases could still occur, resulting in impacts to GRSg. Those impacts would just not be increased by BLM action under this lease sale. Twenty-six non-sage-grouse parcels (parcels 1680, 1689, 1703, 1705, 1717, 1719, 1734, 1765, 1767, 1789, 1791, 1792, 1798, 1799, 1808, 7772, 7778, 7779, 7785, 7786, 7793, 7809,

7814, 7824, 7825, and 7830) would be offered which would not result in direct or indirect effects to GRSG habitat.

Impacts of the No Action Alternative (Alternative D)

Under the No Action Alternative, the BLM would not offer any of the nominated parcels in this lease sale. However, in the absence of a Land Use Plan Amendment closing lands to leasing, they could be considered for inclusion in future lease sales. No new impacts to GHMA associated with new Federal oil and gas development for the subject leases would occur under the No Action Alternative over the course of the existing planning horizon.

Past, Present, and Reasonably Foreseeable Future Actions

Due to uncertainties at the lease development stage, the exact location, timing, and extent of potential surface disturbance cannot be predicted with precision. However, impacts anticipated as identified in Section 3.2. indicate that development of the proposed lease parcels is reasonably foreseeable. Section 3.3 lists past, present, and reasonably foreseeable future actions and environmental trends within the 17 HUC 10 watersheds encompassing the nominated parcels.

There are currently 3,096 drilled or drilling oil, gas, or service wells; 2,269 plugged and abandoned well locations in varying stages of reclamation; and 95 proposed wells within these watersheds. Other ongoing and anticipated activities include mineral material authorizations, electrical transmission lines, watershed restoration projects, and 23 active livestock grazing allotments. These actions collectively contribute to disturbance and fragmentation of sagebrush habitats that support GRSG within GHMA. Table 7 in Section 3.3 provides well and APD status by watershed.

Future development of one or more of these parcels would add incrementally to the effects on sagebrush habitats, primarily through loss and fragmentation of native vegetation, increased human-caused disturbance, and prolonged recovery times for partially reclaimed sites. Although the statewide extent of potential disturbance is small—approximately 0.019% reduction of GRSG PHMA and GHMA in Utah, assuming 100 percent overlap of disturbance with GHMA—the effects at a local scale could be more pronounced where development occurs near active lek complexes or within seasonal habitats important for nesting or brood-rearing.

Past and present actions contributing to impacts in the analysis area include surface disturbance from existing oil and gas development and associated infrastructure, geophysical exploration, livestock grazing and range improvements, recreation (including off-highway vehicle use), and rights-of-way for utilities and access roads. Collectively, these activities have resulted in incremental loss of sagebrush cover, increased noise and visual disturbance near leks, proliferation of invasive annual grasses, and reduced habitat connectivity. When combined with reasonably foreseeable future development, these stressors would continue to affect GRSG use and movement within GHMA.

At the lease authorization stage, the Proposed Action would create additional valid existing rights but would not result in direct surface disturbance until subsequent exploration or development is proposed. Site-specific environmental review would occur at the APD stage,

where Conditions of Approval (COAs), design features, and as appropriate, compensatory mitigation would be applied to avoid, minimize, or offset impacts. Such measures would be consistent with ARMPA direction to achieve a net conservation gain for GRSG, emphasizing habitat avoidance, consolidation of new disturbance, and restoration of degraded areas.

Impacts associated with Alternative B would be similar in type and extent to those under the Proposed Action but slightly reduced, since three GRSG parcels would not be offered for leasing. The No Action Alternative and Alternative C would not result in new impacts to GRSG habitat because no additional leases would be issued. However, ongoing and reasonably foreseeable activities from other land uses described above would continue to contribute to regional impacts to GRSG habitat and populations regardless of the lease sale outcome.

CHAPTER 4. CONSULTATION AND COORDINATION

4.1 ENDANGERED SPECIES ACT CONSULTATION

The effects of oil and gas leasing development on T&E species were analyzed through Section 7 consultation as follows:

- Vernal RMP: 2008 (including the 2018 re-initiation to add the geographic area for yellow-billed cuckoo in the Vernal Field Office, and the ongoing consultation to add Canada lynx and North American Wolverine⁴).
- Moab RMP: 2008 (including the ongoing consultation to add silverspot butterfly⁴
- Monticello RMP: 2008 (including the 2018 re-initiation to add the geographic area for Jone's cycladenia, the 2024 re-initiation to add the geographic area for Yellow-billed cuckoo, and the ongoing consultation to add silverspot butterfly and Welsh's milkweed⁴)

During the consultations, Lease Notices to inform potential lessees of the potential that T&E species may be affected by oil and gas activities were developed and have been attached to parcels as appropriate. The lease action is in compliance with T&E species management outlined in accordance with the requirements under the FLPMA and the NEPA.

Federal laws, regulations, and policies require the BLM to make its public land and resources available on the basis of multiple use principles. Accordingly, it is BLM's policy to conserve special status species and their habitats and to ensure that actions authorized by the BLM do not contribute to the need for the species to become listed as T&E by the USFWS.

For lease sales conducted within the range of listed species covered by the referenced consultation actions, the BLM regularly coordinates with the USFWS to ensure that the two agencies agree that the expected impacts from the leasing and development of the leases would not exceed those analyzed in the existing consultations. Coordination includes providing the

⁴ The ongoing consultation will be completed prior to issuing a decision on this EA to account for silverspot butterfly (the consultation also analyzes Canada lynx, North American wolverine, and Welsh's milkweed which do not have habitat within the parcels analyzed in this EA).

USFWS with the list of nominated parcels, geospatial data, and list of species potentially impacted by the Lease Sale nominated parcels. Coordination is currently ongoing.

While coordination with the USFWS is ongoing, current coordination determinations will be completed prior to a decision being reached through this EA.

When or if APDs are submitted to develop these parcels, further evaluation and Section 7 consultation with the USFWS will occur as necessary.

4.2 TRIBAL CONSULTATION

Tribal consultation for leasing actions is done on a government-to-government basis. On September 25, 2025, the BLM provided project information and an invitation to consult on resources of concern to potentially affected Tribes for the Lease Sale as provided for by the NEPA, the NHPA, the American Indian Religious Freedom Act (AIRFA), and Executive Order 13007. The BLM contacted the Colorado River Indian Tribes of the Colorado River Indian Reservation, Arizona and California; Confederated Tribes of the Goshute Reservation, Nevada and Utah; Eastern Shoshone Tribe of the Wind River Reservation, Wyoming; Hopi Tribe of Arizona; Kaibab Band of Paiute Indians of the Kaibab Indian Reservation, Arizona; Navajo Nation, Arizona, New Mexico, & Utah; Northwestern Band of the Shoshone Nation; Ohkay Owingeh, New Mexico; Paiute Indian Tribe of Utah; Pueblo of Acoma, New Mexico; Pueblo of Cochiti, New Mexico; Pueblo of Isleta, New Mexico; Pueblo of Jemez, New Mexico; Pueblo of Laguna, New Mexico; Pueblo of Nambe, New Mexico; Pueblo of Picuris, New Mexico; Pueblo of Pojoaque, New Mexico; Pueblo of San Felipe, New Mexico; Pueblo of San Ildefonso, New Mexico; Pueblo of Santa Ana, New Mexico; Pueblo of Santa Clara, New Mexico; Pueblo of Taos, New Mexico; Pueblo of Tesuque, New Mexico; Pueblo of Zia, New Mexico; San Juan Southern Paiute Tribe of Arizona; Santo Domingo Pueblo; Skull Valley Band of Goshute Indians of Utah; Southern Ute Indian Tribe of the Southern Ute Reservation, Colorado; Ute Indian Tribe of the Uintah & Ouray Reservation, Utah; Ute Mountain Ute Tribe; Ute Mountain Ute Tribe, White Mesa Community; Ysleta Del Sur Pueblo; and Zuni Tribe of the Zuni Reservation, New Mexico..

On September 29, 2025, the Pueblo of Pojoaque responded to the BLM's notification. The Pueblo of Pojoaque informed the BLM that it defers consultation to the Pueblos that are able to participate in consultation.

In a letter dated October 7, 2025, the Pueblo of Cochiti informed the BLM that it had received the BLM Utah's initial letter and that it will not engage further in consultation on the undertaking. The Pueblo shared that it appreciated being informed of the project and encouraged the BLM to ensure meaningful consultation with the Tribal Nations that may have historic properties directly affected by the proposed undertaking.

As of the date of this report, the BLM has not received any other correspondence from Tribes regarding the Lease Sale. The BLM will remain available to engage with Tribes and respond to any consultation requests until the Lease Sale date. If the nominated parcels are leased, future potential development would be subject to additional Tribal consultation under NEPA, NHPA, AIRFA, and Executive Order 13007 as directed by regulation and current policy.

4.3 NATIONAL HISTORIC PRESERVATION ACT CONSULTATION

The BLM prepared a literature review and analysis of cultural resources for the parcels nominated for the Lease Sale as part of its reasonable and good faith effort to identify historic properties and any potential adverse effects this undertaking may have on historic properties, as required by the National Historic Preservation Act of 1966, 54 U.S.C 306108 (commonly and referred to as Section 106).

The Advisory Council for Historic Preservation's (ACHP) document titled Meeting the "Reasonable and Good Faith" Identification Standards in Section 106 Review, from https://www.achp.gov/sites/default/files/guidance/2018-05/reasonable_good_faith_identification.pdf outlines the steps to determine when a reasonable and good faith identification effort has been met. The ACHP states:

- Prior to beginning the identification stage in the Section 106 process, the regulations (at 36 CFR 800.4) require the federal agency to do the following:
 - Determine and document the APE [Area of Potential Effect] in order to define where the agency will look for historic properties that may be directly or indirectly affected by the undertaking;
 - Review existing information on known and potential historic properties within the APE, so the agency will have current data on what can be expected, or may be encountered, within the APE;
 - Seek information from others who may have knowledge of historic properties in the area. This includes the State Historic Preservation Officer/Tribal Historic Preservation Officer and as appropriate, Indian tribes or Native Hawaiian organizations who may have concerns about historic properties of religious and cultural significance to them within the APE.

Following these initial steps, the regulations (36 CFR 800.4(b)(1)) set out several factors the agency must consider in determining what is a "reasonable and good faith effort" to identify historic properties:

Take into account past planning, research, and studies; the magnitude and nature of the undertaking and the degree of federal involvement; the nature and extent of potential effects on historic properties; and the likely nature and location of historic properties within the APE. The Secretary of the Interior's standards and guidelines for identification provide guidance on this subject. The agency official should also consider other applicable professional, state, tribal, and local laws, standards, and guidelines. The regulations note that a reasonable and good faith effort may consist of or include 'background research, consultation, oral history interviews, sample field investigation, and field survey.'

For lease sales, BLM's identification efforts include: (1) completing a comprehensive "literature review," which is a review and analysis of available pertinent cultural resource records and information for each parcel and the surrounding areas that are included in the undertaking APE; and (2) proactively seeking information from others who may have knowledge of historic properties in the area.

As part of the Section 106 process, the BLM provided project information and an invitation to consult on resources of concern to the following potentially affected Tribes via certified letter sent September 25, 2025: Colorado River Indian Tribes of the Colorado River Indian Reservation, Arizona and California; Confederated Tribes of the Goshute Reservation, Nevada and Utah; Eastern Shoshone Tribe of the Wind River Reservation, Wyoming; Hopi Tribe of Arizona; Kaibab Band of Paiute Indians of the Kaibab Indian Reservation, Arizona; Navajo Nation, Arizona, New Mexico, & Utah; Northwestern Band of the Shoshone Nation; Ohkay Owingeh, New Mexico; Paiute Indian Tribe of Utah; Pueblo of Acoma, New Mexico; Pueblo of Cochiti, New Mexico; Pueblo of Isleta, New Mexico; Pueblo of Jemez, New Mexico; Pueblo of Laguna, New Mexico; Pueblo of Nambe, New Mexico; Pueblo of Picuris, New Mexico; Pueblo of Pojoaque, New Mexico; Pueblo of San Felipe, New Mexico; Pueblo of San Ildefonso, New Mexico; Pueblo of Santa Ana, New Mexico; Pueblo of Santa Clara, New Mexico; Pueblo of Taos, New Mexico; Pueblo of Tesuque, New Mexico; Pueblo of Zia, New Mexico; San Juan Southern Paiute Tribe of Arizona; Santo Domingo Pueblo; Skull Valley Band of Goshute Indians of Utah; Southern Ute Indian Tribe of the Southern Ute Reservation, Colorado; Ute Indian Tribe of the Uintah & Ouray Reservation, Utah; Ute Mountain Ute Tribe; Ute Mountain Ute Tribe, White Mesa Community; Ysleta Del Sur Pueblo; and Zuni Tribe of the Zuni Reservation, New Mexico.

To date, no Tribes have requested to participate in the Section 106 process. See Section 4.2 for additional information about the BLM's Tribal consultation efforts.

The BLM Utah State Office also sent invitations to potential Section 106 consulting parties on September 26, 2025. Invitations were sent to the Utah Rock Art Research Association (URARA), Utah School and Institutional Trust Lands Administration (TLA), Utah Public Lands Policy Coordinating Office (PLPCO), Utah Professional Archaeological Council (UPAC), The Church of Jesus Christ of Latter-day Saints Church History (LDS Church History), Grand County, San Juan County, and Uintah County.

In September 2025, Grand County requested and was granted consulting party status. In September, the LDS Church History also responded to the BLM and shared that they do not wish to participate as a consulting party in accordance with 36 CFR 800.2(c)(5) for the undertaking. In October 2025, PLPCO requested and was granted consulting party status. With their response, PLPCO additionally provided information about 158 segments of potential historic roads within the proposed parcels.

To date, the BLM has not received any other requests for consulting party status.

Per regulations 36 CFR 800.2(c)(1) and 36 CFR 800.2(c)(2)(i)(A), the BLM consulted with both the Utah SHPO and Ute Indian Tribe of the Uintah & Ouray Reservation (Ute Indian Tribe) Tribal Historic Preservation Office (THPO) to fulfill its responsibilities for the Section 106 process. The location of the parcels determined whether the BLM consulted with Utah SHPO or the Ute Indian Tribe THPO. For the parcels within the MbFO and MtFO, the BLM consulted with the Utah SHPO, per 36 CFR 800.2(c)(1) because the six parcels are outside of the exterior boundary of the Ute Indian Tribe reservation. On November 20, 2025, the BLM sought concurrence regarding the finding of effect to historic properties for the parcels within MbFO and MtFO for the Lease Sale. On [ongoing], BLM received [ongoing] concurrence from SHPO.

All 52 nominated lease parcels for the Lease Sale on lands administered by the VFO lie within the exterior boundary of the Ute Indian Tribe reservation. The Ute Indian Tribe entered into an agreement with the National Park Service and the U.S. Department of the Interior to establish a Tribal Historic Preservation Office (THPO) on September 22, 2021, and thereby assumed the functions of a SHPO overseeing Section 106 responsibilities and undertakings that lie within the exterior boundary of their reservation. Per 36 CFR 800.2(c)(2)(i)(A), an Agency consults with the THPO “in lieu of the SHPO regarding undertakings occurring on or affecting historic properties on tribal lands.” On November 20, 2025, the BLM sought concurrence regarding its finding of effect to historic properties for the 52 parcels within VFO with the Ute Indian Tribe THPO.

CHAPTER 5. LITERATURE CITED

- Anabran Solutions. (2025). *Willow Creek Subbasin Riverscape Restoration Plan*.
- BLM. (2003). *Proposed Resource Management Plan Amendment and Final Environmental Impact Statement for Federal Fluid Minerals Leasing and Development in Sierra and Otero Counties*.
- BLM. (2008). Moab Field Office approved Resource Management Plan. Retrieved from <https://eplanning.blm.gov/eplanning-ui/project/66098/570>
- BLM. (2008, August). The Monticello Field Office Proposed Resource Management Plan and Final Environmental Impact Statement. Retrieved from <https://eplanning.blm.gov/eplanning-ui/project/68097/570>
- BLM. (2008). Vernal Field Office Proposed Resource Management Plan and Final Impact Statement. Vernal: Vernal Field Office. Retrieved from <https://eplanning.blm.gov/eplanning-ui/project/68145/570>
- BLM. (2012). *Manual 6330 - Management of Wilderness Study Areas*. Washington, D.C.: U.S. Dept. of the Interior.
- BLM. (2012). *Manual 6400 - Wild and Scenic Rivers - Policy and Program Direction for Identification, Evaluation, Planning, and Management*. Washington, D.C.: U.S. Dept. of the Interior.
- BLM. (2015, September). Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region Including the Greater Sage-Grouse Sub-Region of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah. Utah State Office, Utah. Retrieved December 10, 2020, from https://eplanning.blm.gov/public_projects/lup/68351/87600/104856/Utah_ARMPA.pdf
- BLM. (2015). *Utah Greater Sage-Grouse Proposed Land Use Plan Amendment and Final Environmental Impact Statement*. USDI Bureau of Land Management and USDA Forest Service. Retrieved from <https://eplanning.blm.gov/eplanning-ui/project/103346/570>
- BLM. (2016, December). Moab Master Leasing Plan / Approved Resource Management Plan Amendments for the Moab and Monticello Field Offices. Retrieved from <https://eplanning.blm.gov/eplanning-ui/project/68430/570>
- BLM. (2021). *Manual 6310 - Conducting Wilderness Characteristics Inventories on Public Lands*. Washington, D.C.: U.S Dept. of the Interior, Bureau of Land Management.
- BLM. (2022, August 1). Implementing the Paleontological Resources Preservation Act of 2009 (PIM 2022-009). Retrieved September 5, 2025, from <https://www.blm.gov/policy/pim2022-009>
- BLM. (2023, April 28). *BLM Technical Note 457, Night Sky and Dark Environments: Best Management Practices for Artificial Light at Night on BLM-Managed Lands*. Retrieved

- from U.S. Department of the Interior, Bureau of Land Management:
https://www.blm.gov/sites/default/files/docs/2023-05/IB2023-038_att1.pdf
- BLM. (2024). *2023 BLM Specialist Report on Annual Greenhouse Gas Emissions*. Retrieved from <https://www.blm.gov/content/ghg>
- BLM. (2024, 12 18). *2024 Air Resource Management Strategy Monitoring Report*. Retrieved from <https://eplanning.blm.gov/eplanning-ui/project/101390/570>
- BLM. (2025). *2024 BLM Specialist Report on Annual Greenhouse Gas Emissions*. Retrieved from <https://www.blm.gov/content/ghg>
- BLM. (2025). *2025 Air Resource Management Strategy Monitoring Report*. Retrieved from <https://eplanning.blm.gov/eplanning-ui/project/101390/570>
- BLM. (2025). *2025 Air Resource Management Strategy Monitoring Report*. Retrieved from <https://eplanning.blm.gov/eplanning-ui/project/101390/570>
- BLM. (2025). *BLM Climate and Remote Sensing Data Reports*. Retrieved from <https://reports.climateengine.org/home>
- BLM. (2025). *Programmatic Biological Assessment on Fluid Mineral Development Small Water Depletions of the Upper Colorado River Basin in Utah*.
- BLM. (2025). US Department of the Interior Handbook of National Environmental Policy Act Implementing Procedures. Retrieved from <https://www.doi.gov/media/document/doi-nepa-handbook>
- BLM and NPS. (2018). *The Old Spanish National Historic Trail Recreation and Development Strategy, Grand County, Utah*. Bureau of Land Management and National Park Service, Department of the Interior.
- BLM and NPS. (2018). *The Old Spanish National Historic Trail Recreation and Development Strategy, San Juan County, Utah*.
- Bortle, J. E. (2006). "Gauging Light Pollution: The Bortle Dark-Sky Scale". *Sky & Telescope*.
- Climate Engine. (2025). Retrieved from Climate Engine:
<https://app.climateengine.org/climateEngine>
- County, Grand. (2017). Grand County Resource Management Plan. Retrieved from <https://tinyurl.com/Grand-County-Utah-CRMP>
- CRCT Coordination Team. (2022). *Conservation Strategy for Colorado River Cutthroat Trout in the States of Colorado, Utah, and Wyoming*. .
- Cross, T., Tack, J., Naugle, D., Schwartz, M., Doherty, K., Oyler-McCance, S., . . . Fedy, B. (2023). The Lies that Bind the Sagebrush Biome: Integrating Genetic Connectivity into Range-wide Conservation of Greater Sage-Grouse. *R. Soc. Open Sci.* 10:220437. Retrieved from <https://doi.org/10.1098/rsos.220437>

- DOI. (2024). *Office of Natural Resources Revenue Data*. Retrieved from <https://revenuedata.doi.gov/explore/?dataType=Disbursements&location=NF%2CNA%2CUT&mapLevel=State&offshoreRegions=false&period=Fiscal%20Year&year=2024>
- DOI. (2025, November 4). *Payments In Lieu of Taxes (PILT)*. Retrieved from https://pilt.doi.gov/counties.cfm?term=county&state_code=UT&fiscal_yr=2025&Search.x=57&Search.y=9
- DOI. (2026). *Handbook of NEPA Implementing Procedures*. Retrieved from <https://www.doi.gov/oepc/national-environmental-policy-act-nepa>
- EIA. (2025, 2 11). *Short-Term Energy Outlook*. Retrieved from <https://www.eia.gov/outlooks/steo/>
- EPA . (2022, 4 28). *GHG Equivalancy Calculator*. Retrieved from <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>
- EPA. (1974). *Information on noise levels identified as a requisite to protect public health and welfare an adequate margin of safety. EPA-550/9-74-004*. Retrieved from <https://nepis.epa.gov/Exe/ZyPDF.cgi/2000L3LN.PDF?Dockey=2000L3LN.PDF>
- EPA. (1999, 03). *Residual Risk Report to Congress 1999*. Retrieved from <https://www.epa.gov/fera/residual-risk-report-congress-1999>
- EPA. (2022, 12 8). Retrieved from https://www.epa.gov/system/files/documents/2022-12/EPA-R08-OAR-2015-0709-0160_content.pdf
- EPA. (2023, 1 9). *2019 AirToxScreen: Assessment Results*. Retrieved from <https://www.epa.gov/AirToxScreen/2019-airtoxscreen-assessment-results>
- EPA. (2024, 4 29). *2020 National Emissions Inventory (NEI) Data*. Retrieved from <https://www.epa.gov/air-emissions-inventories/2020-national-emissions-inventory-nei-data>
- EPA. (2024, December 5). *Health Effects Notebook for Hazardous Air Pollutants*. Retrieved from <https://www.epa.gov/haps/health-effects-notebook-hazardous-air-pollutants>
- EPA. (2024, 2 7). *NAAQS Table*. Retrieved from <https://www.epa.gov/criteria-air-pollutants/naaqs-table>
- EPA. (2025, 7 18). *Basic Information about Lead Air Pollution*. Retrieved from <https://www.epa.gov/lead-air-pollution/basic-information-about-lead-air-pollution>
- EPA. (2025, 11 5). *What are Hazardous Air Pollutants?* Retrieved from <https://www.epa.gov/haps/what-are-hazardous-air-pollutants>
- EPA. (2025a, March 11). *Ground-level Ozone Basics*. Retrieved from <https://www.epa.gov/ground-level-ozone-pollution/ground-level-ozone-basics>
- EPA. (2025b, May 30). *Particulate Matter (PM) Basics*. Retrieved from <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics>

- EPA. (2025c, July 10). *Basic Information About NO₂*. Retrieved from <https://www.epa.gov/no2-pollution/basic-information-about-no2>
- EPA. (2025d, June 17). *Basic Information about Carbon Monoxide (CO) Outdoor Air Pollution*. Retrieved from <https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution>
- EPA. (2025e, July 18). *Basic Information about Lead Air Pollution*. Retrieved from <https://www.epa.gov/lead-air-pollution/basic-information-about-lead-air-pollution>
- EPA. (2025f, January 10). *Sulfur Dioxide Basics*. Retrieved from <https://www.epa.gov/so2-pollution/sulfur-dioxide-basics>
- EPA. (2025h, January 31). *Human Health Risk Assessment*. Retrieved from <https://www.epa.gov/risk/human-health-risk-assessment>
- Falchi, e. a. (2016). *Supplement to: The New World Atlas of Artificial Night Sky Brightness*. Retrieved from Light Pollution Map: <https://www.lightpollutionmap.info/>
- Federal Register. (2015). Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To List Greater Sage-Grouse (*Centrocercus urophasianus*) as an Endangered or Threatened Species. A Proposed Rule by the Fish and Wildlife Service on 10/02/2015. *Department of the Interior, Fish and Wildlife Service, 50 CFR Part 17*(Docket No. FWS-R6-ES-2015-0146).
- Graves, T. A., Janouske, W. M., Gaulke, S. M., Nicholas, A. C., Keinath, D. A., Bell, C. M., . . . Sheffield, C. S. (2020). Western bumble bee: declines in the continental United States and range-wide information gaps. *Ecosphere*, Article e03141.
- Headwaters Economics. (2025, November 4). *Bureau of Land Management (BLM) Socioeconomic Impacts*. Retrieved from <https://public.headwaterseconomics.org/economic-profile-system/49019+49047+49037>
- Holloran, M. J. (2005). *Greater sage-grouse (Centrocercus urophasianus) Population Response to Natural Gas Field Development in Western Wyoming*. Dissertation, University of Wyoming, Laramie, WY.
- LANDFIRE. (2016). *National Vegetation Classification Layer, LANDFIRE 2.0.0*. U.S. Department of the Interior, Geological Survey, and U.S. Department of Agriculture. Retrieved from <https://landfire.gov/>
- Mansfield. (2021). Winter Ozone Pollution in Utah's Uinta Basin is Attenuating. *Atmosphere*.
- McIntyre, P. J., Ceasar, H., & Young, B. E. (2024). Mapping migration habitat for western monarch butterflies reveals need for public-private approach to conservation. *Frontiers in Ecology and Evolution*, 10.3389/fevo.2024.1460363.
- NETL. (2009). *2008 Development of Baseline Data and Analysis of Life Cycle Greenhouse Gas Emissions of Petroleum-Based Fuels. Tables 3-10, 4-55, and 5-10*. DOE/NETL-2009/1346.

- NETL. (2019). *Life Cycle Analysis of Natural Gas Extraction and Power Generation. Appendix F, Table F-31*. DOE/NETL-2019/2039.
- NPS. (2010, 09). *Zion National Park Soundscape Management Plan*. Retrieved from <https://parkplanning.nps.gov/document.cfm?documentID=36422>
- NRCS. (2014). *Web Soil Survey - Digital General Soil Map of the United States (STATSGO2)*. Retrieved from <http://websoilsurvey.nrcs.usda.gov>
- Oyler-McCance, S., Cross, T., Row, J., Schwartz, M., Naugle, D., & Fike, J. (2022). New Strategies for Characterizing Genetic Structure in Wide-ranging, Continuously Distributed Species: A Greater Sage-grouse Case Study. 9(17). PLoS ONE. Retrieved from <https://doi.org/10.1371/journal.pone.0274189>
- Penstemon Conservation Team. (2014). *Conservation Agreement and Strategy for Graham's beardtongue (Penstemon grahamii) and White River beardtongue (P. scariosus var. albifluvis)*. Prepared by State of Utah SITLA, Uintah County, Utah, Utah PLPCO, Utah DWR, Rio Blanco County, Colorado, BLM, USFWS.
- Penstemon Conservation Team. (2016). *Conservation Agreement and Strategy for Graham's beardtongue (Penstemon grahamii) and White River beardtongue (P. scariosus var. albifluvis): 2015 Annual Report*. Salt Lake City, UT: Penstemon Conservation Team.
- Penstemon Conservation Team. (2017). *Conservation Agreement and Strategy for Graham's beardtongue (Penstemon grahamii) and White River beardtongue (P. scariosus var. albifluvis): 2016 Annual Report*. Salt Lake City, UT: Penstemon Conservation Team.
- Penstemon Conservation Team. (2018). *Conservation Agreement and Strategy for Graham's beardtongue (Penstemon grahamii) and White River beardtongue (P. scariosus var. albifluvis): 2017 Annual Report*. Salt Lake City, UT: Penstemon Conservation Team.
- Penstemon Conservation Team. (2019). *Conservation Agreement and Strategy for Graham's beardtongue (Penstemon grahamii) and White River beardtongue (P. scariosus var. albifluvis): 2018 Annual Report*. Salt Lake City, UT: Penstemon Conservation Team.
- Penstemon Conservation Team. (2020). *Conservation Agreement and Strategy for Graham's beardtongue (Penstemon grahamii) and White River beardtongue (P. scariosus var. albifluvis): 2019 Annual Report*. Salt Lake City, UT: Penstemon Conservation Team.
- Penstemon Conservation Team. (2021). *Conservation Agreement and Strategy for Graham's beardtongue (Penstemon grahamii) and White River beardtongue (P. scariosus var. albifluvis): 2020 Annual Report*. Salt Lake City, UT: Penstemon Conservation Team.
- Penstemon Conservation Team. (2022). *Conservation Agreement and Strategy for Graham's beardtongue (Penstemon grahamii) and White River beardtongue (P. scariosus var. albifluvis): 2021 Annual Report*. Salt Lake City, UT: Penstemon Conservation Team.
- Penstemon Conservation Team. (2023). *Conservation Agreement and Strategy for Graham's beardtongue (Penstemon grahamii) and White River beardtongue (P. scariosus var. albifluvis): 2022 Annual Report*. Salt Lake City, UT: Penstemon Conservation Team.

- Penstemon Conservation Team. (2024). *Conservation Agreement and Strategy for Graham's beardtongue (Penstemon grahamii) and White River beardtongue (P. scariosus var. albifluvis): 2023 Annual Report*. Salt Lake City, UT: Penstemon Conservation Team.
- Quora. (2025, July 16). *How much does it cost to drill an oil well in the US*. Retrieved from <https://www.quora.com/How-much-does-it-cost-to-drill-an-oil-well-in-the-US>
- Ramboll. (2023). *BLM Western US Photochemical Air Quality Modeling for 2032*.
- San Juan county. (2022). San Juan County Resource Management Plan. Retrieved from <https://tinyurl.com/San-Juan-County-Utah-CRMP>
- Schroeder, M. C. (2004). Distribution of sage-grouse in North America. *Condor*, 106:363-76.
- State of Utah. (2023). *rmp.utah.gov*. Retrieved from State Resource Management Plan (Utah): <https://storymaps.arcgis.com/collections/81d4406668e34acca4d98275ee41cd07?item=8>
- U.S. Fish & Wildlife Service USFWS. (1940). *Bald and Golden Eagle Protection Act*. Retrieved from <https://www.fws.gov/law/bald-and-golden-eagle-protection-act>
- U.S. Fish & Wildlife Service, U. (1918). *Migratory Bird Treaty Act of 1918*. Retrieved from <https://www.fws.gov/law/migratory-bird-treaty-act-1918>
- UDOGM. (2018, March 27). Personal communication from John Rogers, Utah Division of Oil, Gas and Mining (UDOGM).
- UDOGM. (2025, August). *Monthly Production Reports by County*. Retrieved from <https://ogm.utah.gov/production-report-county/>
- UDWR. (2006). *Conservation and Management Plan for Three Fish Species in Utah*.
- UDWR. (2007). *Northeastern Region Black-Footed Ferret Management Plan*. Salt Lake City, Utah: Utah Division of Wildlife Resources.
- UDWR, U. D. (1997). *Utah State University*. Retrieved from <https://digitalcommons.usu.edu/govdocs/402/>
- Uintah County. (2022, October 31). Retrieved from <https://utah-resource-management-planning-plpco.hub.arcgis.com/>: https://ago-item-storage.s3.us-east-1.amazonaws.com/b638e72b971b4720835d801e125ddbb3/Uintah_CRMP_2019_.pdf?X-Amz-Security-Token=IQoJb3JpZ2luX2VjECQaCXVzLWVhc3QtMSJIMEYCIQDGVSRGupfOpci13zoJ33FqSpTtu0iAwFzUIIye1gwBPwIhAPaRIIGZz2vqv38mKyuKvNywN3jI%2FxFxLJyVGH
- United States Environmental Protection Agency. (2025, 11 25). *Underground Injection Control Well Classes*. Retrieved from [www.epa.gov: https://www.epa.gov/uic/underground-injection-control-well-classes](https://www.epa.gov/uic/underground-injection-control-well-classes)
- USDOT. (2003). *Living with Noise. Public Roads*. Retrieved from <https://highways.dot.gov/public-roads/julyaugust-2003/living->

Wild Aware Utah. (2023). *Wild Aware Utah*. Retrieved from Wild Aware Utah: <https://www.wildawareutah.org/wildlife/elk/>

Willey, D. W., & Spotskey, D. (n.d.). *GIS Habitat Model for Mexican spotted owl habitat in Utah (Unpublished Report)*. Salt Lake City, UT: Utah Division of Wildlife Resources.

WRAP/WAQS. (2021). *UNITED STATES ANTHROPOGENIC EMISSIONS RATE OF PROGRESS*. Retrieved from <https://views.cira.coloradostate.edu/tssv2/Docs/USAnthroRoP.pdf>

The interdisciplinary team determined that the resources in this appendix did not warrant detailed analysis. The Issues Analyzed in Brief section addresses those resources that are potentially affected, but which can be easily protected by existing lease terms, conditions, Controlled surface use, stipulations, timing limitations, and lease notices. Table 67 lists resources or concerns that were considered but determined to not warrant further analysis in this EA

A.1 ISSUES ANALYZED IN BRIEF

AIB 1. Cultural Resources

How would potential development of the nominated lease parcels affect cultural resources?

The BLM conducted a literature review for the nominated lease parcels using survey and site information from BLM Utah's cultural resources database (CURES), Utah Division of State History Sego database, J. Willard Marriott Library of the University of Utah online archaeological record collection (UDAM), and VFO to identify currently known sites within the lease parcels. These data sources contain information on all the recorded cultural resource sites and cultural resource surveys conducted within and adjacent to the nominated lease parcels. See Chapter 4 for the NHPA Section 106 process that is used to help inform, but is separate from, the NEPA analysis of impacts to cultural resources.

The BLM's literature reviews analyzed each nominated lease parcel, plus a 0.5-mile buffer around each, to assess potential impacts. To broadly summarize the results of the records review, within the 58 lease parcels, 548 cultural resource surveys have been completed. Of the 58 parcels, two parcels (parcels 1688 and 1816) have received no previous survey coverage, and three parcels (parcels 1681, 1683, and 1823) have received 100% coverage from the previously completed cultural resource surveys. There are 226 documented archaeological sites located within the lease parcels, of which 53 are eligible and 21 are unevaluated for the National Register of Historic Places (NRHP). Five hundred and fourteen archaeological sites have been documented within 0.5 mile of the proposed lease parcels, of which 133 are eligible and 15 are unevaluated for the NRHP. The VFO has additionally identified an area within parcel 1799 potentially subject to the Native American Graves Protection and Repatriation Act (NAGPRA). Cultural resources within a parcel could be directly impacted from surface-disturbing activities related to the construction of a well pad, its access road, and related infrastructure. These cultural resources include both documented archaeological sites and currently undocumented cultural resources. Cultural resources in and within 0.5 mile of a parcel being developed could be indirectly impacted through the introduction of visual, audible, or atmospheric elements, such as dust.

In determining the lease parcel plus 0.5-mile buffer size for its analysis, the BLM took into consideration the foreseeable potential effects of the leasing action, foreseeable development, and the environment in which those effects would occur. The cultural resource analysis area covers the geographic area in which the construction and use of a well pad, with its associated infrastructure, may directly or indirectly cause alterations in the character or use of potential cultural resources. Although cultural resources within the parcels are analyzed for foreseeable potential impacts from foreseeable development, cultural resources within the 0.5-mile buffer are

not directly impacted from foreseeable development. Therefore, those cultural resources within the 0.5-mile buffer have been analyzed for potential indirect impacts (i.e., visual, audible, or atmospheric impacts) only. Topographic complexity adds to the limited visual range of many parts of these lease parcels. When vegetation, topography, and effects from modern human occupation and development are taken into account, camouflaged well facilities will not indirectly impact cultural resources outside a 0.5-mile radius in such a way that adversely impacts the setting, feeling, or association of a cultural resource. Outside of 0.5-mile radius, potential indirect effects, based on foreseeable development, become a part of the modern human landscape.

BLM Archaeologists at the VFO, MbFO, MtFO, and Utah State Office reviewed this data against the Lease Sale parcel locations and the stipulations and lease notices from the applicable land use plans to determine if oil and gas development could occur without incurring significant impacts to cultural resources. This review included an analysis of potential adverse effects to historic properties, per 36 CFR 800.5.

The Cultural Resource Lease Notice (HQ-CR-1), as required by the BLM Competitive Leases Handbook H-3120-1, applies to all parcels on BLM-managed lands. The lease notice reads as follows:

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 would not approve any ground disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.

Based on the currently known cultural resources within the 58 parcels, current cultural resource survey coverage within the parcels, and the previous oil and gas development history of the area, the BLM anticipates encountering similar site types and density across all the parcels should future development necessitate additional cultural resource survey and identification. Site types within the parcels predominantly include prehistoric lithic scatters, historic temporary camps, historic road segments, historic mines, and historic artifact scatters. Additionally, based on the individual size of the parcels, the application of the cultural resources protection lease notice, application of COAs during the development stage, the foreseeable development scenario for potential development, and the relevant past, present, and reasonably foreseeable future actions discussed in Section 3.3, and the existing disturbance from previous development within each parcel, the BLM anticipates that potential development can occur within the parcels without adverse impacts to cultural resources and without an adverse effect to historic properties. As a result, further detailed analysis of this issue is not required at the leasing stage. The NHPA Section 106 review process is ongoing (see Chapter 4) and will conclude before BLM makes a final decision for the Lease Sale.

For future oil and gas developments related to this Lease Sale, the BLM would not approve any ground disturbing activities until it completes its obligations to consider cultural resources and historic properties under NEPA, the NHPA, and other authorities specific to those future developments. This includes NAGPRA, which may require the development of a Plan of Action for potential inadvertent discoveries, as defined by 43 CFR § 10.2. Additional analysis of impacts to cultural resources and potential adverse effects to historic properties would be conducted during consideration of any future site-specific development plans through new NEPA and NHPA Section 106 review processes. Future site-specific inventory and analysis may identify and document currently unknown and unrecorded cultural resources.

Lease Notice:

- HQ-CR-1 Cultural Resource Protection: All Parcels

AIB 1. Dark Night Skies

How would potential development of the nominated lease parcels impact the quality of night skies on public land?

Dark night skies contribute to the remote experience that many people seek when they visit public lands. Light pollution diminishes the aesthetic and values of the night sky by making it difficult to see fainter stars or other faint celestial objects. Optimal night skies are free of scattered light or skyglow, which is generated by anthropogenic light from development, transportation, or industrial operations. The scattering of artificial light in the atmosphere increases night sky luminance and erodes the visual appearance of stars and planets (BLM, 2023). The Bortle Dark-Sky Scale is a nine-level numeric scale used to measure the night sky and star brightness (naked-eye and stellar limiting magnitude) of a particular location. The scale ranges from class 1, the darkest skies available on Earth, through class 9, inner-city skies (Bortle, 2006). The most common cause of skyglow is man-made lights that give off light pollution.

Bortle scale classes are correlated with a sky quality meter (SQM) rating used to quantify the skyglow aspect of light pollution and uses units of “magnitudes per square arcsecond.” SQM ratings use a scale between the numbers of 16.00-22.00. At the lowest number—16.00—the sky is the brightest (Falchi, 2016). Customarily, this class would transpire in urbanized areas. Meanwhile, a number of 22.00 represents the least luminance—in other words, the least light pollution and the very darkest night sky. Typically, this reading would generally materialize in remote, uninhabited areas.

Based on the 2024 data from <http://www.lightpollutionmap.info> (Falchi, 2016), the majority of proposed lease parcels occur primarily in Bortle Class 1 skies with SQM values between 21.8-22.0, the highest quality of dark night skies possible. Bortle Class 1 areas are described as Excellent Night Sky sites where portions of the Milky Way cast obvious shadows, many constellations are difficult to distinguish within the heavy background of visible stars, sources of zodiacal light, airglow, and globular clusters are readily visible to the naked eye, and both Jupiter and Venus are bright enough to affect night adaptation. Some parcels occur near or adjacent to developed or inhabited areas with Bortle Class 2 skies that have SQM values between 21.5-21.8

where the background sky has a slightly gray shade due to atmospheric scattering or airglow on the horizon and where some deep sky objects are visible with the naked eye (Bortle, 2006).

Potential impacts to night skies associated with development of the lease parcels would include flaring and temporary lighting during nighttime construction activities. Light pollution impacts would include lighting at facilities as well as oil and gas developments as needed for safety and security that would contribute to sky glow and adversely affect night skies. Impacts on night skies would last for the duration of any issued leases, if developed, and would begin during construction and would last through operations, maintenance, and decommissioning until the reclamation process is completed. These effects would be temporary and transient in nature and would vary based on conditions such as cloud cover, weather (precipitation events), and wind speed or direction. For example, most artificial lighting would occur during the drilling, construction, and potential flaring of a well within the first 60-90 days. Lighting from the other phases of development and production would occur from vehicle traffic or safety lighting. While production impacts would be minimal and temporary, they would also be considered long-term as the lighting impacts would remain in effect for more than 2 years.

Further detailed analysis of the potential impacts to night skies would be analyzed as appropriate when oil and gas development plans and APDs are submitted. Impacts related to light pollution of night skies would be mitigated and minimized through development of a lighting plan at the APD stage, including the planning principles and the identification of BMPs, as detailed in Night Sky and Dark Environments: Best Management Practices for Artificial Light at Night on BLM-Managed Lands (BLM, 2023). Specific BMPs include having a lighting plan prepared by a qualified lighting designer, selecting luminaires certified to minimize light pollution, identifying light-sensitive receptors, conducting a baseline study of existing light pollution and night sky conditions, and establishing a lighting and light pollution monitoring program. Additionally, mitigation measures for impacts to night skies associated with oil and gas development such as flaring would include using enclosed flare systems for gas flaring and similar operations to shield light, noise, and heat release. This would result in no visible flame protruding above the structures and could include shaded or directional lighting on structures and shrouded gas flare stacks. The application of BMPs and design features would mitigate, limit, and prevent impacts on night skies associated with future development of any of the lease parcels, even when added to the reasonably foreseeable trends and future actions discussed in Section 3.3. Therefore, detailed analysis is not warranted at the leasing stage

Lease Notice:

- UT-LN-115: Light and Sound

AIB 2. Minerals

How would potential development of the nominated lease parcels affect mineral resources and energy production?

In the 5.5 million-acres within the boundary of the VFO, there are approximately 1.9 million acres of federal mineral estate administered by the VFO of which 1.7 million acres are open to oil and gas leasing. Of these lands open to leasing, 1,022,546 acres are already leased (which represents 60% of the federal mineral estate open to oil and gas leasing) across 1270 total leases.

In the 2.8 million acres within the Moab planning area, 1.8 million acres are public lands administered by the MbFO. There are approximately 1.5 million acres of federal estate that are open to oil and gas leasing. Of the lands open to leasing, 440,652.6 acres are already leased (which represents 30% of the federal mineral estate open to oil and gas leasing) across 479 total leases.

In the 4.8 million acres within the Monticello planning area, 1.8 million acres are public lands administered by the MtFO. There are approximately 812,844 acres of federal estate that are open to oil and gas leasing. Of the lands open to leasing, 142,802.6 acres are already leased (which represents 17.5% of the federal mineral estate open to oil and gas leasing) across 146 total leases.

Under Alternative A, B, and C, 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. While conflicts could arise between oil and gas operations and other mineral operations, these could generally be mitigated under 43 CFR 3101.12 and under standard lease terms (Sec. 6) where siting and design of facilities may be adjusted to protect other resources.

Depending on the success of oil and gas well drilling, natural gas and/or oil would be extracted and delivered to market. The estimated future potential development is discussed in Section 3.2.1. Production of oil or gas would result in the irretrievable loss of these resources (i.e., extracted resources would no longer be available for future development). The future estimated production under each alternative is listed in Table A-1. Table 41 shows the amount of land currently leased and the potential increase from each alternative. The Proposed Action would not exceed the level of activity predicted in the RFDs.

Table 40 Production by Alternative (Alternative D would be zero production)

Alternative	Estimated Total Gas Production (mcf)	Estimated Total Oil Production (bbls)
Alternative A	271,954,994	94,554,186
Alternative B	216,256,275	75,956,983
Alternative C	148,900,952	51,066,908

Table 41 Percent of the lands Leased and potential increases (Alternative D would be zero increase)

Field Office	Current Percent Leased	Increase from Alt A	Increase from Alt B	Increase from Alt C
Vernal FO	60%	6.52%	5.17%	3.59%
Moab FO	30%	1.09%	1.09%	0.36%
Monticello FO	17.5%	0.08%	0.08%	0.08%

Any oil and gas development can be managed to avoid or work within the potential development of other mineral resources. Based on a review of existing mining claims and mineral materials permits on November 21, 2025, however, no active placer claims, or mineral materials sites were found within the nominated lease parcels.

The majority of flow back water (water originally injected from the surface) 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, which among other things, could affect the potential for successfully developing and delivering mineral resources to market. There has been no reported induced seismicity in Utah attributable to water injected into Class II water disposal wells. Oil and gas wells produce a great amount of wastewater (water originating from the producing formation.) Most of 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 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. (UDOGM, 2018).

Because oil and gas development is inherently compatible with other mineral operations, the increase in the amount of fluid minerals available for extraction under Alternatives A, B, and C would not affect development of other mineral resources, even when combined with the reasonably foreseeable trends and future actions discussed in Section 3.3. Therefore, this issue does not require detailed analysis at this stage.

AIB 3. Public Health and Safety

How would potential development of the nominated lease parcels affect public health and safety?

Within the 3 counties in which the lease parcels are located, there are 9,011 active wells of all well types across all land jurisdictions (UDOGM, 2025). This level of development has resulted in the following public health and safety-related risks: occasional fire starts; spills of hazardous materials, hydrocarbons, produced water, or hydraulic fracturing fluid (see Appendix F) and corresponding potential contamination of air, soil, or water; exposure to naturally occurring radioactive material (NORM) in drill cuttings or produced water (see Appendix F); traffic congestion and collisions from commercial vehicles and heavy use, especially along Highway 40; infrequent industrial accidents; presence of hydrogen sulfide (H₂S); or increased levels of fugitive dust (PM₁₀ and PM_{2.5}), other criteria air pollutants (CAPs), volatile organic compounds (VOCs), hazardous air pollutants (HAPs), and greenhouse gases (GHGs). See the air quality analysis in Section 3.6.1 for projected levels of CAPs and HAPs, their effects on air quality, and the air quality notices and stipulations that may impact public health and safety. See the GHG analysis in Section 3.6.2 for projected levels of GHGs and their effects on climate that may impact public health and safety. Public health impacts from these air pollutants are incorporated by reference from the BLM's Annual Air Monitoring Report (BLM, 2025).

HAPs are known or suspected to cause cancer or other serious health effects, such as compromises to immune and reproductive systems, birth defects, developmental disorders, or adverse environmental effects resulting from either chronic (long-term) and/or acute (short-term) exposure. Breathing ground-level ozone (O₃) can trigger a variety of health problems, including

coughing and sore or scratchy throat; difficulty breathing deeply and vigorously and pain when taking deep breaths; inflammation and damage to the airways; increased susceptibility to lung infections; aggravation of lung diseases such as asthma, emphysema, and chronic bronchitis; and an increase in the frequency of asthma attacks. Some of these effects have been found even in healthy people, but effects are more serious in people with lung diseases such as asthma. Particulate matter, also known as particle pollution or PM, is a complex mixture of extremely small particles and liquid droplets. Smaller particles (PM_{2.5} or smaller) are associated with more negative health effects, including respiratory and cardiovascular problems, because they can become more deeply embedded in the lungs and may even get into the bloodstream.

The following sources provide additional information on air pollution health effects from the six CAPs and HAPs:

- Ozone (EPA, 2025a)
- Particulates (EPA, 2025b)
- Nitrogen dioxide (EPA, 2025c)
- Carbon monoxide (EPA, 2025d)
- Lead (EPA, 2025e)
- Sulfur dioxide (EPA, 2025f)
- Hazardous air pollutants (HAPs) (EPA, 2024)

The air quality analysis in Section 3.6.1 estimates the risk of cancer from HAPs and the risk of other health impacts based on exposure to CAPs. In addition to HAP and CAP levels, economic or social indicators can also influence the general health risks of a population, such as poverty status, educational attainment, or language proficiency.

The public health impacts of four notable GHGs (carbon dioxide, methane, nitrous oxide, and chlorofluorocarbons) are discussed in the BLM's Air Monitoring Report. The effects of constant direct exposure of the human body to GHGs are negligible but indirect impacts from exposure intensifies existing health threats and can introduce new ones. These indirect threats include worsened air quality, heat-related illness, the spread of infectious diseases, and mental health challenges. The public health effects from these threats are most noticeable in the respiratory and cardiovascular systems but can also affect the digestive, reproductive, immune, and central nervous systems. The BLM's Annual GHG Report (BLM, 2025) also discusses the effects of public health and safety of GHGs and is incorporated by reference. Key weather and climate drivers of health impacts include increasingly frequent, intense, and longer lasting extreme heat, which worsens drought, wildfire, and air pollution risks; increasingly frequent extreme precipitation, intense storms, and changes in precipitation patterns that lead to drought and ecosystem changes; and rising sea levels that intensify coastal flooding and storm surges. These climate-related events can lead to heat-related illnesses, mental health issues, and can facilitate the spread of diseases borne by vectors such as fleas, ticks, and mosquitoes.

Public health risk assessments cannot be performed until project-specific details are known so that frequency, timing, and levels of contact with potential stressors may be identified (EPA, 2025h). However, each of the reasonably foreseeable environmental trends and planned actions discussed in Section 3.3 have been, or will be, subject to relevant rules and regulations regarding public health and safety. Ongoing and potential development would continue to present

aggregate risks to public health as detailed above. When wells reach the end of their useful life and are properly plugged and reclaimed, they would no longer contribute to health and safety effects; however, depending on the level and duration of individual's exposure during well operation, some of the public health effects from air pollution may endure beyond the life of the wells (e.g., chronic respiratory problems such as asthma).

When authorizing development, federal and state laws, regulations, and policy are applied to reduce effects or respond to incidents. These include the following:

- Federal, state, county, and municipal fire managers shall coordinate fire response and mitigation.
- Developers who install and operate oil and gas wells, facilities, and pipelines are responsible for complying with the applicable laws and regulations governing hazardous materials and for following all hazardous spill response plans and stipulations. The Utah Division of Oil, Gas, and Mining requires similar spill response measures after release of hydrocarbons, produced water, or hydraulic fracturing fluids.
- All well pads, vehicles, and other workplaces must comply with worker safety laws as stipulated by the Occupational Safety and Health Administration (OSHA).
- Vehicular traffic and pipelines are regulated according to safety laws as stipulated by the Department of Transportation.

43 CFR § 3176 provides the requirements and standards for conducting oil and gas operations in an environment known to or expected to contain H₂S. Compliance with this Order will protect public health and safety and those personnel essential to maintaining control of the well.

Hazardous materials are not known to exist on any lease parcel. Hazardous materials associated with oil and gas operations, if not handled properly, have the potential to be spilled at the lease/drill site and would be handled during that stage of development. Such materials could include methanol, diesel fuel, unrefined petroleum, produced water, and acid. Spills during operation would be contained, reported, and cleaned up by the operator as written in the Spill Prevention, Control, and Countermeasure (SPCC) rule for wells.

See AIB-22 for further information regarding potential surface and groundwater effects and relevant regulations, stipulations, and lease notices offering protections to groundwater and surface water quality. Lease notices and stipulations for water resource would result in protection of water quality by minimizing sediment inputs and other water quality contaminants. Risks from hazardous or solid waste would be mitigated by BMPs, SOPs, and site-specific COAs. There are no lease stipulations or notices specifically for public health and safety; however other stipulations and notices minimize or eliminate impacts related to public health and safety (See, AIB 10, AIB 21 and Sections 3.6.1 and 3.6.2). Considering these measures, practices, and AIB 10COAs, potential adverse impacts of developing the lease parcels on public health are expected to be minimal, even when considered alongside the reasonably foreseeable trends and future actions discussed in Section 3.3. Therefore, detailed analysis of this issue is not warranted at the leasing stage.

AIB 4. Invasive Species (Noxious Weeds)

How would potential development of the nominated lease parcels affect the introduction and/or spread of invasive species and noxious weeds?

The BLM anticipates that various populations of noxious weeds in the larger overall area of the lease parcels exist within the VFO, MbFO, and MtFO. Noxious and invasive weeds present in the general area are primarily associated with existing areas of development and disturbance. These species typically are present along roads, ditches, well locations, and other disturbance areas near or within these parcels. Some of the known noxious weed species occurring in these areas are Canada thistle (*Cirsium arvense*), houndstongue (*Cynoglossum officinale*), hoary cress (*Cardaria draba*), Russian knapweed, (*Rhaponticum repens*), and black henbane (*Hyoscyamus niger*). Other non-desired species in this area are Russian thistle (*Salsola spp.*), halogeton (*Halogeton glomeratus*), and cheatgrass (*Bromus tectorum*). The extent of infestation and persistence of weeds would be dependent on inventory and monitoring in accordance with the site-specific implementation level actions. Anticipated total surface disturbance under Alternative A is approximately 793.5 acres collectively across all nominated lease parcels within the VFO, MbFO, and MtFO. The proposed surface disturbance would remove native herbaceous and woody shrub vegetation. Some surface disturbance would be temporary in overall nature (areas used for initial staging would be provisionally reclaimed during the working life of the well), taking potentially a minimum of two to three growing seasons to establish vegetation once reclamation begins. Removal of topsoil and native vegetation would result in a localized loss of individual plants and provide a spatial niche for invasive and noxious weed species to proliferate. New ground disturbance that exposes underlying soils creates the ideal seed bed for invasive and non-native weed species to germinate. Uncleaned construction equipment and vehicles entering the project area are potential vectors for introducing invasive weeds not currently present and to expand existing invasive species. Reasonably foreseeable effects to the resources, when added to effects from the trends and other actions in and near the project area and the local watersheds described in Section 3.3, would include short-term and long-term effects from removal of existing herbaceous and shrubland vegetation that creates niches for invasive species. This removal is expected to increase with the current level of oil and gas development, and the recent filing pattern of APD and ROW applications within the VFO in previous years. This increase is anticipated to be much less within the MtFO and MbFO because of the minimal historical well drilling and current parcels nominated for lease. Industry practices that minimize weed transport from construction equipment, such as power washing and appropriate staging (avoiding weed infestation areas) and proper spraying (both timing and herbicide selection), may lessen the density of new weed colonization within the construction area and aid in reclamation efforts. Seed mixes that maximize management of weed emergence are important for returning the site's sustainability and production.

Additionally, lease notice UT-LN-52 – Noxious Weeds is attached to all parcels nominated for sale. Under lease notice UT-LN-52, the lessee is given notice that lands within the lease have been identified as containing or are near areas containing noxious weeds, that best management practices may be required for operations on the lease, and that modifications to the surface use plan of operations may be required in accordance with the lease terms and conditions (Sec. 6).

Prior to any potential development of the lease parcel, the lessee or applicant would be required to contact the BLM before any seeding and weed management activities occur to document the activities and coordinate potential site visits by the BLM. Weed management would be in adherence to the local field office invasive species management plan and/or integrated pest management plan. The well pads, roads, access corridors and any other long-term exposed surface would be treated through either chemical or mechanical means to control weeds. It is mandatory that a Pesticide Use Permit be obtained for applying herbicides on public lands managed by BLM.

Because of the notice attached to the lease parcels and the management practices outlined above, the potential impacts associated with the Proposed Action – even when combined with the trends and future actions discussed in Section 3.3 – are expected to be minimal. Therefore, analysis of this issue in detail is unnecessary at the leasing stage.

Lease Notices:

- LN-52 – Noxious Weeds: All Parcels

AIB 5. Lands with Wilderness Characteristics

How would potential development of the nominated lease parcels affect lands with wilderness characteristics?

BLM Manual 6310 defines lands with wilderness characteristics (LWC) as areas that have been inventoried and determined to possess 5,000 acres or more of public lands with apparent naturalness that provide outstanding opportunities for solitude and/or primitive, unconfined recreation. An LWC unit can be less than 5,000 acres if it is contiguous to a designated wilderness area, proposed wilderness, or WSA. LWCs may also possess supplemental values of ecological, geological, or other features of scientific, educational, scenic, or historical value (BLM, Manual 6310 - Conducting Wilderness Characteristics Inventories on Public Lands, 2021).

An LWC determination is not a land use allocation per se and does not convey any special protective status unless an RMP decision has specifically established that a particular LWC unit will be managed to protect and preserve its wilderness characteristics. BLM Natural Areas are a planning designation for LWC units that have been through the RMP process where BLM has made an affirmative decision to prioritize protection of wilderness characteristics with management prescriptions that may vary based on environmental factors and multiple use considerations.

BLM Natural Areas

Parcel 7830 partially overlays the BLM White River Natural Area from the Vernal 2008 RMP; as such, lease stipulation UT-S-87: NSO – White River BLM Natural Area applies to the portion of this parcel within the Natural Area. Under this stipulation, no surface occupancy for any portion of the parcel that overlaps the Natural Area would be permitted. Therefore, potential direct impacts from lease development, such as new surface disturbance and loss of acreage, would not occur within the Natural Area. Due to the presence of good topographical and auditory

screening, potential indirect impacts to outstanding opportunities for solitude and/or primitive recreation would be temporary in duration and are expected to be noticeable only in the northeast corner of the Natural Area near the Asphalt Wash Road during construction, drilling operations, and interim reclamation (30-60 days) within the parcel. The Asphalt Wash Road provides motorized access to the White River corridor within the Natural Area.

If lease activities were to occur within parcel 7830 just outside the Natural Area boundary, potential indirect impacts within the natural area such as vehicle traffic, noise, or visual intrusions disturbing outstanding opportunities for solitude and/or primitive recreation are expected to be localized and temporary during the exploration phase of lease development. Lease stipulation UT-S-159: Controlled Surface Use – Visual Resources – VRM II applies to parcel 7830, which requires that surface-disturbing activities retain the existing character of the landscape and the level of change to the landscape will be low. Also, BLM has applied lease notice UT-LN-115: Light and Sound to the entirety of parcel 7830. Under this notice, in accordance with the Vernal RMP Decision MIN-5, the BLM would seek to minimize light and sound pollution within the project area using the best available technology such as installation of multi-cylinder pumps, hospital sound reducing mufflers, and placement of exhaust systems to direct noise away from noise sensitive areas (e.g., sensitive habitat, campgrounds, river corridors, and Dinosaur National Monument). Light pollution would be mitigated 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. If a determination is made that natural barriers or view sheds will meet these mitigation objectives, the above requirements may not apply. Application of lease stipulations and notices at the APD stage will further mitigate potential indirect impacts to the White River Natural Area.

Given the temporary nature of lease activities that may occur just outside of the White River Natural Area, the continuation of the reasonably foreseeable trends and future actions in the affected area discussed in Section 3.3 – when combined with implementation of the Proposed Action – would not increase the likely negligible impact on wilderness characteristics in the Natural Area to a level that merits detailed analysis at the leasing stage.

Lands with Wilderness Characteristics (LWC)

The issuance of leases allows for mineral exploration and development activities to occur. Such mineral development in leased areas intersecting LWCs could cause direct (from within the LWC unit) or indirect (from outside the LWC unit) impacts to wilderness characteristics, such as size, naturalness, and outstanding solitude or primitive recreational opportunities in LWC areas. The presence of new oil and gas infrastructure on relatively undisturbed public lands would change the character of such areas. Vegetation removal, grading, and the development of well pads could reduce the apparent naturalness and scenic qualities in LWC areas. Additionally, mineral exploration and development would result in the construction or improvement of access roads, increased traffic, use of heavy machinery, and presence of workers on the landscape, all of which may produce increased levels of noise, alter the viewshed, depreciate apparent naturalness, and reduce opportunities for solitude and primitive recreation. The use of hazardous materials in mineral development sites could also harm vegetation, water resources, and wildlife in LWCs, further altering the naturalness of such lands.

The degree of the intensity of such impacts to wilderness characteristics would be influenced by the location of surface-disturbing activities, existing vehicle access to the lease, the size of the drill pad area and any associated temporary or permanent disturbance, surrounding landforms and topography, vegetation type, season of development, and reclamation processes and their duration. Areas with more terrain variation and elevation differences will offer more topographic screening of the sights and sounds of lease development. Flatter, more open areas will allow sights and sounds to be more noticeable at a greater distance from the well pad or access road. Likewise, larger vegetation, such as trees and large shrubs can help to visually screen or absorb the sounds of development more effectively. Potential impacts from development activities such as visual or audible disturbances or increased vehicle traffic would be temporary and localized to the construction area and access routes, occurring during the construction, drilling, and interim reclamation phase (30-60 days). Following this period of intense activity, removal of equipment and interim reclamation of the well pad would be expected to mitigate most impacts to wilderness characteristics, with the exception of apparent naturalness, within the vicinity of new developments.

Most nominated parcels only partially overlap with LWC units, so potential development outside many units may be possible. At the leasing stage, it is not possible to determine when or where potential development will occur within a parcel; it is possible that all, some, or none of such development may occur within the LWC unit. It is also possible that the affected parcels will never see development before the lease expires. Table 42 provides details on the LWC units potentially affected by this action and the total surface acreage that could be disturbed if lease development were to occur entirely within the applicable LWC unit. Because some nominated parcels overlap with multiple LWC units, Table 43 lists the total combined acreage that could be impacted in those LWC units if development were to occur entirely within the unit.

Table 42 Projected Surface Disturbance for Parcels within LWC Units

Field Office	Parcel No.	LWC Unit	LWC Acres in Unit	Parcel Overlap with LWC (Full or Partial)	Projected Surface Disturbance in Acres*	Percentage of LWC acreage disturbed*
Vernal	1680	Dragon Canyon	14,316	Partial	20.4	0.14 %
Vernal	1681	Archy Bench A	6,729	Partial	9.0	0.13 %
Vernal	1703	Bitter Creek	33,488	Partial	19.6	0.06 %
Vernal	1705	Dragon Canyon	14,316	Partial	20.2	0.14 %
Vernal	1719	Bitter Creek	33,488	Partial	18.7	0.06 %
Vernal	1734	Dragon Canyon	14,316	Partial	23.3	0.16 %
Vernal	1765	Bitter Creek	33,488	Full	24.1	0.07 %
Vernal	1767	Bitter Creek	33,488	Partial	23.7	0.07 %
Vernal	1789	White River West	6,546	Full	19.2	0.29 %

Field Office	Parcel No.	LWC Unit	LWC Acres in Unit	Parcel Overlap with LWC (Full or Partial)	Projected Surface Disturbance in Acres*	Percentage of LWC acreage disturbed*
Vernal	1791	Dragon Canyon	14,316	Partial	19.2	0.13 %
Vernal	1792	Dragon Canyon	14,316	Partial	12.1	0.08 %
Vernal	1792	Bitter Creek	33,488	Partial	12.1	0.04 %
Vernal	1799	Dragon Canyon	14,316	Partial	13.8	0.10 %
Vernal	7785	Bitter Creek	33,488	Partial	24.1	0.07 %
Vernal	7793	Bitter Creek	33,488	Full	24.0	0.07 %
Vernal	7809	Bitter Creek	33,488	Full	18.1	0.05 %
Vernal	7830	White River South	2,300	Full	0.5	0.02 %

*If all projected acres of disturbance occur within LWC.

Table 43 Total Projected Surface Disturbance for LWC Units with Multiple Nominated Parcels

LWC Unit	Parcel Nos.	LWC Acres	Total Parcel Overlap with LWC in Acres	Total Projected Surface Disturbance in Acres*	Total Percentage of LWC Acres Disturbed*
Bitter Creek	1703 1719 1765 1767 1703 1719 7785 7793 7809	33,488	13,363.40	164.4	0.49 %
Dragon Canyon	1680 1705 1734 1791 1792 1799	14,316	3962.40	109.0	0.76 %

*If all projected acres of disturbance occur within LWC

Seventeen parcels in the VFO (Table A-2 above) overlap LWC units not managed to prioritize protection of wilderness characteristics. However, these parcels have the following stipulations

attached: UT-S-96: NSO – Fragile Soils/Slopes Greater than 40%; UT-S-99: CSU – Fragile Soils/Slopes; UT-S-100: CSU – Fragile Soil/Slopes (21%-40%); UT-S-123: NSO – Riparian, Floodplains, and Public Water Reserves; UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitations – Visual Resources. Additionally, parcels 1789 and 7830 have the stipulation UT-S-159: Controlled Surface Use – Visual Resources – VRM II attached, which requires that surface-disturbing activities retain the existing character of the landscape and the level of change to the landscape will be low. Furthermore, lease notice UT-LN-115: Light and Sound has been applied to all proposed lease parcels overlapping with LWC units. Under this notice, in accordance with the Vernal RMP Decision MIN-5, the BLM would seek to minimize light and sound pollution within the project area using the best available technology such as installation of multi-cylinder pumps, hospital sound reducing mufflers, and placement of exhaust systems to direct noise away from noise sensitive areas (e.g., sensitive habitat, campgrounds, river corridors, and Dinosaur National Monument). Light pollution would be mitigated 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. If a determination is made that natural barriers or view sheds will meet these mitigation objectives, the above requirements may not apply.

Implementation of the above listed lease stipulations is expected to reduce the likelihood of APDs filed within LWC units and subsequently the maximum number of potential acres of LWC surface disturbance listed in Table A-2 and A-3 above. Due to attached lease stipulations and notice, potential direct impacts to wilderness characteristics within overlapping portions of LWC units are expected to be low or non-existent, resulting in minimal potential surface disturbance, loss of LWC acreage and/or naturalness. Potential impacts, either direct or indirect, to outstanding opportunities for solitude and/or primitive recreation are expected to be localized and temporary during exploration and development. No bisection of LWC units is anticipated. Potential impairment of LWC resources is expected to be minimal or non-existent within all affected units.

Given the temporary nature of lease activities that may occur within LWC units, the continuation of the reasonably foreseeable trends and future actions in the affected area discussed in Section 3.3 – when combined with implementation of the Proposed Action – would not increase the likely negligible impact on wilderness characteristics within LWC units or Natural Areas to a level that merits detailed analysis at the leasing stage.

Lease Stipulations:

- UT-S-87: NSO – White River BLM Natural Area
- UT-S-96: NSO – Fragile Soils/Slopes Greater than 40%
- UT-S-99: CSU – Fragile Soils/Slopes
- UT-S-100: CSU – Fragile Soil/Slopes (21%-40%)
- UT-S-123: NSO – Riparian, Floodplains, and Public Water Reserves
- UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitations – Visual Resources
- UT-S-159: Controlled Surface Use – Visual Resources – VRM II

Lease Notice:

- UT-LN-115: Light and Sound

AIB 6. Livestock Grazing

How would surface disturbance associated with potential development of the nominated lease parcels affect livestock grazing?

The parcels overlap 23 allotments within the VFO, MbFO, and MtFO. Table 44 identifies the allotments, the sum of the estimated surface disturbance of all or portions of parcels within each allotment, total BLM acres and active AUMs by allotment and potentially impacted AUMs from estimated surface disturbance. Should development be proposed within lease parcels, additional, site specific NEPA analysis would be completed to assess the potential impacts to livestock grazing within the project area when an APD is submitted.

Under the Proposed Action for the Lease Sale, livestock grazing would continue. However, should oil and gas development occur on the lease parcel, loss of forage and possible reductions of permitted AUMs could occur in affected allotments due to soil and vegetation disturbance and development activity. Livestock movement patterns could be altered and access to range improvements could be hindered by new roads, well pads, and human presence and activity. Increased traffic may lead to an increase in vehicle-livestock collisions, and increased livestock mortality. Potential impacts to specific allotments, pastures, and range improvements would be analyzed with additional site-specific NEPA review at the APD stage. Any mitigation measures and design features protecting range improvements would be identified at the development stage. In addition, if any existing range improvement projects that could be impacted by wells or associated infrastructure, those well pads could be moved 800 meters to avoid the existing rangeland improvements in accordance with 43 CFR 3101.12. The largest potential impact to AUMs on any one allotment is 9.6 and the lowest is zero. During the APD analysis stage, any loss of AUMs from actual well sites would be less than one percent for any allotments. Alternatives B and C have less lease parcels offered than the proposed actions, therefore, the number of AUMs impacted would be less than identified in Table 44. In addition, no specific concerns were identified during the internal and external scoping period, therefore detailed analysis of this issue is unnecessary and not analyzed further.

Reasonably foreseeable effects to livestock grazing, when added to effects from other past or foreseeable future lease sales within the allotments, would include short-term and long-term effects from removal of existing herbaceous and shrubland vegetation that incrementally decreases available forage until the life of the well has expired. Any reclamation could be decades later. This incremental loss of forage is expected to increase with the past, current and potential future level of oil and gas development.

Table 44 Potential AUM impact by allotment

Allotment	Parcel Number(s)	Sum of Estimated Surface	Total allotment BLM acres	Total Active	Number of AUMs

		Disturbance (Acres)		BLM AUMs	potentially impacted
Asphalt Draw	1684,7786	9.9	36,309	4,343	.8
Atchee Ridge Amp	1680,1703,1705 1719,1765,1767 1791,1792,7785 7793,7809	195	78,362	2,285	5.6
Big Indian	7825	8.2	7,993	810	.8
Bonanza	1698,1742,7784 7814	31.6	24,546	1,939	2.4
Coyote Wash	1691,1696,1698, 1702,7781,7782 7784,7813,7814, 7825,7833,7837	98.5	78,848	7,762	9.6
Evacuation Creek*	1680,1734,1799 7786,7779	58.6	85,875	7,253	4.9
Hells Hole	1688,1689	6	18,107	3,554	1.2
Horse Point	1674, 1715	41.5	26,251	380	.6
Lisbon	7824, 7772	23.4	101,008	10,643	2.4
Lower Lisbon	7824	27.7	12,657	928	2
Lower Mccook	1703,7778	10	7,807	801	1
Mcclelland	1662, 1672, 1673	104.7	8,528	332	4
Olsen Amp	1681,1683,1687 1789,1816,1823	31.3	98,769	9,268	2.9
Ouray Road	7823	4.3	10,402	567	.2
Powder Wash	7837	8	22,588	2,100	.7
Sand Wash	1825	12.1	56,642	4,526	.96
Snake John	7840	9.3	9,259	1,164	1.2
Southam Canyon	7830	1.1	12,669	1,315	.1
Sunday School Canyon	1678,1717, 1808,1810,1815, 1817,1818	61.2	36,800	2,843	4.7
Sweet Water	1678,1703,1818	33.6	81,249	6,527	2.7
Twelve Mile	7823	4	41,967	2,781	.26
Watson-Bc	1684, 7786	19	8,791	1,258	2.7
White River Bottoms	1798	0.1	1,910	480	0

*Evaluation Creek allotment is administered out of the White River Field Office in Colorado.

AIB 7. Migratory Birds

How would potential development of the nominated lease parcels affect migratory birds in Bird Conservation Region (BCR) 16?

Bird habitat on the lease parcels ranges from Colorado Plateau Mixed Low Sagebrush, Shrubland Inter-Mountain Basins Big Sagebrush, Shrubland Colorado Plateau Pinyon-Juniper, to Woodland Inter-Mountain Basins Mixed Salt Desert Scrub. Potential development could direct loss of habitat and noise and activity disturbance from the building of roads and pad development. Habitat fragmentation could also occur by structures and roads occupying habitat. The BLM uses Integrated Bird Monitoring in Bird Conservation Regions (IMBCR). The BLM works with the Bird Conservatory of the Rockies, which conducts surveys in BCR 16, where all 58 parcels are located. The collected data can be used for analysis at the Conservation Region down to the Field Office level. The BLM has conducted surveys every year since 2017. There are two survey locations near the parcels within BCR 16 (UT-BCR-VE6 and UT-BCR R12), and there is a survey grid located in between many of the parcels in Uintah County (UT-BCR VE2). The BLM also uses the Raptor Inventory Nest Survey protocol to locate and monitor raptor nests.

The Migratory Bird Treaty Act (U.S. Fish & Wildlife Service, 1918) protects migratory birds by not allowing take, which includes not harming them or their nests. The Bald and Golden Eagle Protection Act (U.S. Fish & Wildlife Service USFWS, 1940) provides additional protection for bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*). The BLM Instructional Memorandum No. 2008-050 requires the BLM to address the potential effects of ground-disturbing activities on migratory bird populations and their habitat and implement best management practices to avoid or minimize the possibility of impacts. These include the BLM conducting surveys for nests, applying timing limitations during nesting seasons, and conducting monitoring post-project implementation. To protect migratory birds during their nesting season, the BLM will implement species specific timing and spatial buffers as defined in the field office RMP. Migratory birds are analyzed in brief because there likely will not be a population level impact to the Bird Conservation Region because the Conservation Region is very large and covers portions of several states. Additionally, mitigation measures will be taken to protect active nests which will mitigate impacts at the project level. Bird Conservation Region maps are available online. The BLM has attached Lease Notices UT-LN-44 for Raptors on all parcels, which gives notice that appropriate seasonal and spatial buffers shall be placed on all known raptor nests, and Lease Notice UT-LN-45 for Migratory Birds, which gives notice that surveys for nesting migratory birds may be required during migratory bird breeding season whenever surface disturbances and/or occupancy is proposed.

Common raptor species with potential to occur within the lease parcels include the American kestrel (*Falco sparverius*), burrowing owl (*Athene cunicularia*), bald eagle winter roosting habitat, cooper's hawk (*Accipiter cooperii*), ferruginous hawk (*Buteo regalis*), golden eagle (*Aquila chrysaetos*), great horned owl (*Bubo virginianus*), northern harrier (*Circus hudsonius*), peregrine falcon (*Falco peregrinus*), pinyon jay (*Gymnorhinus cyanocephalus*), prairie falcon (*Falco mexicanus*), red-tailed hawk (*Buteo jamaicensis*), and short eared owls (*asio flammeus*).

Table 45 The Utah Partners in Flight: Colorado Plateau Species

Common Name	Scientific Name	UPIF High Priority	BLM Sensitive Species
American three-toed woodpecker	<i>Picoides dorsalis</i>		X
Bald eagle	<i>Haliaeetus leucocephalus</i>		X
Bewick's wren	<i>Thryomanes bewickii</i>		
Black phoebe	<i>Sayornis nigricans</i>		
Black-chinned sparrow	<i>Spizella atrogularis</i>		
Black swift	<i>Cypseloides niger</i>		X
Black-throated sparrow	<i>Amphispiza bilineata</i>		
Bobolink	<i>Dolichonyx oryzivorus</i>		X
Brewer's sparrow	<i>Spizella breweri</i>	X	
Burrowing owl	<i>Athene cunicularia</i>		X
Chukar	<i>Alectoris chukar</i>		
Ferruginous hawk	<i>Buteo ragalis</i>	X	X
Golden eagle	<i>Aquila chrysaetos</i>		X
Grasshopper sparrow	<i>Ammodramus savannarum</i>		X
Gray flycatcher	<i>Empidonax wrightii</i>		
Greater sage-grouse	<i>Centrocercus urophasianus</i>	X	X
Green-tailed towhee	<i>Pipilo chlorurus</i>		
Horned lark	<i>Eremophila alpestris</i>		
Lark bunting	<i>Calamospiza melanocorys</i>		
Lark sparrow	<i>Chondestes grammacus</i>		
Lewis's woodpecker	<i>Melanerpes lewis</i>		X

Common Name	Scientific Name	UPIF High Priority	BLM Sensitive Species
Loggerhead shrike	<i>Lanius ludovicianus</i>		
Long-billed curlew	<i>Numenius americanus</i>		X
Mountain bluebird	<i>Sialia currucoides</i>		
Mountain plover	<i>Charadrius montanus</i>	X	X
Northern harrier	<i>Circus hudsonius</i>		
Northern mockingbird	<i>Mimus polyglottos</i>		
Pinyon Jay	<i>Gymnorhinus cyanocephalus</i>	X	
Prairie falcon	<i>Falco mexicanus</i>		
Sagebrush sparrow	<i>Artemisiospiza nevadensis</i>	X	X
Sage thrasher	<i>Oreoscoptes montanus</i>		
Say's phoebe	<i>Sayornis saya</i>		
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>	X	
Short-eared owl	<i>Asio flammeus</i>		X
Snowy plover	<i>Charadrius nivosus</i>		X
Vesper sparrow	<i>Pooecetes gramineus</i>		
Western meadowlark	<i>Sturnella neglecta</i>		

The potential impacts of future development on migratory birds and their habitats within the affected lease parcels would occur within the broader context of the relevant past, present, and reasonably foreseeable future actions from activities identified in Section 3.3, which includes energy and mineral development, and the conversion of native vegetation communities to agricultural or rural development. Other factors include grazing across all land ownership types, existing transmission powerlines, existing interstate transmission pipelines, paved and unpaved roads, and trends related to habitat loss and fragmentation. However, because of the lease notices, the temporary nature of lease activities that may occur, and the use of COAs, the continuation of the reasonably foreseeable trends and planned actions discussed in Section 3.3 – when combined with implementation of the Proposed Action – would not increase the likely negligible impact on migratory birds to a level that merits detailed analysis at the leasing stage.

Lease Notices:

- UT-LN-44 Statewide Raptors
- UT-LN-45 Statewide Migratory Birds
- UT-LN-49 Statewide Utah Sensitive Species UT-LN-107 Statewide (Formerly T&E-01) Bald Eagle

Lease Stipulations:

- UT-S-261 Vernal Timing Limitation-Raptor Buffers
- UT-S-278 Vernal Controlled Surface Use-Bald Eagle Winter Roost
- UT-S-325 Monticello Timing Limitation-Raptor Nest Site
- UT-S-272 Moab (Outside of MLP) Conditional Surface Use/Timing Limitation-Burrowing Owl and Ferruginous Hawk NestingUT-S-273 Moab (Outside of MLP) Conditional Surface Use/Timing Limitation- Golden Eagle Nesting Sites and Territories
- UT-S-273 Moab (Outside of MLP) Conditional Surface Use/Timing Limitation-Golden Eagle Nesting Sites and Territories
- UT-S-275 Moab, Monticello (Outside of Moab MLP) Controlled Surface use/Timing Limitation-Bald Eagles
- UT-S-325 Monticello Timing Limitation-Raptor Nest Site

AIB 8. Native American Concerns

How would potential development of the nominated lease parcels affect Native American Concerns?

As discussed in further detail in Section 4.2, the BLM provided project information and an invitation to consult on resources of concern to 32 potentially affected Tribes on September 25, 2025. To date, no Tribes have requested government-to-government consultation for this Lease Sale or identified any specific areas or resources of concern. Data available to the BLM does not indicate any documented Traditional Cultural Properties or Sacred Sites located within or proximal to the nominated lease parcels; however, resources and locations of concern to Native American Tribes may be present. Further information regarding the potential for additional resources of concern for Tribes may be obtained through on-going outreach, coordination, or consultation. Additional opportunities to engage with Tribes regarding areas or resources of concern remain available throughout the leasing process and in subsequent NEPA and NHPA reviews that would be required if the nominated parcels are leased and development is proposed. This issue is not analyzed further here because no specific areas or resources of concern have been identified by Tribes.

AIB 9. Old Spanish National Historic Trail

How would potential development of the nominated lease parcels in the Moab and Monticello Field Offices affect the Old Spanish National Historic Trail (OSNHT)?

BLM manages the Old Spanish National Historic Trail (OSNHT) in accordance with the National Trail System Act. Congress officially designated the Old Spanish National Historic Trail in 2002. This designation recognized the trail's significance as a historical trade route between Santa Fe, New Mexico, and Los Angeles, California, during the period of significance of 1829-1848. The trail, which spans over 2,700 miles across six states (New Mexico, Colorado, Arizona, Utah, Nevada, and California), is jointly administered by the National Park Service and the BLM. Parcels 772, 7824, and 7825 are located within 10 miles of the OSNHT. The OSNHT crosses through the MbFO and MtFO, but it does not pass through the VFO.

Parcels 7772 and 7824 are in the southern portion of the MbFO within the Hatch Wash area, and parcel 7825 is in the northern portion of the MtFO also within the Hatch Wash area. The South Canyon High Potential Route Segment along with Looking Glass Rock, Casa Colorado Rock, and Las Tinajas High Potential Sites are within 10 miles of these lease parcels. The *Old Spanish National Historic Trail Recreation and Development Strategy, Grand County, Utah* (BLM and NPS, 2018) and *The Old Spanish National Historic Trail Recreation and Development Strategy San Juan County, Utah* (BLM and NPS, 2018) identify this High Potential Route Segment and these High Potential Sites for recreational opportunities, presence of trail trace, retained and partially retained setting, better than average scenery and significance to the history of the trail. The BLM and local partners promote the recreational use of the trail through The Old Spanish National Historic Trail Mobile Map at the Moab Museum.

The North Branch of the OSNHT traverses this area extending from Cortez, Colorado to Moab, Utah. The overall historic integrity of the trail in this area is partially retained. Recorded mule train trail trace is present in this area. The primary features in the area, which are outside the period of significance for the OSNHT, are roads, signs, powerlines and infrastructure associated with grazing and mining.

The *Old Spanish National Historic Trail Recreation and Development Strategy San Juan County, Utah* (BLM and NPS, 2018) identifies the primary recreational use of the OSNHT to be motorized along Highway 191 and the Peters Wash Road. It also identifies hiking and equestrian use along the trail in the Casa Colorado area and visits to Looking Glass Rock and Las Tinajas Watering Holes. People can hike the trail at the Dry Valley Retracement Trailhead.

Recreation sites affiliated with the trail closest to the lease parcels are Looking Glass Rock Recreation Site, 4.1 miles from parcel 7772; Hook and Ladder OHV Trailhead, 4.1 miles from parcel 7772 and 10 miles from parcels 7825 and 7824; and Casa Colorado Auto Loop Route, 5.5 miles from parcels 7824 and 7825.

The BLM uses the BLM's Visual Resource Inventory process, as defined in BLM Handbook 8410-1 Section II, to quantify scenic quality. The process ranks seven factors (land form, vegetation, water, color, adjacent scenery, scarcity, and cultural modification) and the resulting score receives an A, B, or C rating. Using this process, the BLM determined that the scenic quality along these portions of the OSNHT is a B to high B, thus, it is above average.

The introduction of roads, pipelines, and pad development would not contribute to the period of significance for the OSNHT. The period of significance for the OSNHT has been defined by Congress to be the years 1829-1848. Any activities before or after this time period are outside the period of use of the OSNHT. Therefore, future introduction of roads, pipelines, and pad development do not contribute to the trail's period of significance. The introduction of these oil

and gas development elements has the potential to impact the historic setting primarily to views to the east of the trail. The scenery of the OSNHT may also be impacted along with recreational uses and user experience.

Based on the BLM's viewshed analysis review of the OSNHT towards the parcels, none of the parcels are visible from any of the High Potential Sites and parcel 7772 is the only parcel visible from the trail. With the application of UT-LN-65 to parcels 7772 and 7824, potential development on these lease parcels would have minimal to no impact to the OSNHT. The attached lease notice will bring about COAs that address the quality of the resource in the area. No substantial interference with the nature and purpose of the trail or the key elements of cultural, historic setting integrity, recreation, scenery, or natural resources contributing to the trail would occur.

Finally, when the potential development of the parcels is added to the reasonably foreseeable trends and planned actions discussed in Section 3.3, the combined impacts to the OSNHT are expected to be minimal because of the application of lease notices and stipulations, COAs, and the temporary and localized nature of lease activities. Therefore, detailed analysis of this issue is unnecessary at the leasing stage.

AIB 10. Quality of Life

How would potential development of the lease parcels affect the quality of life of the American people residing in the three-county planning area?

BLM IM 2024-040 directs the BLM to follow the principles and practices in the *Desk Guide for Socioeconomic Aspects of NEPA and Planning* (BLM, 2024). The Guide addresses nine socioeconomic values, all of which can be considered broadly as addressing quality of life issues. The recently released DOI Handbook of NEPA Implementing Procedures (DOI, 2025) includes Appendix 3 that provides implementation guidance to DOI bureaus. Section 1.2 of the DOI NEPA Procedures set forth several considerations the Responsible Official may weigh when determining the "significance" of a proposed action.

One of the considerations includes the effects on the quality of life of the American people. The Appendix recommends considering six items which may affect quality of life. The discussion which follows applies to the socioeconomic analysis area, as this area contains the populations most likely to be impacted by the proposed action and alternatives. The BLM believes that a decision which improves one aspect of quality of life for one individual or group may have a negative impact on another individual or group with different values or concerns. BLM also believes that the described impacts would likely occur at some level to larger geographies, including state, regional, and national. These impacts could vary in type, direction (favorable or unfavorable), and intensity depending on the values and concerns of individuals and groups that may be affected differently. Quality of Life factors considered:

- *Access to Products:* Development of all or some of the lease parcels could enhance opportunities to consume, use, possess, or purchase products extracted or produced on BLM lands, such as minerals, by commercial or other users. See AIB-3 (Fluid Minerals) for discussion of this resource. There are no known vegetative materials that occur within the Proposed Action locations that could be used by subsistence, commercial or other

users. Products (such as meat) deriving from livestock grazing activities in the project location would not be changed because according to the analysis in AIB-7 (Grazing) there will, at most, a minimal loss of AUMs. Similarly, there would be no loss of access to fuel wood (see AIB-25 [Woodland and Forest Resources] for further discussion). Development of lease parcels likely will lead to increases in labor income. This in turn provides access to products through increased purchasing power. See AIB-16 (Socioeconomics) for further discussion.

- *Visitor experience*: Expansion of the oil and gas industry may be perceived as having a negative effect on quality-of-life considerations for people who value undeveloped landscapes, opportunities for isolation, and activities such as wildlife viewing and other forms of recreation. See AIB-13 (Recreation) and AIB-21 (Visual Resources) for further discussion.
- *Public Services*: Development of all or some of the lease parcels could lead to improvements in public services through the generation of mineral lease payments to local governments. See AIB-16 (Socioeconomics) for further discussion.
- *Way of Life and Culture for Native Americans*: See AIB-1 (Cultural Resources) and AIB-9 (Native American Concerns) for discussion of this issue.
- *Passive Use of Ecosystems*: Passive use of ecosystems is a change in resources which people value for their simple existence (cultural, geological, paleontological, biological, aquatic, or aesthetic) or represent a long-term change in resources and/or ecosystem resiliency, as in changes to climate, water, or fire behavior. For some, lease development may create a perception of negative impacts to ecosystems. For example, people who value the aesthetics of undeveloped landscapes may feel that this aspect of their quality of life is impacted. The current document discusses many of the resources associated with ecosystems and ecosystem services. BLM imposes stipulations and lease notices on parcels offered for lease, designed to provide protection of ecosystems and other resources. For more discussion, see Section 3.6.1 (Air Quality) and Section 3.6.2 (Greenhouse Gas), and the following AIBs in Appendix A (Invasive Species; Migratory Birds; Paleontological Resources; Riparian, Wetlands, Floodplains, and Aquatic Species; Soils; Soundscapes; Threatened, Endangered, and Proposed Species; Utah BLM Sensitive Species; Vegetation Communities; Visual Resources; Water Resources, Wildlife: Big Game; and Woodland and Forest Resources).
- *Education and Knowledge*: Development of all or some of the lease parcels could provide incentives to operators to provide training conducive to employment in the development and production phases of the lease operation. Fiscal benefits to counties, such as increases in property taxes, could benefit local schools.

Additionally, the total landscape-level surface disturbance associated with reasonably foreseeable environmental trends and planned actions would include activities that generate increased human activity, traffic, noise, dust, odor, light pollution, and visual effects. These activities have the potential to affect quality of life of any existing nearby residences or facilities, depending on the intensity of development activities and proximity of structures to a given lease

parcel. While the majority of these impacts to any significantly proximal residences or facilities would be short term and cease during operations (e.g., increased human activity, traffic, noise, dust, and odor during drilling and completion phases), residences may continue to experience long-term visual or other impacts that have potential to affect quality of life if they are located in areas in which oil and gas development is not currently nearby or visible. See AIB 16 (Socioeconomics) for a discussion of relative residential proximity to parcels being considered for lease. As discussed above, quality of life factors relate to many of the resources and issues that are considered in detail and analyzed in brief in this EA. Because potential impacts to these resources, as well as measures that will minimize or avoid those impacts, are already discussed in those sections of the EA, there is no need for additional detailed analysis of quality of life factors at the leasing stage.

AIB 11. Paleontological Resources

How would potential development of the nominated lease parcels affect known or unknown paleontological resources?

Paleontological resources are defined by the Paleontological Resources Preservation Act of 2009 (PRPA) as the fossilized remains, traces, or imprints of organisms preserved in or on the earth's crust that are of paleontological interest and that provide information about the history of life on earth (16 U.S.C. 470aaa[1][c]). The PRPA and the DOI regulations (43 CFR § 49.1(a) and 49.30(b)) implementing PRPA direct the BLM to “preserve, manage, and protect paleontological resources” on Federal land using scientific principles and expertise. The Potential Fossil Yield Classification (PFYC) system is a tool used to assess resource impacts and mitigation needs by providing estimates of the potential for paleontological resources within a geologic unit (BLM, 2022) which allows the BLM to predict the likelihood of encountering paleontological resources. The PFYC system is based on numeric classes of 1–5 (very low to very high) and unknown (U). A geologic unit identified as PFYC 1 has very low likelihood of containing paleontological resources, whereas a geological unit identified as PFYC 4 or 5 is a geological unit that has a high or very high likelihood to contain and predictably produce scientifically significant paleontological resources. A class U assignment indicates that there is not enough information available for a formal class assignment. Until additional information is available, and a provisional or formal assignment made, these units should be considered to have paleontological potential. Within areas identified as PFYC 2 or 3, paleontological resource management concern is generally low to moderate because the likelihood of encountering scientifically significant fossils is relatively low to moderate. Areas of moderate to very high and unknown PFYC class (3-5, U) should be assessed prior to authorizing land use action (BLM, 2022).

Based on a review of 1:100,000 scale published geological maps, the 58 nominated parcels contain over 20 unique mapped geologic units that were deposited from approximately 298 million years ago during the Permian to the recent, many with high potential for containing paleontological resources. Therefore, a full list of potentially affected geological units is not included in this analysis. Instead, the Potential Fossil Yield Classification (PFYC) system is used to assess resource effects and mitigation needs by providing estimates of the potential for paleontological resources within a geologic unit (BLM, 2022). The geologic units within the 58 nominated parcels range in PFYC from 2-5 with more than three-fourths (84%) of the acreage classified as PFYC 4 or 5, 3% as PFYC U, 1% as PFYC 3, and 1% as PFYC 2 (Table 46). Areas of moderate to very high PFYC class (3-5) and unknown (U)

should be assessed prior to authorizing land use action (BLM, 2022). PFYC class 3-5 and U areas are found in the nominated parcels in the Moab and Vernal Field Offices, but the nominated parcel in the Monticello field office has only PFYC 3 (Table 47 and Table 48).

Although systematic paleontological resource surveys have not been conducted for the entirety of the nominated lease parcels, according to confidential paleontological locality data managed by the Utah Geological Survey (UGS) and BLM, there are at least 100 known paleontological localities within the nominated lease parcels with typical fossils including plants, turtles, fish, crocodilians, and small mammals from the Uinta Formation, turtles from the Duchesne River and Green River Formations, and sphenocodontid pelycosaurs from the Cutler Formation. One of these localities is found within the Moab FO nominated lease parcels and the other 99 are within the Vernal FO nominated lease parcels. Additionally, many of the nominated lease parcels have exposures of geologic units with paleontological potential.

Table 46 Summary of Nominated Lease Parcel Acreage and Known Paleontological Localities by Field Office.

Field Office	2	3	4	5	U	Number of Localities
Moab	556	380	3,707	127	8	1
Monticello	-	120	-	-	-	0
Vernal	7,924	8	42,679	13,804	2,194	99
Totals	8,480 (12%)	508 (1%)	46,385 (65%)	13,931 (19%)	2,202 (3%)	100

Notes There are no geologic units designated as PFYC 1 within the nominated lease parcels. All acreages contained in the EA analysis were calculated using geographic information system (GIS) data sets for resources and the lease parcels, which may differ slightly from the acreages contained in the legal descriptions. Difference in total acres between the lease parcels and acres analyzed in the EA can vary slightly due to geoprocessing operations where slivers of area are created when two or more data sets intersect. Any inaccuracies are negligible and do not change the overall impact analysis conclusions presented in this EA. Locality Data Source: Utah Geological Survey confidential locality database. No systematic surveys were conducted for this assessment. The best data available were used and they illustrate the lowest number of paleontological localities possible within the lease parcels.

Table 47 Acreage within the 58 Nominated Lease Parcels by Potential Fossil Yield Classification.

Lease Parcel	2	3	4	5	U	Total
1662	0	0	1,160	0	0	1,160
1672	0	0	280	0	0	280
1673	0	0	1,761	0	8	1,769
1674	3	0	1,987	0	249	2,239
1678	98	0	1,179	0	0	1,277
1680	92	0	2,054	0	0	2,146
1681	107	8	0	846	0	961
1684	39	0	875	235	0	1,149
1687	0	0	0	40	0	40
1688	0	0	4	156	0	160
1689	26	0	453	0	0	479
1691	356	0	0	644	278	1,278
1696	37	0	0	241	0	278
1698	180	0	0	1,397	0	1,577

Lease Parcel	2	3	4	5	U	Total
1702	792	0	0	250	0	1,042
1703	72	0	2,040	0	0	2,112
1705	77	0	2,061	0	0	2,138
1715	0	0	1,588	0	567	2,155
1717	7	0	619	0	0	626
1719	0	0	1,983	0	0	1,983
1734	196	0	2,258	0	0	2,454
1742	207	0	0	961	0	1,168
1765	69	0	2,489	0	0	2,558
1767	121	0	2,399	0	0	2,520
1789	0	0	0	2,030	0	2,030
1791	113	0	1,924	0	0	2,037
1792	42	0	1,237	0	0	1,279
1798	6	0	3	1	0	10
1799	151	0	1,279	0	0	1,430
1808	11	0	1,868	0	0	1,879
1810	0	0	2,041	0	0	2,041
1815	0	0	160	0	0	160
1816	0	0	0	40	0	40
1817	0	0	0	80	0	80
1818	88	0	2,308	0	0	2,396
1823	0	0	0	80	0	80
1825	187	0	0	1,093	0	1,280
7772	32	0	380	0	0	412
7778	0	0	640	0	0	640
7779	63	0	177	0	0	240
7781	449	0	0	2,059	45	2,553
7782	216	0	0	1,532	0	1,748
7784	833	0	0	1,045	0	1,878
7785	43	0	2,511	0	0	2,554
7786	36	0	2,191	0	0	2,227
7793	7	0	2,545	0	0	2,552
7809	173	0	1,747	0	0	1,920
7813	163	0	0	156	0	319
7814	455	0	0	120	106	681
7823	632	0	0	95	161	888
7824	524	380	126	127	0	1,157
7825	0	120	0	0	0	120
7826	35	0	0	84	0	119
7830	37	0	0	80	0	117
7833	38	0	0	82	0	120
7837	1,539	0	0	386	0	1,925
7840	39	0	58	0	788	885
1683	89	0	0	71	0	160
Total	8,480 (12%)	508 (1%)	46,385 (65%)	13,931 (19%)	2,202 (3%)	71,506

Notes: There are no geologic units designated as PFYC 1 within the nominated lease parcels. All acreages contained in the EA analysis were calculated using geographic information system (GIS) data sets for resources and the lease parcels, which may differ slightly from the acreages contained in legal description here and. Difference in total acres between the lease parcels and acres analyzed in the EA can vary slightly due to geoprocessing operations where slivers of area are created when two or more data sets intersect. Any inaccuracies are negligible and do not change the overall impact analysis conclusions presented in this EA.

Potential development of all nominated lease parcels would result in up to 793.5 acres of surface disturbance (629.5 acres disturbance in the Vernal FO and 164 acres disturbance outside the Vernal FO) all of which could occur within areas of low to high or unknown potential for paleontological resources. Effects could result in the immediate physical loss of fossils and their contextual data. Ground disturbance could also subject fossils to long-term damage or destruction from erosion and create improved access to the public and increased visibility, potentially resulting in unauthorized collection or vandalism. Ground disturbance can also reveal scientifically significant fossils that would otherwise remain buried and unavailable for scientific study. Such fossils can be collected properly and curated into the museum collection of a qualified repository, making them available for scientific study and education.

Under the action alternatives, Alternative B would have 13,277 fewer acres of PFYC 3-5 or U, 498 fewer acres of PFYC 2, two fewer paleontological localities, and 130 fewer acres of potential ground disturbance than Alternative A. Alternative C would have 27,084 fewer acres of PFYC 3-5 or U, 6,133 fewer acres of PFYC 2, 96 fewer paleontological localities, and 389 fewer acres of potential ground disturbance than Alternative A.

Effects to paleontological resources would be mitigated under all action alternatives, and future development of the nominated lease parcels would be analyzed further through separate NEPA processes, as directed by regulations and current policy including FLPMA. For these 58 nominated lease parcels in particular, the BLM applied Lease Notice UT-LN-72 (High Potential Paleontological Resources) which states that there is high potential for paleontological resources and specifies that 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 3101.12.

In addition, monitoring may be required during surface disturbing activities to identify and avoid destruction of currently unknown paleontological resources. Thus, for all 58 nominated parcels, if an APD is filed, specific clearances would be conducted and incorporated into that future NEPA and APD approval process at the development stage. Additional mitigation measures such as BMPs, standard operating procedures (SOPs), and site-specific mitigation may be applied at the APD stage as COAs. These would include, for example, if during operations within the nominated lease parcels paleontological resources are discovered they would be protected pursuant to the standard discovery requirements, where the lessee must cease any operations that would result in the destruction of such specimens and contact the BLM Authorized Officer. Scientifically significant paleontological resources that may be discovered through surveys or monitoring would be collected by a qualified paleontologist and curated at an appropriate repository (43 CFR Part 49). Additionally, the BLM applied stipulations to many of the nominated parcels that would limit or eliminate surface disturbance in particular areas including UT-S-123 for Riparian, Floodplains, and Public Water Reserves, UT-S-96, UT-S-99, UT-S-100 for Fragile Soils/Slopes, (see Appendix C.1) and these would also provide protection for

geologic exposures along drainages and on slopes that may have paleontological potential. With consideration of these protections, potential effects on paleontological resources of scientific interest would be avoided or mitigated.

The relevant past, present, and reasonably foreseeable future actions scenario described in Section 3.3 provides a quantitative overview of acres influenced by these actions. The risk of impacts on paleontological resources from reasonably foreseeable trends and planned actions would depend on the locations of disturbance relative to PFYC class. When the potential development of these lease parcels is combined with these other actions, the combined effects to paleontological resources on BLM-administered lands are anticipated to be minimal due to the requirements for resource assessments and mitigation combined with the low percent of total acreage that could be impacted by ground disturbing activities or increases in human use of areas.

Lease Notices:

- UT-LN-72 (High Potential Paleontological Resources): All Parcels

AIB 12. Recreation

How would potential development of the nominated lease parcels affect recreation opportunities and activities?

Recreational opportunities and activities within the lease parcels consist mainly of dispersed types of recreation such as operation of Off Highway Vehicles (OHVs), camping, equestrian riding, hunting, target shooting, and wildlife viewing. There are two designated Special Recreation Management Areas (SRMAs) located within the lease parcels 1789 and 7772 which include: White River and Cameo Cliffs. The lease parcels overlap approximately 40 acres or 1% of the White River SRMA (2,836 acres), 412 acres or .03% of the Cameo Cliffs SRMA (15, 641 acres).

The two SRMAs have a timing limitation or controlled surface use stipulations to reduce impacts to recreation and other resources. These limitations would reduce impacts to the recreation experience for which the SRMA was designated. UT-S-47 (for parcel 1789) is a No Surface Occupancy stipulation to protect the White River SRMA. Impacts to the Cameo Cliffs SRMA would be reduced by timing limitation or controlled surface use stipulations to originally created to protect other resources.

Per the Surface Operating Standards and Guideline for Oil and Gas Exploration and Development - The Gold Book (BLM, 2007), temporary or longer-term impacts from the Proposed Action, such as road upgrades, increased vehicle traffic, construction, noise, dust, and/or surface disturbances, would be localized and would not substantially impact recreational access and dispersed recreation opportunities within the lease parcels as alternative travel routes and other public lands would still be available for dispersed recreational opportunities in the vicinity. There are no lease stipulations directly related to developed recreation sites within the lease parcels because the parcels are not impacting any designated recreation sites.

Lease Stipulations:

- UT-S-47: No Surface Occupancy White River SRMA

AIB 13. Riparian, Wetland, Floodplain, and Non-special Status Aquatic Species

How would potential development of the nominated lease parcels affect riparian areas, wetlands, floodplains, and non-special status aquatic species?

The BLM reviewed the lease parcels for proximity to riparian areas, wetlands, and floodplains. Through resource knowledge and/or GIS analysis of the National Wetlands Inventory (NWI) and National Hydrography Dataset (NHD) layers, the BLM identified lease parcels with perennial or intermittent water, springs, riparian, or wetland habitat. Perennial water flows through seven parcels: 1674, 1703, 1715, 1767, 1792, 1798, and 7809. Intermittent streams occur or are expected to occur in all but two parcels, 1687 in VFO and 7825 in MtFO. Riparian areas associated with perennial and intermittent streams and wetlands are also present in all parcels except the two without perennial or intermittent water. There are multiple aquatic and riparian dependent species that rely on the streams and riparian areas within the area of the lease parcels. Sensitive and threatened and endangered species are addressed separately in AIB-18 and AIB-19.

Impacts to these aquatic habitats could occur through surface disturbing activities and water use. Based on the estimated number and types of wells and water usage estimates discussed in Section 3.2.1, the estimated total water usage for full lease development ranges from 2,400 – 12,800 ac-ft (See Section 3.2.1). At this stage, the source and amount of water and impacts of this use these aquatic habitats are not known and will be addressed by site specific NEPA at the APD stage. All parcels are in the Colorado River Basin and have a stipulation or notice stating that any new water depletions from any portion of the Upper Colorado River drainage above Lake Powell are considered to adversely affect the habitat of the endangered fish and will require consultation with FWS. Water needs for all lease developments are authorized by Utah Division of Water Rights and will require a valid water right for that purpose. Water Resources are discussed further in AIB-22 Water Resources.

Surface disturbance estimates are provided in Section 3.2.1. All riparian, wetland, and floodplain habitats Lease Notice UT-LN-53 is applied to all lease parcels with riparian, wetland, and floodplain habitat. This includes all intermittent or perennial streams which have the potential to support riparian habitat. This notifies the lessee that riparian areas may be present, and no surface disturbing activities are allowed within 100 meters of the riparian area. Lease Notice UT-LN-128 is also applied to these lease parcels notifying the lessee that to avoid impacts to floodplains, facilities should be located outside the 100-year floodplain. FO specific stipulations also provide NSO within the habitat and with a 100-meter buffer.

Aquatic habitat restoration projects are in progress or planned throughout the White River Corridor and the Willow Creek and Bitter Creek Watersheds. UT-LN-50 has been added to the lease parcels that overlap these project areas to notify the lessee that these projects are occurring and may require modification to the Surface Use Plan of Operations to mitigate any conflicts.

With the stipulations and notices preventing surface disturbance and development within riparian areas, wetlands, floodplains, intermittent and perennial stream and a buffer from those habitats,

there would be minimal impact to riparian and associated habitats and therefore the species that depend on these habitats. Additionally, because of these stipulations and notices, the continuation of the reasonably foreseeable trends and future actions in the affected area discussed in Section 3.3 – when combined with the implementation of the Proposed Action – would not cause this minimal potential impact on aquatic species and habitats to increase to a level warranting detailed analysis at this stage. No further detailed analysis is necessary at this stage; however, the BLM may apply additional mitigation measures and buffers at the APD stage, as necessary to protect these areas. The BLM would conduct additional site-specific NEPA analysis at that time. Any lease specific issues will be addressed at the APD stage to further prevent impacts to these habitats.

Lease Notices

- UT-LN-53 Riparian Areas: All parcels except 1687 and 7825
- UT-LN-50 Habitat Restoration: Parcels 1798, 1703, 1792, 1791, 7793, 1765, 1767, 7785, 1719, 1681, 1823, 1683, 1717, 1808, 1810, 1674, 1715, 1662

Lease Stipulations:

- UT-S-120 No Surface Occupancy – White River Corridor: Parcel 1789
- UT-S-123 No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves: All VFO and VFO RMP parcels
- UT-S-122 No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves: Parcels 7772 and 7824

AIB 14. Soils

How would potential development of the nominated lease parcels affect sensitive soils?

Soil movement disrupts the existing structure of the soil horizons to the depth of disturbance. Soil forming processes are halted, and compaction of underlying horizons and loss or degradation of soil microbes may occur. These issues are compounded when fragile soils are present. Fragile soils are soil types that are easily damaged by use or disturbance and/or are those that are difficult to reclaim to pre-disturbance conditions. Additionally, fragile soils may include those that have components that can be characterized as susceptible to compaction or other mechanical damage and/or are highly erodible when disturbed. Surface disturbance of fragile and/or sensitive soils occurring on increased slope profiles has the potential to affect soil stability and may lead to accelerated soil erosion and potential sedimentation to proximal water bodies during saturated and runoff conditions within the soil profile.

Soils can be rated based on their susceptibility to degradation. Fragile soils are those that are most vulnerable to degradation. In other words, they can be easily degraded and have a low resistance to degradation processes. They tend to be highly susceptible to erosion and can have a low capacity to recover after degradation has occurred (low resilience). The soil surveys that cover all the parcels are UT047 (Uintah Area, parts of Daggett, Grand, and Uintah counties) for the VFO parcels portions, CO 685 (Rio Blanco Area Colorado), and UT 633 (parts of Grand and San Juan Counties which comprise this analysis area). The web soil survey erosion hazard for road and trail are used for the purpose of this section to identify projected soil disturbances and

erosion potential from soils that would be created through development of potential roads and wells pads. Ratings for the soils are presented in Table 48 below. The hazard is described as "slight," "moderate," or "severe." A rating of "slight" indicates that little or no erosion is likely; "moderate" indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and "severe" indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed. Protective measures for soil resources would be implemented at the APD stage to minimize erosion, soil loss, and disturbance to soils in the lease parcel areas. Additionally, the fragile soils attributes and full descriptions for each soil complex have been presented and summarized in the custom soil survey report for the parcels (Web Soil Survey, 2025). The stipulations have been applied to parcels and are applicable where they are present within each parcel. By avoiding sloped areas with higher potential for erosion, and known mapped fragile soils, overall soil loss and excessive erosion from disturbed areas would be avoided. Other site-specific erosion control measures to protect soils, minimize runoff, and soil loss will be applied at the APD stage.

Additionally, soils mapped as “Prime Soils of Statewide Significance” have been reviewed and none of these areas are present within the lease parcels.

Applying these protective stipulation measures at the time of leasing would inform the lessee of the resource. These stipulations and notices provide protective measures of slope limitations and NSO which will reduce the potential impacts to these habitats. The BLM needs no further analysis at this stage; however, the BLM may apply additional mitigation measures and buffers at the APD stage, as necessary to protect these areas. The BLM would conduct additional site-specific analysis at that time.

Table 48 Soil Rating (Road,Trail) Summary by Rating Value

Rating Value	Acres in AOI	Percent of AOI
Erosion hazard very severe	7,652.20	10.70%
Erosion hazard severe	613.4	0.90%
Erosion hazard moderate	56,300.90	78.70%
Erosion hazard slight	2,030.70	2.80%
Null or Not Rated	4,932.50	6.90%
Totals for Area of Interest	71,530.80	100.00%

For the full Web Soil Survey site report and map refer to (Web Soil Survey, 2025).

Lease Stipulations:

- UT-S-96 NSO – Fragile Soils/Slopes Greater Than 40%- All VFO Parcels where present within the parcel.

- UT-S-99 CSU – Fragile Soils/Slopes – All VFO Parcels where present within the parcel.
- UT-S-100 CSU– Fragile Soils/Slopes (21%-40%)- All VFO parcels where present within the parcel.

AIB 15. Socioeconomics

How would potential development of the nominated lease parcels affect social and economic conditions?

The recently released DOI Handbook of NEPA Implementing Procedures (DOI, 2026) includes Appendix 3 that provides implementation guidance to DOI bureaus. Section 1.2 of the DOI NEPA Procedures set forth several considerations the Responsible Official may weigh when determining the “significance” of a proposed action. One of the considerations includes the degree to which the action, including any changes to the natural and physical environment, would affect economic activity.

The study area includes three counties within three BLM FOs in the State of Utah, which encompass 10,318,691 acres. Because socioeconomic (SE) data are typically available at the county level, county boundaries are used to define the SE study area. Data were obtained from the U.S. Department of Labor, the Bureau of Labor Statistics, local area unemployment statistics, the U.S. Department of Commerce, and the Census Bureau, as compiled by the Headwaters Economics Socioeconomic Profiles Tool developed for the BLM (Headwaters Economics, 2025).

Of the total study area, 6,470,486 acres – 62.7 percent of the total – are federally owned lands, and 4,985,409 of those acres are managed by BLM. 703,346 acres within the study area are privately owned, 50,508 are Tribal lands, and 2,236,069 are owned by state, county, city, or other non-federal agencies. The total population in the study area was 61,269 in 2022, representing an increase of 27.7 percent from 2000 to 2022. The largest contributor to this change in total population was natural change (the surplus of births over deaths). The number of employed workers in the study area in 2022 was 35,829. In 2024, the average annual unemployment rate was 3.6 percent. In 2023, 78.2 percent of workers aged 16 and over within the study area worked in their county of residence. Per capita income in the study area in 2022 was \$44,497, but this ranged from a low of \$38,130 (San Juan County) to a high of \$74,999 (Grand County).

The total number of housing units was 24,720, of which 85.23 percent were occupied, and 4.9 percent were seasonal, recreational, or occasionally occupied properties. Of those living within the study area aged 25 or older, 20.9 percent had earned a bachelor’s degree or higher as of 2023. In 2022, there were approximately 5,436 total jobs in non-services industries in the study area. In the same year there were approximately 15,312 jobs in services related industries, and there were approximately 6,051 jobs in the government sector. This total includes federal, state, county, and local government jobs. In 2022, the industries employing the largest numbers of employees in the study area were: trade, transportation and utilities, leisure and hospitality, and local government.

Within the study area, the average annual wage for all reported jobs was \$53,207 in 2024. The highest paying industries, on average, were mining, federal government, and financial activities. Non-labor income, which includes dividends, interest payments, rent, age-related transfer payments, hardship-related payments, and other transfer payments—can be important in local economies. Where non-labor income is a relatively high percentage of all income, it is likely that there are a higher number of retirees and/or families receiving assistance, in comparison to other regions. In 2022, total non-labor income within the study area represented 41 per cent of all income. The highest category of non-labor income was dividends, interest, and rent, at 17.6 per cent of total study area income. In fiscal year 2025, the Department of Interior, through the Payments In Lieu of Taxes (PILT) program, paid the study area counties \$5,877,207 (DOI, 2025).

The only direct impact of issuing oil and gas leases on quantifiable market socioeconomic values within the analysis area, including the reasonably foreseeable trends and future actions outlined in Section 3.3, would be generation of revenue from the lease sale, as the State of Utah retains approximately 49 percent of the proceeds. Should all or some of the lease parcels prove productive, such production would generate additional revenues from royalties. Subsequent oil and gas exploration, development and production, and support services could affect the local economy in terms of additional jobs, income and tax revenues. Wells would typically be drilled over a period of time and not at the same time. Local businesses may realize increased revenue from the purchase of supplies, meals, rooms, etc. Local trucking and delivery companies may also benefit economically by transporting supplies, building materials and oil products.

There are many uncertainties in estimating the economic impacts of mineral exploration and development. Unknowns include whether the lease parcel will be developed, and what production might result. Factors affecting the costs of exploration, drilling and extraction include type of well (horizontal vs. vertical), geology, well depth, availability and cost of labor and equipment, and, perhaps above all, commodity prices⁵. Given these factors, estimating quantitatively the overall impact from oil and gas exploration and production from the current lease parcel is extremely speculative. Nonetheless, it is possible to get reasonably reliable estimates of marginal impacts, assuming a well was drilled in the relatively near future.

The following analyses use the IMPLAN⁶ (IMpact Analysis for PLANning) input-output model to estimate the impacts from \$1 million in spending for a number of sectors within the oil and gas industry. IMPLAN is strictly linear, so a doubling in spending, for example, would lead to a doubling of impacts. Conversely, a reduction in spending that might have otherwise occurred (due, for example, to a lease parcel not being issued or issued but not subsequently developed) could lead to a proportionate decrease in economic activity. Since we cannot estimate with any degree of certainty future costs, for the reasons discussed earlier, the marginal spending impacts

⁵ Drilling costs vary widely, depending on the factors outlined in this section. Estimates for the cost of drilling an “average” oil well in the U.S. vary from \$3 to \$6 million dollars but can cost much more (Quora, 2025)

⁶ IMPLAN employment is an Industry-specific mix of full-time, part-time, and seasonal employment. It is an annual average that accounts for seasonality.

in 2025 dollars is the most reliable available estimate of economic effects. The described effects are for the multi-county analysis area and could differ if calculated on a county-specific basis. Given that most of the parcels being considered for lease are in Uintah County, BLM expects the potential economic impacts to be larger there than in the other two counties.

The model provides estimates of how a specific economic activity translates into jobs and income for the region. It includes the ripple effect (also called the “multiplier effect”) of changes in economic sectors that may not be directly impacted by management actions but are linked to industries that are directly impacted. In IMPLAN, these ripple effects are termed indirect impacts (for changes in industries that sell inputs to the industries that are directly impacted) and induced impacts (for changes in household spending as household income increases or decreases due to the changes in production). The IMPLAN sectors relevant to these estimates are (1) drilling oil and gas wells, (2) oil and gas extraction, and (3) support activities for oil and gas operations. Table 61 through Table 63 provide the results for \$1 million in spending for each of these three sectors⁷.

Table 49 Economic Impact of \$1 million spending on oil well drilling (\$2025)

Impact	Employment ^[3]	Labor Income	Value Added	Output
Direct	5.5	\$673,777	\$637,723	\$1,000,000
Indirect	0.7	\$38,019	\$85,086	\$175,810
Induced	1.8	\$72,734	\$186,593	\$304,489
Total	7.9	\$784,530	\$909,402	\$1,480,299

Table 50 Economic Impact of \$1 million spending on oil extraction (\$2025)

Impact	Employment	Labor Income	Value Added	Output
Direct	1.4	\$105,683	\$418,786	\$1,000,000
Indirect	0.8	\$45,245	\$105,515	\$231,563
Induced	0.4	\$15,933	\$40,880	\$66,710
Total	2.5	\$166,860	\$565,182	\$1,298,272

⁷ Source for all Tables: IMPLAN 2023 Data for Grand, Uintah and San Juan Counties, UT(IMPLAN® model, 2023 Data, using inputs provided by the BLM and IMPLAN Group LLC, www.IMPLAN.com)

Table 51 Economic Impact of \$1 million spending on support activities (\$2025)

Impact	Employment	Labor Income	Value Added	Output
Direct	3.6	\$297,809	\$738,166	\$1,000,000
Indirect	0.5	\$23,694	\$53,556	\$122,411
Induced	0.8	\$32,840	\$84,249	\$137,480
Total	4.9	\$354,343	\$875,971	\$1,259,891

Oil production from federal lands is subject to a 12.5 per cent royalty payment to the federal government. Approximately 49 percent of that amount is provided to the state government, which then provides a portion to the counties. In 2024, Utah received a total of \$93.74 million in such payments from all leases in Utah (DOI, Office of Natural Resources Revenue Data, 2024). These revenues are split between the State and the federal government. Fiscal impacts from issuing these lease parcels could result from annual rent fees (for 10 years regardless of activity on a lease), royalties (if and when production occurs) and property taxes on oil and gas infrastructure. These may provide income to county governments for schools and other expenditures. The Proposed Action would not be expected to induce substantial growth or concentration of population, displace many people, cause a substantial reduction in employment, reduce wage and salary earnings, cause a substantial net increase in county expenditures, or create a substantial demand for public services. With a reduction in output from the oil and gas sector, converse effects would be expected to occur. Increased activity in oil and gas development and operations could have an impact on the demand for community services as well as having some effect on available housing and demand for goods and services within the affected counties.

Expansion of the oil and gas industry may be perceived as having a negative effect on quality-of-life considerations for people who value undeveloped landscapes, opportunities for isolation, and activities such as wildlife viewing, other forms of recreation, or rangeland management. The total landscape-level surface disturbance associated with reasonably foreseeable environmental trends and planned actions would include activities that generate increased human activity, traffic, noise, dust, odor, light pollution, and visual effects. These activities have the potential to affect quality of life of any existing nearby residences or facilities, depending on the intensity of development activities and proximity of structures to a given lease parcel. While the majority of these impacts to any significantly proximal residences or facilities would be short term and cease during operations (e.g., increased human activity, traffic, noise, dust, and odor during drilling and completion phases), residences may continue to experience long-term visual or other impacts that have potential to affect quality of life if they are located in areas in which oil and gas development is not currently nearby or visible.

To assess the potential impact of oil and gas development (as opposed to leasing which may or may not lead to development), BLM measured the distance from each parcel to the nearest municipal area boundary. While it is possible that individual occupied residences may exist outside municipal areas, BLM assumes that most existing and future residential development

will occur within these boundaries. Using GIS tools, BLM estimates that only one of the 58 parcels lies within 2-5 miles of a municipality (in this case, one in Colorado). This does not completely eliminate potential impacts to residences within these municipalities, as oil field traffic could still use travel corridors which bisect these areas.

AIB 16. Soundscapes

How would noise associated with potential development of the nominated lease parcels affect the local soundscape?

The acoustic environment of a given area is an important consideration in understanding environmental and social impacts from potential lease development. Elevated noise levels can disrupt wildlife behavior and communication, as well as diminish human experiences of natural quiet—both of which are important considerations when evaluating environmental thresholds for sound. The EPA has identified a 24-hour environmental noise exposure level of 70 A-weighted decibels (dBA) to prevent any measurable hearing loss over a person’s lifetime. Likewise, levels of 55 decibels outdoors and 45 decibels indoors are identified as preventing activity interference and annoyance. The levels are not single event, or “peak” levels. Instead, they represent averages of acoustic energy over periods of time such as 8 hours or 24 hours, or over longer periods of time such as years. The 55 dBA threshold is generally recognized as a level below which no public health or safety risks to the general population would be anticipated to occur. In rural areas, where the lease parcels are located, ambient sound levels are typically 30 to 40 dBA (EPA, 1974). As a basis for comparison, the sound level of a normal conversation between two people standing 5 feet apart is 60 dBA. Highway traffic noise typically ranges from 70 to 80 dBA at a distance of 50 feet from the highway (USDOT, 2003). Typical noise levels associated with oil and gas activity are presented in Table 52.

Table 52 Noise Levels Associated with Oil and Gas Activity

Noise Source	Sound Level at 50 Feet (dBA)
Well drilling ¹	83
Production operations (Pumping) ²	82

Source: (BLM, 2003)

Note: Sound levels are based on highest measured sound levels and are normalized to a distance of 50 feet from the source.

It is estimated that noise levels could be approximately 83 dBA during the drilling phase. The Inverse Square Law indicates that noise will decrease by 6 dBA with every doubling of distance from the source, and this is often used to estimate noise impacts at different distances from a specific source. As such, if the noise level is 83 dBA at 50 feet from drilling operations, then the noise level would be 77 dBA at 100 feet and 71 dBA at 200 feet. At approximately 1,250 feet (0.24 miles) from the drilling, sound levels will drop below the EPA activity interference and annoyance threshold of 55 dBA. Sound levels will drop to background sound levels (30-40 dBA) at distances of 3 miles or less. However, the actual noise levels experienced by the receptor will depend on the distance between the receptor and the equipment, vegetation (e.g. trees), meteorological conditions (e.g. wind speed and directions, temperature, humidity), the type of equipment used, etc., so sound levels could vary slightly.

One can also use deviation from natural background sound levels to identify reductions in listening area and alerting distance for wildlife. Reduction in listening area quantifies the loss of hearing ability resulting from an increase in ambient noise level. Under natural ambient conditions, a sound is audible within a certain area around an animal. If the ambient level is increased due to a noise event, the area in which the sound is audible decreases. Table 53 shows the relationship between increased sound level and listening area reduction. Wildlife are impacted by their failure to hear natural sounds that would have been audible in the absence of artificial noise (e.g., a mouse misses the footfall of a coyote). Reductions in listening area and alerting distance capture these types of impacts.

Table 53 Reduction in Listening Area Due to Increase from Background Sound Levels

Increase from Background	3 dBA	6 dBA	10 dBA	20 dBA
Reduction in Listening Area	50%	75%	90%	99%
Reduction in Alerting Distance	30%	50%	70%	90%

Source: (NPS, 2010)

A review of other noise sources within 3 miles of the lease parcels shows that common noise sources, including the noise sources from the reasonably foreseeable trends and planned actions described in Section 3.3, are expected to be from livestock, oil and gas development activities, mining, power generation, ranch houses, recreation, vehicular traffic, and wildlife. The BLM identified parcels (1789,1687,1688,1689,1691,7823,7772,7823) within 3 miles of sensitive noise receptors (White River and residential houses) where sound from the development and operation of lease parcels may be heard. Sensitive noise receptors are areas where occupants are more susceptible to the adverse effects of noise pollution (e.g. communities, residences, parks or monuments, river corridors, sensitive wildlife habitats, protected natural areas, etc.). The BLM identified parcels 1689 and 7830 as being within a quarter mile of lease parcels, where sound levels could exceed the 55 dBA annoyance threshold. Lease notice UT-LN-98: Protection of Natural Soundscapes is applied to lease parcels within 3 miles of sensitive noise receptors to minimize impacts to soundscapes at the APD stage.

The BLM expects potential development of the lease parcels to generate noise above ambient levels during drilling and completion for the area within a quarter mile of the well site. Noise impacts during these phases of development would be short-term. As discussed, development, drilling, including spudding and completion, is estimated to take 30-60 days. At the APD stage the BLM will have site specific information to better evaluate noise impact and can implement COAs if it is determined the impact may be adverse.

Overall, increases to the ambient sound levels where lease parcels are located would occur from well construction and well production operations. In addition, during final abandonment of the well and reclamation, there would be temporarily increased noise levels associated with operation of earth-moving construction equipment. Sound levels from well development and production operations on the lease parcels in combination with the continuation of the trends and planned actions discussed in Section 3.3, is unlikely to increase the expected minimal impacts on soundscapes to a level that requires detailed analysis at the leasing stage because of the

application of lease notice UT-LN-98 – Protection of Natural Soundscapes. At the APD stage, site specific information can be used to evaluate potential soundscape impacts in more detail and impose COAs if the impacts are determined to be adverse. As a result, detailed analysis of potential impacts to soundscapes at the leasing stage is not warranted.

AIB 17. Threatened, Endangered, and Proposed Species

How would potential development of the nominated lease parcels affect federally listed and proposed species or their habitats?

The BLM analyzed the nominated lease parcels individually for the presence of federally listed and proposed species in coordination with the USFWS and identified thirteen species whose USFWS-published range maps (also referred to as areas of influence [AOI]) intersect with one or more nominated parcels. Each identified species is discussed separately in the following subsection. In accordance with lease notice HQ-TES-1, which applies to all the nominated lease parcels, the BLM would not approve any ground-disturbing activity that may affect listed species or critical habitat until it completes its obligations under the applicable requirements of the ESA.

The BLM may also require modifications to or disapprove proposed activities that are likely to jeopardize the continued existence of any proposed or listed threatened or endangered species or that may result in the destruction or adverse modification of designated or proposed critical habitat (see Appendix C Stipulations and Notices).

Additionally, since the BLM may potentially identify current or future listed species within the parcels, lease notice T&E-05 (Listed Plant Species) applies to all lease parcels. Section 4.1 further discusses how the Proposed Action complies with the threatened and endangered species management guidelines (both plant and animal) outlined in the Vernal, Moab, and Monticello RMPs, as well as the consultation requirements of ESA Section 7.

By applying the identified threatened and endangered (T&E) lease notices, which the BLM developed through formal ESA Section 7 consultation with the USFWS during the creation of the applicable land use plans, potential impacts from mineral development on the nominated lease parcels and adjacent lands would be mitigated.

As discussed below, the implementation of these lease stipulations and notices, as well as the requirements outlined in the applicable land use plan, would adequately reduce potential impacts to listed or candidate T&E species during the leasing stage. At the lease development stage, the BLM would conduct site-specific ESA Section 7 consultation with the USFWS as necessary, taking into account infrastructure siting, habitat suitability determinations, survey results, and any additional site-specific considerations or avoidance measures.

1. Aquatic Animal Species

There are four federally listed fish in the Upper Colorado River Drainage Basin (Colorado pikeminnow [*Ptychocheilus lucius*], razorback sucker [*Xyrauchen texanus*], bonytail [*Gila elegans*], and humpback chub [*Gila cypha*]).

All parcels are within the Upper Colorado Basin Watershed. The FWS considers water depletions from any portion of the Upper Colorado River drainage basin above Lake Powell to

be detrimental to the critical habitat of the four resident listed fish species of the Upper Colorado River Basin. The BLM must evaluate effects of water depletion using the criteria described in the Upper Colorado River Endangered Fish Recovery Program which has the objective of recovering the listed species while water development occurs. This has occurred through payment of water depletion fees which fund recovery actions.

BLM recently conducted a programmatic consultation for APD stage development for water depletions less than 100 ac-ft with a resulting Biological Opinion that these small depletions no longer require a depletion fee or consultation (USFWS, 2025). Based on the estimated number and types of wells and water usage estimates discussed in Section 3.2, the estimated total water usage for full lease development ranges from 2,400 – 12,800 ac-ft. While the total estimated water use for potential full lease development is greater than 100 ac-ft, this is not what consultation is based on. Consultation and analysis of impacts of water depletions occurs at the time and scale of an individual APD. At this leasing stage, the source of water and amount of new water depletions are not known and will be addressed by site specific NEPA at the APD stage. At this stage, it is too speculative to identify the potential source and status of permitted water sources used in the lease development.

- Lease notice T&E-23 is applied to all parcels and informs potential lessees of this need for FWS consultation on water depletions greater than 100 ac-ft at the APD stage.

Parcel 1798 on the White River is within designated critical habitat for the razorback sucker and Colorado pikeminnow and both species occupy this reach. There is potential for bonytail and humpback chub to occur in this portion of the White River, but they are much less likely to occur there than razorback sucker or Colorado pikeminnow.

- Parcel 1798 on the White River would not have any surface occupancy as Stipulation UT-S-120: NSO White River Corridor applies to the entire parcel.
- T&E-23 applies to all parcels in this lease sale as they are all within the Colorado River Basin. This notice informs operators they are in critical habitat for these species and provides avoidance and minimization measures including but not limited to:
 - Avoiding surface disturbance within the 100-year floodplain
 - Avoid direct mortality and entrapment
 - Manage water depletions

There are no records documenting any of the four federally listed fish in the parcels with perennial water on Willow Creek or Bitter Creek (1703, 7809, 1767, 1715, 1674). There are records of bonytail and Colorado pikeminnow from the lower reaches of Willow Creek near the Green River from 2022 (Anabran Solutions, 2025). There is potential they could move upstream if there are no barriers present. Surface-disturbing activities that affect sediment supply, alter the hydrology, or impact water quality or quantity or spills of hydrocarbons could result in downstream impacts to the fish and their habitat. These impacts are most likely to occur from activities in parcel 1798 as it is in critical habitat, then from parcels with perennial water upstream of critical habitat (1703, 7809, 1767, 1715, and 1674), and with a lower potential for impacts from all other parcels with intermittent or perennial connections to habitat. Stipulations and BMPs to address spills are discussed in AIB-22 (Water Resources).

- Lease notices and stipulations applied to these parcels with perennial water and riparian habitat provide a NSO buffer of 100m from riparian, wetland, and floodplain habitats.

The stipulations and notices required consultation on water depletions, protections for development in critical habitat and providing buffers from riparian, wetlands, and floodplains requirements sufficient protections are provided that there would be minimal impact to these species. Additionally, because of these stipulations and notices, the continuation of the reasonably foreseeable trends and future actions in the affected area discussed in Section 3.3 – when combined with the implementation of the Proposed Action – would not cause this minimal potential impact to increase to a level warranting detailed analysis at this stage.

Lease Notices:

- T&E-23 Threatened and Endangered Fish of the Colorado Basin: All Parcels
- HQ-TES-1 Threatened and Endangered Species Act: All Parcels
- UT-LN-53 Riparian Areas: All parcels except 1687 and 7825

Lease Stipulations:

- UT-S-120 No Surface Occupancy – White River Corridor: Parcel 1789
- UT-S-123 No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves: All VFO and VFO RMP parcels
- UT-S-122 No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves: MbFO parcels 7772 and 7824
- UT-S-183 Threatened and Endangered Fish of the Colorado Basin: MbFO parcels 7772 and 7824
- UT-S-182 Threatened and Endangered Fish of the Colorado Basin: MtFO parcel 7825

2. -Terrestrial Vertebrate Species

I. Black-footed ferret (*Mustela nigripes*) – Endangered / Nonessential Experimental Population

Parcels 1698, 1702, 1742, 7784, 7813, 7814, 7833, and 7837 intersect the USFWS AOI for the black-footed ferret and of these intersect the Management Area (UDWR, 2007) for the species. Parcels 1691, 1696, 7781, 7782, and 7826 are outside of the USFWS AOI but intersect the Management Area. Of those lease parcels that intersect the Management Area, three parcels (7784, 7813, and 7814) intersect mapped white-tailed prairie dog colonies (Table 54), which serve as suitable habitat for the black-footed ferret, and one parcel (7833) is within 1/8 mile of mapped colonies.

Table 54. Estimated disturbance to white-tailed prairie dog colonies & black-footed ferret habitat within the black-footed ferret Management Area

Lease Parcel	Prairie Dog Colony Acres in Lease Parcel	Estimated Acres Prairie Dog Colony Disturbed in Lease Parcel
7784	266.8	2.5

Lease Parcel	Prairie Dog Colony Acres in Lease Parcel	Estimated Acres Prairie Dog Colony Disturbed in Lease Parcel
7813	15.2	0.1
7814	50.1	0.5
outside of parcels	26,949.7	
Grand Total	27,281.8	3.1

Using the disturbance assumptions in Appendix J and assuming random placement of disturbance relative to the mapped white-tailed prairie dog colonies, development of the parcels would impact 3.1 acres of suitable habitat for the black-footed ferret. This represents less than 0.1% of the mapped white-tailed prairie dog colonies within the Management Area.

Existing activities are expected to continue (see Section 3.2). Within the mapped white-tailed prairie dog colonies within the Management Area 26 fluid mineral well pads have been constructed at some point in the past and an additional 25 pads have been built within 1/8 mile the mapped colonies. The BLM and TLA have previously leased for fluid mineral development 73.9% of the mapped colony area within the Management Area (8.8% of the mapped colony area is associated with a lease with existing lease development).

The implementation of the associated stipulations and notice (combined with Section 6 of the standard terms and conditions of the lease) would further reduce impacts to potential and suitable habitat for the species. Therefore, a detailed analysis of the impacts to the black-footed ferret is not warranted.

Lease Stipulations

- UT-S-218 – Controlled Surfaced Use – White-Tailed Prairie Dog: Parcels 1742, 7784, 7813, 7814, 7833
- UT-S-299 – Controlled Surface Use/Timing Limitations – Black-Footed Ferret – Primary Management Zone Area: Parcels 1691, 1698, 1702, 1742, 7781, 7784, 7813, 7814, 7826, 7833

Lease Notice

- T&E-02 – Black-Footed Ferret (*Mustela nigripes*) – Parcels 1691, 1696, 1698, 1702, 1742, 7781, 7782, 7784, 7813, 7814, 7826, 7833, 7837, and 7840

II. Mexican spotted owl (*Strix occidentalis lucida*) – Threatened

Parcels 1662, 1672, 1673, 1674, 1678, 1680, 1681, 1683, 1684, 1688, 1689, 1703, 1705, 1715, 1717, 1719, 1734, 1765, 1767, 1789, 1791, 1792, 1799, 1808, 1810, 1815, 1817, 1818, 7772, 7778, 7779, 7785, 7786, 7793, 7809, 7824, 7825, and 7830 intersect the USFWS AOI for the Mexican spotted owl. Of those all but Parcel 1815 intersects the 1997 Willey-Spotskey Mexican Spotted Owl Habitat Model. (Willey & Spotskey).

The modeled habitat within 0.5 mile of Parcels 1672, 1673, 1674, 1678, 1680, 1681, 1683, 1684, 1688, 1689, 1703, 1705, 1715, 1717, 1719, 1734, 1765, 1767, 1789, 1791, 1792, 1799, 1808, 1810, 1815, 1817, 1818, 7772, 7778, 7779, 7785, 7786, 7793, 7809, and 7824 do not have

Rocky-canyon Habitat as defined in the Final Recovery Plan (USFWS, 2012) (e.g. one sided cliffs not associated with canyons or canyons with rim to rim width greater than 1 kilometer). Therefore, there is no suitable habitat for Mexican Spotted Owl in the vicinity of these parcels.

BLM and USFWS biologists evaluated habitat within and adjacent to Parcels 1680, 1681, 1683, 1684, 1688, 1689, 1703, 1705, 1715, 1717, 1719, 1734, 1765, 1767, 1789, 1791, 1792, 1799, 1808, 1810, 1815, 1817, 1818, 7772, 7778, 7779, 7785, 7786, 7793, 7809, 7824, 7825, and 7830 between 2005 and 2009 and these parcels were determined to be unsuitable to poor habitat. As habitat characteristics for Canyon habitat are topographically controlled, determinations do not expire. Consequently, these parcels do not provide suitable breeding habitat for Mexican Spotted Owl.

1. Vernal Planning Area (i.e. Vernal FO and portions of the Moab FO north of the Book Cliffs Divide)

The modeled habitat that interests Parcels 1662, 1689, 1705, 7778, and 7793 are not suitable habitat. However, they are located within ½ mile of potential canyon habitat that has not been evaluated for habitat suitability. These areas could be indirectly impacted by potential future development of the parcels, particularly due to increased noise.

Parcel 1673 and 1818 intersect modeled habitat that has not had habitat suitability evaluations completed and Parcels 1674, 1678, 1703, 1715, 1765, 1767, 1792, and 7809 intersect habitat that has been evaluated as fair (Parcels 1678, 1703, 1765, 1767, and 1792) or good habitat (Parcels 1674, 1715 and 7809).

To date, the BLM has not identified any resident Mexican spotted owls in the vicinity of these parcels. The nearest detections to any of the parcels is approximately 20 miles to the west (the Trail Canyon Protected Area Core [PAC]). Existing activities are expected to continue (see Section 3.2).

The implementation of the Lease Notice T&E-25-Mexican Spotted Owl, which includes habitat assessments, surveys, timing restrictions, and monitoring (combined with Section 6 of the standard terms and conditions of the lease) would further reduce impacts to potential habitat for the species. Therefore, a detailed analysis of the impacts to the Mexican spotted owl within the Vernal Planning Area is not warranted.

Lease Notice

- T&E-25: Mexican Spotted Owl (*Strix occidentalis lucida*) – Parcels 1662, 1674, 1678, 1689, 1703, 1705, 1715, 1765, 1767, 1792, 1818, 7778, 7793, and 7809

2. Moab Planning Area (ie Moab FO South of the Book Cliffs Divide)

Parcel 7772 intersect habitat that has been evaluated as suitable habitat for the species. Detections of the species have not been made to date within ½ mile of the parcel, with the nearest detection approximately 11.5 miles southeast of the parcel. Existing activities are expected to continue (see Section 3.2)

The implementation of the Lease Notice T&E-25-Mexican Spotted Owl and Lease Stipulation UT-S-340, which includes habitat assessments, surveys, timing restrictions, and monitoring

(combined with Section 6 of the standard terms and conditions of the lease) would further reduce impacts to potential habitat for the species. Therefore, a detailed analysis of the impacts to the Mexican spotted owl within the Moab Planning Area is not warranted.

Lease Stipulation

- UT-S-340 – Controlled Surface Use/Timing Limitation – Mexican Spotted Owl Habitat and Nest Sites: Parcel 7772

Lease Notice

- T&E-25: Mexican Spotted Owl (*Strix occidentalis lucida*) – Parcel 7772

III. Western yellow-billed cuckoo (*Coccyzus americanus*) – Threatened

Twenty-seven parcels (1678, 1681, 1684, 1688, 1689, 1691, 1702, 1703, 1715, 1734, 1742, 1767, 1789, 1798, 1799, 1818, 1825, 7778, 7779, 7781, 7784, 7809, 7813, 7826, 7830, 7833, and 7840) intersect the AOI for the western yellow-billed cuckoo. Of those, seven parcels (1691, 1702, 1742, 1825, 7813, 7833, and 7840) are not located within ½ mile of riparian forests, riparian woodlands, or other habitat that may provide suitable breeding, migratory, or foraging habitat and therefore, potential future on lease activities on those parcels would not impact the species.

Fourteen parcels (1678, 1681, 1684, 1688, 1734, 1767, 1799, 1818, 7778, 7779, 7781, 7784, 7826, and 7830) are not located within ½ mile of areas that may provide suitable breeding habitat and potential usage would be limited to migratory stopover usage.

The remaining six parcels intersect (1703, 1715, 1798, and 7809) or are within ½ mile of (1689 and 1789) potential breeding habitat. The remaining six parcels intersect (1703, 1715, 1798, and 7809) or are within ½ mile of (1689 and 1789) potential breeding habitat for the Yellow-billed cuckoo. All potential breeding habitat within the parcels is protected by an NSO stipulation.⁸

Portions of these riparian areas may contain riparian forest habitat that could be suitable breeding or stop-over habitat for the species. However, direct impacts to these habitats are expected to be limited as lease stipulations are attached to all the parcels that establish NSO stipulations on wetlands and riparian area identified at the time of development.

Within ½ mile of lease parcel areas not subject to NSO stipulations are 1,504 of potential riparian or wetland habitats. These areas could be indirectly impacted by potential future development of the lease parcel, particularly due to increased noise. Existing activities are expected to continue (see Section 3.2).

The implementation of the Lease Notice T&E-31 which includes habitat assessments, surveys, timing restrictions, and monitoring (combined with Section 6 of the standard terms and conditions of the lease) would further reduce impacts to potential habitat for the species. Therefore, a detailed analysis of the impacts to the Yellow-billed cuckoo is not warranted.

⁸ Not all NSO stipulation areas can be identified prior to site specific field reviews

Lease Notice:

- T&E-31: Western yellow-billed cuckoo (*Coccyzus americanus*) – Parcels 1678, 1681, 1684, 1688, 1689, 1703, 1715, 1734, 1767, 1789, 1798, 1799, 1818, 7778, 7779, 7781, 7784, 7809, 7826, 7830

3. Insect Species

IV. Monarch butterfly (*Danaus plexippus*) – Proposed Threatened

All parcels have the potential to support the monarch butterfly during a portion of its migration. However, not all areas provide the same habitat value. NatureServe has modeled suitable habitat for the western monarch for both the spring and fall migrations to identify regions of global and local importance to the species (McIntyre, Ceasar, & Young, 2024).

Eleven parcels intersect areas identified as either of global or local importance. Within this parcels, there are 642 acres identified as being of global importance outside of areas with NSO stipulations and 503 acres of local importance outside of areas with a NSO stipulation (Table 55 and Table 56: note to due overlapping areas, values in the table do not sum to the figure above).

Table 55: Acres of suitable habitat and estimated disturbance (in paranthesis) of global and local importance for the western monarch during the spring migration

Lease Parcel	Acres of Global Importance During Spring Migration in Lease Parcel	Acres of Local Importance During Spring Migration in Lease Parcel	Total Acres of Global and Local Importance During Spring Migration in Lease Parcel
1674			
1678	1.2 (0)		1.2 (0)
1681	3.1 (0)		3.1 (0)
1689	12.2 (0.1)		12.2 (0.1)
1715		0.2 (0)	0.2 (0)
1734	3.2 (0)	1.5 (0)	4.7 (0)
1798	1.9 (0)		1.9 (0)
1799	79.7 (0.7)	9.8 (0.1)	89.5 (0.8)
7809	0.3 (0)		0.3 (0)
7814			
7823	58.3 (0.5)	6.1 (0.1)	64.4 (0.6)
Grand Total	159.9 (1.5)	17.6 (0.2)	177.5 (1.7)

Table 56: Acres of suitable habitat and estimated disturbance (in paranthesis) of global and local importance for the western monarch during the fall migration

Lease Parcel	Acres of Global Importance During Spring Migration in Lease Parcel	Acres of Local Importance During Spring Migration in Lease Parcel	Total Acres of Global and Local Importance During Spring Migration in Lease Parcel
1674	93.9 (0.9)		93.9 (0.9)
1678			
1681	182.8 (1.7)		182.8 (1.7)

Lease Parcel	Acres of Global Importance During Spring Migration in Lease Parcel	Acres of Local Importance During Spring Migration in Lease Parcel	Total Acres of Global and Local Importance During Spring Migration in Lease Parcel
1689	86 (0.8)	0.5 (0)	86.5 (0.8)
1715	44 (0.4)	153.4 (1.4)	197.4 (1.9)
1734			
1798			
1799		146.2 (1.4)	146.2 (1.4)
7809			
7814	85.5 (0.8)	185.6 (1.7)	271.1 (2.6)
7823			
Grand Total	492.2 (4.6)	485.7 (4.6)	977.9 (9.2)

Using the disturbance assumptions outlined in Section 3.2. and Appendix J and assuming random placement of disturbance relative to the modeled areas, there would be an estimated 1.5 acres of disturbance to habitat of global importance and 0.2 acres of disturbance to habitat of local importance during the spring migration (Table 55) and estimated 4.6 acres of disturbance to habitat of global importance and 4.6 acres of disturbance to habitat of local importance during the fall migration (Table 56).

This represents less than 0.1% of either the habitat of global importance or the combined habitat of global and local importance during the spring migration within the watersheds encompassing the parcels. Similarly, this represents 0.1% of either the habitat of global importance or the combined habitat of global and local importance during the fall migration within the watersheds encompassing the parcels. Existing activities are expected to continue (see Section 3.2).

Given the low expected disturbance relative to the available habitat at the local, regional, and global levels, and considering the implementation of the attached lease notice (UT-LN-156) (combined with Section 6 of the standard terms and conditions of the lease), a detailed analysis of the impacts on the monarch butterfly is not warranted.

Lease Notice:

- UT-LN-156 – Pollinators and Pollinator Habitat: All parcels

V. Silverspot butterfly (*Speyeria nokomis nokomis*) – Threatened

Parcels 7772, 7824, and 7825 intersect the USFWS AOI for the silverspot butterfly.

Of those, parcel 7824 is not located within 300 feet of any areas of potential perennial wetlands and therefore does not have suitable habitat present.

Parcels 7772 and 7825 have potential wetland habitat within them. The silverspot butterfly depends upon permanent spring-fed meadows, seeps, marshes, and boggy streamside meadows (USFWS, 2021). These habitats are covered by NSO stipulations (UT-S-122 in Moab and UT-S-128 in Monticello). Therefore, there would be no impacts to habitat for the species from lease development. Additionally, the implementation of the attached lease notice (T&E-35) (combined with Section 6 of the standard terms and conditions of the lease) will further reduce potential

impacts on the silverspot butterfly and a detailed analysis of the impacts on the species is not warranted

Lease stipulations:

- UT-S-122: No Surface Occupancy – Floodplains, Riparian Areas, Springs and Public Water Resources: Parcel 7772
- UT-S-128: No Surface Occupancy – Floodplains, Riparian Areas: Springs, and Public Water Resources: Parcel 7825

Lease notice:

- T&E-35: Silverspot Butterfly (*Speyeria nokomis nokomis*): Parcels 7772 and 7825

VI. Suckley's cuckoo bumble bee (*Bombus suckleyi*) – Proposed Endangered

The current USFWS AOI for Suckley's bumblebee covers all of the State of Utah due to the uncertainty with the potential range for the species. Western bumblebee (*Bombus occidentalis*) is the primary host for Suckley's bumblebee. An occupancy model for western bumblebee has been developed (Graves, et al., 2020). Using post-hoc EPA Level III Ecoregion specific thresholds (0.21 for the Colorado Plateaus and the hydrological units in adjacent mountain ecoregions that flow into each of those), it is possible to identify areas of potential habitat for western bumblebee and by association Suckley's bumblebee. Using these thresholds, portions of parcels 1662, 1672, 1673, 1674, and 1715 (in the East Willow Creek-Willow Creek watershed) may provide habitat for western bumblebee and Suckley's bumblebee (Table 57).

Table 57: Acres of potential habitat for the Western bumble bee and Suckley's cuckoo bumble bee

Parcel	Acres of potential habitat	Acres of potential habitat disturbed
1662	1,160.3	37.7
1672	279.6	9.1
1673	1,769.1	57.6
1674	2,234.8	21.1
1715	2,153.7	20.3
Outside Parcels within overlapping watershed	177,823.1	
Grand Total	185,420.6	145.8

Based on the disturbance assumptions outlined in Section 3.2.1, the estimated disturbance to potential habitat would be 145.8 acres. This represents less than 0.1% of the potential habitat within the watershed overlapping these parcels. Existing activities are expected to continue (see Section 3.4).

Given the low expected disturbance relative to the available habitat at the local, regional, and global levels, and considering the implementation of the attached lease notice (UT-LN-156) and Section 6 of the standard terms and conditions of the lease, a detailed analysis of the impacts on Suckley's cuckoo bumble bee is not warranted.

Lease Notice:

- UT-LN-156 – Pollinators and Pollinator Habitat: All parcels

4. Plant Species

Within the nominated lease parcels, potential habitat of three federally listed plant species were identified: Navajo sedge (*Carex specuicola*), Uinta Basin hookless cactus (*Sclerocactus wetlandicus*) Ute ladies'-tresses (*Spiranthes diluvialis*) discussed in this section.

VII. Navajo sedge (*Carex specuicola*) - Threatened

Parcels 7772, 7824, and 7825 intersect the USFWS AOI for Navajo sedge. There are no known populations within 300 feet of any analyzed parcel. These parcels have potential springs within them or are within 1.25 miles of the parcel that may provide suitable habitat for the species. These habitats are covered by a 100-meter NSO stipulations (UT-S-122 in Moab and UT-S-128 in Monticello). Therefore, there would be no direct loss of suitable habitat from future on-lease development. Existing activities are expected to continue (see Section 3.2).

The implementation of the attached lease notice (T&E-30) which includes habitat assessments, surveys, avoidance of occupied habitat, and additional minimization measures (combined with Section 6 of the standard terms and conditions of the lease) will further reduce potential impacts on Navajo sedge habitat and a detailed analysis of the impacts on Navajo sedge is not warranted.

Lease stipulations:

- UT-S-122: No Surface Occupancy – Floodplains, Riparian Areas, Springs and Public Water Resources: Parcel 7824 and 7772
- UT-S-128: No Surface Occupancy – Floodplains, Riparian Areas: Springs, and Public Water Resources: Parcel 7825

Lease notice:

- T&E-30: Navajo Sedge (*Carex specuicola*): Parcels 7772, 7824, and 7825

VIII. Uinta Basin hookless cactus (*Sclerocactus wetlandicus*) – Threatened

Parcels 1687, 1691, 1789, and 7814 intersect the USFWS AOI for Uinta Basin hookless cactus. Of those parcels, 7814 intersects modeled habitat for the species. Within parcel 7814, there are 0.1 acres of modeled suitable habitat. Based on the disturbance assumptions outlined in Section 3.2 and Appendix J and assuming a random distribution of disturbance relative to the modeled areas, the estimated disturbance to potential habitat would be less than 0.1 acres. This estimated disturbance represents less than 0.1% of the total 507,996 acres of modeled habitat for the species. No populations of Uinta Basin hookless cactus have been identified within the proposed parcels, with the nearest known population located approximately 0.5 miles east of the parcel. Existing activities are expected to continue (see Section 3.2).

The implementation of the attached lease notice (T&E-12) which includes habitat assessments, surveys, avoidance of occupied habitat, and additional minimization measures (combined with Section 6 of the standard terms and conditions of the lease) will further reduce potential impacts on Uinta Basin hookless cactus habitat and a detailed analysis of the impacts on the species is not warranted.

Lease notice:

- T&E-12 Pariette Cactus (*Sclerocactus brevispinus*) and Uinta Basin Hookless Cactus (*Sclerocactus wetlandicus*): Parcels 1687, 1691, 1789, and 7814

IX. Ute ladies'-tresses (*Spiranthes diluvialis*) – Threatened

Forty-six of the nominated parcels intersect the USFWS AOI for Ute ladies'-tresses. The AOI was developed based on a habitat model created by the USFWS. However, the threshold used for classifying habitat is very low (i.e., quite conservative), leading to a significant overestimation of the potential habitat area.

By employing a detrended Modified Soil Adjusted Vegetation Index surface—calculated from the four-band National Agricultural Imagery Program data—it becomes possible to identify areas that qualify as statistical outliers (those exceeding 2 standard deviations) after excluding areas of open water. This approach helps to remove areas that are clearly unsuitable as habitat (including shrublands). Nevertheless, it still overestimates potential habitat because it includes not only wetlands, which are suitable for Ute ladies'-tresses, but also non-suitable habitat regions of higher vegetative productivity, including moister pinyon-juniper woodlands and Gambel's oak woodlands. This remote sensing-based habitat evaluation concludes that 24 of the lease parcels may contain potential habitat for the species. Twenty-one parcels have areas that are not subject to an NSO stipulation that intersect potential riparian or wetland habitats within the AOI for the Ute-ladies' tresses (Table 58).

Table 58. Acres of potential habitat for Ute-ladies' tresses and potential disturbance

Parcel	Acres Habitat Not Subject NSO Stipulation	Acres Potential Disturbance
1678	7.8	0.1
1680	4.2	0.0
1681	0.2	0.0
1691	0.0	0.0
1703	68.6	0.6
1705	1.2	0.0
1715	11.1	0.1
1719	19.0	0.2
1734	1.3	0.0
1765	157.4	1.5
1767	83.6	0.8
1798	0.0	0.0
1799	6.8	0.1
1818	28.1	0.3
7779	0.2	0.0
7781	0.0	0.0
7785	3.3	0.0
7786	0.7	0.0
7793	14.0	0.1
7809	110.3	1.0
Grand Total	518.0	4.9

Based on the disturbance assumptions outlined in Section 3.2. and Appendix J and assuming a random distribution of disturbance relative to the modeled areas, the estimated disturbance to potential habitat would be 4.9 acres. However, direct impacts to these habitats are expected to be limited as lease stipulations are attached to all the lease parcels that establish NSO stipulations on wetlands and riparian area identified at the time of development.

Within 300 feet of lease parcel areas not subject to NSO stipulations are an additional 1,277 acres of potential riparian or wetland habitats. These areas could be indirectly impacted by potential future development of the lease parcel. Existing activities are expected to continue (see Section 3.2).

Given the minimal expected disturbance relative to the available habitat at local, regional, and global scales, along with the implementation of the attached lease notice (T&E-22) and Section 6 of the standard terms and conditions of the lease, a detailed analysis of the impacts on Ute ladies'-tresses is unnecessary.

Lease notice:

- T&E-22 - Ute Ladies'-Tresses (*Spiranthes diluvialis*): 1678, 1680, 1681, 1689, 1691, 1703, 1705, 1715, 1719, 1734, 1765, 1767, 1798, 1799, 1815, 1817, 1818, 7778, 7779, 7781, 7785, 7786, 7793, 7809

AIB 18. Utah BLM Sensitive Species

How would potential development of the nominated lease parcels affect BLM sensitive species or their habitats?

1. Aquatic Animals

There are three sensitive fish species with a Conservation Agreement and Strategy (UDWR, 2006) that occur in the Upper Colorado River Basin, flannelmouth sucker (*Catostomus latipinnis*), bluehead sucker (*Pantosteus discobolus*), and roundtail chub (*Gila robusta*). These species are known to occur in the White River in parcel 1789. The analysis and the stipulations and notices that apply for the T&E fish in the Upper Colorado River watershed provide the same protections to these three species. In addition, UT-LN-49 is applied to this parcel which notifies the lessee that disturbances that would result in disturbance to populations would not be allowed and modifications to the surface use plan of operations may be required. Stipulations and BMPs to address spills are discussed in AIB 22 Water Resources. Due to these notices and the parcels and notices discussed in AIB – 14 Riparian, Wetland, Floodplain habitats, sufficient protections are provided that detailed analysis is not required.

Colorado River cutthroat trout (*Oncorhynchus virginalis pleuriticus*) (CRCT) is managed under a Conservation Agreement and Strategy (CRCT Coordination Team, 2022). This fish occurs in headwater streams in the Upper Colorado River watershed. Parcels that may have CRCT or that could impact CRCT populations include: 1703, 7809, 1767, 1715, and 1674. UT-LN-49 notifying the lessee of sensitive species is applied to these parcels which notifies the lessee that disturbances that would result in disturbance to populations would not be allowed and modifications to the surface use plan of operations may be required. Stipulations and BMPs to

address spills are discussed in AIB 22 Water Resources. Due to these notices and the parcels and notices discussed in AIB – 14 and AIB – 18, sufficient protections are provided that detailed analysis is not required.

Habitat for Great Plains toad (*Anaxyrus cognatus*) occurs in parcels 1662, 1672, 1673, 1674, and 1715. Stipulation UT-S-123 providing a 100 meter NSO buffer from riparian and wetland areas will be applied to these parcels as discussed in AIB 14. This along with UT-LN-49 notifying the lessee of the presence of sensitive species will provide sufficient protection to this species and its habitat that more detailed analysis is not needed.

Additionally, because of these stipulations and notices, the continuation of the reasonably foreseeable trends and future actions in the affected area discussed in Section 3.3– when combined with the implementation of the Proposed Action – would not cause this minimal potential impact on aquatic sensitive species to increase to a level warranting detailed analysis at this stage. Additionally, because of these stipulations and notices, the continuation of the reasonably foreseeable trends and planned actions in the affected area discussed in Section 3.4– when combined with the implementation of the Proposed Action – would not cause this minimal potential impact on aquatic sensitive species to increase to a level warranting detailed analysis at this stage.

Lease Notices:

- UT-LN-49 Utah Sensitive Species: Parcels 1789, 1703, 7809, 1767, 1715, 1674
- UT-LN-53 Riparian Areas: All parcels except 1687 and 7825

Lease Stipulations:

- UT-S-120 No Surface Occupancy – White River Corridor: Parcel 1789
- UT-S-123 No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves: All VFO and VFO RMP parcels.

2. Terrestrial Animals

BLM sensitive species have been identified as those species that require additional conservation to prevent decline of populations to the point where they may be considered for listing under the Endangered Species Act. The BLM has several lease stipulations and lease notices that protect sensitive species statewide. As detailed below, certain leased parcels have been identified as having occurrence, or potential occurrence, of several species of plants or animals that may require modification of surface use plans at the APD stage to avoid disruptive or harmful activities.

The potential development of leased parcels would result in a direct disturbance to sensitive species habitat from the construction of well pads, associated roads, pipelines (above ground and buried), water gathering lines, and powerlines. These developments also create habitat fragmentation by intersecting and occupying habitat. Noise and other human disturbances will occur during all phases of development and production as well as reclamation but will be reduced after the original construction phase. Traffic on roads to construct, maintain and service the facilities may cause possible direct mortalities from collisions with wildlife, and noise and human activity in the area will cause disturbance continually.

Habitat in this area consists of Colorado Plateau Mixed Low Sagebrush, Shrubland Inter-Mountain Basins Big Sagebrush, Shrubland Colorado Plateau Pinyon-Juniper to Woodland Inter-Mountain Basins Mixed Salt Desert Scrub. BLM Sensitive Species were analyzed in brief because of the notices and stipulation attached. The notices let the lessee/producer know the species may be present and what may be required by the site-specific NEPA at the APD stage. The stipulations require action on the identified species. The small amount of direct habitat disturbance that would occur and the applied stipulations and notices are enough to analyze special status species in brief and not detail. Additional terms for development can be applied to the APD, if local analysis determines they are needed.

The potential impacts of future development on BLM sensitive species and their habitats within the affected lease parcels would occur within the broader context of the relevant past, present, and reasonably foreseeable future actions from activities identified in Section 3.3, which includes energy and mineral development, and the conversion of native vegetation communities to agricultural or rural development. Other factors include grazing across all land ownership types, existing transmission powerlines, existing interstate transmission pipelines, paved and unpaved roads, and trends related to habitat loss and fragmentation. However, because of the lease notices, the temporary nature of lease activities that may occur, and the use of COAs, the continuation of the reasonably foreseeable trends and planned actions discussed in Section 3.3 – when combined with implementation of the Proposed Action – would not increase the likely negligible impact on BLM sensitive species to a level that merits detailed analysis at the leasing stage.

Lease Stipulations

- UT-S-218 Moab (Outside of MLP) Vernal Controlled Surface Use- White-Tailed Prairie Dog
- UT-S-261 Vernal Timing Limitation-Raptor Buffers
- UT-S-278 Vernal Controlled Surface Use-Bald Eagle Winter Roost
- UT-S-272 Moab (Outside of MLP) Conditional Surface Use/Timing Limitation- Burrowing Owl and Ferruginous Hawk Nesting
- UT-S-273 Moab (Outside of MLP) Conditional Surface Use/Timing Limitation- Golden Eagle Nesting Sites and Territories
- UT-S-275 Moab, Monticello (Outside of Moab MLP) Controlled Surface use/Timing Limitation-Bald Eagles
- UT-S-298 Moab (Outside of MLP) Conditional Surface Use- Kit Fox
- UT-S-220 Moab (Outside of MLP) Controlled Surface Use-Gunnison Prairie Dog

Lease Notices

- UT-LN-25 Moab, Monticello, Vernal, Price (Outside of Moab MLP) White-Tailed And Gunnison Prairie Dog
- UT-LN-25 White-Tailed and Gunnison Prairie Dog
- UT-LN-44 Statewide Raptors

- UT-LN-45 Statewide Migratory Birds
- UT-LN-156 Statewide Pollinators and Pollinator Habitat
- UT-LN-49 Statewide Utah Sensitive Species
- UT-LN-107 Statewide (Formerly T&E-01) Bald Eagle

Table 59 Terrestrial Sensitive Species Animals

Common Name	Scientific Name	Status	Background / Potential Habitat Occurrence	Lease Parcel ID(s)	Lease Stipulation and/or Notice
BIRDS					
Bald Eagle	<i>Haliaeetus leucocephalus</i>	SPC	In Utah, breeding occurrences are limited. Winter habitat typically includes areas of open water, adequate food sources, and sufficient diurnal perches and night roosts.		UT-LN-107 Statewide (Formerly T&E-01) Bald Eagle UT-LN-44 Statewide Raptors UT-LN-45 Statewide Migratory Birds UT-LN-49 Statewide Utah Sensitive Species UT-S-261 Vernal Timing Limitation-Raptor Buffers UT-S-275 Moab, Monticello (Outside of Moab MLP) Controlled Surface use/Timing

Common Name	Scientific Name	Status	Background / Potential Habitat Occurrence	Lease Parcel ID(s)	Lease Stipulation and/or Notice
					Limitation- Bald Eagles UT-S-278 Vernal Controlled Surface Use- Bald Eagle Winter Roost
Burrowing Owl	<i>Athene cunicularia</i>	SPC	Inhabits desert, semi-desert shrubland, grasslands, and agricultural areas. Nesting habitat primarily consists of flat, dry, and relatively open terrain; short vegetation and abandoned mammal burrows for nesting and shelter. In northeastern Utah, Burrowing Owls nest in desert/grassland habitats and are found in close association with prairie dog colonies. Per GIS review of USGS GAP	1683, 1691, 1696, 1698, 1702, 1742, 1823, 7772, 7781, 7782, 7784, 7785, 7813, 7814, 7823, 7824, 7825, 7826, 7833, 7837	UT-S-261 Vernal Timing Limitation- Raptor Buffers; UT-LN-44 Statewide Raptors; UT-LN-45 Statewide Migratory Bird; UT-LN-49 Utah Sensitive Species
Ferruginous Hawk	<i>Buteo regalis</i>	SS	Occupies lowland desert terrain with cliffs, bluffs, pinyon-juniper woodlands, and desert shrub. Nests on rocky outcrops. Potential habitat in all parcels (GIS/USGS GAP).	1698, 1702, 7772, 7782, 7784, 7824, 7833, 7837	UT-S-261 Vernal Timing Limitation- Raptor Buffers; UT- LN-44 Statewide Raptors; UT- LN-45 Migratory Bird; UT-LN- 49 Utah

Common Name	Scientific Name	Status	Background / Potential Habitat Occurrence	Lease Parcel ID(s)	Lease Stipulation and/or Notice
					Sensitive Species UT-LN-49 Statewide Utah Sensitive Species
Golden Eagle	<i>Aquila chrysaetos</i>	SS	Found in cliff and high desert scrub habitats; nests on cliffs or tall trees (10–100+ ft). Suitable foraging habitat in listed parcels. Potential habitat in all parcels (GIS review).	1680, 1681, 1683, 1698, 1734, 1742, 1823, 1825, 7772, 7779, 7784, 7813, 7824, 7825	UT-S-261 Vernal Timing Limitation–Raptor Buffers; UT-LN-44 Statewide Raptors; UT-LN-45 Utah Sensitive Species UT-LN-49 Statewide Utah Sensitive Species UT-S-273 Moab (Outside of MLP) Conditional Surface Use/Timing Limitation–Golden Eagle Nesting Sites and Territories
Pinyon Jay	<i>Gymnorhinus cyanocephalus</i>	SS	Inhabits pinyon-juniper woodlands, high desert scrublands, and rocky foothills. Closely associated with pinyon pine range.	1662, 1672–1674, 1678, 1680, 1684, 1688–1689, 1698, 1702–1703, 1705, 1715, 1717, 1719, 1734, 1742, 1764–	UT-LN-45 Migratory Bird; UT-LN-49 Utah Sensitive Species

Common Name	Scientific Name	Status	Background / Potential Habitat Occurrence	Lease Parcel ID(s)	Lease Stipulation and/or Notice
				1765, 1789, 1791–1792, 1799, 1808, 1815, 1818, 7772, 7778–7779, 7785–7786, 7793, 7809, 7824–7825, 7830, 7837, 7840	
Lewis' Woodpecker	<i>Melanerpes lewis</i>	SS	Occupies open habitats—pine forests, riparian areas, and pinyon-juniper woodlands. Breeds in ponderosa pine and cottonwood habitats; also found in farmlands and urban areas.	1672 1673 1674 1678 1703 1705 1715 1719 1765 1767 1791 1792 1818 7772 7785 7809 7824 7825	UT-LN-45 Migratory Bird; UT-LN-49 Utah Sensitive Species
Short-eared Owl	<i>Asio flammeus</i>	SS	Inhabits open-country grasslands, marshes, and tundra. Ground-nesting species favoring low vegetation. Potential habitat in listed parcels (GIS/USGS GAP).	1680–1681, 1683–1684, 1687–1689, 1691, 1696, 1698, 1702, 1717, 1734, 1742, 1789, 1798–1799, 1808, 1816– 1817, 1823, 1825, 7779, 7781–7782, 7784, 7786, 7813–7814, 7823, 7826, 7830, 7833, 7837	UT-S-261 Vernal Timing Limitation– Raptor Buffers; UT-LN-44 Statewide Raptors; UT-LN-45 Statewide Migratory Birds; UT-LN-49 Utah Sensitive Species
MAMMALS					
Big Free-tailed Bat	<i>Nyctinomops macrotis</i>	SPC	Found in rocky and woodland habitats; roosts in caves, buildings, and rock crevices. Feeds primarily on moths.	All Parcels	UT-LN-49 Utah Sensitive Species

Common Name	Scientific Name	Status	Background / Potential Habitat Occurrence	Lease Parcel ID(s)	Lease Stipulation and/or Notice
			Potential habitat in all parcels.		
Fringed Myotis	<i>Myotis thysanodes</i>	SPC	Occurs in desert, grassland, and woodland habitats. Roosts in caves, mines, and buildings. Managed under Bat Conservation Plan. Feeds on beetles and other insects.	All Parcels	UT-LN-49 Utah Sensitive Species
Gunnison's Prairie Dog	<i>Cynomys gunnisoni</i>	SS	Per GIS review of USGS GAP data Gunnison's prairie dog habitat is present within the listed parcels. Their habitat consists of grasslands, semidesert and montane shrublands.	7772 7824 7825	UT-LN-45 Utah Sensitive Species UT-LN-25 White-Tailed and Gunnison Prairie Dog UT-LN-25 Moab, Monticello, Vernal, Price (Outside of Moab MLP) White-Tailed And Gunnison Prairie Dog
Kit Fox	<i>Vulpes macrotis</i>	SS	Per GIS review of USGS GAP data, kit fox habitat is present within the listed parcels. Their habitat consists of desert, semi-arid landscapes.	7772 7824 7825	UT-LN-45 Utah Sensitive Species UT-S-298 Moab (Outside of MLP) Conditional Surface Use-Kit Fox
Spotted Bat	<i>Euderma maculatum</i>	SPC	Found from deserts to forested mountains. Roosts and hibernates in caves and rock crevices. Feeds on	All Parcels	UT-LN-49 Utah Sensitive Species

Common Name	Scientific Name	Status	Background / Potential Habitat Occurrence	Lease Parcel ID(s)	Lease Stipulation and/or Notice
			moths captured in flight.		
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	SPC	Found near forested areas; roosts in caves, mines, and buildings. Feeds mainly on moths; often forages near trees.	All Parcels	UT-LN-49 Utah Sensitive Species
White-tailed Prairie Dog	<i>Cynomys leucurus</i>	SPC	Occurs in Uintah Basin and northern Colorado Plateau. All parcels contain colonies or high-probability habitat (GIS/BLM/UDWR data). Important for Burrowing Owl and other species.	1683, 1691, 1696, 1698, 1702, 1742, 1823, 7772, 7781–7785, 7813–7814, 7823–7826, 7833, 7837	UT-S-218 Controlled Surface Use– White-tailed Prairie Dog; UT-LN-25 White-tailed and Gunnison Prairie Dog; UT-LN-49 Utah Sensitive Species
REPTILES					
Smooth Greensnake	<i>Opheodrys vernalis</i>	SGCN	Associated with riparian and wetland habitats. Suitable habitat within one lease parcel.	Not Present	UT-LN-49 Utah Sensitive Species
INSECTS					
Western Bumblebee	<i>Bombus occidentalis</i>	SS	The Western Bumble Bee (<i>Bombus occidentalis</i>) primarily inhabits diverse environments, including forests, meadows, and developed areas, and requires specific conditions for nesting and foraging. Description of potential impacts discussed with	All Parcels	UT-LN-49 Utah Sensitive Species; UT-LN-156 Statewide Pollinators and Pollinator Habitat

Common Name	Scientific Name	Status	Background / Potential Habitat Occurrence	Lease Parcel ID(s)	Lease Stipulation and/or Notice
			Suckley's Cuckoo bumble bee (AIB 17.3.3)		

3. Plant Species

Within the lease parcels, populations of three BLM-sensitive plant species was identified: Barneby catseye (*Oreocarya barnebyi*), discussed in this section, and Graham's penstemon (*Penstemon grahamii*) and White River penstemon (*Penstemon albifluvis*) discussed in Issues Analyzed in Detail (AIB 17).

Based on a desktop review, two additional sensitive species were identified as potentially having habitat within the lease parcels (see Table 60).

The desktop review involved intersecting the General Soil Map of the United States (STATSGO2) soil units (NRCS, 2014) with known plant locations. To ensure all potential habitats were identified, additional STATSGO2 soil units that share soil components with the intersected soil units were also included. Finally, for species that are closely associated with specific geological formations, areas identified using STATSGO2 were refined to those that intersect with the required geological formations.

This identified area can be considered the outer potential bounds of the species' range. However, a comprehensive assessment of suitable habitat—that is, habitats containing the necessary biotic and abiotic components to support the species—has not yet been completed for the majority of BLM-sensitive plant species.

Table 60 Sensitive Plant Species with Potential to Occur within Lease Parcels but Not Present

Species Name	Background and Documentation for Species / Potential Habitat Occurrence in Lease Parcels
<i>Pediomelum aromaticum</i> var. <i>tuhyi</i>	Parcels 7772, 7824, and 7825 intersect STATSGO2 soils associated with <i>Pediomelum aromaticum</i> var. <i>tuhyi</i> . No populations have been identified within the identified lease parcels with the nearest known population approximately 1.5 miles to the south of Parcel 7772
<i>Yucca sterilis</i>	All parcels within Uinta Basin have the potential to support sterile yucca. No confirmed populations have been identified within the parcels

Given the lack of known populations for the above listed species and considering the implementation of the attached lease notices (UT-LN-49 & UT-LN-51) and Section 6 of the standard terms and conditions of the lease, a detailed analysis of these species is not warranted.

Lease Notices:

- UT-LN-49 - Utah Sensitive Species: All Nominated Parcels with BLM Surface
- UT-LN-51 – Special Status Plants: Not Federally Listed: All Nominated Parcels with BLM Surface

1. Barneby's cryptantha (*Oreocarya barnebyi*)

Parcels 1680, 1705, 1765, 1798 (non-federal surface not subject to BLM sensitive species management), 1810, 7785, and 7786 have known locations of Barneby's catseye. Parcels 1808, 1815, and 7779 are within 300 feet of known locations and contain occupied habitat for the species. Additionally, parcels 1662, 1672, 1674, 1678, 1681, 1684, 1689, 1703, 1715, 1717, 1719, 1734, 1767, 1789, 1791, 1792, 1799, 1816, 1817 (non-federal surface not subject to BLM sensitive species management), 1818, 7778, 7793, 7809, 1683, 1687, 1688, 1698, 1823, 1825, 7840 intersect both STATSGO2 soils associated with Barneby's catseye and are found on the Green River Formation.

Using a 2-kilometer separation distance to delineate subpopulations, across the range of the species there are 39 subpopulations with 1,610 acres of habitat within 300 feet of a known occurrence within Utah.

Within the project area, seven subpopulations intersect a parcel with a total of 589 acres of occupied habitat (Table 61).

Table 61. Acres and Estimated Disturbance (in Parathesis) of Barneby's Cryptantha Occupied Habitat by Subpopulation

Parcel	4	10	16	17	24	26	27	Grand Total
1680				25.9 (0.2)			13.0 (0.1)	38.9 (0.4)
1705						6.5 (0.1)		6.5 (0.1)
1765			25.9 (0.2)					25.9 (0.2)
1808	251.6 (2.4)							251.6 (2.4)
1810	251.6 (2.4)							251.6 (2.4)
7785					8.1 (0.1)			8.1 (0.1)
7786		6.5 (0.1)						6.5 (0.1)
Outside of Parcels	251.6	0.0	25.9	25.9	8.1	0.0	13	324.5
Grand Total	754.8 (4.7)	6.5 (0.1)	51.8 (0.2)	51.8 (0.2)	16.2 (0.1)	6.5 (0.1)	25.9 (0.1)	913.5 (5.5)

Using the foreseeable disturbance assumptions in Appendix J, 5.5 acres of occupied Barneby's catseye habitat would be directly impacted by the development, representing between 0.5 and 0.3% of occupied habitat of the intersecting subpopulations and 1.2% of the occupied habitat across the range of the species on BLM. Given the requirements to perform surveys and avoid individuals where feasible, it is expected that impacts to occupied habitat at the lease development stage would be less than those presented.

Given the low expected disturbance relative to the available habitat and considering the implementation of the attached lease notices (UT-LN-49 & UT-LN-41) and Section 6 of the standard terms and conditions of the lease, a detailed analysis of the impacts on Barneby's catseye is not warranted.).

Lease Notices:

- UT-LN-49 - Utah Sensitive Species: All Nominated Parcels with BLM Surface
- UT-LN-51 – Special Status Plants: Not Federally Listed: All Nominated Parcels with BLM Surface

AIB 19. Vegetation Communities

How would potential development of the nominated lease parcels affect terrestrial vegetation communities and the animals that use them as habitat?

Using the foreseeable disturbance assumptions in Section 3.4 and Appendix J, potential development of the parcels could result in new surface disturbances and the potential loss of vegetation over approximately 793.5 acres of the total 71,586.52. Any activities that involve surface disturbances or direct impacts to resources would need to be authorized as lease operations requiring additional site specific NEPA analyses during the APD stage. Reclamation provisions and procedures, including re-vegetation with an appropriate seed mix based on ecological site, elevation, and topography, would be included in the APD analysis. Terrestrial upland vegetation within the parcels is dominated by globally and regionally common native vegetation communities including Southern Rocky Mountain two-needle pinyon – One-Seed juniper, Great Basin & Intermountain tall sagebrush shrubland & steppe, and Great Basin saltbush scrub. Estimates of native vegetation types (National Vegetation Classification Macro-Groups) represented within the parcels are presented in Table 62: National Vegetation Classification (NVC) Macro-Group Acres¹ within Parcels (LANDFIRE, 2016).

Table 62: National Vegetation Classification (NVC) Macro-Group Acres¹ within Parcels

Macro-Group	GIS Acres	Estimated Disturbance Acres	Percent Disturbed Within Parcels	Percent Disturbed within Encompassing Watersheds
Southern Rocky Mountain Two-needle Pinyon - One-seed Juniper Woodland	23,635.2	299.9	1.3%	0.0%
Great Basin & Intermountain Tall Sagebrush Shrubland & Steppe	17,089.5	171.1	1.0%	0.0%
Great Basin Saltbush Scrub	11,550.1	111.9	1.0%	0.0%
Western North American Cool Semi-Desert Ruderal Scrub & Grassland	3,596.1	37.5	1.0%	0.0%
Great Basin & Intermountain Dwarf Sagebrush Shrubland & Steppe	3,559.7	34.2	1.0%	0.0%

Macro-Group	GIS Acres	Estimated Disturbance Acres	Percent Disturbed Within Parcels	Percent Disturbed within Encompassing Watersheds
Recently Disturbed or Modified	2,388.2	22.5	0.9%	0.2%
Intermountain Basins Cliff Scree & Badland Sparse Vegetation	2,304.1	25.6	1.1%	0.0%
Great Basin & Intermountain Dry Shrubland & Grassland	2,195.4	22.2	1.0%	0.0%
Southern Rocky Mountain Montane Shrubland	1,825.1	28.3	1.6%	0.1%
Southern Rocky Mountain Lower Montane Forest	1,394.5	17.9	1.3%	0.0%
Western North American Temperate Cliff Scree & Rock Vegetation	664.6	6.9	1.0%	0.0%
Intermountain Singleleaf Pinyon - Utah Juniper - Western Juniper Woodland	428.6	4.1	1.0%	0.0%
Permanent Pasture & Grass Hay Field ²	213.1	2.0	0.9%	0.0%
Developed-Roads	110.0	1.0	0.9%	0.0%
Interior West Ruderal Flooded & Swamp Forest	103.0	1.0	0.9%	0.0%
Shrub & Herb Developed Vegetation ²	75.7	0.7	0.9%	0.0%
Rocky Mountain & Vancouverian Subalpine-High Montane Mesic Meadow	63.2	0.7	1.1%	0.0%
Southwest Riparian Forest	48.9	0.5	1.0%	0.0%
Rocky Mountain & Great Basin Montane Riparian Forest	42.7	0.5	1.1%	0.0%
Warm & Cool Desert Alkali-Saline Wetland	40.8	0.4	0.9%	0.0%
Western North American Ruderal Grassland & Shrubland	39.9	0.5	1.1%	0.0%
Quarries-Strip Mines-Gravel Pits-Energy Development	37.3	0.4	1.1%	0.0%
Developed-Low Intensity	31.4	0.3	0.9%	0.0%
Rocky Mountain Subalpine-High Montane Conifer Forest	21.9	0.7	3.3%	0.0%
Western North American Montane-Subalpine Wet Shrubland & Wet Meadow	17.8	0.2	1.0%	0.0%

Macro-Group	GIS Acres	Estimated Disturbance Acres	Percent Disturbed Within Parcels	Percent Disturbed within Encompassing Watersheds
Developed-Medium Intensity	15.5	0.1	0.9%	0.0%
Central Rocky Mountain Montane-Foothill Grassland & Shrubland	9.7	0.1	0.9%	0.0%
Arid West Interior Freshwater Emergent Marsh	8.1	0.1	0.9%	0.0%
Close Grain Crop ²	7.6	0.1	1.1%	0.0%
Open Water	3.9	0.0	1.0%	0.0%
Corn Crop ²	3.3	0.0	0.9%	0.0%
Western North American Ruderal Wet Shrubland Meadow & Marsh	2.7	0.0	1.1%	0.0%
Fallow Field ²	2.2	0.1	2.6%	0.0%
Tree Developed Vegetation ²	0.9	0.0	0.9%	0.0%
Grand Total	71,530.5	791.5	1.1%	0.0%

¹Landfire Products are developed from remote sensed data and the classification is best suited for large-scale planning and data should be considered as representative of the habitat present but not exact.

²Very likely habitat types that are miscategorizations

Animal community composition is correlated with the composition and structure of vegetation communities. Therefore, impacts associated with future development are expected to align with trends observed in vegetation communities. Various wildlife species inhabit the impacted vegetation communities, including rodents (e.g., mice, voles, kangaroo rats), jackrabbits, foxes, coyotes, and reptiles such as snakes and lizards. A wide variety of insect species from numerous orders, including pollinators, are also present in this ecotype. All wildlife species play roles in various food webs as either predators or prey, and direct habitat loss could decrease the prey base for raptors, which rely on rabbits, mice, and prairie dogs. Additionally, a decline in insect diversity and abundance may reduce the prey base for bats and lead to a decrease in pollinators for plant communities. Additional information on Wildlife is discussed in AIB 7, AIB 17.2, AIB 17.3, AIB 18.2, and AIB 24.

The potential impacts to various vegetation communities are highly dependent on the siting of facilities during the APD stage. Based on the analysis assumptions in Section 3.2 and Appendix J, the median percentage of disturbance to vegetation communities at the lease spatial scales would be 1.0% and at watershed level scale would be less than 0.05% assuming random disturbance distribution. Given the low level of disturbance to vegetation communities when placed in the watershed and landscape context, a detailed analysis of the impacts on vegetation communities is not warranted.

AIB 20. Visual Resources

How would potential development of the nominated lease parcels affect the visual landscape?

Management objectives for VRM Class 2 are to retain the existing character of the landscape and allow a low level of change that should not attract the attention of a casual observer.

Management objectives for VRM Class 3 allow for a moderate degree of change or visual contrast with the landscape. Management activities may attract the attention of the casual observer but should not dominate the view of the casual observer. The management objective for VRM class 4 is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. Management activities may dominate the view and may be the major focus of viewer attention. However, in all VRM Classes, the impact of these activities should be minimized through careful siting, minimal disturbance, and repeating the basic elements of form, line, color, and texture within the existing setting (BLM 2024). Lease parcels 1662, 1672, 1673, and 7830 are fully within Visual Resource Management (VRM) Class 2 and parcels 1689 is within VRM Class 2 and 3, and parcel 1789 is within VRM Class 2 and 4. Lease parcel 1674, 1678, 1680, 1684, 1698, 1702, 1703, 1705, 1715, 1717, 1719, 1734, 1742, 1742, 1765, 1767, 1791, 1792, 1799, 1808, 1810, 1815, 1818, 7778, 7779, 7785, 7786, 7793, 7809, 7813, 7823, 7833, and 7840 are located within VRM Class 3. Lease parcels 1681, 1683, 1687, 1688, 1691, 1696, 7814, 7824, 7825, 7826, 1789, 7781, 7782, 1816, and 823 are located within VRM Class 4. Lease parcels 1688, 7784, 7837, and 1825 are within VRM Class 3 and 4, and parcel 7772 is within VRM class 2, 3 and 4 though mostly with VRM Class 2. Parcels 1798 and 1817 have no VRM class since they are on private and state surface.

The lease parcels are located within areas that have variations in the topographic relief and landform, line, texture, and color. These types of variations in the landscape create screening and break up the visual contrast of structures on the landscape. Typically, if the landform has topographic relief the casual observer will only see structures for a short period of time while traveling along roads within the vicinity of the structures, which are the main observation points within these lease parcels. For these reasons, potential changes or visible contrast with the form, line, texture, and color of the characteristic landscape are likely to be low for these lease parcels and would meet the prescribed objectives for VRM management. VRM resources will also be analyzed at the APD stage.

Approximately 70% of the lease parcel acres are within a timing limit/controlled surface use area (UT-S-157) which would restrict the construction of facilities and infrastructure that would impact the visual resources. Controlled Surface Use (CSU) stipulations limit visual impacts by regulating where, how, and when surface activities occur. By requiring facilities such as roads, well pads, and transmission lines to be sited away from visually sensitive areas (e.g., ridgelines, scenic corridors, foreground viewsheds), CSU ensures that landscape changes remain within the acceptable thresholds established for each Visual Resource Management (VRM) class. For these reasons, potential changes or visible contrast with the form, line, texture, and color of the characteristic landscape are likely to be low with the RFD for lease parcels and would meet the prescribed objectives of the VRM Classes in which they reside. Site-specific mitigation practices may be required to minimize visual impacts, such as properly chosen paint color and low-profile equipment that allows long term facilities to blend in with the natural landscape. However, these would be decided at the time an APD is approved.

Lease Stipulations:

- UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitations – Visual Resources

AIB 21. Water Resources (Groundwater and Surface water)

How would potential development of the nominated lease parcels affect groundwater and surface water quality and quantity?

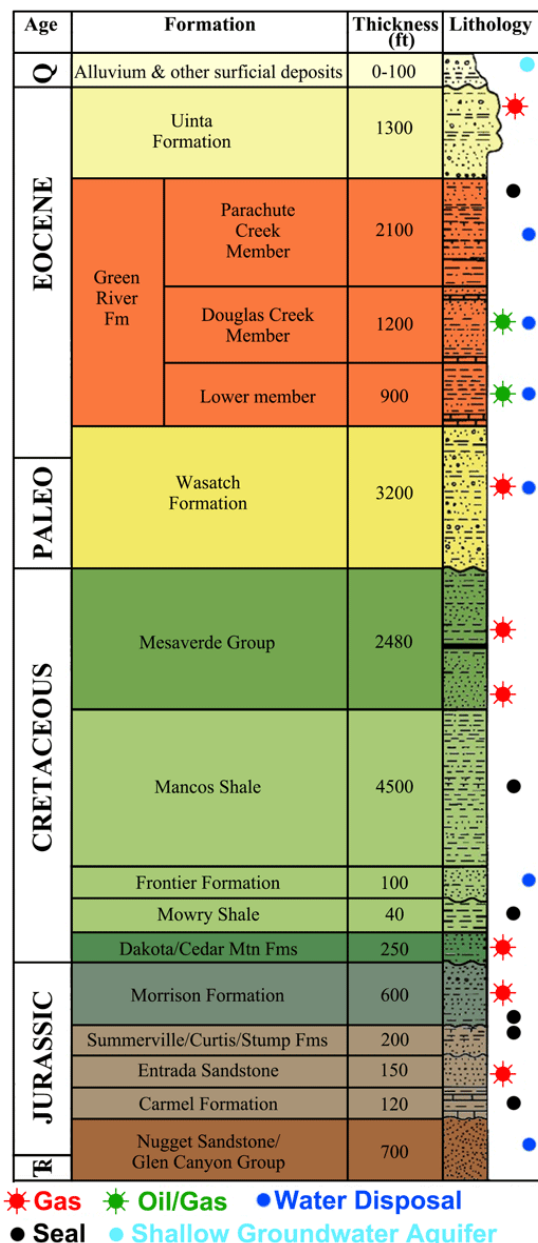


Figure 1 (Utah Geological Survey, 2017)
Modified from Hintze and Kowallis (2009),
Geologic History of Utah.

Surface and Groundwater Background Needs/Uses

Water is necessary during the drilling, completion, production, and reclamation phases of development to varying degrees. Sources obtained from aquifers and surface water could result in the drawing down of the water table and reduction of available water resources for wildlife, vegetation, springs, streams, or public consumption. High volume long-term withdrawal could potentially affect local groundwater flow patterns and water levels of aquifers. Principal aquifers in the Colorado Plateau region are sandstone aquifers. In sandstone aquifers, groundwater moves along bedding planes, through cracks, and within pore spaces in the rock. While water does not flow as easily through sandstone as it can through unconsolidated gravel or sand, sandstone aquifers can still yield large amounts of groundwater. Primary, secondary, and tertiary aquifers containing useable water in the lease parcel area, within the Colorado River watershed, area consist of portions of the Glen Canyon Group Triassic-Jurassic age (Windgate, Kayenta, Navajo/Nugget Sandstone, Entrada), Cretaceous (Cedar Mountain and Dakota, Cocino-DeChelly), and Uintah Formations and other shallow unconfined aquifers. Refer to (Utah Geological Survey, 2017) for a full detailed geologic description of aquifers of the area.

Major rivers in the lease parcel area are the White, Green, and Colorado Rivers and their tributaries. Surface water withdrawal impacts river and stream elevations, and other beneficial surface water uses and users within each watershed. Water needs for drilling and completion activities vary throughout

the state with greater demand use for mining purposes in areas with extensive oil and gas development.

Within the Uintah Basin, where most of the parcels are located, extensive drilling for gas in tight sandstones in the eastern part of the Uintah Basin enhanced oil recovery (EOR) programs, called waterflooding recovery, creates a need for water. This process involves injecting oil-bearing sandstone reservoirs with water to push remaining oil towards producing wells to increase recovery. Waterflooding (EOR) projects use a variety of freshwater and recycled produced water, which creates additional demand for freshwater supplies. Compatible produced water from gas wells has also increasingly been transported to oil fields undergoing EOR. As of 2018, about 60 percent of the produced water in the Uintah Basin is injected via wells into porous rock at a sufficient depth as to not cause contamination of shallow freshwater aquifers (Utah Geological Survey, 2017) refer to Figure 1 for specific producing and disposal formations. Reinjection of excess produced water is a common practice in other areas of Utah per DOGM records. The amount of water used depends on the rock formation, the operator, whether the well is vertical or horizontal, and the number of portions (or stages) of the well that are fractured. There is a high degree of variability in quantities of water needed for drilling operations. Estimates include water needed for all aspects of oil and gas development and production including dust suppression. Water usage varies based on whether the well is horizontal or vertical and can be decreased if water recycling techniques are used. Vertical well water use can range from 3-15 ac/ft per well and horizontal from 11-59 ac/ft per well. The potential development of lease parcels would result in estimated water usage of 238,431,749 bbls for lease parcels in VFO and 8,461,484 bbls for the lease parcels in MbFO and 445,368 bbls in MtFO as outlined in Table 4 and Table 5 in Section 3.2.1

The amounts of total water depletions are also highly variable because much of the water that is produced is a byproduct and is often recycled from or reused for other nearby operations depending on local conditions. Surface waters and produced waters are typically used for dust suppression along routes during operational periods and these sources and associated water rights are presented and analyzed for water use conflicts at the APD stage. Water that is not re-injected or reused is disposed of via rubber lined evaporation ponds or transported to approved commercial disposed facilities.

Large volumes of produced saline water are typically disposed of by several techniques as shown in Figure 2.

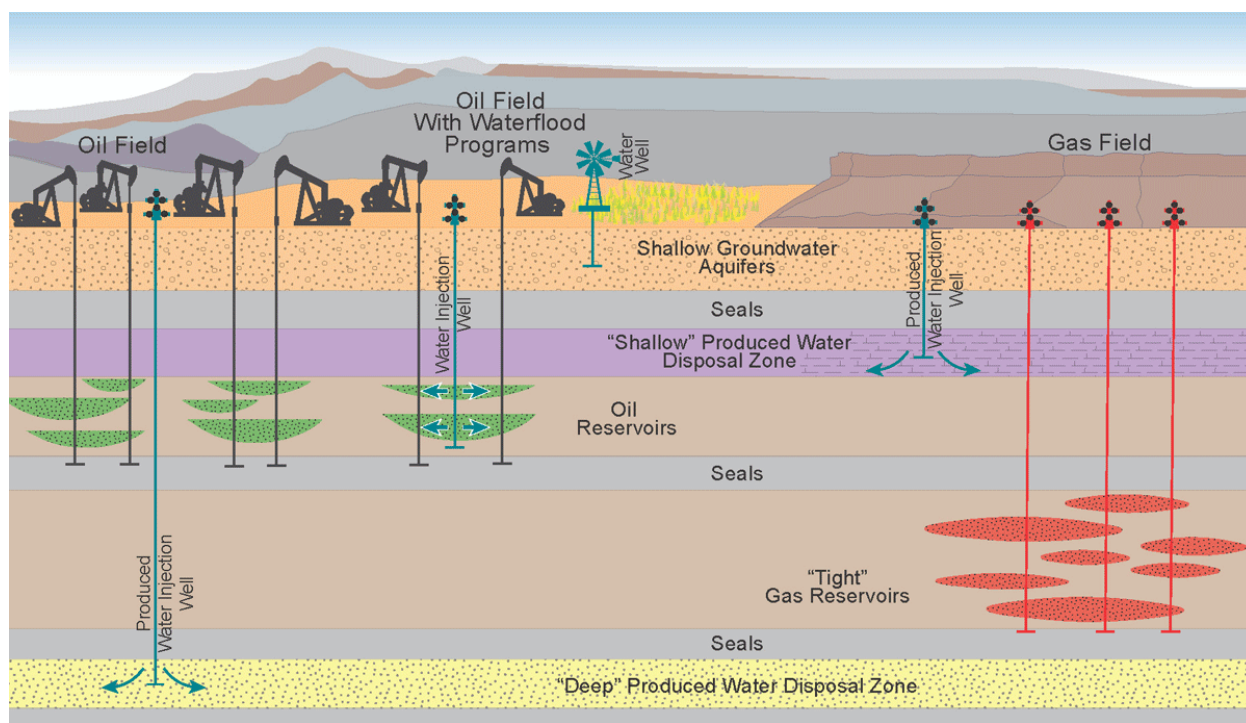


Figure 2 (Utah Geological Survey, 2017). Schematic diagram showing oil and gas wells and hypothetical zones to dispose of the produced water.

The amounts of depletion from these sources are based on several factors such as re-injection, re-use, disposal, evaporation, or circulation based on types of open or closed loop drilling systems. Depletion amounts within the Colorado River watersheds are subject to the Colorado River Endangered fish recovery program fees and rules. The Utah Division of Water Rights manages the water rights necessary for each phase of development and is responsible for the adjudication and allocation of water uses throughout the state with considerations for impairment to other water users. Surface and groundwater needed to support drilling, production, and reclamation phases of developed leases would be from state permitted sources. Site specific potential groundwater and surface water impairment issues are identified at the APD stage when adjacent water users, sources, and volumes are identified. The source, volume of water, and transportation methods involved are identified in the surface use plan at the APD stage per 43 CFR 3170 Subpart 3171. This requires the submission of a drilling plan and surface use management plan where the source and transportation of project water is identified. The disposal of produced water is regulated by CFR 3170 subpart 3177. This section was analyzed in brief because site-specific SOPs, BMPs, COAs, and lease stipulations attached to each lease parcel would minimize impacts from the Proposed Action to surface and groundwater resources because surface disturbing activities would occur outside of areas where surface water is present (which influences groundwater), refer to UT-S-123 in Appendix C for further details. The overall depletion amount would be based on percentages of water re-used or reinjected at various stages of development and is unknown at this stage. Basin wide potential demand on water resources information is presented in this section. This section has been analyzed in brief because detailed analysis at this stage would be speculative beyond a basin level. These required volumes when

compared to other beneficial uses and volumes in all the water basins and do not necessitate a detailed analysis at this stage. Potential site-specific impacts relating to future authorizations would be reviewed and possibly analyzed in detail when an APD is received.

Surface Water Quantity

Surface water demands from similar activities within the basin require water for the use of drilling, development and dust suppression along routes which are typically obtained from municipal sources or through a temporary change application on valid existing water rights. Surface water sources typically include rivers, streams, or canals that are in proximity to potential development areas.

Since 2000, the Colorado River Basin (Basin) has been experiencing a historic, extended drought, increase in average daily temperatures, all of which has impacted regional water supply and other resources, such as hydropower, recreation, and ecologic services. The Palmer Drought Severity Index (PDSI) (Figure 2) includes BLM Utah managed lands over the lease parcel areas. The PDSI uses readily available temperature and precipitation data to estimate relative dryness. It is a standardized index that generally spans -10 (dry) to +10 (wet) (Climate Engine, 2025). Additional stress on other water sources and users in the basin would be increased during extended times and increased of hydrologic drought.

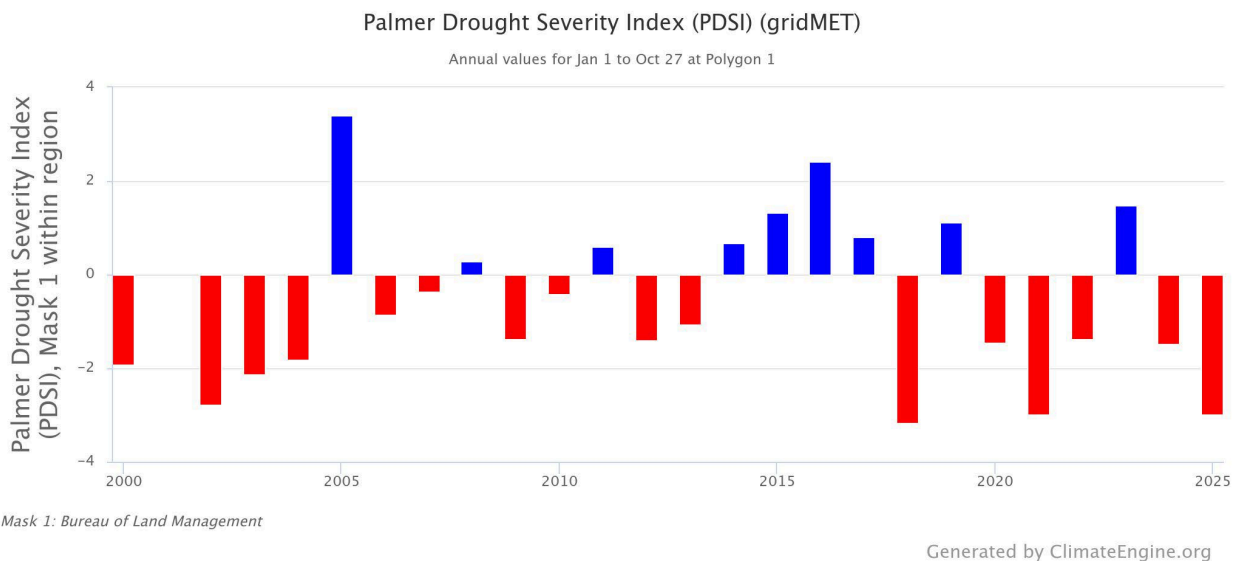


Figure 2 (Climate Engine, 2025)

The Utah Division of Water Rights (UDWRi) is the regulatory agency responsible for the approval of water rights and water right applications to support sustainable yield for each basin for the protection of existing water beneficial uses. For specific water rights policy for each area refer to the Water Rights Policy Map (Utah Division of Water Rights, 2025).

Water sources used for drilling, production, and reclamation would be from state permitted sources with valid water rights. Water supply necessary for drilling, production, and reclamation

would likely originate from local sources and cause additional demand and depletion from effected water basins. For lease parcels within the Colorado River Basins, the Colorado River Recovery and San Juan Recovery programs water depletion fees apply for larger depletions occurring in the river with a post 1988 priority. See AIB 18 for further details. Valid permits and supporting water rights for these activities, if necessary, that involve these beneficial uses are verified and analyzed for potential impacts to public and other adjacent water rights prior to approval and analyzed in detail at the APD stage.

Water Quality (Surface and Ground)

The BLM has reviewed the lease parcels as related to assessed watersheds per the 2024 DEQ water quality 305b report (Table 63). Estimated ground disturbances from lease development would likely create increased sedimentation from sheet flow and other erosional processes due to increased bare ground following significant storm events and during snowmelt runoff periods. To minimize erosion and soil loss from sloped areas, site-specific SOPs, BMPs, COAs, and lease stipulations are attached to each lease parcel based on soil and slope characteristics within the lease parcel. These protective measures would minimize impacts from the Proposed Action to surface water resources because surface disturbing activities would occur outside of riparian and wetland areas where surface water and is present. Minor erosional effects would be limited to upland areas where surface disturbance occurs. Other necessary development activities with potential impact on surface water, such as stream crossings and culvert installations would be designed per BLM standards with existing SOPs and BMPs to minimize amounts of erosion, sedimentation, and stormwater runoff to the maximum extent possible. Surface water resources would not be impacted to the degree that requires detailed analysis in the EA.

Per and Polyfluoroalkyl (PFAS) “forever chemicals” and their presence within the oil and gas industry and near production sites and within produced water is currently being studied by the USGS, EPA, academia and industry. Utah currently does not have PFAS specific regulations for water quality.

Table 63 Utah Department of Water Quality Beneficial Use Classification and EPA Assessment Category Surface Waters

Beneficial Use Sub Classification (UAC R317-2-6)	Use Definition
1	Drinking Water
2A	Primary Contact Recreation (swimming, rafting, kayaking)
2B	Infrequent Primary Contact Recreation (such as wading, hunting, fishing)
3A	Cold Water Fishery/Cold Water Aquatic Life
3B	Warm Water Fishery/Warm Water Aquatic Life
4	Agriculture/Irrigation

EPA Assessment Category	Assessment Category Description
1	Supporting all beneficial uses
2	No Evidence of Impairment.
3	Insufficient Data and/or Information
4A	TMDL Approved
4B	Pollution Control
4C	Non-Pollutant Impairment
5	Not Supporting

Table 64 - Parcels within watersheds Assessment Units/Classifications/Description (2024 DEQ 305b list)

Bitter Creek Lower Use Class 3A (Cold Water Fishery/Aquatic Life): Temperature, Dissolved Oxygen, Selenium; Use Class 4 (Agriculture - crop irrigation, stock watering): Boron, Total Dissolved Solids (TDS) 5: TMDL Required (Impaired 303d list) UT-2026-03-1681 UT-2026-03-1683 UT-2026-03-1687 UT-2026-03-1823 Bitter Creek Upper Use Class 3A (Cold Water Fishery/Aquatic Life): Temperature; Use Class 4 (Agriculture - crop irrigation, stock watering): Total Dissolved Solids (TDS) 5: TMDL Required (Impaired 303d list) UT-2026-03-1703 UT-2026-03-1705 UT-2026-03-1719 UT-2026-03-1765

UT-2026-03-1767

UT-2026-03-1791

UT-2026-03-1792

UT-2026-03-7778

UT-2026-03-7785

UT-2026-03-7793

UT-2026-03-7809

Duchesne River-1

Use Class 2B (Infrequent Primary Contact Recreation): E. coli; Use Class 4 (Agriculture - crop irrigation, stock watering): Total Dissolved Solids (TDS)

5: TMDL Required (Impaired 303d list) and 4A: TMDL Approved (Impaired)

UT-2026-03-7823

Evacuation Creek

Use Class 3B (Warm Water Fishery/Aquatic Life): Temperature; Use Class 4 (Agriculture - crop irrigation, stock watering): Total Dissolved Solids (TDS), Boron

5: TMDL Required (Impaired 303d list)

UT-2026-03-1680

UT-2026-03-1684

UT-2026-03-1688

UT-2026-03-1705

UT-2026-03-1734

UT-2026-03-1791

UT-2026-03-1792

UT-2026-03-1799

UT-2026-03-7779

UT-2026-03-7785

UT-2026-03-7786

Green River-2 Tribs-2

Use Class 1C (Domestic/Drinking Water Source): E. coli; Use Class 2A (Frequent Primary Contact Recreation): E. coli; Use Class 2B (Infrequent Primary Contact Recreation): E. coli

5: TMDL Required (Impaired 303d list)

UT-2026-03-7823

Green River-2 Tribs-4

Use Class 1C (Domestic/Drinking Water Source): E. coli; Use Class 2A (Frequent Primary Contact Recreation): E. coli

5: TMDL Required (Impaired 303d list)

UT-2026-03-7837

UT-2026-03-7840

Kane Spring Wash

Use Class 3C (Non-game Fishery/Aquatic Life): Temperature; Use Class 4 (Agriculture - crop irrigation, stock watering): Total Dissolved Solids (TDS)

5: TMDL Required (Impaired 303d list)

UT-2026-03-7772

UT-2026-03-7824

UT-2026-03-7825

Sweetwater Creek

No Impairments

2: Supports all assessed uses

UT-2026-03-1678

UT-2026-03-1815

UT-2026-03-1818

UT-2026-03-7778

White River

No Impairments

1: Supports all designated uses

UT-2026-03-1680

UT-2026-03-1683

UT-2026-03-1684

UT-2026-03-1687

UT-2026-03-1689

UT-2026-03-1691

UT-2026-03-1696

UT-2026-03-1698

UT-2026-03-1702

UT-2026-03-1719

UT-2026-03-1742

UT-2026-03-1789

UT-2026-03-1798

UT-2026-03-1816

UT-2026-03-1817

UT-2026-03-1825

UT-2026-03-7781

UT-2026-03-7782

UT-2026-03-7784

UT-2026-03-7785

UT-2026-03-7786

UT-2026-03-7813

UT-2026-03-7814

UT-2026-03-7826

UT-2026-03-7830

UT-2026-03-7833

UT-2026-03-7837

UT-2026-03-7840

Willow Creek

Use Class 3A (Cold Water Fishery/Aquatic Life): Temperature; Use Class 4 (Agriculture - crop irrigation, stock watering): Boron, Total Dissolved Solids (TDS)

5: TMDL Required (Impaired 303d list)

UT-2026-03-1674

UT-2026-03-1715

UT-2026-03-1717

UT-2026-03-1808

UT-2026-03-1810

Willow Creek Upper

No impairments

2: Supports all assessed uses

UT-2026-03-1662

UT-2026-03-1672

UT-2026-03-1673

UT-2026-03-1674

UT-2026-03-1715

Water Quality Protection

Primary aquifers within the Colorado River basin consist of shallow basin fill types and sandstone bedrock aquifers that generally have useable water less than 10,000 TDS. Older, deeper groundwater generally contains more salts and minerals than groundwater that is closer to the land surface. Within the Colorado Plateau, much of this deeper groundwater is saline and not suitable to drink or use for agriculture without significant treatment.

The BLM has reviewed the lease parcels for proximity of Sole Source Aquifers or Public Drinking Water Source Protection Zones as designated and delineated by the U.S. Environmental Protection Agency (EPA) and State of Utah Division of Drinking Water. Lease parcels that have been identified within these protection zones have a lease notice and or stipulation attached. Refer to UT-LN-56 and UT-LN-58 in Appendix C for further details. There are no lease parcels within this Lease Sale within delineated groundwater source protection zones. No EPA sole source aquifers were identified that intersect the lease parcels.

Development of the parcels causes inherent risks from drilling operations to water and water quality. Potential risks to human health and the environment are from water contamination and potential ground water pollution which can occur through various means such as accidental spills, well bore drilling operations, and potential hydraulic fracturing chemicals and fluid migration if rules and procedures are not followed. For these reasons regulatory and protection

measures for surface and ground water protection zones are presented. Underground Injection Control (UIC) regulations mandate the consideration of a variety of measures to assure that injection activities will not endanger underground sources of drinking water (USDWs). The concept of endangerment is defined in federal code of regulations (40 CFR 144.12). Section 144.12 (a) explains the prohibition of movement of fluid into underground sources of drinking water: No owner or operator shall construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 142 or may otherwise adversely affect the health of persons. (United States Environmental Protection Agency, 2025).

There are 3 VFO parcels within Surface Water Zone 2. In Utah, the Surface Water Zone 2 rules are governed by the Utah Safe Drinking Water Act and the Utah Administrative Code (UAC) Rule R309-605. Zone 2 is defined as the area from the end of Zone 1, an additional 50 miles upstream, and 1000 feet on each side measured from the high-water mark of the source.

There are 25 VFO parcels within surface water zone 3.

All the VFO parcels are within the Zone 4 surface drinking water area, which is an area upstream from a public water supply intake to the extent of the watershed boundary above the Green River Intake per Utah Division of Drinking Water Source Protection rules. UT-LN-56 Drinking Water Source Protection Zone is applied to all Vernal FO lease parcels due to them being in Zone 4.

The BLM also reviewed the lease parcels for potential water rights for potential water quality degradation or quantity impairment. Per State of Utah Anti-Degradation policy (UAC R317-2-3) water quality must continue to be acceptable to meet the beneficial uses of the water right under all conditions (State of Utah, 2023).

BLM Utah reviews for groundwater quality protection for oil and gas leasing, exploration and development are outlined in Instruction Memorandum (IM) No. UT 2010-055: Protection of Ground Water Associated with Oil and Gas Leasing, Exploration and Development- Utah BLM (BLM, 2010). The purpose of this IM is to clarify the process for the protection or isolation of usable ground water zones (< 10,000 mg/L as defined in 43 CFR 3172) associated with oil and gas exploration and development activities. The downhole intervals of formations containing usable water would be fully cased and cemented to prevent co-mingling of water. Well casings would be pressure tested to ensure long-term integrity throughout the life of the well. The appropriate selection of casing materials and cementing schedule is required and reviewed by the BLM, for the prevention of intermixing or water quality degradation of identified usable water formations. Prior to approving an APD, the BLM would conduct hydrologic and engineering reviews on all proposed down-hole activities, including hydraulic fracturing (if proposed) to ensure that usable water zones will be protected or isolated by the casing and cementing plan. All appropriate regulatory and mitigation measures would be included in any approved APD, and all potential impacts would be identified and addressed during the site-specific NEPA process.

In the event of an oil spill or other undesirable event any potential risks to surface and ground water quality, BLM requires a Notice to Lessees 3A (NTL-3A), 44 Fed. Reg. 2205 (Jan. 10,

1979) requires oil and gas operators on public lands to provide notification to the BLM FO within 24 hours and to follow this notification with a written report within 15 days.

The site-specific SOPs, BMPs, COAs, and lease stipulations attached to each lease parcel would minimize impacts from the Proposed Action to surface water resources because surface disturbing activities would occur outside of riparian and wetland areas where surface water is present. Surface water resources would not be impacted to the degree that requires detailed analysis in the EA and would continue to support designated uses.

While there are no specific BLM Utah water quality specific notices or stipulations, the buffers on surface occupancy in riparian areas and floodplains and stipulations for sloped areas where higher amounts of run-off are expected, will result in protection of surface water quality by minimizing sediment inputs and other water quality contaminants within the lease parcels. Slight increases in surface runoff volume from disturbed areas such as any required new roads, pads, and other disturbance would likely occur.

The Utah Division of Water Quality requires a construction storm water permit if the development activities (industrial or construction) result in a discharge of a reportable quantity release or that contribute pollutants to a violation of a water quality standard. All activities that may contribute to degradation of water quality is subject to State of Utah water quality anti-degradation laws and reviews. No adverse impacts to drinking water sources would occur provided that proper drilling, casing, and cementing procedures as outlined in state and federal regulations are followed to protect the integrity of bore holes and underlying geologic units.

Lease Stipulations:

- UT-S-122 No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves: Parcels 7772 and 7824
- UT-S-123 No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves: All VFO and VFO RMP parcels

Lease Notices:

- UT-LN-56 Drinking Water Protection Zone All VFO Parcels
- UT-LN-57 Public Water Reserves Parcel 1662

AIB 22. Wild and Scenic Rivers (WSR)

How would potential development of the nominated lease parcels impact wild and scenic rivers?

Several lease parcels in the project area occur within the corridors of several rivers determined through BLM planning to be eligible for designation under the Wild and Scenic Rivers Act (WSRA) of 1968. The evaluation of a river(s) for possible inclusion under the WSRA follows a three-step process: (1) determination of eligibility, (2) tentative classification (wild, scenic, or recreational), and (3) determination of suitability. The inventory criteria for eligibility are as follows: the river must be free flowing and, with its adjacent land area, possess one or more outstandingly remarkable values, including scenic, recreational, geological, fish and wildlife, historical, cultural, or other similar values. Other values that may be considered include, but are

not limited to, ecological, biological or botanical, paleontological, hydrological, traditional cultural uses, water quality, and scientific values. The tentative classification of a river found to be eligible is based on the condition of the river and the adjacent lands as they exist at the time of the study. The WSRA specifies and defines three classification categories for eligible rivers: wild, scenic, and recreational. Each eligible river segment must be further evaluated to determine whether it is suitable for inclusion under the WSRA. The suitability analysis provides the basis for determining which rivers to recommend to Congress as potential additions to the National Wild and Scenic Rivers System. The numerous factors considered within the suitability determinations can be found in BLM Manual 6400 (BLM, Manual 6400 - Wild and Scenic Rivers - Policy and Program Direction for Identification, Evaluation, Planning, and Management, 2012). Per the WSRA, corridors for eligible and suitable rivers are defined as .25 miles either side of ordinary high-water mark not to exceed 320 acres per river mile.

Rivers that are determined via BLM planning to be eligible, but not suitable, do not continue to have management prescriptions or protections for identified wild and scenic river values; however, this determination does not nullify the continued existence of inventoried river values. For suitable rivers determined by RMP decisions, it is BLM's policy to manage to protect their free-flowing condition, water quality, tentative classification, and any outstandingly remarkable values until Congress designates the river or releases it for other uses.

1. White River

Under the Vernal 2008 RMP, several segments of the White River were determined eligible-wild or eligible-scenic but not suitable. Parcel 1798 straddles a White River eligible-scenic segment; lease stipulations UT-S-120: NSO – White River Corridor applies to this parcel. This stipulation requires no surface occupancy with the centerline line of site, up to ½ mile along both sides of the river from where the river enters Township 10 South, Range 24 East, to where the river leaves Section 18, Township 10 South, Range 23 East, Salt Lake Meridian.

Parcel 7830 lies within .35 miles of the White River along the Asphalt Wash road; lease stipulation UT-S-120: NSO – White River Corridor applies to this parcel within .25 miles of the river. The Asphalt Wash road provides motorized access to the White River corridor for boaters and campers.

If lease activities were to occur on parcel 7830 outside the river corridor, potential indirect impacts to river values such as recreation, wildlife, scenery, and water quality from vehicle traffic, noise, dust, visual intrusions, and erosion may occur but are expected to be localized and temporary during the exploration phase of lease development. However, lease stipulation UT-S-159: Controlled Surface Use – Visual Resources – VRM II applies to parcel 7830, which requires that surface-disturbing activities retain the existing character of the landscape and the level of change to the landscape will be low. Also, BLM has applied lease notice UT-LN-115: Light and Sound to the entirety of parcel 7830. Under this notice, in accordance with the Vernal RMP Decision MIN-5, the BLM would seek to minimize light and sound pollution within the project area using the best available technology such as installation of multi-cylinder pumps, hospital sound reducing mufflers, and placement of exhaust systems to direct noise away from noise sensitive areas (e.g., sensitive habitat, campgrounds, river corridors, and Dinosaur National Monument). Light pollution would be mitigated 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. If a determination is made that natural barriers or view sheds will meet these mitigation objectives, the above requirements may not apply. Application of lease stipulations and notices at the APD stage will further mitigate potential indirect impacts to the White River corridor.

2. Bitter Creek

Portions of parcels 1703, 1767, and 7809 overlay the eligible-scenic segment of Bitter Creek. These parcels have the following stipulations attached: UT-S-96: NSO – Fragile Soils/Slopes greater than 40%; UT-S-99: CSU – Fragile Soils/Slopes; UT-S-100: CSU – Fragile Soils/Slopes (21%-40%); UT-S-123: NSO – Riparian, Floodplains, and Public Water Reserves; UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitations – Visual Resources . Slopes within the Bitter Creek corridor beyond the floodplain vary from 25-90%.

Due to the attached lease stipulations, no surface disturbance within the stream banks, riparian zone, and floodplain would occur. Potential development or surface disturbance within the remainder of the ½ mile river corridor would necessarily be restricted or prevented by stipulations for fragile soils and slopes. Due to these restrictions and most of each lease parcel existing outside the Bitter Creek corridor, lease parcel development within the corridor is expected to be substantially minimized or avoided. Potential impacts to the inventoried wild and scenic river values within the eligible-scenic Bitter Creek corridor are not expected to occur.

3. Evacuation Creek

Parcels 1688, 1734, 1799, and 7779 partially overlay the eligible-recreational segment of Evacuation Creek. These parcels have the following stipulations attached: UT-S-96: NSO – Fragile Soils/Slopes greater than 40%; UT-S-99: CSU – Fragile Soils/Slopes; UT-S-100: CSU – Fragile Soils/Slopes (21%-40%); UT-S-123: NSO – Riparian, Floodplains, and Public Water Reserves; UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitations – Visual Resources. Slopes within the river corridor beyond the floodplain vary from 25-80%.

Due to the attached lease stipulations, no surface disturbance within the stream banks, riparian zone, and floodplain would occur. Potential development or surface disturbance within the remainder of the ½ mile river corridor would necessarily be restricted or prevented by stipulations for fragile soils and slopes. Due to these restrictions and most of each lease parcel existing outside the Evacuation Creek corridor, lease parcel development within the river corridor is expected to be substantially minimized or avoided. Potential impacts to the inventoried wild and scenic river values within the eligible-scenic Bitter Creek corridor are not expected to occur.

Given the temporary nature of lease activities that may occur near WSR resources, the continuation of the reasonably foreseeable trends and planned actions in the affected area discussed in Section 3.3 – when combined with implementation of the Proposed Action – would

not increase the likely negligible impact on WSR values to a level that merits detailed analysis at the leasing stage.

Lease Stipulations:

- UT-S-96: NSO – Fragile Soils/Slopes greater than 40%
- UT-S-99: CSU – Fragile Soils/Slopes
- UT-S-100: CSU – Fragile Soils/Slopes (21%-40%)
- UT-S-120: NSO – White River Corridor
- UT-S-123: NSO – Riparian, Floodplains, and Public Water Reserves
- UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitations – Visual Resources
- UT-S-159: Controlled Surface Use – Visual Resources – VRM II

Lease Notice:

- UT-LN-115: Light and Sound

AIB 23. Wilderness Study Area (WSA)

How would potential development of the nominated lease parcels impact Wilderness Study Areas (WSA)?

The nearest edges of proposed parcels 1674, 1717, 1808, and 1810 are within 1300-2000 feet of the Winter Ridge WSA boundary. The natural environment of both the parcels and the WSA consists of a complex undulating landscape of canyons, washes, and tree-covered ridges that branch out in many different directions. Aerial imagery and GIS data show regular and persistent changes in vegetation, slope, and aspect within the WSA and proposed parcels. This terrain creates a good degree of both visual and auditory screening within a short distance in any direction due to topography and vegetation.

Potential development in proposed parcels would not create surface disturbance or direct impacts to naturalness within the WSA. Mineral exploration and development within a parcel would result in the construction or improvement of access roads, increased vehicle traffic, use of heavy machinery, and presence of workers on the landscape, all of which may produce visual intrusions and increased levels of noise noticeable within the WSA that can reduce outstanding opportunities for solitude and/or primitive recreation. The intensity of such impacts would be heavily influenced by the location of mineral activities within each parcel, existing vehicle access, new surface disturbance, topography, vegetation types, season of development, and duration. Potential indirect impacts from development activities such as visual or audible disturbances would be temporary and localized, occurring during the construction, drilling, and interim reclamation phase (30-60 days). Following this period of intense activity, removal of equipment and interim reclamation of the well pad would be expected to eliminate most indirect impacts to wilderness characteristics from outside the WSA.

BLM has applied the following stipulations to parcels 1674, 1717, 1808, and 1810: UT-S-96: NSO – Fragile Soils/Slopes Greater than 40%; UT-S-99: CSU – Fragile Soils/Slopes; UT-S-100:

CSU – Fragile Soil/Slopes (21%-40%); UT-S-123: NSO – Riparian, Floodplains, and Public Water Reserves; UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitations – Visual Resources. Also, lease notice UT-LN-115: Light and Sound applies to parcels 1674, 1717, 1808, and 1810. In accordance with the Vernal RMP Decision MIN-5, the BLM will seek to minimize light and sound pollution within the project area using the best available technology such as installation of multi-cylinder pumps, hospital sound reducing mufflers, and placement of exhaust systems to direct noise away from noise sensitive areas (e.g., sensitive habitat, campgrounds, river corridors, and Dinosaur National Monument). Light pollution will be mitigated 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. If a determination is made that natural barriers or view sheds will meet these mitigation objectives, the above requirements may not apply. Application of this lease notice at the APD stage will further mitigate potential indirect impacts within the WSA.

Due to the application of lease stipulations and notices and the presence of good topographic screening, potential indirect impacts to outstanding opportunities for solitude and/or primitive recreation would be temporary in duration and are likely to be noticeable only in small, isolated areas near the northern and southwestern boundary of the Winter Ridge WSA during construction and drilling operations within the parcels. Potential indirect effects would comply with the WSA non-impairment standard (temporary, non-surface disturbing) and would not permanently impact wilderness characteristics (BLM, Manual 6330 - Management of Wilderness Study Areas, 2012). WSA suitability for preservation as wilderness would not be diminished.

Lease Stipulations:

- UT-S-96: NSO – Fragile Soils/Slopes greater than 40%
- UT-S-99: CSU – Fragile Soils/Slopes
- UT-S-100: CSU – Fragile Soils/Slopes (21%-40%)
- UT-S-123: NSO – Riparian, Floodplains, and Public Water Reserves
- UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitations – Visual Resources

Lease Notice:

- UT-LN-115: Light and Sound

AIB 24. Wildlife - Big Game

How would potential development of the nominated lease parcels affect big game habitat?

The proposed parcels that overlap UDWR designated big game habitat are in a diverse range of vegetation types including Colorado Plateau Mixed Low Sagebrush, Shrubland Inter-Mountain Basins Big Sagebrush, Intermountain Semi-Desert Grasslands, Shrubland Colorado Plateau Pinyon-Juniper to Woodland Inter-Mountain Basins Mixed Salt Desert Scrub. This variety of vegetation creates ideal winter range habitat for big game species including Mule deer and

Rocky Mountain elk. Many of the parcels are in the Book Cliffs, which supports numerous species of big game and is recognized as a prime destination for wildlife viewing and hunting.

The Utah Division of Wildlife Resources (UDWR) classifies habitats based on season of use and assigns importance values of “substantial” and “crucial”. Many of the nominated parcels have crucial and substantial winter range for mule deer, year-long habitat for bison, winter crucial habitat for bison, crucial year-long habitat for Rocky Mountain bighorn sheep, year-long substantial habitat for pronghorn and winter substantial habitat for elk. Fawning/calving habitat for mule deer, rocky mountain elk and pronghorn and migration corridors for mule deer are also present where parcels have been proposed. The term *crucial* is typically applied to areas that, if seriously degraded or otherwise lost, could lead to major declines in carrying capacity or numbers of big game.

Pronghorn (*Antilocapra americana*) crucial UDWR designated habitat is found within lease parcels. The term crucial, taken from the Utah Mule Deer Statewide Plan, is typically applied to areas that, if seriously degraded or otherwise lost, could lead to major declines in carrying capacity or numbers of animals (Utah Division of Wildlife Resources, 2025). Pronghorn have historically ranged throughout the western United States. In Utah, this species is primarily found in shrub steppe habitats with open, flat expanses, but also occurs in grasslands. The presence of succulent forbs is a vital component for lactating females. A lack of succulent forbs within spring/summer ranges and loss of shrubs within winter ranges are critical limiting factors in pronghorn habitat (Utah Division of Wildlife Resources, 2017). Habitat degradation associated with drought, invasive plants, grazing, wildfire, and other human disturbances (e.g., fences, clearing) represents a key concern for this species. UDWR designated pronghorn crucial habitat within all three field offices is 1,752,765 acres and within the parcels is 17,261 acres. Parcels within pronghorn crucial habitat are: 1681, 1683, 1691, 1696, 1698, 1702, 1742, 1823, 1825, 7781, 7782, 7784, 7813, 7814, 7823, 7826, 7833, 7837, and 7840. Using the disturbance assumptions in Appendix J and assuming random placement of disturbance relative to the DWR designated habitat, development of the parcels would impact 97 acres of the UDWR designated crucial pronghorn habitat within these parcels and less than 1% of the total UDWR designated crucial elk wintering habitat within the three field offices..

Mule deer (*Odocoileus hemionus*) range throughout Utah and can be found in a variety of habitats from developed urban areas to mountains. However, this species’ preferential habitat is shrubland located within rough terrain with abundant browse and cover. Many mule deer populations migrate between their higher elevation summer ranges and lower elevation winter ranges to avoid deep snow and find forage (Wild Aware Utah, 2023). Does usually give birth to one or two fawns in late spring or early summer, but normally in June (UDWR, 1997). DWR designated mule deer crucial winter habitat within the three field offices is 3,134,373 acres and within the parcels is 21,993. Parcels within Mule Deer crucial winter habitat are: 1678, 1680, 1684, 1689, 1703, 1717, 1719, 1734, 1765, 1767, 1808, 1810, 1815, 1817, 1818, 7778, 7779, 7785, 7786, 7824, 7825, 7837, 7840, 1798, and 7830. Using the disturbance assumptions in Appendix J and assuming random placement of disturbance relative to the DWR designated habitat, development of the parcels would impact 62.5 acres of the UDWR designated crucial deer wintering habitat within these parcels and less than 1% of the total UDWR designated crucial mule deer wintering habitat within the three field offices.

Rocky Mountain elk (*Cervus elaphus nelsoni*) habitat can be found throughout Utah and can be split into summer and winter habitat. Summer habitat consists of high elevation mountain terrain between 6,000 and 10,000 feet consisting of aspen-conifer forests and wet meadow habitat that provides grasses, sedges, forbs and shrubs. In the winter they rely on lower elevation winter ranges that have less snow providing opportunity to accessible browse forage consisting of woody vegetation. Elk calving occurs in late spring/early summer and requires low disturbance to be successful (Wild Aware Utah, 2023). UDWR designated elk crucial winter habitat is 2,249,099 acres within the field offices that the lease sale is occurring (Vernal, Moab, Monticello) and 3736. Parcels with rocky mountain elk crucial winter habitat are: 1662, 1674, 1678, 1680, 1684, 1703, 1705, 1715, 1717, 1719, 1734, 1765, 1767, 1791, 1792, 1808, 1810, 1815, 1818, 7778, 7785, 7786, 7793, and 7809. Using the disturbance assumptions in Appendix J and assuming random placement of disturbance relative to the DWR designated habitat, development of the parcels would impact 85 acres of the UDWR designated crucial elk habitat and approximately 1.7% of the total UDWR designated crucial elk wintering habitat within the three field offices.

The potential impacts of future development on big game and their habitats within the affected parcels would occur within the broader context of the relevant past, present, and reasonably foreseeable future actions from activities identified in Section 3.3, which includes energy and mineral development, and the conversion of native vegetation communities to agricultural or rural development. Other factors include grazing across all land ownership types, existing transmission powerlines, existing interstate transmission pipelines, paved and unpaved roads, and trends related to habitat loss and fragmentation. However, because of the lease notices, the temporary nature of lease activities that may occur, and the use of COAs, the continuation of the reasonably foreseeable trends and planned actions discussed in Section 3.3 – when combined with implementation of the Proposed Action – would not increase the likely negligible impact on big game to a level that merits detailed analysis at the leasing stage.

Table 65 Percentage of Designated Habitat within Parcels

Big Game Habitat Type	Acres within Lease Parcels	DWR Designated Acres in Filed Offices	Percentage
Mule Deer Crucial Winter Range	21,993	3,134,373	<1%
Rocky Mountain Elk Winter Crucial Range	37,638	2,249,099	1.7%
Pronghorn Crucial Habitat	17,261	1,777,240	<1%

Table 66 Estimated Disturbance in Designated Habitat

Big Game Habitat Type	Acres within Lease Parcels	Estimated Acres of Development Within Parcels	Estimated Acres of Disturbance Per Habitat Type
Mule Deer Crucial Winter Range	21,993	352	62.5

Rocky Mountain Elk Winter Crucial Range	37,638	443	85
Pronghorn Crucial Habitat	17,261	178	97

Energy production is likely to have adverse effects on big game species, including loss of habitat from construction of roads and production facilities including usable habitat near roads, habitat fragmentation, impacts on fawning success, increased noise and disturbance from human activities, and possible collisions causing direct mortality. Winter is a particularly sensitive period for big game as they are more susceptible to energy loss, so reduced winter habitat may increase mortality. In accordance with BLM RMPs and UDWR, lease stipulations will be implemented to reduce herd level impacts to big game species.

These potential impacts are analyzed in brief and the stipulations from three field offices for mule deer and rocky mountain elk crucial winter habitat timing stipulations, mule deer and elk fawning habitat timing stipulations, migration corridor timing stipulations, and spatial buffer stipulations that are applied are sufficient to protect big game species according to BLM and/or State data. Impacts that may harm big game species and their populations would be localized to immediately disturbed locations through habitat loss and temporary disturbance, but they are unlikely to have larger, herd management unit level impacts due to protecting habitat during these particularly sensitive times such as wintering, migrating, and calving/fawning. Each proposed action for development will be analyzed for impacts to big game species, and stipulations can be applied.

The Utah Division of Wildlife Resources recommends a 4:1 mitigation ratio for any permanent disturbance that takes place on these parcels, where for every one acre of permanently disturbed crucial winter range, four acres are restored by the operator. This would be a recommendation if deemed appropriate at the field office level and would be voluntary on the part of the operator.

Lease Stipulations:

- UT-S-229 Crucial Deer and Elk winter range timing stipulation from November 15-April 15 for parcels in the Moab Field Office.
- UT-S-230, stipulates that no surface disturbing activities in deer and elk crucial winter range may occur from December 1-April 30 for parcels in the Vernal Field Office.
- UT-S-231 stipulates that no more than 10% of crucial deer winter range may be subject to surface disturbance and remain un-reclaimed at any given time Vernal Field Office.
- UT-S-234 Timing stipulations from November 15-April 15 for Crucial Deer winter Range in Monticello Field Office.
- UT-S-242 Crucial Elk Winter Range timing stipulation from November 15- April 15 in Monticello Field Office
- UT-S-246 Deer and Elk Fawning and Calving Habitat timing stipulation from May 15-June 30th within the Moab Field Office
- UT-S-247 stipulates that crucial elk calving and deer fawning habitat will be protected by timing restrictions from May 15- June 30 Vernal Field Office.

- UT-S-251 stipulates that parcels within migration corridors will have timing restrictions from April 15-May 31 within McCook and Monument Ridge mule deer migration corridors Vernal Field Office.

Lease Notices:

- UT-LN-11 Statewide Crucial Elk Calving and Deer Fawning Habitat

AIB 25. Woodland and Forest Resources

How would potential development of the nominated lease parcels affect woodland and forest vegetation resources?

Pinyon-juniper (PJ) woodlands and riparian gallery woodlands (e.g., Fremont cottonwood, willow) occur patchily within and adjacent to the nominated lease parcels, primarily in the VFO planning area with limited occurrences in the MbFO and MtFO areas. Riparian woodlands are largely confined to major drainages (e.g., White River and larger tributaries); PJ occurs on benches and breaks interspersed with sagebrush and desert shrub. Lease stipulations and notices applied programmatically and at the parcel level include protections for riparian areas, floodplains, sensitive species, weeds, and visual resources, and they will apply to all lease parcels offered (see Appendix C— Stipulations and Notices).

Under Alternative A, estimated overlap of modeled disturbance with Forests/Woodlands is 324.47 acres (see AIB 19). Effects consist of vegetation clearing for pads/roads/linear features and localized conversion of woodland cover that persists through operations until final reclamation. Lease stipulations and standard terms allow relocation (up to ~0.5 mi), design changes, and timing limits to avoid/minimize woodland and riparian impacts; riparian/floodplain measures steer facilities away from gallery woodlands and require setbacks/design features where proximity is unavoidable. Reclamation (site-appropriate seed mixes, weed prevention/response, stabilization) further reduces long-term effects and edge expansion.

Under Alternative B, parcels/surface locations intersecting mapped suitable/occupied habitat for Graham's and White River penstemon would be screened out or constrained, which reduces the number and extent of woodland intersections relative to Alternative A where those habitats co-occur on PJ benches and breaks. The same avoidance/minimization tools and COAs as A apply; remaining woodland overlap would be lower than A and concentrated outside the screened plant habitats.

Under Alternative C, leasing would avoid or constrain parcels/surface locations within mapped GRSG habitats. Where sagebrush and woodland mosaics intermix, this screen shifts and typically reduces woodland overlap relative to A, because well pads and access tend to be routed away from GRSG habitats and adjacent sensitive edges. With stipulations and COAs, residual woodland overlap is expected to be less than A and comparable to or lower than B, depending on the spatial co-occurrence of GRSG and woodland patches in the parcel set.

Standard lease terms allow the BLM to require relocation (up to 800 m), timing, and design modifications and to impose COAs at the APD stage to avoid and minimize woodland impacts (EA Ch. 2). Stipulations/notices commonly attached across parcels that protect woodlands and riparian gallery systems include, but are not limited to: Riparian Areas (UT-LN-53), Floodplain

Management (UT-LN-128), Drinking Water Source Protection (UT-LN-56/58), Noxious Weeds (UT-LN-52), Sensitive Species (UT-LN-49), Site ROW (UT-LN-83), and Visual Resources stipulations where applicable; numerous parcels also carry species-specific plant and wildlife protections that indirectly protect woodland structure and function (Appendix C). Reclamation is required to stabilize disturbances and re-establish vegetation, with additional measures at the APD stage to ensure seed mixes and methods appropriate to site potential and to discourage weed establishment (EA Ch. 2; standard terms and conditions).

Anticipated total ground disturbance analyzed in the EA is limited relative to the planning-area extent, and only a fraction of that disturbance is expected to intersect forest/woodland communities once stipulations, site-specific avoidance, and COAs are applied. Lease stipulations and notices already incorporated for all parcels (plus parcel-specific plant/wildlife protections) provide adequate mechanisms to avoid or substantially minimize adverse effects to woodlands and riparian galleries, including relocating facilities away from these communities and requiring additional design features where needed (Appendix C; EA Chs. 2-3).

With application of the lease stipulations/notices and standard terms, and additional site-specific COAs at the APD stage, potential effects to forests and woodlands would be minor, localized, and mitigable; therefore, this issue does not require detailed analysis in the EA and is appropriately analyzed in brief.

A.2 RESOURCES NOT ANALYZED IN THIS EA

Table 67 Resources not Analyzed in this EA

Resource or Concern	Rationale for not Analyzing in EA
Area of Critical Environmental Concern (ACEC)	None of the nominated parcels overlap an ACEC. The closest ACEC to the nominated parcels is Raven Ridge ACEC, located in Colorado, and 1.6 miles south of the nearest parcel. Potential indirect impacts from oil and gas lease development would not occur due to a combination of distance and topography.
National Conservation Areas (NCA)	The John Wesley Powell NCA is 20 miles north of the nearest parcel. The McGinnis Canyons NCA is over 30 miles southeast of the nearest parcel. Potential indirect impacts from oil and gas lease development would not occur due to a combination of distance and topography.
National Monuments (NM)	Dinosaur NM is over 13 miles north of the nearest lease parcel. The Bears Ears NM is over 9 miles west of the nearest parcel. The Canyons of the Ancients NM is over 30 miles south of the nearest parcel. Potential indirect impacts from oil and gas lease development would not occur due to a combination of distance and topography.
Travel Management	All the nominated lease parcels are within the Vernal Field Office, Moab Field Office and Monticello Field Office Travel Management Areas (TMA). Roads constructed as part of well completion would not be open to public use and would not be added to the public access network; therefore, no change to the applicable travel management plans would be required. Use of the existing travel and transportation network within the BLM parcels would not be substantially changed by the Proposed Action.
Wilderness	The Desolation Canyon Wilderness is more than 20 miles west of the nearest parcel. The Black Ridge Canyons Wilderness is over 30 miles southeast of the nearest parcel. Potential indirect impacts from oil and gas lease development would not occur due to a combination of distance and topography.
National Wildlife Refuge (NWR)	The Ouray NWR is 5 miles southeast of the nearest parcel. Potential indirect impacts from oil and gas lease development would not occur due to a combination of distance and topography.
National & State Parks	Canyonlands NP is over 20 miles west of the nearest parcel. Arches NP is over 25 miles north of the nearest parcel. Dead Horse Point State Park is over 25 miles northwest of the nearest parcel. Potential indirect impacts from oil and gas lease development would not occur due to a combination of distance and topography.

APPENDIX B FIGURES/MAPS

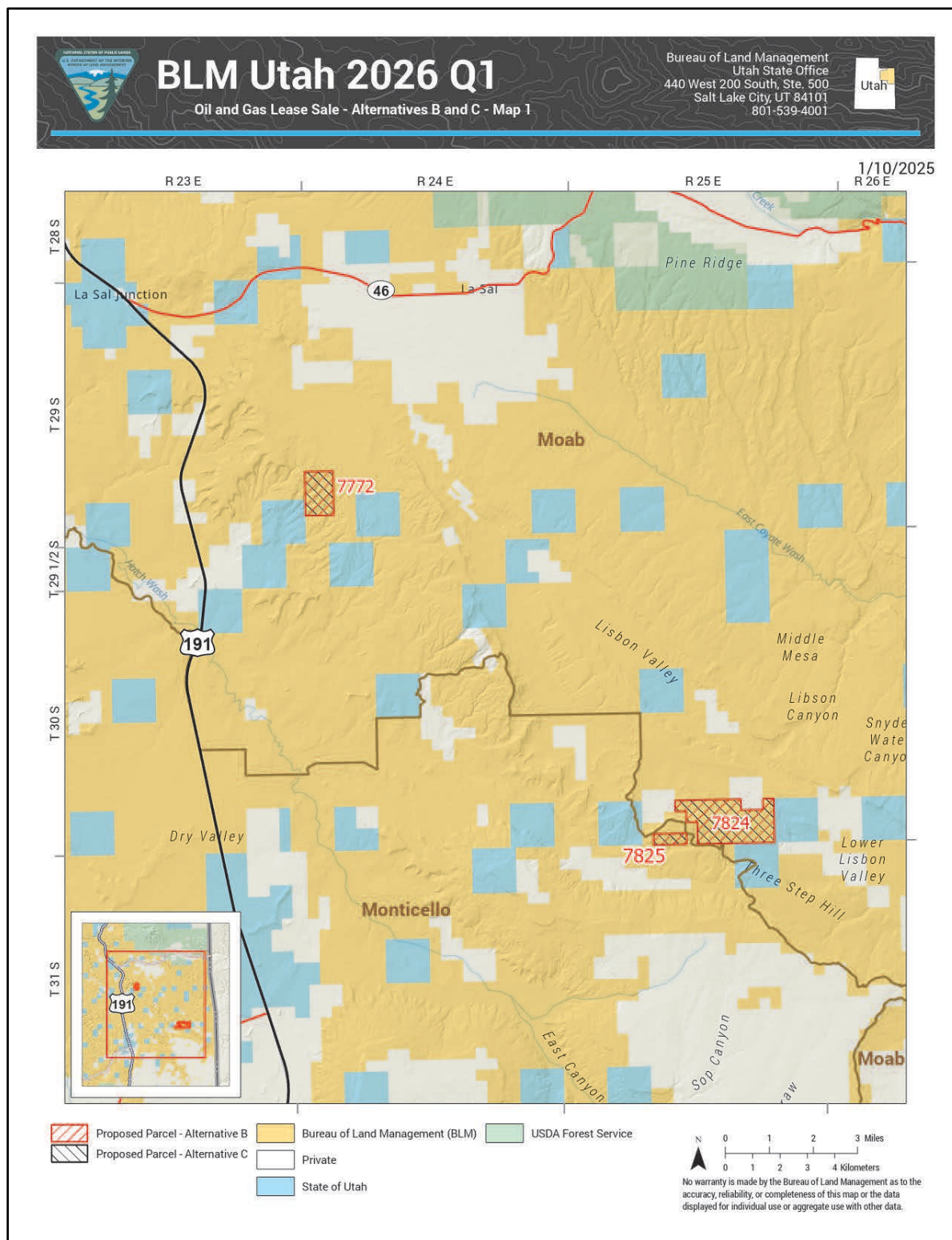


Figure 3 Q1 Map 1

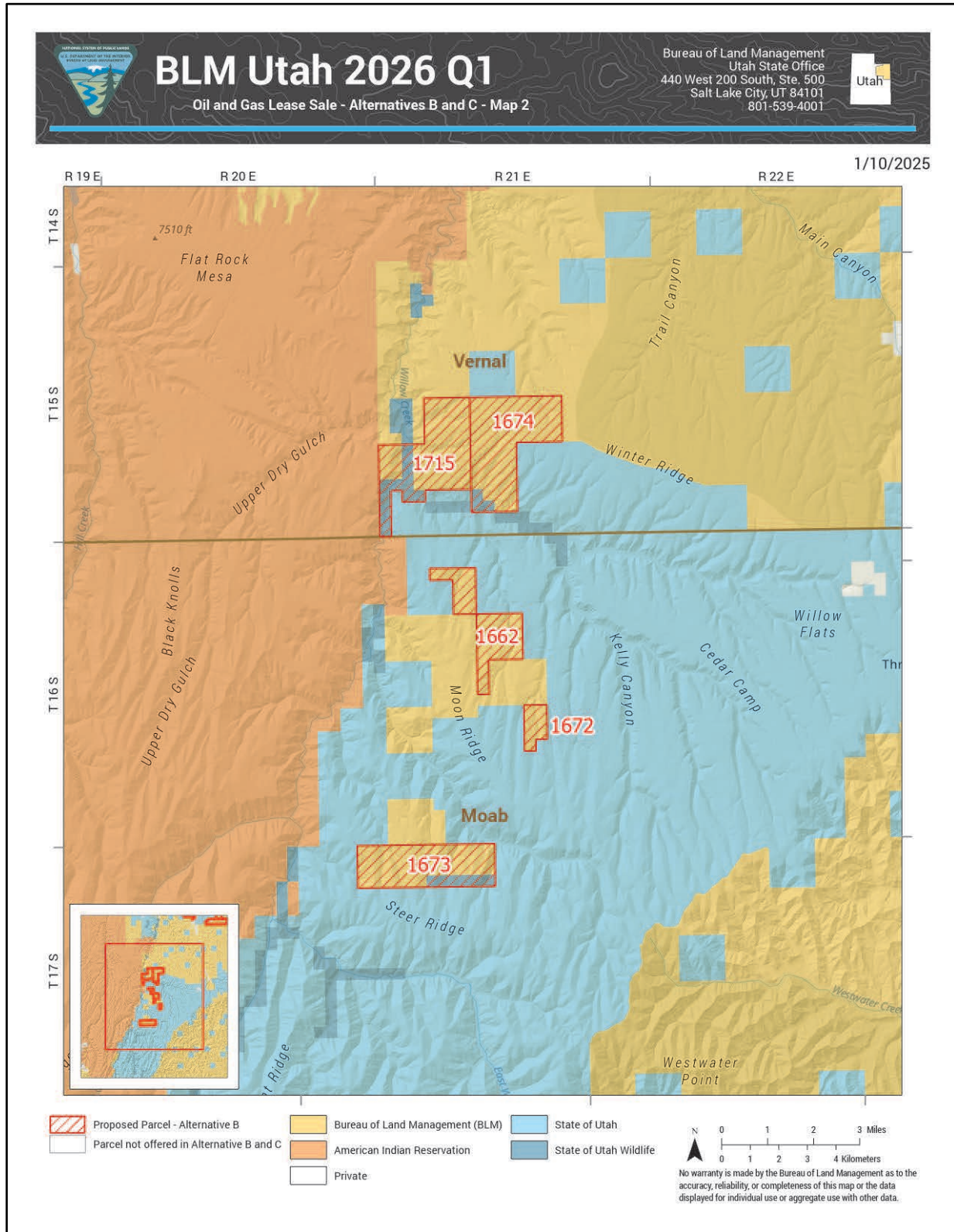


Figure 4 Q1 Map 2

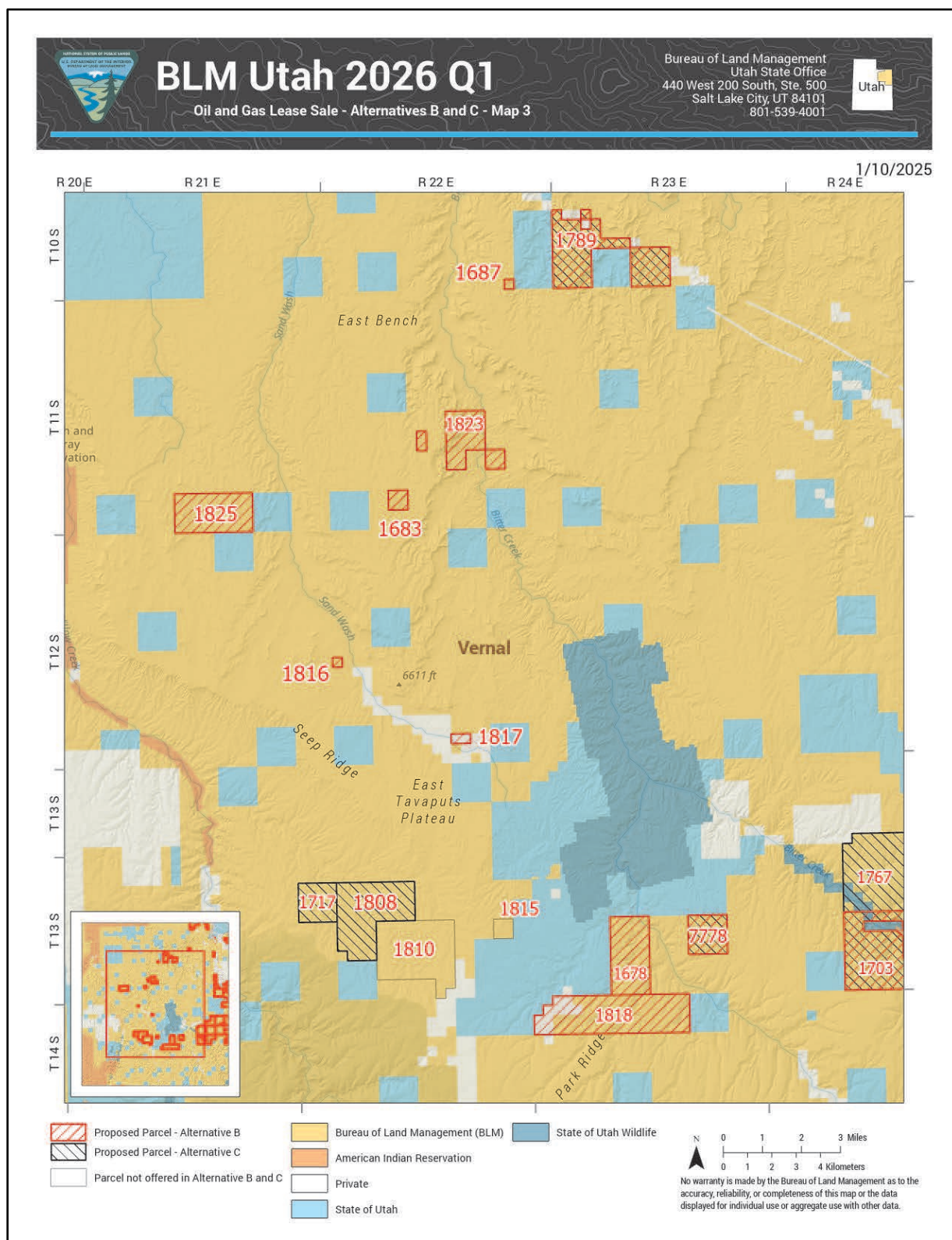


Figure 5 Q1 Map 3

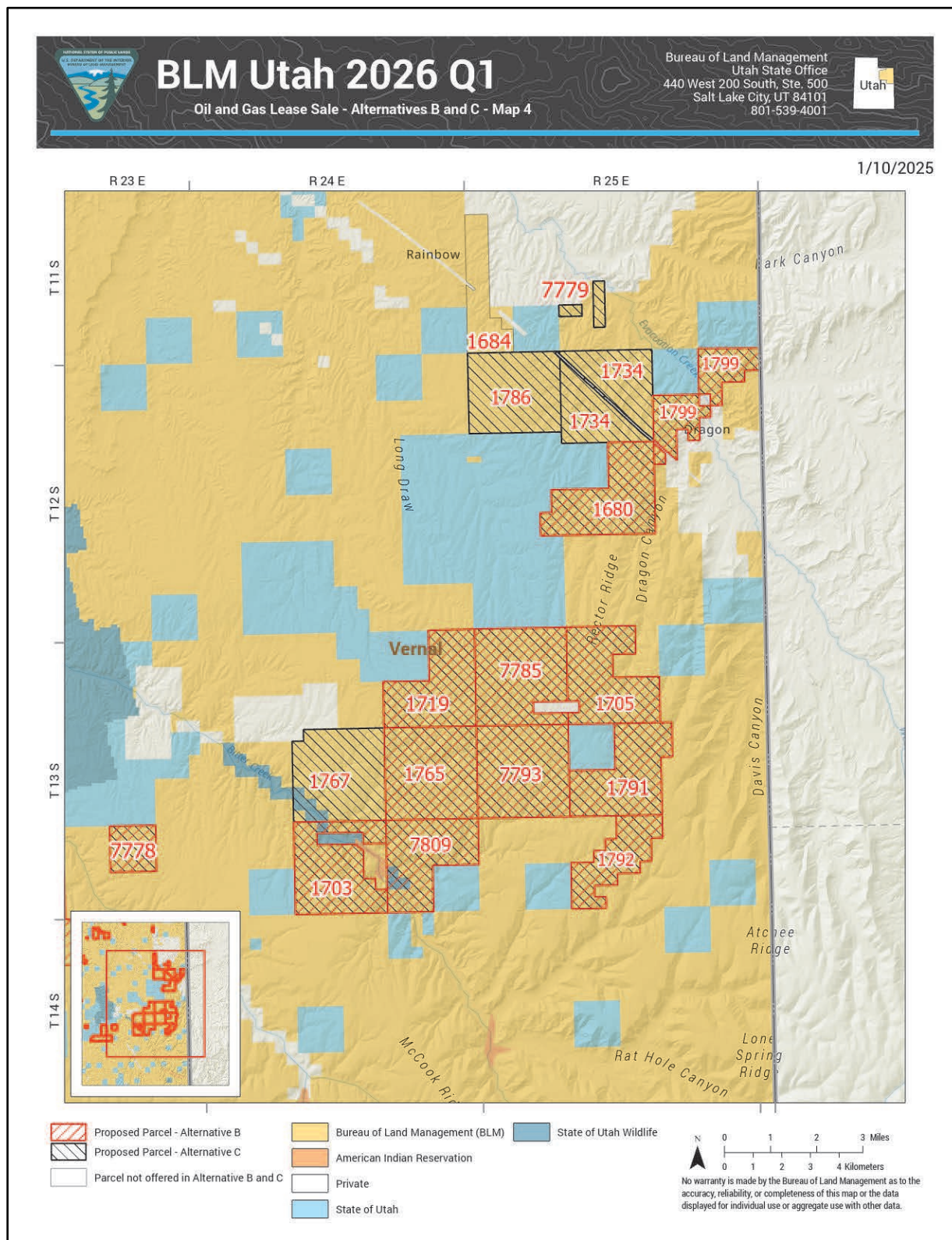


Figure 6 Q1 Map 4

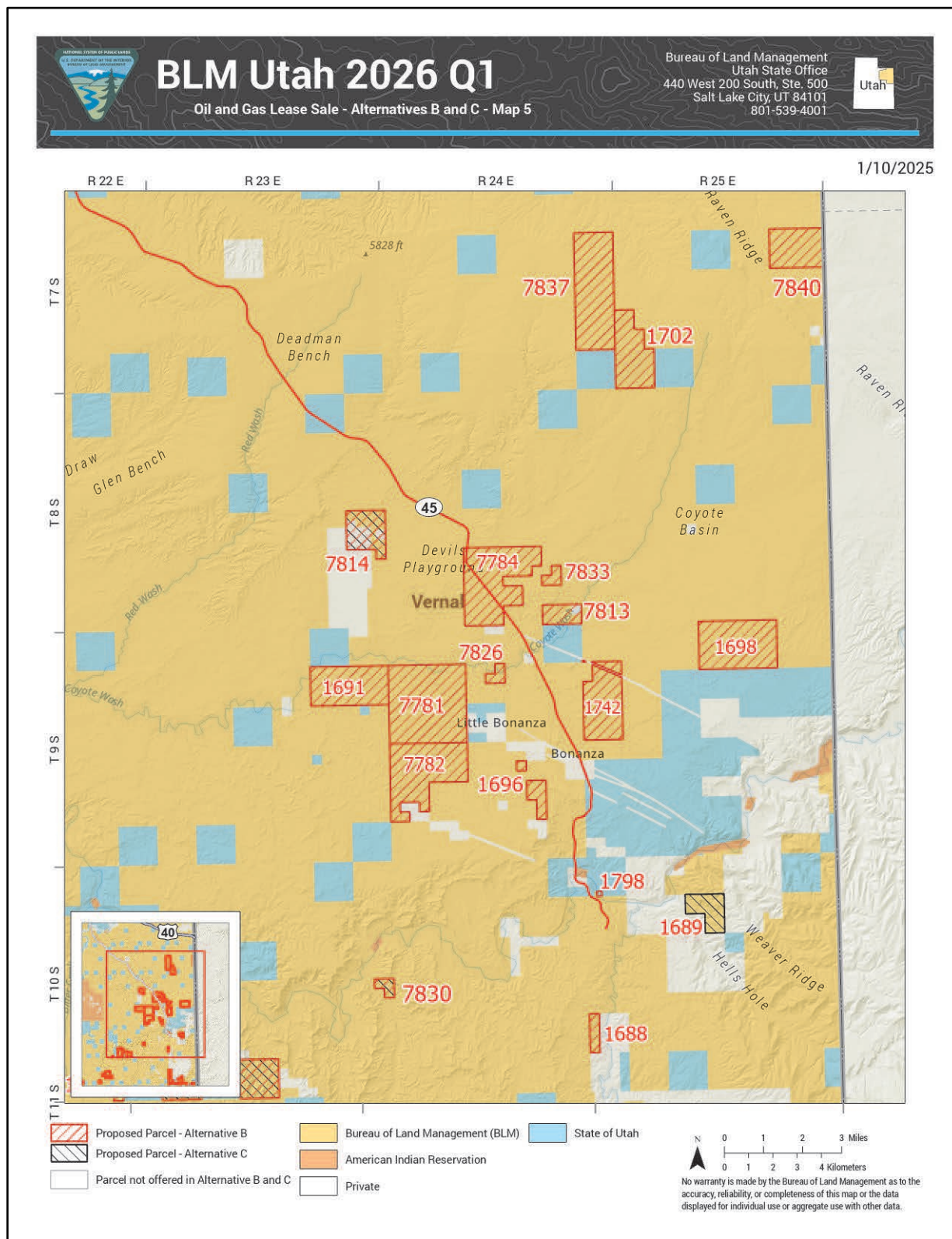


Figure 7 Q1 Map 5

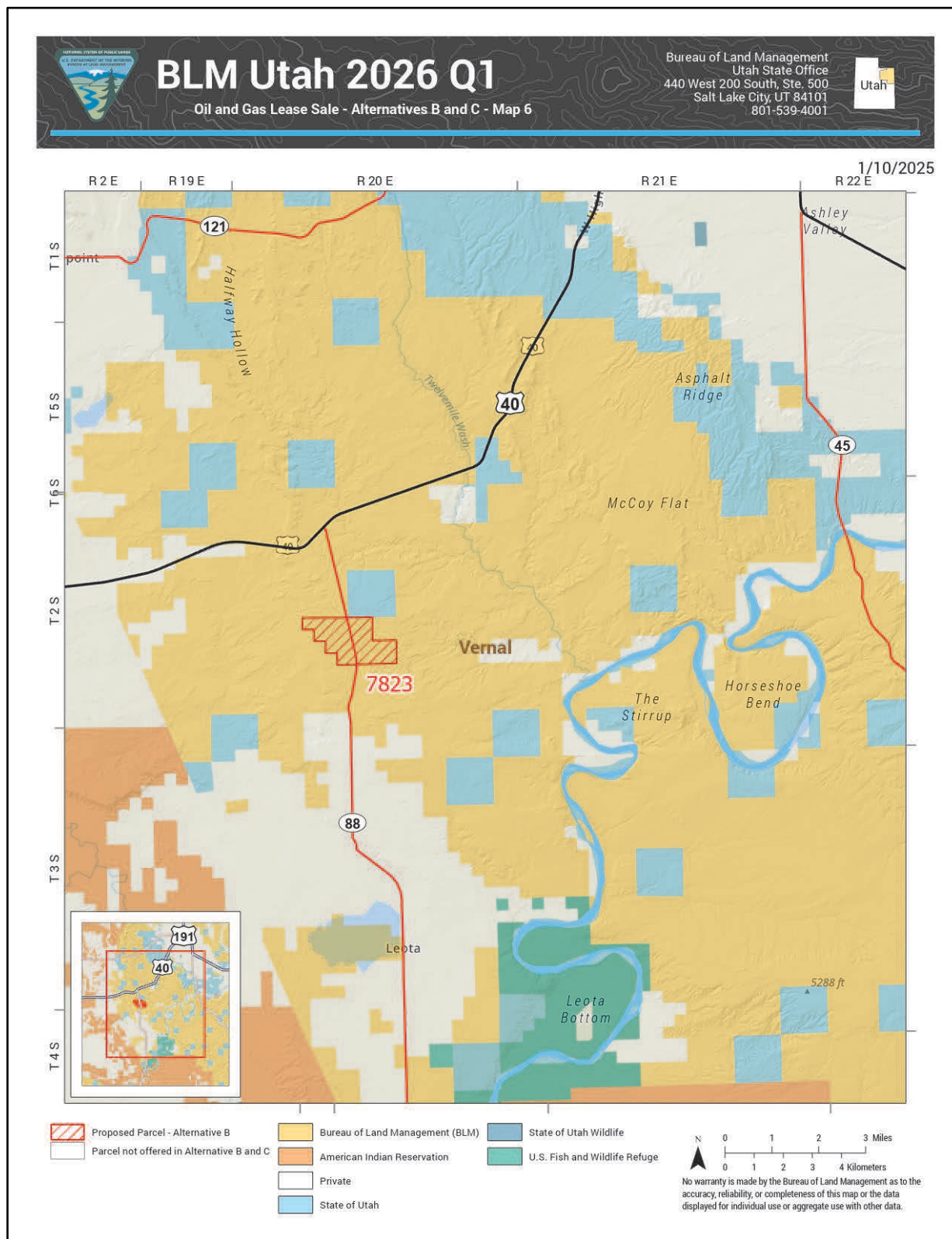


Figure 8 Q1 Map 6

APPENDIX C STIPULATIONS AND NOTICES

Lease stipulations and notices applied to each parcel are listed in C.1. For descriptions of each stipulation and notice, see section C.2. In addition to the parcel specific Stipulations and Notices listed below, the stipulations and notices presented in this table would be applied to ALL parcels:

Stipulations	Notices
	HQ-CR-1 Cultural Resources Protection (Handbook H-3120-1)
	HQ-TES-1 Threatened & Endangered Species Act (Handbook H-3120-1)
	HQ-MLA-1 Notice to Lessee (MLA)

C.1 LEASE STIPULATIONS AND NOTICES BY PARCEL

Moab Field Office

1662

UT-2026-03-1662

UT, Moab Field Office, Bureau of Land Management, PD

T. 16 S., R. 21 E., Salt Lake

Sec. 3 LOTS 1 thru 4;

Sec. 3 S1/2NE1/4, SE1/4;

Sec. 11 ALL;

Sec. 14 W1/2NW1/4, NW1/4SW1/4.

Grand County

1161.88 Acres

12.50% Royalty Rate

EOI# UT00019956, UT00019906, UT00019907

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Floodplains, Riparian Areas, Springs and Public Water Resources

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-159: Vernal, Controlled Surface Use – Visual Resources – VRM II

UT-S-230: Stipulates that no surface disturbing activities in deer and elk crucial winter range

may occur from December 1-April 30 for parcels in the Vernal Field Office.

UT-S-261: Vernal Timing Limitation- Raptor Buffers

LEASE NOTICES

UT-LN-11: Statewide Crucial Elk Calving and Deer Fawning Habitat

UT-LN-44: Raptors

UT-LN-45: Migratory Bird

UT-LN-49: Utah Sensitive Species

UT-LN-50: Habitat Restoration

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-57: Public Water Reserve

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-83: Site ROW

UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-131: Greater Sage-Grouse – Net Conservation Gain

UT-LN-132: Greater Sage-Grouse – Required Design Features

UT-LN-133: Greater Sage-Grouse – Buffer

UT-LN-156: Pollinators and Pollinator Habitat

T&E-05: Listed Plant Species

T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

T&E-25: Mexican Spotted Owl (*Strix occidentalis lucida*)

1672

UT-2026-03-1672

UT, Moab Field Office, Bureau of Land Management, PD

T. 16 S., R. 21 E., Salt Lake

Sec. 24 NW1/4, N1/2SW1/4, SW1/4SW1/4.

Grand County

280 Acres

12.50% Royalty Rate

EOI# UT00019908c

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Floodplains, Riparian Areas, Springs and Public Water Resources

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-159: Vernal, Controlled Surface Use – Visual Resources – VRM II

UT-S-247: Vernal Timing Limitation- Crucial Elk Calving and Deer Fawning Habitat

UT-S-251: Vernal, Timing Limitation- Deer Migration Corridor (Monument and McCook Ridges)

LEASE NOTICES

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-131: Greater Sage-Grouse – Net Conservation Gain

UT-LN-132: Greater Sage-Grouse – Required Design Features

UT-LN-133: Greater Sage-Grouse – Buffer

UT-LN-156 Statewide Pollinators and Pollinator Habitat

T&E-05: Listed Plant Species

T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1673

UT-2026-03-1673 Split Estate

UT, Moab Field Office, Bureau of Land Management, PD

T. 17 S., R. 21 E., Salt Lake

Sec. 3 LOTS 1 thru 4;

Sec. 3 S1/2SW1/4, S1/2SE1/4;

Sec. 3 S1/2NE1/4, S1/2NW1/4, N1/2SW1/4, N1/2SE1/4;

Sec. 4 LOTS 1 thru 4;

Sec. 4 S1/2NE1/4, S1/2NW1/4, SW1/4, N1/2SE1/4;

Sec. 4 S1/2SE1/4;

Sec. 5 LOTS 1 thru 4;

Sec. 5 S1/2NE1/4, S1/2NW1/4, S1/2.

Grand County

1775.84 Acres

12.50% Royalty Rate

EOI# UT00019953, UT00019954, UT00019955

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Floodplains, Riparian Areas, Springs and Public Water Resources

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-159: Vernal, Controlled Surface Use – Visual Resources – VRM II

UT-S-247: Vernal Timing Limitation- Crucial Elk Calving and Deer Fawning Habitat

UT-S-261: Vernal Timing Limitation- Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors

UT-LN-45 Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-83: Site ROW

UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-131: Greater Sage-Grouse – Net Conservation Gain

UT-LN-132: Greater Sage-Grouse – Required Design Features

UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

7772

UT-2026-03-7772
UT, Moab Field Office, Bureau of Land Management, PD
T. 29 S., R. 24 E., Salt Lake
 Sec. 30 LOTS 5 thru 8;
 Sec. 30 E1/2SW1/4;
 Sec. 31 LOTS 1 thru 4;
 Sec. 31 E1/2NW1/4.
San Juan County
412.12 Acres
12.50% Royalty Rate
EOI# UT00019849

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-122: NSO - Floodplains, Riparian Areas, Springs
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-158: Controlled Surface Use – VRM II areas
UT-S-183: Endangered Fish of the Upper Colorado River Drainage Basin
UT-S-220: Moab (Outside of MLP) Controlled Surface Use-Gunnison Prairie Dog
UT-S-272: Conditional Surface Use/Timing Limitation – Burrowing Owl and Ferruginous Hawk Nesting
UT-S-273: Conditional Surface Use/Timing Limitations – Golden Eagle Nesting Sites and
UT-S-275: Controlled Surface Use/Timing Limitation – Bald Eagles Territories
UT-S-298: Moab (Outside of MLP) Condition Surface Use- Kit Fox
US-S-340: Controlled Surface Use/Timing Limitation – Mexican Spotted Owl Habitat and Nest Sites
UT-S-329: Moab (Outside of MLP) Controlled Surface Use – Slopes Greater than 30%

LEASE NOTICES

UT-LN-25 White-Tailed and Gunnison Prairie Dog
UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Statewide Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-72: High Potential Paleontological Resources
UT-LN-96: Air Quality Mitigation Measures
UT-LN-98: Protection of Natural Soundscapes

UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-128: Floodplains
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-25: Mexican Spotted Owl (*Strix occidentalis lucida*)
T&E-30: Navajo Sedge (*Carex specuicola*)
T&E-35: Silverspot Butterfly (*Speyeria nokomis nokomis*)

7824

UT-2026-03-7824
UT, Moab Field Office, Bureau of Land Management, PD
T. 30 S., R. 25 E., Salt Lake Sec. 33 NE1/4NE1/4;
 Sec. 34 N1/2, NE1/4SW1/4, SE1/4SW1/4, SE1/4;
 Sec. 35 NE1/4NE1/4, NW1/4NW1/4, S1/2NE1/4, S1/2NW1/4, S1/2.
San Juan County
1160 Acres
12.50% Royalty Rate
EOI# UT00020426

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-122: NSO - Floodplains, Riparian Areas, Springs
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-183: Endangered Fish of the Upper Colorado River Drainage Basin
UT-S-220 Moab (Outside of MLP) Controlled Surface Use-Gunnison Prairie Dog
UT-S-229: Moab (Outside of MLP) Timing Limitation- Crucial Deer and Elk Winter Range
UT-S-272: Conditional Surface Use/Timing Limitation – Burrowing Owl and Ferruginous Hawk Nesting
UT-S-273: Conditional Surface Use/Timing Limitations – Golden Eagle Nesting Sites and Territories
UT-S-275: Controlled Surface Use/Timing Limitation – Bald Eagles
UT-S-298: Moab (Outside of MLP) Condition Surface Use- Kit Fox
UT-S-329: Moab (Outside of MLP) Controlled Surface Use – Slopes Greater than 30%

LEASE NOTICES

UT-LN-25 Moab, Monticello, Vernal, Price (Outside of Moab MLP) White-Tailed And Gunnison Prairie Dog
UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Bird
UT-LN-49 Statewide Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-60: Slopes

UT-LN-72: High Potential Paleontological Resources
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-109: Lisbon Valley Copper Mine
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-30: Navajo Sedge (*Carex specuicola*)

Monticello Field Office

7825

UT-2026-03-7825
UT, Monticello Field Office, Bureau of Land Management, PD
T. 30 S., R. 25 E., Salt Lake
Sec. 33 SE1/4SW1/4, S1/2SE1/4.
San Juan County
120 Acres
12.50% Royalty Rate
EOI# UT00020426

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-98: No Surface Occupancy - Fragile Soils/Slopes Greater than 40 Percent
UT-S-106: Controlled Surface Use - Fragile Soils/Slopes 21-40 Percent
UT-S-128: Monticello - NSO Floodplains, Riparian, Springs, Public Water Reserve
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual
Resources UT-S-229: Crucial Deer and Elk Winter Range
UT-S-234: Timing Limitation-Crucial Deer Winter Range
UT-S-242: Timing Limitation-Crucial Elk Winter Range
UT-S-275: Controlled Surface Use/Timing Limitation – Bald Eagles
UT-S-298: Kit Fox
UT-S-325: Monticello Timing Limitation-Raptor Nest Site

LEASE NOTICES

UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-52: Statewide Noxious Weeds
UT-LN-72: High Potential Paleontological Resources
UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Statewide Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-60: Monticello, Price, Vernal - Steep Slopes (Outside of MLP)
UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-107: Statewide (Formerly T&E-01) (Outside of Moab MLP) Bald Eagle
UT-LN-117: Monticello Shallow Groundwater Protection Zone
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-30: Navajo Sedge (*Carex specuicola*)
T&E-35: Silverspot Butterfly (*Speyeria nokomis nokomis*)

Vernal Field Office

1674

UT-2026-03-1674 Split Estate
UT, Vernal Field Office, Bureau of Land Management, PD
T. 15 S., R. 21 E., Salt Lake
 Sec. 21 ALL;
 Sec. 22 ALL;
 Sec. 28 ALL;
 Sec. 33 NE1/4, NE1/4NW1/4;
 Sec. 33 W1/2NW1/4, SE1/4NW1/4.
Uintah County
2240 Acres
12.50% Royalty Rate
EOI# UT00019909, UT00019910, UT00019911, UT00019992

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy-Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use- Fragile Soils/Slopes
UT-S-100: Controlled Surface Use - Fragile Soils/Slopes (21%-40%)
UT-S-123: NSO Riparian, Wetland, and Floodplains
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-261: Vernal Timing Limitation- Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-50: Habitat Restoration
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-128: Floodplain Management
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-134: Graham’s Beartongue (*Penstemon grahamii*) & White River Beartongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-25: Mexican Spotted Owl (*Strix occidentalis lucida*)

1678

UT-2026-03-1678
UT, Vernal Field Office, Bureau of Land Management, PD
T. 13 S., R. 23 E., Salt Lake
 Sec. 28 ALL;
 Sec. 33 ALL.
Uintah County
1280 Acres
12.50% Royalty Rate
EOI# UT00019913, UT00019914

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: NSO Riparian, Wetland, and Floodplains
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-251: Vernal Timing Limitation-Deer Migration Corridor (Monument and McCook Ridges)
UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Statewide Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-90: Graham's beardtongue (*Penstemon grahamii*)
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-128: Floodplain Management
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-134: Graham's Beartongue (*Penstemon grahamii*) & White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-25: Mexican Spotted Owl (*Strix occidentalis lucida*)
T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

1680

UT-2026-03-1680
UT, Vernal Field Office, Bureau of Land Management, PD
T. 12 S., R. 25 E., Salt Lake
 Sec. 15 LOTS 1;
 Sec. 15 W1/2NE1/4, SE1/4NE1/4, W1/2, SE1/4;
 Sec. 20 E1/2NE1/4, SE1/4;
 Sec. 21 ALL;
 Sec. 22 ALL.
Uintah County
2159.38 Acres
16.67% Royalty Rate
EOI# UT00020056, UT00019986, UT00019915, UT00019916

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: NSO Riparian, Wetland, and Floodplains
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range
UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Statewide Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-90: Graham’s beardtongue (*Penstemon grahamii*)
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-128: Floodplain Management
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-22: Ute Ladies’-Tresses (*Spiranthes diluvialis*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1681

UT-2026-03-1681

UT, Vernal Field Office, Bureau of Land Management, PD

T. 11 S., R. 22 E., Salt Lake

Sec. 23 ALL;

Sec. 25 NW1/4;

Sec. 26 NW1/4.

Uintah County

960 Acres

12.50% Royalty Rate

Agreements:

UTUT106353986 This parcel is fully committed to Unit Agreement (UA) UTUT106353986, effective 6/4/2025. The UA operator is Anschutz Exploration Corporation. In accordance with the regulations in 43 CFR 3101.3-1, the successful bidder is required to file evidence of having entered into an agreement with the UA operator for the development and operation of the subject lands under the terms and provisions of the approved UA. The successful bidder should immediately contact the Operator. In order to join the UA, the operator will give instructions about executing copies of the joinder agreement. Five duplicate originally signed copies of the joinder agreement must be furnished to the Bureau of Land Management Utah State Office within 60 business days of the sale date. If more time is required, you must request an extension of time in which to comply. If not submitted within the time allowed, your bid may be subject to rejection.

EOI# UT00019917, UT00020021, UT00019918

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: NSO Riparian, Wetland, and Floodplains

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

LEASE NOTICES

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-50: Habitat Restoration

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-83: Site ROW

UT-LN-90: Graham's beardtongue (*Penstemon grahamii*)
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-128: Floodplain Management
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-134: Graham's Beardtongue (*Penstemon grahamii*) & White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]
UT-LN-156: Statewide Pollinators and Pollinator Habitat
UT-S-261: Vernal Timing Limitation-Raptor Buffers
T&E-05: Listed Plant Species
T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

1683

UT-2026-03-1683
UT, Vernal Field Office, Bureau of Land Management, PD
T. 11 S., R. 22 E., Salt Lake
Sec. 33 NE1/4.
Uintah County
160 Acres
12.50% Royalty Rate
EOI# UT00019919

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: NSO Riparian, Wetland, and Floodplains
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-218: Controlled Surface Use- White-Tailed Prairie Dog

LEASE NOTICES

UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-50: Habitat Restoration
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1684

UT-2026-03-1684
UT, Vernal Field Office, Bureau of Land Management, PD
T. 11 S., R. 25 E., Salt Lake
Sec. 19 W1/2;
Sec. 30 LOTS 1, 2;
Sec. 30 N1/2NW1/4, SE1/4NW1/4, S1/2SW1/4, NE1/4SW1/4;
Sec. 31 S1/2, NW1/4, SW1/4NE1/4.
Uintah County
1151.54 Acres
12.50% Royalty Rate
EOI# UT00019920, UT00019971, UT00019922

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: NSO Riparian, Wetland, and Floodplains
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range
UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-90: Vernal Graham's beardtongue (*Penstemon grahamii*)
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse - Buffer
UT-LN-134: Graham's Beartongue (*Penstemon grahamii*) & White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

1687

UT-2026-03-1687
UT, Vernal Field Office, Bureau of Land Management, PD
T. 10 S., R. 22 E., Salt Lake
Sec. 35 SE1/4SE1/4.
Uintah County
40 Acres
12.50% Royalty Rate
EOI# UT00019923

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: NSO Riparian, Wetland, and Floodplains
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

LEASE NOTICES

UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Statewide Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds

UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-96: Air Quality Mitigation Measures
UT-LN-98: Protection of Natural Soundscapes
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-134: Graham’s Beartongue (*Penstemon grahamii*) & White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]
UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-12: Pariette Cactus (*Sclerocactus brevispinus*) and Uinta Basin Hookless Cactus (*Sclerocactus wetlandicus*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1688

UT-2026-03-1688
UT, Vernal Field Office, Bureau of Land Management, PD
T. 10 S., R. 24 E., Salt Lake
Sec. 25 W1/2NW1/4, W1/2SW1/4.
Uintah County
160 Acres
12.50% Royalty Rate
EOI# UT00019924

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-96: Air Quality Mitigation Measures
UT-LN-98: Protection of Natural Soundscapes
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-128: Floodplain Management
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

1689

UT-2026-03-1689
UT, Vernal Field Office, Bureau of Land Management, PD
T. 10 S., R. 25 E., Salt Lake
 Sec. 8 NE1/4;
 Sec. 9 W1/2.
Uintah County
480 Acres
12.50% Royalty Rate
EOI# UT00019925, UT00019926

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-120: Vernal, No Surface Occupancy – White River Corridor
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-159: Vernal, Controlled Surface Use – Visual Resources – VRM II
UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range
UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-50: Habitat Restoration
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-90: Graham's Beardtongue (*Penstemon grahamii*) [Vernal]
UT-LN-96: Air Quality Mitigation Measures
UT-LN-98: Protection of Natural Soundscapes
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-128: Floodplain Management
UT-LN-134: Graham's Beartongue (*Penstemon grahamii*) & White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-25: Mexican Spotted Owl (*Strix occidentalis lucida*)
T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

1691

UT-2026-03-1691
UT, Vernal Field Office, Bureau of Land Management, PD
T. 9 S., R. 23 E., Salt Lake
 Sec. 11 ALL;
 Sec. 12 S1/2, NW1/4, E1/2NE1/4;
 Sec. 12 W1/2NE1/4.
Uintah County
1280 Acres
12.50% Royalty Rate
EOI# UT00019927, UT00019928, UT00020494

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-299: Controlled Surface Use/Timing Limitations – Black-footed Ferret – PMZ area

UT-S-218: Controlled Surface Use – White-tailed Prairie Dog

LEASE NOTICES

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-83: Site ROW

UT-LN-98: Protection of Natural Soundscapes

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-115: Light and Sound

UT-LN-128: Floodplain Management

UT-LN-131: Greater Sage-Grouse – Net Conservation Gain

UT-LN-132: Greater Sage-Grouse – Required Design Features

UT-LN-133: Greater Sage-Grouse – Buffer

UT-LN-156: Statewide Pollinators and Pollinator Habitat

T&E-02: Black-footed Ferret

T&E-05: Listed Plant Species

T&E-12: Pariette Cactus (*Sclerocactus brevispinus*) and Uinta Basin Hookless Cactus (*Sclerocactus wetlandicus*)

T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)

T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1696

UT-2026-03-1696

UT, Vernal Field Office, Bureau of Land Management, PD

T. 9 S., R. 24 E., Salt Lake

Sec. 22 NE1/4SW1/4;

Sec. 27 NE1/4, E1/2SE1/4.

Uintah County

280 Acres

12.50% Royalty Rate

EOI# UT00019932, UT00019933

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-218: Controlled Surface Use – White-tailed Prairie Dog
UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range
UT-S-247: Vernal Timing Limitation-Crucial Elk Calving and Deer Fawning Habitat
UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-11: Statewide Crucial Elk Calving and Deer Fawning Habitat
UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-02: Black-footed Ferret
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1698

UT-2026-03-1698

UT, Vernal Field Office, Bureau of Land Management, PD

T. 9 S., R. 25 E., Salt Lake

Sec. 3 LOTS 1 thru 4;

Sec. 3 S1/2NE1/4, S1/2NW1/4, S1/2;

Sec. 4 LOTS 1 thru 4;

Sec. 4 S1/2NE1/4, S1/2NW1/4, S1/2;

Sec. 9 N1/2NE1/4, N1/2NW1/4;

Sec. 10 N1/2NE1/4, N1/2NW1/4.

Uintah County

1570.36 Acres

12.50% Royalty Rate

Agreements:

UTUT106715343 This parcel is fully committed to Unit Agreement (UA) (UTUT106715343), effective (February 20, 2025). The UA operator is (Anschutz Exploration Corporation). In accordance with the regulations in 43 CFR 3101.3-1, the successful bidder is required to file evidence of having entered into an agreement with the UA operator for the development and operation of the subject lands under the terms and provisions of the approved UA. The successful bidder should immediately contact the Operator. In order to join the UA, the operator will give instructions about executing copies of the joinder agreement. Five duplicate originally signed copies of the joinder agreement must be furnished to the Bureau of Land Management (Utah State Office) within 60 business days of the sale date. If more time is required, you must request an extension of time in which to comply. If not submitted within the time allowed, your bid may be subject to rejection.

EOI# UT00019977, UT00019978, UT00019934, UT00019935

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-218: Controlled Surface Use – White-tailed Prairie Dog

UT-S-261: Vernal Timing Limitation-Raptor Buffers

UT-S-299: Controlled Surface Use/Timing Limitations – Black-footed Ferret – PMZ area

LEASE NOTICES

UT-LN-25: White-Tailed and Gunnison Prairie Dog

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-90: Graham's beardtongue (*Penstemon grahamii*)
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-156 Statewide Pollinators and Pollinator Habitat
T&E-02: Black-footed Ferret
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1702

UT-2026-03-1702
UT, Vernal Field Office, Bureau of Land Management, PD
T. 7 S., R. 25 E., Salt Lake
Sec. 30 W1/2, W1/2SE1/4;
Sec. 31 ALL.

Uintah County
1040 Acres
12.50% Royalty Rate

Agreements:

UTUT106715343 This parcel is fully committed to Unit Agreement (UA)
UTUT106715343, effective 2/20/2025. The UA operator is Anschutz Exploration Corporation. In accordance with the regulations in 43 CFR 3101.3-1, the successful bidder is required to file evidence of having entered into an agreement with the UA operator for the development and operation of the subject lands under the terms and provisions of the approved UA. The successful bidder should immediately contact the Operator. In order to join the UA, the operator will give instructions about executing copies of the joinder agreement. Five duplicate originally signed copies of the joinder agreement must be furnished to the Bureau of Land Management Utah State Office within 60 business days of the sale date. If more time is required, you must request an extension of time in which to comply. If not submitted within the time allowed, your bid may be subject to rejection.

EOI# UT00019938, UT00020488

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-218: Controlled Surface Use – White-tailed Prairie Dog
UT-S-261: Vernal Timing Limitation-Raptor Buffers
UT-S-299: Controlled Surface Use/Timing Limitations – Black-footed Ferret – PMZ area

LEASE NOTICES

UT-LN-25 White-Tailed and Gunnison Prairie Dog
UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-02: Black-footed Ferret
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1703

UT-2026-03-1703 Split Estate

UT, Vernal Field Office, Bureau of Land Management, PD

T. 13 S., R. 24 E., Salt Lake

Sec. 27 NE1/4, N1/2NW1/4, E1/2SW1/4, SE1/4SW1/4;

Sec. 28 NE1/4NE1/4, W1/2, SE1/4;

Sec. 28 NW1/4NE1/4;

Sec. 33 ALL;

Sec. 34 S1/2, NW1/4, SW1/4NE1/4.

Uintah County

2080 Acres

12.50% Royalty Rate

EOI# UT00019948, UT00019995, UT00020018, UT00019961

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range

UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range

UT-S-251: Vernal Timing Limitation-Deer Migration Corridor (Monument and McCook Ridges)

UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-25: White-Tailed and Gunnison Prairie Dog

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-50: Habitat Restoration Area

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-90: Graham's beardtongue (*Penstemon grahamii*)

UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-115: Light and Sound

UT-LN-128: Floodplain Management

UT-LN-134: Graham's Beartongue (*Penstemon grahamii*) & White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]

UT-LN-156: Statewide Pollinators and Pollinator Habitat

T&E-05: Listed Plant Species

T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)

T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

T&E-25: Mexican Spotted Owl (*Strix occidentalis lucida*)

T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

1705

UT-2026-03-1705

UT, Vernal Field Office, Bureau of Land Management, PD

T. 13 S., R. 25 E., Salt Lake

Sec. 3 LOTS 3 thru 6;

Sec. 3 S1/2NW1/4;

Sec. 4 LOTS 1 thru 8;

Sec. 4 S1/2, S1/2NE1/4, S1/2NW1/4;

Sec. 9 N1/2, S1/2SW1/4, NE1/4SW1/4, SE1/4;

Sec. 10 ALL.

Uintah County

2143.95 Acres

12.50% Royalty Rate

EOI# UT00020045, UT00019962, UT00019950, UT00020035

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-230 Vernal Timing Limitation-Crucial Deer and Elk Winter Range

UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-11: Statewide Crucial Elk Calving and Deer Fawning Habitat

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-25: Mexican Spotted Owl (*Strix occidentalis lucida*)

1715

UT-2026-03-1715 Split Estate
UT, Vernal Field Office, Bureau of Land Management, PD
T. 15 S., R. 21 E., Salt Lake
Sec. 20 ALL;
Sec. 29 ALL;
Sec. 30 LOTS 1 thru 3;
Sec. 30 LOTS 4;
Sec. 30 E1/2NE1/4, E1/2NW1/4, NE1/4SW1/4, E1/2SE1/4;
Sec. 30 W1/2NE1/4, SE1/4SW1/4, W1/2SE1/4;
Sec. 31 LOTS 1 thru 4;
Sec. 31 N1/2NE1/4.

Uintah County

2161.2 Acres

12.50% Royalty Rate

EOI# UT00020005, UT00020006, UT00020007, UT00019958

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-50: Habitat Restoration
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-128: Floodplain Management
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-156 Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-25: Mexican Spotted Owl (*Strix occidentalis lucida*)
T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

1717

UT-2026-03-1717
UT, Vernal Field Office, Bureau of Land Management, PD
T. 13 S., R. 22 E., Salt Lake
Sec. 19 LOTS 1 thru 4;
Sec. 19 E1/2, E1/2NW1/4, E1/2SW1/4.
Uintah County
627.88 Acres
12.50% Royalty Rate
EOI# UT00019959

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range
UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species
UT-LN-50: Habitat Restoration
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-90: Graham's Beardtongue (*Penstemon grahamii*) [Vernal]
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-128: Floodplain Management
UT-LN-134: Graham's Beartongue (*Penstemon grahamii*) & White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1719

UT-2026-03-1719
UT, Vernal Field Office, Bureau of Land Management, PD
T. 13 S., R. 24 E., Salt Lake
 Sec. 1 LOTS 1 thru 8;
 Sec. 1 S1/2, S1/2NE1/4, S1/2NW1/4;
 Sec. 11 ALL;
 Sec. 12 ALL.
Uintah County
1980.4 Acres
12.50% Royalty Rate
EOI# UT00019960, UT00020008, UT00020009

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-230 Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-231 Vernal Controlled Surface Use-Crucial Deer Winter Range
UT-S-261 Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors
UT-LN-45 Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-50: Habitat Restoration
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-90: Graham's beardtongue (*Penstemon grahamii*)
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-156 Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1734

UT-2026-03-1734
UT, Vernal Field Office, Bureau of Land Management, PD
T. 12 S., R. 25 E., Salt Lake
 Sec. 3 LOTS 1 thru 4;
 Sec. 3 S1/2NE1/4, S1/2NW1/4, S1/2;
 Sec. 4 LOTS 1 thru 10;
 Sec. 4 S1/2NE1/4, W1/2SW1/4, SE1/4SW1/4, NE1/4SE1/4;
 Sec. 9 LOTS 2;
 Sec. 9 NW1/4NE1/4, S1/2NE1/4, NW1/4, S1/2;
 Sec. 10 LOTS 1 thru 7;
 Sec. 10 NE1/4, NE1/4NW1/4, NW1/4SW1/4, S1/2SW1/4.

Uintah County
2462.92 Acres
12.50% Royalty Rate
EOI# UT00019968, UT00020023, UT00019969, UT00019970

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual

Resources

UT-S-230 Vernal Timing Limitation-Crucial Deer and Elk Winter Range

UT-S-231 Vernal Controlled Surface Use-Crucial Deer Winter Range

UT-S-261 Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-83: Site ROW

UT-LN-90: Graham's Beardtongue (*Penstemon grahamii*) [Vernal]

UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-115: Light and Sound

UT-LN-128: Floodplain Management

UT-LN-134: Graham's Beartongue (*Penstemon grahamii*) & White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]

UT-LN-156 Statewide Pollinators and Pollinator Habitat

T&E-05: Listed Plant Species

T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

1742

UT-2026-03-1742 Split Estate

UT, Vernal Field Office, Bureau of Land Management, PD

T. 9 S., R. 24 E., Salt Lake

Sec. 1 LOTS 7;

Sec. 12 LOTS 1 thru 6;

Sec. 12 SE1/4NW1/4, S1/2;

Sec. 13 ALL.

Uintah County

1192.34 Acres

12.50% Royalty Rate

EOI# UT00019972, UT00020483, UT00020484

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-218: Controlled Surface Use – White-tailed Prairie Dog
UT-S-230 Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-231 Vernal Controlled Surface Use-Crucial Deer Winter Range
UT-S-261 Vernal Timing Limitation-Raptor Buffers
UT-S-299: Controlled Surface Use/Timing Limitations – Black-footed Ferret – PMZ area

LEASE NOTICES

UT-LN-25 White-Tailed and Gunnison Prairie Dog
UT-LN-44 Statewide Raptors
UT-LN-45 Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-90: Graham’s beardtongue (*Penstemon grahamii*)
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-156 Statewide Pollinators and Pollinator Habitat
T&E-02: Black-footed Ferret
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1765

UT-2026-03-1765
UT, Vernal Field Office, Bureau of Land Management, PD
T. 13 S., R. 24 E., Salt Lake
 Sec. 13 ALL;
 Sec. 14 ALL;
 Sec. 23 ALL;
 Sec. 24 ALL.
Uintah County
2560 Acres

12.50% Royalty Rate

EOI# UT00020010, UT00020011, UT00020015, UT00020016

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-230 Vernal Timing Limitation-Crucial Deer and Elk Winter Range

UT-S-231 Vernal Controlled Surface Use-Crucial Deer Winter Range

UT-S-261 Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44 Statewide Raptors

UT-LN-45 Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-50: Habitat Restoration

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-90: Graham's beardtongue (*Penstemon grahamii*)

UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-115: Light and Sound

UT-LN-128: Floodplain Management

UT-LN-156 Statewide Pollinators and Pollinator Habitat

T&E-05: Listed Plant Species

T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)

T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

T&E-25: Mexican Spotted Owl (*Strix occidentalis lucida*)

1767

UT-2026-03-1767 Split Estate

UT, Vernal Field Office, Bureau of Land Management, PD

T. 13 S., R. 24 E., Salt Lake

Sec. 15 ALL;

Sec. 16 NE1/4, NE1/4NW1/4, S1/2NW1/4, S1/2;

Sec. 21 NE1/4, N1/2NW1/4, SE1/4NW1/4, SW1/4SW1/4, N1/2SE1/4, SE1/4SE1/4;

Sec. 21 SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, SW1/4SE1/4;

Sec. 22 ALL.

Uintah County

2520 Acres

12.50% Royalty Rate

EOI# UT00020012, UT00020013, UT00019994, UT00020014

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-230 Vernal Timing Limitation-Crucial Deer and Elk Winter Range

UT-S-231 Vernal Controlled Surface Use-Crucial Deer Winter Range

UT-S-261 Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44 Statewide Raptors

UT-LN-45 Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-50: Habitat Restoration

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-90: Graham's Beardtongue (*Penstemon grahamii*) [Vernal]

UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-115: Light and Sound

UT-LN-128: Floodplain Management

UT-LN-134: Graham's Beartongue (*Penstemon grahamii*) & White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]

UT-LN-156 Statewide Pollinators and Pollinator Habitat

T&E-05: Listed Plant Species

T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)

T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

T&E-25: Mexican Spotted Owl (*Strix occidentalis lucida*)

T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

1789

UT-2026-03-1789

UT, Vernal Field Office, Bureau of Land Management, PD

T. 10 S., R. 23 E., Salt Lake

Sec. 29 SW1/4NW1/4, NW1/4SW1/4, S1/2SW1/4, S1/2SE1/4;

Sec. 30 LOTS 1 thru 4;

Sec. 30 NE1/4NE1/4, SW1/4NE1/4, SE1/4NW1/4, E1/2SW1/4, SE1/4;

Sec. 31 LOTS 1 thru 4;

Sec. 31 E1/2, E1/2NW1/4, E1/2SW1/4;

Sec. 33 ALL.

Uintah County

2039.04 Acres

12.50% Royalty Rate

Agreements:

UTUT106367776 This parcel is fully committed to Unit Agreement (UA)

UTUT106367776, effective 5/16/2024. The UA operator is Anschutz Exploration Corporation. In accordance with the regulations in 43 CFR 3101.3-1, the successful bidder is required to file evidence of having entered into an agreement with the UA operator for the development and operation of the subject lands under the terms and provisions of the approved UA. The successful bidder should immediately contact the Operator. In order to join the UA, the operator will give instructions about executing copies of the joinder agreement. Five duplicate originally signed copies of the joinder agreement must be furnished to the Bureau of Land Management Utah State Office within 60 business days of the sale date. If more time is required, you must request an extension of time in which to comply. If not submitted within the time allowed, your bid may be subject to rejection.

EOI# UT00020479, UT00020478, UT00020480, UT00020481

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-47: No Surface Occupancy White River SRMA

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-159: Controlled Surface Use – Visual Resources -VRM II

UT-S-261 Vernal Timing Limitation-Raptor Buffers

UT-S-278: Controlled Surface Use – Bald Eagle Winter Roost

LEASE NOTICES

UT-LN-44 Statewide Raptors

UT-LN-45 Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-50: Habitat Restoration

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-90: Graham's Beardtongue (*Penstemon grahamii*) [Vernal]
UT-LN-96: Air Quality Mitigation Measures
UT-LN-98: Protection of Natural Soundscapes
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-106: Vernal, Special Recreation Management area
UT-LN-107: Bald Eagle
UT-LN-128: Floodplain Management
UT-LN-134: Graham's Beartongue (*Penstemon grahamii*) & White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]
UT-LN-156 Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-12: Pariette Cactus (*Sclerocactus brevispinus*) and Uinta Basin Hookless Cactus (*Sclerocactus wetlandicus*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

1791

UT-2026-03-1791
UT, Vernal Field Office, Bureau of Land Management, PD
T. 13 S., R. 25 E., Salt Lake
 Sec. 14 NW1/4NW1/4, SW1/4NW1/4, NW1/4SW1/4;
 Sec. 15 ALL;
 Sec. 21 ALL;
 Sec. 22 ALL.
Uintah County
2040 Acres
12.50% Royalty Rate
EOI# UT00020046, UT00020047, UT00020036, UT00020048

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-230 Vernal Timing Limitation-Crucial Deer and Elk Winter Range

UT-S-231 Vernal Controlled Surface Use-Crucial Deer Winter Range
UT-S-247 Vernal Timing Limitation-Crucial Elk Calving and Deer Fawning Habitat
UT-S-261 Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-11: Statewide Crucial Elk Calving and Deer Fawning Habitat
UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-50: Habitat Restoration
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1792

UT-2026-03-1792 Split Estate
UT, Vernal Field Office, Bureau of Land Management, PD
T. 13 S., R. 25 E., Salt Lake
 Sec. 27 NE1/4, W1/2, W1/2SE1/4;
 Sec. 28 NE1/4SE1/4, S1/2SE1/4;
 Sec. 33 N1/2, N1/2SW1/4, SW1/4SW1/4;
 Sec. 33 SE1/4SW1/4, SE1/4SE1/4;
 Sec. 34 N1/2NW1/4.
Uintah County
1280 Acres
12.50% Royalty Rate
EOI# UT00020049, UT00020037, UT00020050, UT00020498, UT00020051

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-230 Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-231 Vernal Controlled Surface Use-Crucial Deer Winter Range
UT-S-247 Vernal Timing Limitation-Crucial Elk Calving and Deer Fawning Habitat
UT-S-261 Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-11: Statewide Crucial Elk Calving and Deer Fawning Habitat
UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-50: Habitat Restoration
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-90: Graham's beardtongue (*Penstemon grahamii*)
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-156 Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-25: Mexican Spotted Owl (*Strix occidentalis lucida*)

1798

UT-2026-03-1798 Split Estate
UT, Vernal Field Office, Bureau of Land Management, PD
T. 10 S., R. 24 E., Salt Lake
Sec. 1 SW1/4SE1/4SW1/4.
Uintah County
10 Acres
12.50% Royalty Rate
EOI# UT00019996

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-120: No Surface Occupancy – White River Corridor
UT-S-123: NSO – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range
UT-S-247: Vernal Timing Limitation-Crucial Elk Calving and Deer Fawning Habitat
UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-11: Statewide Crucial Elk Calving and Deer Fawning Habitat
UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-50: Habitat Restoration
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-90: Graham's Beardtongue (*Penstemon grahamii*) [Vernal]
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-128: Floodplain Management
UT-LN-134: Graham's Beartongue (*Penstemon grahamii*) & White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

1799

UT-2026-03-1799
UT, Vernal Field Office, Bureau of Land Management, PD
T. 12 S., R. 25 E., Salt Lake
 Sec. 1 LOTS 1 thru 8, 10, 11;
 Sec. 1 S1/2NW1/4, SW1/4;
 Sec. 11 LOTS 1;
 Sec. 11 N1/2, N1/2SW1/4, SE1/4SW1/4, N1/2SE1/4, SE1/4SE1/4;
 Sec. 12 NE1/4NW1/4, SW1/4NW1/4;
 Sec. 14 LOTS 1 thru 3.
Uintah County
1469.52 Acres
12.50% Royalty Rate
EOI# UT00020052, UT00020053, UT00020054, UT00020055

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: NSO – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-261 Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-90: Graham's beardtongue (*Penstemon grahamii*)
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-128: Floodplain Management
UT-LN-134: Graham's Beartongue (*Penstemon grahamii*) & White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

1808

UT-2026-03-1808
UT, Vernal Field Office, Bureau of Land Management, PD
T. 13 S., R. 22 E., Salt Lake
 Sec. 20 ALL;
 Sec. 21 ALL;
 Sec. 29 N1/2, N1/2SW1/4, SE1/4SW1/4, SE1/4.
Uintah County
1880 Acres
12.50% Royalty Rate
Agreements:

UTUT106715229 This parcel is fully committed to Unit Agreement (UA)
UTUT106715229, Golf(Deep) Unit, effective December 1, 2025. The UA operator is Anschutz Exploration Corp. In accordance with the regulations in 43 CFR 3101.30, the successful bidder is required to file evidence of having entered into an agreement with the UA operator for the development and operation of the subject lands under the terms and provisions of the approved UA. The successful bidder should immediately contact the Operator. In order to join the UA, the operator will give instructions about executing copies of the joinder agreement. Five duplicate originally signed copies of the joinder agreement must be furnished to the Bureau of Land Management (Utah State Office) within 60 business days of the sale date. If more time is required, you must request an extension of time in which to comply. If not submitted within the time allowed, your bid may be subject to rejection.

EOI# UT00020499, UT00020500, UT00020503

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: NSO – Riparian, Floodplains, and Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range

UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range

UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-50: Habitat Restoration

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-90: Graham's Beardtongue (*Penstemon grahamii*) [Vernal]

UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-115: Light and Sound

UT-LN-128: Floodplain Management

UT-LN-134: Graham's Beardtongue (*Penstemon grahamii*) & White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]

UT-LN-156: Statewide Pollinators and Pollinator Habitat

T&E-05: Listed Plant Species

T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1810

UT-2026-03-1810

UT, Vernal Field Office, Bureau of Land Management, PD

T. 13 S., R. 22 E., Salt Lake

Sec. 27 ALL;

Sec. 28 ALL;

Sec. 33 N1/2;

Sec. 34 N1/2, N1/2SE1/4, SW1/4SE1/4.

Uintah County

2040 Acres

12.50% Royalty Rate

Agreements:

UTUT106715229 This parcel is fully committed to Unit Agreement (UA)

UTUT106715229, Golf(Deep) Unit, effective December 1, 2025. The UA operator is Anschutz Exploration Corp. In accordance with the regulations in 43 CFR 3101.30, the successful bidder is required to file evidence of having entered into an agreement with the UA operator for the development and operation of the subject lands under the terms and provisions of the approved UA. The successful bidder should immediately contact the Operator. In order to join the UA, the operator will give instructions about executing copies of the joinder agreement. Five duplicate originally signed copies of the joinder agreement must be furnished to the Bureau of Land Management (Utah State Office) within 60 business days of the sale date. If more time is required, you must request an extension of time in which to comply. If not submitted within the time allowed, your bid may be subject to rejection.

EOI# UT00020501, UT00020502, UT00020504, UT00020505

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: NSO – Riparian, Floodplains, and Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual

Resources

UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range

UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range

UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44 Statewide Raptors

UT-LN-45 Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species
UT-LN-50: Habitat Restoration
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-90: Graham's Beardtongue (*Penstemon grahamii*) [Vernal]
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse - Buffer
UT-LN-134: Graham's Beartongue (*Penstemon grahamii*) & White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]
UT-LN-156 Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1815

UT-2026-03-1815
UT, Vernal Field Office, Bureau of Land Management, PD
T. 13 S., R. 22 E., Salt Lake
Sec. 25 NW1/4.
Uintah County
160 Acres
12.50% Royalty Rate
EOI# UT00020506

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, And Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range
UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-90: Graham's Beardtongue (*Penstemon grahamii*) [Vernal]
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse - Buffer
UT-LN-134: Graham's Beartongue (*Penstemon grahamii*) & White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1816

UT-2026-03-1816

UT, Vernal Field Office, Bureau of Land Management, PD

T. 12 S., R. 22 E., Salt Lake

Sec. 20 SW1/4NW1/4.

Uintah County

40 Acres

Agreements:

UTUT106715229 This parcel is fully committed to Unit Agreement (UA)

UTUT106715229, Golf(Deep) Unit, effective December 1, 2025. The UA operator is Anschutz Exploration Corp. In accordance with the regulations in 43 CFR 3101.30, the successful bidder is required to file evidence of having entered into an agreement with the UA operator for the development and operation of the subject lands under the terms and provisions of the approved UA. The successful bidder should immediately contact the Operator. In order to join the UA, the operator will give instructions about executing copies of the joinder agreement. Five duplicate originally signed copies of the joinder agreement must be furnished to the Bureau of Land Management (Utah State Office) within 60 business days of the sale date. If more time is required, you must request an extension of time in which to comply. If not submitted within the time allowed, your bid may be subject to rejection.

12.50% Royalty Rate

EOI# UT000120507

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Riparian, Floodplains, And Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-261 Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-52: Statewide Noxious Weeds

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-96: Air Quality Mitigation Measures

UT-LN-115: Light and Sound

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-131: Greater Sage-Grouse – Net Conservation Gain

UT-LN-132: Greater Sage-Grouse – Required Design Features

UT-LN-133: Greater Sage-Grouse – Buffer

UT-LN-134: Graham's Beartongue (*Penstemon grahamii*) & White River Beartongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]

UT-LN-156: Statewide Pollinators and Pollinator Habitat

T&E-05: Listed Plant Species

T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1817

UT-2026-03-1817 Split Estate

UT, Vernal Field Office, Bureau of Land Management, PD

T. 12 S., R. 22 E., Salt Lake

Sec. 35 S1/2NW1/4.

Uintah County

80 Acres

12.50% Royalty Rate

Agreements:

UTUT106715229 This parcel is fully committed to Unit Agreement (UA)

UTUT106715229, Golf(Deep) Unit, effective December 1, 2025. The UA operator is

Anschutz Exploration Corp. In accordance with the regulations in 43 CFR 3101.30, the successful bidder is required to file evidence of having entered into an agreement with the UA operator for the development and operation of the subject lands under the terms and provisions of the approved UA. The successful bidder should immediately contact the Operator. In order to join the UA, the operator will give instructions about executing copies of the joinder agreement. Five duplicate originally signed copies of the joinder agreement must be furnished to the Bureau of Land Management (Utah State Office) within 60 business days of the sale date. If more time is required, you must request an extension of time in which to comply. If not submitted within the time allowed, your bid may be subject to rejection.

EOI# UT00020508

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-123: No Surface Occupancy – Riparian, Floodplains, And Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range

UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range

UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-90: Graham's beardtongue (*Penstemon grahamii*)

UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-115: Light and Sound

UT-LN-156: Statewide Pollinators and Pollinator Habitat

T&E-05: Listed Plant Species

T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)

T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1818

UT-2026-03-1818 Split Estate

UT, Vernal Field Office, Bureau of Land Management, PD

T. 14 S., R. 23 E., Salt Lake

Sec. 3 LOTS 1 thru 4;

Sec. 3 S1/2NE1/4, S1/2NW1/4, S1/2;

Sec. 4 LOTS 1 thru 4;
Sec. 4 S1/2NE1/4, S1/2NW1/4, S1/2;
Sec. 5 LOTS 1 thru 4;
Sec. 5 S1/2NE1/4, SE1/4NW1/4, S1/2;
Sec. 5 SW1/4NW1/4;
Sec. 6 LOTS 1,2,6,7;
Sec. 6 S1/2NE1/4, SE1/4NW1/4, E1/2SW1/4;
Sec. 6 SE1/4.

Uintah County

2396.72 Acres

12.50% Royalty Rate

EOI# UT00020514, UT00020515, UT00020516, UT00020517

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Riparian, Floodplains, And Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range

UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range

UT-S-251: Vernal Timing Limitation-Deer Migration Corridor (Monument and McCook Ridges)

UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-83: Site ROW

UT-LN-90: Graham's beardtongue (*Penstemon grahamii*)

UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-115: Light and Sound

UT-LN-128: Floodplain Management

UT-LN-131: Greater Sage-Grouse – Net Conservation Gain

UT-LN-132: Greater Sage-Grouse – Required Design Features

UT-LN-133: Greater Sage-Grouse – Buffer

UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-25: Mexican Spotted Owl (*Strix occidentalis lucida*)
T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

1823

UT-2026-03-1823
UT, Vernal Field Office, Bureau of Land Management, PD
T. 11 S., R. 22 E., Salt Lake
Sec. 22 E1/2SW1/4.
Uintah County
80 Acres
12.50% Royalty Rate
EOI# UT00020511

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, And Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-218: Controlled Surface Use – White-tailed Prairie Dog
UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-25 White-Tailed and Gunnison Prairie Dog
UT-LN-44 Statewide Raptors
UT-LN-45 Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-50: Habitat Restoration
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features

UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-134: Graham’s Beartongue (*Penstemon grahamii*) & White River Beartongue
(*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]
UT-LN-156 Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

1825

UT-2026-03-1825 Split Estate
UT, Vernal Field Office, Bureau of Land Management, PD
T. 11 S., R. 21 E., Salt Lake
Sec. 34 ALL;
Sec. 35 ALL.
Uintah County
1280 Acres
12.50% Royalty Rate
EOI# UT00020512, UT00020513

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, And Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual
Resources
UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-90: Graham’s beartongue (*Penstemon grahamii*)
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound

UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-134: Graham’s Beartongue (*Penstemon grahamii*) & White River Beartongue
(*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]
UT-LN-156 Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

7778

UT-2026-03-7778
UT, Vernal Field Office, Bureau of Land Management, PD
T. 13 S., R. 23 E., Salt Lake
Sec. 26 ALL.
Uintah County
640 Acres
12.50% Royalty Rate
EOI# UT00019912

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, And Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual
Resources
UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range
UT-S-251: Vernal Timing Limitation-Deer Migration Corridor (Monument and McCook Ridges)
UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-90: Graham’s beartongue (*Penstemon grahamii*)
UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-134: Graham's Beartongue (*Penstemon grahamii*) & White River Beartongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-25: Mexican Spotted Owl (*Strix occidentalis lucida*)
T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

7779

UT-2026-03-7779
UT, Vernal Field Office, Bureau of Land Management, PD
T. 11 S., R. 25 E., Salt Lake
 Sec. 28 E1/2SE1/4;
 Sec. 33 E1/2NE1/4, N1/2NW1/4.
Uintah County
240 Acres
12.50% Royalty Rate
EOI# UT00019921, UT00020038

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range
UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW

UT-LN-90: Graham's Beardtongue (*Penstemon grahamii*) [Vernal]
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-128: Floodplain Management
UT-LN-134: Graham's Beardtongue (*Penstemon grahamii*) & White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

7781

UT-2026-03-7781

UT, Vernal Field Office, Bureau of Land Management, PD

T. 9 S., R. 24 E., Salt Lake

Sec. 7 LOTS 1 thru 4;

Sec. 7 E1/2, E1/2NW1/4, E1/2SW1/4;

Sec. 8 ALL;

Sec. 17 ALL;

Sec. 18 LOTS 1 thru 4;

Sec. 18 E1/2, E1/2NW1/4, E1/2SW1/4.

Uintah County

2545.78 Acres

12.50% Royalty Rate

EOI# UT00019973, UT00019929, UT00019930, UT00019974

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Riparian, Floodplains, And Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-218: Controlled Surface Use – White-tailed Prairie Dog

UT-S-261 Vernal Timing Limitation-Raptor Buffers

UT-S-299: Controlled Surface Use/Timing Limitations – Black-footed Ferret – PMZ area

LEASE NOTICES

UT-LN-25: White-Tailed and Gunnison Prairie Dog

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-128: Floodplain Management
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-02: Black-footed Ferret
T&E-05: Listed Plant Species
T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

7782

UT-2026-03-7782

UT, Vernal Field Office, Bureau of Land Management, PD

T. 9 S., R. 24 E., Salt Lake

Sec. 19 LOTS 1 thru 4;

Sec. 19 E1/2, E1/2NW1/4, E1/2SW1/4;

Sec. 20 ALL;

Sec. 30 LOTS 1 thru 4;

Sec. 30 NE1/4, E1/2NW1/4, SE1/4SW1/4, NE1/4SE1/4.

Uintah County

1748.52 Acres

12.50% Royalty Rate

EOI# UT00020042, UT00019931, UT00019976

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Riparian, Floodplains, And Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-218: Controlled Surface Use – White-tailed Prairie Dog

UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-25: White-Tailed and Gunnison Prairie Dog

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-49: Utah Sensitive Species

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-83: Site ROW

UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-115: Light and Sound

UT-LN-131: Greater Sage-Grouse – Net Conservation Gain

UT-LN-132: Greater Sage-Grouse – Required Design Features

UT-LN-133: Greater Sage-Grouse – Buffer

UT-LN-156: Statewide Pollinators and Pollinator Habitat

T&E-02: Black-footed Ferret

T&E-05: Listed Plant Species

T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

7784

UT-2026-03-7784

UT, Vernal Field Office, Bureau of Land Management, PD

T. 8 S., R. 24 E., Salt Lake

Sec. 27 N1/2, N1/2SW1/4, NW1/4SE1/4;

Sec. 28 ALL;

Sec. 33 ALL;

Sec. 34 NW1/4.

Uintah County

1880 Acres

12.50% Royalty Rate

EOI# UT00020486, UT00019936, UT00019937, UT00020487

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Riparian, Floodplains, And Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-218: Controlled Surface Use – White-tailed Prairie Dog

UT-S-261 Vernal Timing Limitation-Raptor Buffers

UT-S-299: Controlled Surface Use/Timing Limitations – Black-footed Ferret – PMZ area

LEASE NOTICES

UT-LN-25: White-Tailed and Gunnison Prairie Dog

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-83: Site ROW

UT-LN-90: Graham's beardtongue (*Penstemon grahamii*)

UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-115: Light and Sound

UT-LN-128: Floodplain Management

UT-LN-131: Greater Sage-Grouse – Net Conservation Gain

UT-LN-132: Greater Sage-Grouse – Required Design Features

UT-LN-133: Greater Sage-Grouse – Buffer

UT-LN-156 Statewide Pollinators and Pollinator Habitat

T&E-02: Black-footed Ferret

T&E-05: Listed Plant Species

T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

7785

UT-2026-03-7785

UT, Vernal Field Office, Bureau of Land Management, PD

T. 13 S., R. 25 E., Salt Lake

Sec. 5 LOTS 1 thru 8;

Sec. 5 N1/2NE1/4, N1/2NW1/4, S1/2;

Sec. 6 LOTS 1 thru 11;

Sec. 6 SE1/4, S1/2NE1/4, E1/2SW1/4, SE1/4NW1/4;

Sec. 7 LOTS 1 thru 4;

Sec. 7 E1/2, E1/2NW1/4, E1/2SW1/4;

Sec. 8 N1/2, NW1/4SW1/4, S1/2SW1/4, S1/2SE1/4.

Uintah County

2556.39 Acres

12.50% Royalty Rate

EOI# UT00019963, UT00019964, UT00019965, UT00019949

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Riparian, Floodplains, And Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-218: Controlled Surface Use – White-tailed Prairie Dog

UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range

UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range

UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-25: White-Tailed and Gunnison Prairie Dog

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-50: Habitat Restoration

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-83: Site ROW

UT-LN-90: Graham's beardtongue (*Penstemon grahamii*)

UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-115: Light and Sound

UT-LN-156: Statewide Pollinators and Pollinator Habitat

T&E-05: Listed Plant Species

T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)

T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

7786

UT-2026-03-7786

UT, Vernal Field Office, Bureau of Land Management, PD

T. 12 S., R. 25 E., Salt Lake

Sec. 5 LOTS 1 thru 4;
Sec. 5 S1/2NE1/4, S1/2NW1/4, S1/2;
Sec. 6 LOTS 1 thru 4;
Sec. 6 S1/2NE1/4, S1/2NW1/4, S1/2;
Sec. 7 N1/2, N1/2SW1/4, N1/2SE1/4;
Sec. 8 N1/2, N1/2SW1/4, N1/2SE1/4.

Uintah County

2236.6 Acres

12.50% Royalty Rate

EOI# UT00020024, UT00020026, UT00019951, UT00019952

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Riparian, Floodplains, And Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range

UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range

UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-83: Site ROW

UT-LN-90: Graham's Beardtongue (*Penstemon grahamii*) [Vernal]

UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-115: Light and Sound

UT-LN-134: Graham's Beartongue (*Penstemon grahamii*) & White River Beardtongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]

UT-LN-156: Statewide Pollinators and Pollinator Habitat

T&E-05: Listed Plant Species

T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)

T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

7793

UT-2026-03-7793

UT, Vernal Field Office, Bureau of Land Management, PD

T. 13 S., R. 25 E., Salt Lake

Sec. 17 ALL;

Sec. 18 LOTS 1 thru 4;

Sec. 18 E1/2, E1/2NW1/4, E1/2SW1/4;

Sec. 19 LOTS 1 thru 4;

Sec. 19 E1/2, E1/2NW1/4, E1/2SW1/4;

Sec. 20 ALL.

Uintah County

2548.24 Acres

12.50% Royalty Rate

EOI# UT00020019, UT00019966, UT00019967, UT00020020

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Riparian, Floodplains, And Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range

UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range

UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-50: Habitat Restoration

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-90: Graham's beardtongue (*Penstemon grahamii*)

UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-115: Light and Sound

UT-LN-156: Statewide Pollinators and Pollinator Habitat

T&E-05: Listed Plant Species

T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)

T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-25: Mexican Spotted Owl (*Strix occidentalis lucida*)

7809

UT-2026-03-7809 Split Estate
UT, Vernal Field Office, Bureau of Land Management, PD
T. 13 S., R. 24 E., Salt Lake
Sec. 25 ALL;
Sec. 26 ALL;
Sec. 35 NE1/4, NE1/4NW1/4, S1/2;
Sec. 35 NW1/4NW1/4, S1/2NW1/4.

Uintah County
1920 Acres
12.50% Royalty Rate
EOI# UT00020032, UT00020033, UT00020034

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-251: Vernal Timing Limitation-Deer Migration Corridor (Monument and McCook Ridges)
UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-50: Habitat Restoration
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-90: Graham's beardtongue (*Penstemon grahamii*)
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-128: Floodplain Management

UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-22: Ute Ladies'-Tresses (*Spiranthes diluvialis*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-25: Mexican Spotted Owl (*Strix occidentalis lucida*)
T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

7813

UT-2026-03-7813 Split Estate
UT, Vernal Field Office, Bureau of Land Management, PD
T. 8 S., R. 24 E., Salt Lake
Sec. 35 SW1/4, W1/2SW1/4, SE1/4SE1/4;
Sec. 35 NE1/4SE1/4.

Uintah County
320 Acres
12.50% Royalty Rate
EOI# UT00019997

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-218: Controlled Surface Use – White-tailed Prairie Dog
UT-S-261: Vernal Timing Limitation-Raptor Buffers
UT-S-299: Controlled Surface Use/Timing Limitations – Black-footed Ferret – PMZ area

LEASE NOTICES

UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound

UT-LN-128: Floodplain Management
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-02: Black-footed Ferret
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

7814

UT-2026-03-7814 Split Estate
UT, Vernal Field Office, Bureau of Land Management, PD
T. 8 S., R. 23 E., Salt Lake
Sec. 24 N1/2NE1/4, N1/2SW1/4NE1/4, N1/2SW1/4SW1/4NE1/4, SE1/4SW1/4NE1/4,
SE1/4NE1/4, N1/2NW1/4, N1/2SE1/4, N1/2SW1/4SE1/4NW1/4,
N1/2SE1/4SE1/4NW1/4, E1/2SE1/4, SE1/4SE1/4;
Sec. 24 S1/2SW1/4SW1/4NE1/4, SW1/4NW1/4, S1/2SW1/4SE1/4NW1/4,
S1/2SE1/4SE1/4NW1/4, SW1/4, W1/2NW1/4SE1/4, W1/2SW1/4SE1/4;
Sec. 24 NE1/4SE1/4;
Sec. 25 NE1/4NE1/4.

Uintah County
680 Acres
12.50% Royalty Rate
EOI# UT00020044, UT00020495

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-218: Controlled Surface Use – White-tailed Prairie Dog
UT-S-261: Vernal Timing Limitation-Raptor Buffers
UT-S-299: Controlled Surface Use/Timing Limitations – Black-footed Ferret – PMZ area

LEASE NOTICES

UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-128: Floodplain Management
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-02: Black-footed Ferret
T&E-05: Listed Plant Species
T&E-12: Pariette Cactus (*Sclerocactus brevispinus*) and Uinta Basin Hookless Cactus (*Sclerocactus wetlandicus*)
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

7823

UT-2026-03-7823
UT, Vernal Field Office, Bureau of Land Management, PD
T. 6 S., R. 20 E., Salt Lake
 Sec. 20 NE1/4, N1/2NW1/4, SE1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;
 Sec. 21 NW1/4, S1/2.
Uintah County
880 Acres
12.50% Royalty Rate
EOI# UT00020433

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-218: Controlled Surface Use – White-tailed Prairie Dog
UT-S-261: Vernal Timing Limitation-Raptor Buffers

LEASE NOTICES

UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-96: Air Quality Mitigation Measures
UT-LN-98: Protection of Natural Soundscapes
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

7826

UT-2026-03-7826
UT, Vernal Field Office, Bureau of Land Management, PD
T. 9 S., R. 24 E., Salt Lake
 Sec. 9 S1/2NE1/4, NE1/4NE1/4.
Uintah County
120 Acres
12.50% Royalty Rate
EOI# UT00020043

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-218: Controlled Surface Use – White-tailed Prairie Dog
UT-S-261: Vernal Timing Limitation-Raptor Buffers
UT-S-299: Controlled Surface Use/Timing Limitations – Black-footed Ferret – PMZ area

LEASE NOTICES

UT-LN-25: White-Tailed and Gunnison Prairie Dog
UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-128: Floodplain Management
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-02: Black-footed Ferret
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

7830

UT-2026-03-7830
UT, Vernal Field Office, Bureau of Land Management, PD
T. 10 S., R. 23 E., Salt Lake
Sec. 24 N1/2NE1/4, SE1/4NE1/4.

Uintah County

120 Acres

12.50% Royalty Rate

Agreements:

UTUT106367776 This parcel is fully committed to Unit Agreement (UA)
UTUT106367776, effective 5/16/2024. The UA operator is Anschutz Exploration Corporation. In accordance with the regulations in 43 CFR 3101.3-1, the successful bidder is required to file evidence of having entered into an agreement with the UA operator for the development and operation of the subject lands under the terms and provisions of the approved UA. The successful bidder should immediately contact the Operator. In order to join the UA, the operator will give instructions about executing copies of the joinder agreement. Five duplicate originally signed copies of the joinder agreement must be furnished to the Bureau of Land Management Utah State Office within 60 business days of the sale date. If more time is required, you must request an extension of time in which to comply. If not submitted within the time allowed, your bid may be subject to rejection.

EOI# UT00020482

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-87: No surface Occupancy - White River BLM Natural Area
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-120: No Surface Occupancy – White River Corridor
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-159: Controlled Surface Use – Visual Resources – VRM II
UT-S-230: Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-231: Vernal Controlled Surface Use-Crucial Deer Winter Range
UT-S-247: Vernal Timing Limitation-Crucial Elk Calving and Deer Fawning Habitat
UT-S-261: Vernal Timing Limitation-Raptor Buffers
UT-S-278: Controlled Surface Use – Bald Eagle Winter Roost

LEASE NOTICES

UT-LN-11: Statewide Crucial Elk Calving and Deer Fawning Habitat
UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-50: Habitat Restoration
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-96: Air Quality Mitigation Measures
UT-LN-98: Protection of Natural Soundscapes
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-107: Bald Eagle
UT-LN-115: Light and Sound
UT-LN-128: Floodplain Management
UT-LN-134: Graham’s Beartongue (*Penstemon grahamii*) & White River Beartongue (*Penstemon scariosus* var. *albifluvis*) Conservation Area [Vernal]
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin
T&E-31: Western Yellow-Billed Cuckoo (*Coccyzus americanus*)

7833

UT-2026-03-7833
UT, Vernal Field Office, Bureau of Land Management, PD
T. 8 S., R. 24 E., Salt Lake

Sec. 26 E1/2SW1/4, SW1/4SW1/4.

Uintah County

120 Acres

12.50% Royalty Rate

EOI# UT00020485

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-218: Moab Controlled Surface Use- White-Tailed Prairie Dog

UT-S-261: Vernal Timing Limitation-Raptor Buffers

UT-S-299: Controlled Surface Use/Timing Limitations – Black-footed Ferret – PMZ area

LEASE NOTICES

UT-LN-25: White-Tailed and Gunnison Prairie Dog

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-72: High Potential Paleontological Resources

UT-LN-83: Site ROW

UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls

UT-LN-102: Air Quality Analysis

UT-LN-115: Light and Sound

UT-LN-131: Greater Sage-Grouse – Net Conservation Gain

UT-LN-132: Greater Sage-Grouse – Required Design Features

UT-LN-133: Greater Sage-Grouse – Buffer

UT-LN-156 Statewide Pollinators and Pollinator Habitat

T&E-02: Black-footed Ferret

T&E-05: Listed Plant Species

T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

7837

UT-2026-03-7837

UT, Vernal Field Office, Bureau of Land Management, PD

T. 7 S., R. 24 E., Salt Lake

Sec. 13 ALL;

Sec. 24 ALL;

Sec. 25 ALL.

Uintah County

1920 Acres

12.50% Royalty Rate

Agreements:

UTUT106715343 This parcel is fully committed to Unit Agreement (UA) UTUT106715343, effective 2/20/2025. The UA operator is Anschutz Exploration Corporation. In accordance with the regulations in 43 CFR 3101.3-1, the successful bidder is required to file evidence of having entered into an agreement with the UA operator for the development and operation of the subject lands under the terms and provisions of the approved UA. The successful bidder should immediately contact the Operator. In order to join the UA, the operator will give instructions about executing copies of the joinder agreement. Five duplicate originally signed copies of the joinder agreement must be furnished to the Bureau of Land Management Utah State Office within 60 business days of the sale date. If more time is required, you must request an extension of time in which to comply. If not submitted within the time allowed, your bid may be subject to rejection.

EOI# UT00020489, UT00020490, UT00020491

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality

UT-S-96: No Surface Occupancy – Fragile Soils/Slopes Greater than 40%

UT-S-99: Controlled Surface Use – Fragile Soils/Slopes

UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)

UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves

UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources

UT-S-218: Controlled Surface Use – White-tailed Prairie Dog

UT-S-230 Vernal Timing Limitation-Crucial Deer and Elk Winter Range

UT-S-231 Vernal Controlled Surface Use-Crucial Deer Winter Range

UT-S-261: Vernal Timing Limitation-Raptor Buffers

UT-S-299: Controlled Surface Use/Timing Limitations – Black-footed Ferret – PMZ area

LEASE NOTICES

UT-LN-25: White-Tailed and Gunnison Prairie Dog

UT-LN-44: Statewide Raptors

UT-LN-45: Statewide Migratory Birds

UT-LN-49: Utah Sensitive Species

UT-LN-51: Special Status Plants: Not Federally Listed

UT-LN-52: Statewide Noxious Weeds

UT-LN-53: Riparian Areas

UT-LN-56: Drinking Water Source Protection Zone

UT-LN-58: Drinking Water Protection Zone

UT-LN-72: High Potential Paleontological Resources

UT-LN-83: Site ROW

UT-LN-96: Air Quality Mitigation Measures

UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse – Buffer
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-02: Black-footed Ferret
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

7840

UT-2026-03-7840
UT, Vernal Field Office, Bureau of Land Management, PD
T. 7 S., R. 25 E., Salt Lake
 Sec. 13 LOTS 1 thru 4;
 Sec. 13 W1/2NW1/4, W1/2SW1/4;
 Sec. 14 ALL.

Uintah County
895.38 Acres
12.50% Royalty Rate

Agreements:

UTUT106715343 This parcel is fully committed to Unit Agreement (UA)
UTUT106715343, effective 2/20/2025. The UA operator is Anschutz Exploration Corporation. In accordance with the regulations in 43 CFR 3101.3-1, the successful bidder is required to file evidence of having entered into an agreement with the UA operator for the development and operation of the subject lands under the terms and provisions of the approved UA. The successful bidder should immediately contact the Operator. In order to join the UA, the operator will give instructions about executing copies of the joinder agreement. Five duplicate originally signed copies of the joinder agreement must be furnished to the Bureau of Land Management Utah State Office within 60 business days of the sale date. If more time is required, you must request an extension of time in which to comply. If not submitted within the time allowed, your bid may be subject to rejection.

EOI# UT00020492, UT00020493

STIPULATIONS

UT-S-01: 2008 RMPs Only Air Quality
UT-S-99: Controlled Surface Use – Fragile Soils/Slopes
UT-S-100: Controlled Surface Use – Fragile Soils/Slopes (21%-40%)
UT-S-123: No Surface Occupancy – Riparian, Floodplains, and Public Water Reserves
UT-S-157: No Surface Occupancy/Controlled Surface Use/Timing Limitation – Visual Resources
UT-S-218: Controlled Surface Use – White-tailed Prairie Dog

UT-S-230 Vernal Timing Limitation-Crucial Deer and Elk Winter Range
UT-S-231 Vernal Controlled Surface Use-Crucial Deer Winter Range
UT-S-261: Vernal Timing Limitation-Raptor Buffers
UT-S-299: Controlled Surface Use/Timing Limitations – Black-footed Ferret – PMZ area

LEASE NOTICES

UT-LN-44: Statewide Raptors
UT-LN-45: Statewide Migratory Birds
UT-LN-49: Utah Sensitive Species
UT-LN-51: Special Status Plants: Not Federally Listed
UT-LN-52: Statewide Noxious Weeds
UT-LN-53: Riparian Areas
UT-LN-56: Drinking Water Source Protection Zone
UT-LN-58: Drinking Water Protection Zone
UT-LN-72: High Potential Paleontological Resources
UT-LN-83: Site ROW
UT-LN-96: Air Quality Mitigation Measures
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis
UT-LN-115: Light and Sound
UT-LN-131: Greater Sage-Grouse – Net Conservation Gain
UT-LN-132: Greater Sage-Grouse – Required Design Features
UT-LN-133: Greater Sage-Grouse - Buffer
UT-LN-156: Statewide Pollinators and Pollinator Habitat
T&E-02: Black-footed Ferret
T&E-05: Listed Plant Species
T&E-23: Endangered Fish of the Upper Colorado River Drainage Basin

C.2 DESCRIPTION OF LEASE STIPULATIONS AND NOTICES

Standard Lease Notices (from H-3120 – Competitive Leasing Handbook)*

STIPULATION	DESCRIPTION/PURPOSE
HQ-CR-1	CULTURAL RESOURCE PROTECTION This lease may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes and executive orders. The BLM will not approve any ground disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.

STIPULATION	DESCRIPTION/PURPOSE
HQ-TES-1	THREATENED AND ENDANGERED SPECIES ACT The lease area may now or hereafter contain plants, animals or 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 objective to avoid BLM-approved activity that would contribute to a need to list such species or their habitat. BLM may require modifications to or disapprove 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 until it completes its obligations under applicable 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.
HQ-MLA-1	NOTICE TO LESSEE – MINERAL LEASING ACT SECTION 2(A)(2)(A) Provisions of the Mineral Leasing Act (MLA) of 1920, as amended by the Federal Coal Leasing Amendments Act of 1976, affect an entity's qualifications to obtain an oil and gas lease. Section 2(a)(2)(A) of the MLA, 30 U.S.C. 201(a)(2)(A), requires that any entity that holds and has held a Federal Coal Lease for 10 years beginning on or after August 4, 1976, and which is not producing coal in commercial quantities from each such lease, cannot qualify for the issuance of any other lease granted under the MLA. Compliance by coal lessees with Section 2(a)(2)(A) is explained in 43 CFR 3472. In accordance with the terms of this oil and gas lease with respect to compliance by the initial lessee with qualifications concerning Federal coal lease holdings, all assignees and transferees are hereby notified that this oil and gas lease is subject to cancellation if: (1) the initial lessee as assignor or as transferor has falsely certified compliance with Section 2(a)(2)(A) because of a denial or disapproval by a State Office of a pending coal action, i.e., arms-length assignment, relinquishment, or logical mining unit, the initial lessee as assignor or as transferor is no longer in compliance with Section 2(a)(2)(A). The assignee or transferee does not qualify as a bona fide purchaser and, thus, has no rights to bona fide purchaser protection in the event of cancellation of this lease due to noncompliance with Section 2(a)(2)(A). Information regarding assignor or transferor compliance with Section 2(a)(2)(A) is contained in the lease case file as well as in other Bureau of Land Management records available through the State Office issuing this lease.

*These stipulations are attached to all leases issued.

Table 68: Descriptions of Stipulations

STIPULATION	DESCRIPTION/PURPOSE
UT-S-01	AIR QUALITY All new stationary 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.

STIPULATION	DESCRIPTION/PURPOSE
	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-47	NO SURFACE OCCUPANCY – WHITE RIVER SRMA No surface disturbing activities within line of sight from the centerline of the White River, up to one-half mile on either side of the river, from where the river enters Section 28, T10S R23E to where it leaves Section 18, T10S R23E. Exception: An exception will be granted if the disturbance complemented recreational goals and objectives. No exception for oil and gas leasing. Modification: None Waiver: None
UT-S-87	NO SURFACE OCCUPANCY – WHITE RIVER BLM NATURAL AREA No surface occupancy within the White River BLM Natural Area. Exception: No exceptions for oil and gas activity. When compatible with the goals and objectives for management of BLM Natural Areas, the following activities could be permitted: • Vegetation and fuel treatments using prescribed fire, mechanical and chemical treatments, and other actions compatible with the Healthy Lands Initiative (HLI); • Construction of wildlife water and livestock facilities, and minimal recreation facilities; • Authorize reasonable access to non-BLM managed lands. Modification: None Waiver: None
UT-S-96	NO SURFACE OCCUPANCY – FRAGILE SOILS/SLOPES GREATER THAN 40% No surface occupancy for 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 NSO area may be authorized. Additionally a plan shall be submitted by the operator and approved by BLM prior to construction and maintenance and include: • An erosion control strategy;

STIPULATION	DESCRIPTION/PURPOSE
	• GIS modeling; • Proper survey and design by a certified engineer. Modification: Modifications also may be granted if a more detailed analysis, i.e. Order I, soil survey conducted by a qualified soil scientist finds that surface disturbance activities could occur on slopes greater than 40% while adequately protecting the area from accelerated erosion. Waiver: None
UT-S-98	NO SURFACE OCCUPANCY – FRAGILE SOILS/SLOPES GREATER THAN 40 PERCENT No new surface-disturbing activities allowed on slopes greater than 40% to protect soils, avoid erosion, and maintain public health and safety in sloped embankments. Exception: If after an analysis the authorized officer determines that it would cause undue or unnecessary degradation to pursue other placement alternatives; surface occupancy in the NSO may be authorized. Additionally, a plan would be submitted by the operator and approved by BLM prior to construction and maintenance. Modification: None Waiver: None
UT-S-99	CONTROLLED SURFACE USE – FRAGILE SOILS/SLOPES The surface operating standards for oil and gas exploration and development (Gold Book) shall be used as a guide for surface-disturbing proposals on steep slopes/hillsides. Exception: None Modification: None Waiver: None
UT-S-100	CONTROLLED SURFACE USE – FRAGILE SOILS/SLOPES (21%-40%) If surface-disturbing activities cannot be avoided on slopes from 21-40% a plan will be required. The plan will approved by BLM prior to construction and maintenance and include: • An erosion control strategy; • GIS modeling; • Proper survey and design by a certified engineer. Exception: None Modification: None Waiver: None
UT-S-106	CONTROLLED SURFACE USE – FRAGILE SOILS/SLOPES 21-40 PERCENT No new surface disturbance/construction on slopes between 21-40% without a BLM approved site plan that is prepared for any surface disturbing or

STIPULATION	DESCRIPTION/PURPOSE
	construction activity. This plan would include an erosion control strategy, survey and design, and reclamation plan. Exception: None Modification: None Waiver: None
UT-S-120	NO SURFACE OCCUPANCY – WHITE RIVER CORRIDOR No surface occupancy with the centerline line of site, up to ½ mile along both sides of the river from where the river enters Township 10 South, Range 24 East, to where the river leaves Section 18, Township 10 South, Range 23 East. Exception: Recognized utility corridors are excepted. Modification: None Waiver: None
UT-S-122	NO SURFACE OCCUPANCY – FLOODPLAINS, RIPARIAN AREAS, SPRINGS AND PUBLIC WATER RESOURCES No surface-disturbing activities within 100 year floodplains or within 100 meters of riparian areas. Also, no surface-disturbing activities within public water reserves or within 100 meters of springs. 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 benefit and enhance the resource values. Modification: None Waiver: None
UT-S-123	NO SURFACE OCCUPANCY – RIPARIAN, FLOODPLAINS, AND PUBLIC WATER RESERVES No new surface-disturbing activities are allowed within active flood plains, wetlands, public water reserves, or 100 meters of riparian areas. Keep construction of new stream crossings to a minimum. 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-128	NO SURFACE OCCUPANCY – FLOODPLAINS, RIPARIAN AREAS, SPRINGS, AND PUBLIC WATER RESERVES No surface-disturbing activities are allowed in active floodplains, public water reserves or within 100 meters of riparian areas along perennial streams and springs. 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 resource values.

STIPULATION	DESCRIPTION/PURPOSE
	Modification: None Waiver: None
UT-S-157	NO SURFACE OCCUPANCY/CONTROLLED SURFACE USE/TIMING LIMITATION – VISUAL RESOURCES Visual resource management activities will comply with BLM Handbook 8410-1. Within VRM Class I areas, very limited management activity will be allowed, with the objective of preserving the existing character of the landscape, allowing for natural ecological changes. The level of change to the landscape should be very low and shall not attract attention. Within VRM Class II areas, surface-disturbing activities will retain the existing character of the landscape. The level of change to the landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any change to the landscape shall repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape. Within VRM Class III areas, surface disturbing activities will partially retain the existing character of the landscape. The allowable level of change will be moderate, may attract attention, but should not dominate the view of the casual observer. Landscape changes should repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape. Within VRM Class IV areas, surface disturbing activities are allowed to dominate the view and the major focus of viewer attention. Major modifications to the existing character of the landscape are allowed. But every attempt should be made to minimize and mitigate the impacts. Exception: Exempted are recognized utility corridors. Modification: None Waiver: None
UT-S-158	CONTROLLED SURFACE USE – VRM II AREAS Surface-disturbing activities must meet the VRM II class objectives. Exception: The level of change to the landscape should be low; management activities may be seen, but should not attract attention of the casual observer. Any change to the landscape must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. Surface-disturbing activities that are determined to be compatible and consistent with the protection or enhancement of the resource values are exempted. Also, recognized utility corridors are exempted only for utility projects which would be managed according to VRM III objectives. Modification: None Waiver: None

STIPULATION	DESCRIPTION/PURPOSE
UT-S-159	CONTROLLED SURFACE USE – VISUAL RESOURCES - VRM II Within VRM II areas, surface-disturbing activities will retain the existing character of the landscape. The level of change to the landscape should be low. Management activities may be seen, but should not attract attention of the casual observer. Any change to the landscape must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. Exception: Exempted are recognized utility corridors. Modification: None Waiver: None
UT-S-183	NO SURFACE OCCUPANCY – CRITICAL HABITAT OF THE ENDANGERED COLORADO RIVER FISHES No surface-disturbing allowed within the 100-year floodplain of the Colorado River, Green River, and at the Dolores/Colorado River confluence or on lands within this watershed that contains tributaries with designated critical habitat for the Colorado River fish (bonytail, humpback chub, Colorado pike minnow, and razorback sucker) listed as endangered under the Endangered Species Act will be allowed. 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. 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

STIPULATION	DESCRIPTION/PURPOSE
	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 <i>any</i> 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: An exception may be granted by the authorized officer if: 1) There is no practical alternative, and 2) the development would enhance riparian/aquatic values. This exception would require consultation with the USFWS. The authorized officer may also grant an exception if an environmental analysis indicates that the nature or the conduct of the actions, as proposed or conditioned, would not impair the primary constituent element determined necessary for the survival and recovery of the Endangered Colorado River Fishes. Modification: The authorized officer may modify the boundaries of the stipulation area if an environmental analysis indicates, and USFWS (through applicable provisions of the ESA) determines a portion of the area is not being used as Critical Habitat. Waiver: A waiver may be granted if the Endangered Colorado River Fishes are de-listed and the Critical Habitat is determined by USFWS as not necessary for the survival and recovery of the Endangered Colorado River Fishes.
UT-S-195	NO SURFACE OCCUPANCY – GREATER SAGE-GROUSE LEKS

STIPULATION	DESCRIPTION/PURPOSE
	No surface-disturbing activities within 1/4 mile of active Greater Sage-Grouse leks year-round found outside of Priority Habitat Management Areas (PHMA). Exception: None Modification: None Waiver: None
UT-S-205	TIMING LIMITATION – GREATER SAGE-GROUSE BROOD REARING AND NESTING No surface-disturbing activities within 2 miles of active Greater Sage-Grouse leks found outside of Priority Habitat Management Areas (PHMA) within brood rearing and nesting habitat from March 1 - June 15. Exception: None Modification: None Waiver: None
UT-S-206	CONTROLLED SURFACE USE – GREATER SAGE-GROUSE (NOISE REDUCTION) Within ½ mile of known active Greater Sage-Grouse leks found outside of Priority Habitat Management Areas (PHMA) use the best available technology such as installation of multi-cylinder pumps, hospital sound reducing mufflers, and placement of exhaust systems to reduce noise. Exception: None Modification: None Waiver: None
UT-S-207	CONTROLLED SURFACE USE – GREATER SAGE-GROUSE (STRUCTURES) No permanent facilities or structures would be allowed within 2 miles of Greater Sage-Grouse leks found outside of Priority Habitat Management Areas (PHMA) when possible. Exception: None Modification: None Waiver: None
UT-S-218	CONTROLLED SURFACE USE – WHITE-TAILED PRAIRIE DOG No surface-disturbing activities within 660 feet of prairie dog colonies identified within prairie dog habitat. No permanent aboveground facilities are allowed within the 660 feet buffer. Exception: An exception may be granted by the authorized officer if the applicant submits a plan that indicates that impacts of the proposed action can be adequately mitigated or, if due to the size of the town, there is no

STIPULATION	DESCRIPTION/PURPOSE
	reasonable location to develop a lease and avoid colonies the authorized officer will allow for loss of prairie dog colonies and/or habitat to satisfy terms and conditions of the lease. Modification: The authorized officer may modify the boundaries of the stipulation area if portions of the area does not include prairie dog habitat or active colonies are found outside current defined area, as determined by BLM. Waiver: May be granted if in the leasehold if it is determined that habitat no longer exists or has been destroyed.
UT-S-220	CONTROLLED SURFACE USE – GUNNISON PRAIRIE DOG No surface-disturbing activities within 660 feet of active prairie dog colonies identified within prairie dog habitat. No permanent aboveground facilities are allowed within the 660 feet buffer. Exception: An exception may be granted by the authorized officer if the applicant submits a plan that indicates that impacts of the proposed action can be adequately mitigated or, if due to the size of the town, there is no reasonable location to develop a lease and avoid colonies the authorized officer will allow for loss of prairie dog colonies and/or habitat to satisfy terms and conditions of the lease. Modification: The authorized officer may modify the boundaries of the stipulation area if portions of the area does not include prairie dog habitat or <i>active</i> colonies are found outside current defined area, as determined by BLM. Waiver: May be granted if it is determined that the habitat no longer exists or has been destroyed within the leasehold.
UT-S-229	TIMING LIMITATION – CRUCIAL DEER AND ELK WINTER RANGE No surface disturbing activities from November 15 to April 15 within crucial deer and/or elk winter range to minimize stress and disturbance to deer and elk during critical winter months. Exception: This stipulation does not apply to the maintenance and operation of existing and ongoing facilities. An exception may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action can be adequately mitigated or it is determined the habitat is not being utilized during the winter period for any given year. Modification: The authorized officer may modify the boundaries of the stipulation area (1) if a portion of the area is not being used as winter range by deer/elk or (2) if habitat is being utilized outside of stipulation boundaries as winter range and needs to be protected or (3) if the migration patterns have changed causing a difference in the season of use. Waiver: May be granted if the winter range habitat is unsuitable or unoccupied during winter months by deer/elk and there is no reasonable likelihood of future winter range use.

STIPULATION	DESCRIPTION/PURPOSE
UT-S-230	TIMING LIMITATION – CRUCIAL DEER AND ELK WINTER RANGE No surface disturbing activities in deer and elk crucial winter range from December 1 - April 30. Exception: This restriction would not apply if and/or elk are not present, or if it is determined through analysis and coordination with UDWR that impacts could be mitigated. Factors to be considered would include snow depth, temperature, snow crusting, location of disturbance, forage quantity and quality, animal condition, and expected duration of disturbance. Modification: The stipulation could be modified based on findings of collaborative monitoring and analysis. For example, the winter range configuration and time frames could be changed if current animal use patterns are determined to be inconsistent with the dates and boundaries established. Waiver: This stipulation could be waived if it is determined through collaborative monitoring and analysis that the area is not crucial winter range or that timing restrictions are unnecessary.
UT-S-231	CONTROLLED SURFACE USE – CRUCIAL DEER WINTER RANGE Within crucial deer winter range, no more than 10% of such habitat will be subject to surface disturbance and remain un-reclaimed at any given time. Exception: This stipulation may be excepted if either the resource values change or the lessee/operator demonstrates to BLMs satisfaction that impacts can be mitigated. Modification: None Waiver: None
UT-S-234	TIMING LIMITATION – CRUCIAL DEER WINTER RANGE No surface-disturbing activities within crucial deer winter range from November 15 to April 15 to minimize stress and disturbance to deer during crucial winter months. Exception: The authorized officer may grant an exception if, after an analysis, the authorized officer determines that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals. Routine operation and maintenance is allowed. Modification: The authorized officer may modify the boundaries of the stipulation area if a portion of the area is not being used as deer winter range.

STIPULATION	DESCRIPTION/PURPOSE
	Waiver: May be granted if the deer winter range is determined to be unsuitable or unoccupied and there is no reasonable likelihood of future use of the deer winter range.
UT-S-242	TIMING LIMITATION – CRUCIAL ELK WINTER RANGE No surface-disturbing activities within crucial elk winter range from November 15 to April 15 to minimize stress and disturbance to elk during crucial winter months. Exception: The authorized officer may grant an exception if, after an analysis, the authorized officer determines that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals. Routine operation and maintenance is allowed. Modification: The authorized officer may modify the boundaries of the stipulation area if a portion of the area is not being used as elk winter range. Waiver: May be granted if the elk winter range is determined to be unsuitable or unoccupied and there is no reasonable likelihood of future use of the elk winter range.
UT-S-247	TIMING LIMITATION – CRUCIAL ELK CALVING AND DEER FAWNING HABITAT In order to protect crucial elk calving and deer fawning habitat exploration, drilling, and other development activity will not be allowed from May 15 - June 30. Exception: This restriction would not apply to maintenance and operation of existing facilities. This stipulation may be excepted if either the resource values change or the lessee/operator demonstrates to BLMs satisfaction that adverse impact can be mitigated. Modification: None Waiver: None
UT-S-251	TIMING LIMITATION – DEER MIGRATION CORRIDOR (MONUMENT AND McCOOK RIDGES) No surface-disturbing activities from April 15-May 31 within McCook and Monument Ridge mule deer migration corridors. Exception: This stipulation may be excepted if either the resource values change or the lessee/operator demonstrates to BLM’s satisfaction that adverse impact can be mitigated. Modification: None Waiver: None
UT-S-261	TIMING LIMITATION – RAPTOR BUFFERS Raptor management will be guided by the use of "Best Management Practices for Raptors and Their Associated Habitats in Utah" (Utah BLM, 2006, Appendix A), utilizing seasonal and spatial buffers, as well as

STIPULATION	DESCRIPTION/PURPOSE
	mitigation, to maintain and enhance raptor nesting and foraging habitat, while allowing other resource uses. Exception: None Modification: Criteria that would need to be met, prior to implementing modifications to the spatial and seasonal buffers in the “<i>Raptor BMPs</i>”, would include the following: 1. Completion of a site-specific assessment by a wildlife biologist or other qualified individual. See example (Attachment 1 of the Raptor BMPs in Appendix A) 2. Written documentation by the BLM Field Office Wildlife Biologist, identifying the proposed modification and affirming that implementation of the proposed modification(s) would not affect nest success or the suitability of the site for future nesting. Modification of the “BMPs” would not be recommended if it is determined that adverse impacts to nesting raptors would occur or that the suitability of the site for future nesting would be compromised. 3. Development of a monitoring and mitigation strategy by a BLM biologist, or other raptor biologist. Impacts of authorized activities would be documented to determine if the modifications were implemented as described in the environmental documentation or Conditions of Approval, and were adequate to protect the nest site. Should adverse impacts be identified during monitoring of an activity, BLM would follow an appropriate course of action, which may include cessation or modification of activities that would avoid, minimize or mitigate the impact, or, with the approval of UDWR and the USFWS, BLM could allow the activity to continue while requiring monitoring to determine the full impact of the activity on the affected raptor nest. A monitoring report would be completed and forwarded to UDWR for incorporation into the Natural Heritage Program (NHP) raptor database. Waiver: None
UT-S-272	CONDITIONAL SURFACE USE/TIMING LIMITATION – BURROWING OWL AND FERRUGINOUS HAWK NESTING No surface disturbances or occupancy will be conducted during the breeding and nesting season (March 1 to August 31 for burrowing owl and March 1 – August 1 for ferruginous hawk) within spatial buffers (0.25 mile for burrowing owl and 0.5 mile for ferruginous hawk) of known nesting sites. Exception: An exception would be granted if protocol surveys determine that nesting sites, breeding territories, and winter roosting areas are not occupied. Modification: The authorized officer may modify the boundaries of the stipulation area if portions of the area do not include habitat or are outside the current defined area, as determined by the BLM. Waiver: May be granted if it is determined the habitat no longer exists or has been destroyed.

STIPULATION	DESCRIPTION/PURPOSE
UT-S-273	CONDITIONAL SURFACE USE/TIMING LIMITATION – GOLDEN EAGLE NESTING SITES AND TERRITORIES No surface-disturbing activities will be allowed within a 0.5 miles radius of documented Golden Eagle nest sites within nesting territories from February 1 to July 15th or until fledgling and dispersal of young. Any access created by the action will be outside of nesting season and will be eliminated once action is complete. Exception: An exception may be granted by the authorized officer if authorization is obtained from USFWS and UDWR. The authorized officer may also grant an exception if an environmental analysis indicates that the nature or the conduct of the actions, as proposed or conditioned, would not impair the primary constituent element determined necessary for the survival and recovery of the Golden Eagle. Modification: The authorized officer may modify the boundaries of the stipulation area if an environmental analysis indicates and USFWS and UDWR determine a portion of the area is not being used as Golden Eagle nesting territories. Waiver: A waiver may be granted if an individual Golden Eagle nest has been inactive (unoccupied) for at least a period of 3 years. Nest-monitoring data for a 3-year period would be required before the waiver could be granted.
UT-S-275	CONTROLLED SURFACE USE/TIMING LIMITATION – BALD EAGLES Bald eagles would be protected as outlined in the Bald Eagle Protection Act of 1940 (16 U.S.C. 668-668d, 54 Stat. 250, as amended). Activities on BLM lands that contain nesting or winter roosting habitat for the bald eagle would be avoided or restricted, depending on the duration and timing of the activity. Bald eagles would be managed according to the Best Management Practices for Raptors and their Associated Habitats in Utah (BLM 2006c). These management requirements would include restrictions and avoidance measures, including required surveys prior to activity, possible monitoring during the activity, implementation of seasonal and spatial buffers during the breeding season (January 1 – August 31), and avoidance of disturbance in riparian areas unless impracticable. No future ground-disturbing activities would be authorized within a 1.0-mile radius of known bald eagle nest sites year-round. Deviations may be allowed only after appropriate levels of consultation and coordination with the USFWS/UDWR. In addition, no permanent above-ground structures would be allowed within a 0.50-mile radius of a winter roost site if the structure would result in the habitat becoming unsuitable for future winter roosting by bald eagles. These requirements would help to mitigate the adverse impacts of human disturbance on bald eagles during breeding and roosting seasons. 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.

STIPULATION	DESCRIPTION/PURPOSE
	2. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures would be evaluated. 3. Water production will be managed to ensure maintenance or enhancement of riparian habitat. 4. Temporary activities within 1.0 mile of nest sites will not occur during the breeding season of January 1 to August 31, unless the area has been surveyed according to protocol and determined to be unoccupied. 5. Temporary activities within 0.5 miles of winter roost areas, e.g., cottonwood galleries, will not occur during the winter roost season of November 1 to March 31, unless the area has been surveyed according to protocol and determined to be unoccupied. 6. No permanent infrastructure will be placed within 1.0 mile of nest sites. 7. No permanent infrastructure will be placed within 0.5 miles of winter roost areas. 8. Remove big game carrion within 100 feet of lease roadways occurring within Bald Eagle foraging range. 9. Avoid loss or disturbance to large cottonwood gallery riparian habitats. 10. 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 direction drilling to avoid direct impacts to large cottonwood gallery riparian habitats. Ensure that such direction drilling does not intercept or degrade alluvial aquifers. 11. All areas of surface disturbance within riparian areas and/or adjacent uplands should be re-vegetated with native species. Additional measures may also be employed to avoid or minimize effects to the species between the lease stage and lease development stage. These additional measures will be developed and implemented in coordination with the USFWS/UDWR to ensure continued compliance with the Bald Eagle Protection Act. Exception: An exception may be granted by the authorized officer if authorization is obtained from USFWS/UDWR. The authorized officer may also grant an exception if an analysis indicates that the nature of the conduct of the actions, as proposed or conditioned, would not impair the habitat and physical requirements determined necessary for the survival of the Bald Eagles. Modification: The authorized officer may modify the boundaries of the stipulation area if an analysis indicates, and USFWS/UDWR determines that a portion of the area is not being used as Bald Eagle nesting or roosting territories or if additional nesting or roosting territories are identified. Waiver: May be granted if there is no reasonable likelihood of site occupancy over a minimum 10 year period.

STIPULATION	DESCRIPTION/PURPOSE
UT-S-278	CONTROLLED SURFACE USE – BALD EAGLE WINTER ROOST Protect and restore cottonwood bottoms for bald eagle winter habitat along the Green and White Rivers, at Pelican Lake, and at the Cliff Creek Bald Eagle roost site, as well as any new roost sites discovered in the future. Exception: None Modification: None Waiver: None
UT-S-298	CONDITIONAL SURFACE USE – KIT FOX No surface disturbances within 200 meters of a kit fox den. Exception: An exception could be granted if protocol surveys determine that kit fox dens are not present. Modification: The authorized officer may modify the stipulation area if portions of the area do not contain habitat. Waiver: A waiver may be granted if it is determined that the habitat no longer exists.
UT-S-299	CONTROLLED SURFACE USE/TIMING LIMITATIONS – BLACK-FOOTED FERRET – PRIMARY MANAGEMENT ZONE AREA BLM will manage the black-footed ferrets and the black-footed ferret primary management zone (PMZ) consistent with the Black-footed Ferret Reintroduction Plan Amendment (UT-080-1999-02) and those portions of the Cooperative Plan for the Reintroduction and Management of Black-footed Ferret in Coyote Basin, Uintah County, Utah that are consistent with this plan amendment. New power lines constructed through the PMZ will be raptor proof. Management activities within the PMZ will be conducted with the objective of maintaining at least 10,000 acres of prairie dog colonies. According to the US Fish and Wildlife Service (USFWS) and the Utah Division of Wildlife Resources (UDWR), a minimum of 8,000 acres is acceptable as long as the ferret habitat rating (the number of ferret families the habitat can support) does not fall below 50% of the 1989 levels. Whenever possible, such activities will avoid prairie dog habitat. Otherwise, activities will be designed to impact the smallest area possible and/or those areas with the lowest prairie dog densities. The creation of additional prairie dog habitat (e.g. burning vegetation and drilling new holes, etc.) will be required only if the disturbance or development reduces the prairie dog acreage below the 8,000 acre threshold. The period between breeding and emergence of young is a period of "sensitivity" for ferrets. This period extends from March 1 to July 15. The period between birth and emergence of young is a period of "critical" importance for successful ferret productivity. This period extends from May 1 to July 15. Activities involving the development or construction of temporary or permanent surface disturbances will be prohibited within 1/8 mile boundaries of known home ranges of female ferrets during the "critical" period from May 1 thru July 15. The home ranges will be determined from data obtained

STIPULATION	DESCRIPTION/PURPOSE
	from radio collared animals. Previously existing or permitted operations which may occur within these boundaries will continue normal operations; however, no new surface disturbances will be initiated at these sites during the "critical" period. If a ferret is discovered at a commercial facility (e.g. Gilsonite mine, well pad, power plant), it will then be decided by the USFWS and UDWR, if removal of the ferret was necessary and, if so, removal will be initiated within 48 hours. If the targeted animal(s) cannot be captured within 72 hours of the commencement of trapping activities, such activities will cease and be replaced by a monitoring program to ascertain the status of the animal(s). Further attempts to remove the subject animal(s) will be based on this monitoring. If ferrets are discovered at the site of a proposed commercial operation, then mitigation in the form of: delay of activities, movement of ferret(s), offsite prairie dog habitat development, redesign of activities, or any combination of the above will be required. The course of events chosen will be determined cooperatively by the operator, UDWR, the USFWS, and land management agencies. Exception: Retrofitting of existing poles and towers to raptor proof standards will not be required. Maintenance or construction of previously existing or permitted operations can continue. Ephemeral surface disturbance (disturbance in prairie dog habitat for less than six months, after which it again becomes or can be made suitable for prairie dog use), such as prescribed fire or herbicide treatment, may be conducted within 1/8 mile of the boundary of the home range of a female from March 1 to May 1. In general, the disturbance should be completed before the critical period begins. The USFWS, UDWR, and the land management agencies will determine if this exemption applies. Normal travel and surveying activities will not be restricted. Modification: None Waiver: None
UT-S-325	TIMING LIMITATION – RAPTOR NEST SITES Restrict surface disturbing activities within ½ mile around special status raptor species nest sites during the following time periods: Mar 1–Aug 1: Ferruginous hawk Mar 1–Aug 15: N. Goshawk Restrict surface disturbing activities within ¼ mile around special status raptor species nest sites during the following time periods: Mar 1–Aug 1: Short-eared owl Mar 1–Aug 31: Burrowing owl

STIPULATION	DESCRIPTION/PURPOSE
	Exception: An exception could be granted if surveys determine that nesting sites are not occupied. Modification: The Authorized Officer may modify the boundaries of the stipulation area if portions of the area do not include habitat or are outside the current defined area, as determined by the BLM. Waiver: A waiver may be granted if it is determined the habitat no longer exists or has been destroyed.
UT-S-329	CONTROLLED SURFACE USE – SLOPES GREATER THAN 30% No surface-disturbing activities are allowed on slopes greater than 30% to minimize watershed damage throughout the Moab Planning Area in fragile soils. This restriction includes heavy equipment traffic on existing roads associated with drilling operations. Purpose: To minimize watershed damage in fragile soils on steep slopes. Exception: An exception could be granted if the operator can provide a plan of development demonstrating that the proposed action would be properly designed and constructed to support the anticipated types and levels of use. Roads must be designed to meet BLM road standards for drainage control and surfaced to support heavy equipment and tractor trailers. Adjustments to the timing restriction could be considered by the Authorized Officer on a case-by-case basis, depending on current soil and weather conditions. Modification: None Waiver: None
UT-S-340	CONTROLLED SURFACE USE/TIMING LIMITATION – MEXICAN SPOTTED OWL HABITAT AND NEST SITES In areas that contain suitable habitat for MSO or designated Critical Habitat, actions will be avoided or restricted that may cause stress and disturbance during nesting and rearing of their young. Appropriate measures will depend on 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. Current avoidance and minimization measures include the following: 1. Surveys will be required prior to implementation of the proposed action. All surveys must be conducted by qualified individual(s) acceptable to the BLM. 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

STIPULATION	DESCRIPTION/PURPOSE
	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. Any activity that includes water production will be managed to ensure maintenance or enhancement of riparian habitat. 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 MSO 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 from March 1 through August 31, and leaves no permanent structure or permanent habitat disturbance, the action can proceed without an occupancy survey. b. If the action will occur during a breeding season, a survey for owls is required prior to commencing the activity. If owls are found, the activity shall 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 disturbing actions will occur within 0.5 mile of an identified site. If nest site is unknown, no activity will occur within the designated current and historic Protected Activity Center (PAC). c. Avoid permanent structures within 0.5 mile 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 contingent upon a noise analysis to ensure noise

STIPULATION	DESCRIPTION/PURPOSE
	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 designated and/or 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 ESA. Modifications to the Surface Use Plan of Operations may be required in order to protect the MSO and/or habitat in accordance with Section 6 of the lease terms, the Endangered Species Act, and the regulations at 43 CFR 3101.1-2. Exception: An exception may be granted by the Authorized Officer if authorization is obtained from USFWS (through applicable provisions of the ESA). The Authorized Officer may also grant an exception if an environmental analysis indicates that the nature or the conduct of the actions would not impair the primary constituent element determined necessary for the survival and recovery of the MSO and USFWS concurs with this determination. Modification: The Authorized Officer may modify the boundaries of the stipulation area if an environmental analysis indicates and USFWS (through applicable provisions of the ESA) determines a portion of the area is not being used as Critical Habitat. Waiver: A waiver may be granted if the MSO is de-listed and the Critical Habitat is determined by USFWS as not necessary for the survival and recovery of the MSO.
UT-S-353	Timing Limitation – Greater Sage-Grouse Breeding, Nesting and Early Brood Rearing* Manage uses to prevent disturbance to GRSB populations and habitat by applying seasonal restrictions (e.g., no surface disturbance) between Feb 15 – June 15, in Greater Sage-Grouse Priority Habitat Management Areas (PHMA) breeding, nesting, and early brood-rearing habitat to seasonally protect those habitats from disruptive activity. Exception: None Modification: Specific time and distance determinations would be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter)

STIPULATION	DESCRIPTION/PURPOSE
	in order to better protect GRSG, in coordination with the appropriate State of Utah agency. Waiver: None *This would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted.
UT-S-354	TIMING LIMITATION – GREATER SAGE-GROUSE BROOD-REARING Manage uses to prevent disturbance to GRSG populations and habitat by applying seasonal restrictions (e.g., no surface disturbance) between April 15 – August 15 in the Greater Sage-Grouse (GRSG) Priority Habitat Management Areas (PHMA) brood-rearing habitat to seasonally protect that habitat from disruptive activity. Exception: None Modification: Specific time and distance determinations would be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) in order to better protect GRSG, in coordination with the appropriate State of Utah agency. Waiver: None *This would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted.
UT-S-355	Timing Limitation – Greater Sage-Grouse Winter Habitat Manage uses to prevent disturbance to GRSG populations and habitat by applying seasonal restrictions (e.g., no surface disturbance) between Nov 15 – March 15 in Priority Habitat Management Areas (PHMA) for Greater Sage-Grouse (GRSG) winter habitat to protect GRSG within PHMA from disruptive activity during the winter season. Exception: None Modification: Specific time and distance determinations would be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) in order to better protect GRSG, in coordination with the appropriate State of Utah agency. Waiver: None

STIPULATION	DESCRIPTION/PURPOSE
	*This would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted.

Table 69: Description of Lease Notices

NOTICE	DESCRIPTION/PURPOSE
UT-LN-11	CRUCIAL ELK CALVING AND DEER FAWNING HABITAT The lessee/operator is given notice that lands in this lease have been identified as containing crucial elk calving or deer fawning habitat. Exploration, drilling and other development activities may be restricted for up to 60 days. Modifications may be required in the Surface Use Plan of Operations including seasonal timing restrictions to protect the species and its habitat.
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 3101.12.
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 it's young the on-site monitor will suspend activities and contact the BLM AO 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 43 CFR 3101.12.

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 AO of the Bureau of Land Management. Based on the result of the field survey, the AO 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 3101.12.
UT-LN-50	HABITAT RESTORATION The lessee/operator is given notice that lands in this lease have an existing habitat restoration project present. Modifications to the Surface Use Plan of Operations may be required or other appropriate mitigation as deemed necessary by the BLM Authorized Officer.
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 3101.12.
UT-LN-52	NOXIOUS WEEDS The lessee/operator is given notice that lands in this lease have been identified as containing or is near areas containing noxious weeds. Best management practices to prevent or control noxious weeds may be required for operations on the lease. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43CFR3101.12.
UT-LN-53	RIPARIAN AREAS The lessee/operator is given notice that this lease has been identified as containing riparian areas. No surface use or otherwise disruptive activity allowed within 100 meters of riparian areas unless it can be shown that (1)

	there is no practicable alternative; (2) that all long-term impacts are fully mitigated; or (3) that the construction is an enhancement to the riparian areas. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43 CFR 3101.12.
UT-LN-56	DRINKING WATER SOURCE PROTECTION ZONE This lease (or a portion thereof) is within a public Drinking Water Source Protection zone. Before application for a permit to drill (APD) submittal or any proposed surface-disturbing activity, the lessee/operator must contact the public water system manager to determine any zoning ordinances, best management or pollution prevention measures, or physical controls that may be required within the protection zones. Drinking Water Source Protection plans are developed by the public water systems under the requirements of R309-600. Drinking Water Source Protection for Ground-Water Sources. (Utah Administrative Code). There may also be county ordinances in place to protect the source protection zones, as required by Section 19-4-113 of the Utah Code. Incorporated cities and towns may also protect their drinking water sources using Section 10-8-15 of the Utah Code. This part of the Code gives cities and towns the extraterritorial authority to enact ordinances to protect a source of drinking water ... "For 15 miles above the point from which it is taken and for a distance of 300 feet on each side of such stream..." Class I cities (greater than 100,000 population) are granted authority to protect their entire watersheds. Some public water sources qualify for monitoring waivers which reduce their monitoring requirements for pesticides and volatile organic chemicals (VOCs). Exploration, drilling, and production activities within Source Protection zone 3 could jeopardize these waivers, thus requiring increased monitoring. Contact the public water system to determine what effect your activities may have on their monitoring waivers. Please be aware of other State rules to protect surface and ground water: the Utah Division of Water Quality Rules R317 Water Quality Rules; and Rules of the Utah Division of Oil, Gas and Mining, Utah Oil and Gas Conservation Rules R649. At the time of development, drilling operators will additionally conform to the operational regulations in Onshore Oil & Gas Order No. 2 (which requires the protection and isolation of all usable quality waters, $\leq 10,000$ mg/L Total Dissolved Solids), Onshore Oil and Gas Order No. 7 (which prescribes measures required for the handling of produced water to insure the protection of surface and ground water sources) and the Surface Operating Standards and Guidelines for Oil and Gas Development, The Gold Book, Fourth Edition- Revised 2007 (which provides information and requirements for conducting environmentally responsible oil and gas operations). Additional mitigation measures may be necessary to prevent adverse impacts from oil and gas exploration and development activities. Mitigation measures may include submitting an erosion control plan with best management practices (BMPs) that address rigorous interim reclamation which might include surface roughening, vegetative buffer strips, etc.; and sediment control through the use of sediment logs, silt fences, erosion control blankets,

	outlet/inlet protection of water control features such as culverts or diversion ditches, sediment traps, run on/run off pad design features. If project activities are close to sensitive areas or water sources a semi or closed-loop drilling system should be required.
UT-LN-57	PUBLIC WATER RESERVE The lessee/operator is given notice that lands in this lease have been identified as a designated Public Water Reserve. Surface occupancy or use is subject to the Public Water Reserve Executive Order No. 107. Modification to the Surface Use Plan of Operations may be required for the protection of the reserve up to and including no surface occupancy or use. Protection of a designated public water reserve as discussed in Public Water Reserve Executive Order No. 107. This limitation does not apply to operations and maintenance of producing wells.
UT-LN-58	DRINKING WATER PROTECTION ZONE The lessee/operator is given notice that this lease parcel overlaps a drinking water protection zone for public water sources in Utah. At the time of development, drilling operators will conform to the provisions of the operational regulations and Onshore Oil & Gas Order Number 2, which requires the protection and isolation of all useable quality waters.
UT-LN-60	STEEP SLOPES The lessee/operator is given notice that this lease has been identified as containing steep slopes. No surface use or otherwise disruptive activity allowed on slopes in excess of 30 percent without written permission from the Authorized Officer. 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-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 3101.12. In addition, monitoring may be required during surface disturbing activities.
UT-LN-83	SITE ROW The lessee/operator is given notice that lands in this lease have an existing site ROW present. Modifications to the Surface Use Plan of Operations may be required or other appropriate mitigation as deemed necessary by the BLM Authorized Officer in order to protect the valid existing rights.
UT-LN-90	GRAHAM'S BEARDTONGUE (<i>PENSTEMON GRAHAMII</i>) In order to minimize effects to the federally proposed Graham's beardtongue, the Bureau of Land Management (BLM) in coordination

	with the U.S. Fish and Wildlife Service (Service) developed the following avoidance and minimization measures. 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 habitat¹ prior to any ground disturbing activities to determine if suitable Graham's beardtongue habitat is present. 2. Within suitable habitat³, site inventories will be conducted to determine occupancy. Inventories: a. Must be conducted by qualified individual(s) and according to BLM and Service accepted survey protocols, b. Will be conducted in suitable and occupied habitat⁴ 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 May 20th in the Uintah Basin; 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 habitat²: a. Reduce well pad size to the minimum needed, without compromising safety, b. Limit new access routes created by the project, c. Roads and utilities should share common right-of-ways where possible, d. 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, e. Place signing to limit off-road travel in sensitive areas, and f. Stay on designated routes and other cleared/approved areas. 4. Within occupied habitat⁴, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:

	a. Follow the above (3.) recommendations for project design within suitable habitats, b. Construction of roads will occur such that the edge of the right of way is at least 300' from any plant, c. Roads will be graveled within occupied habitat; the operator is encouraged to apply water for dust abatement to such areas from April 15th to May 20th (flowering period); dust abatement applications will be comprised of water only, d. The edge of the well pad should be located at least 300' away from plants, e. Surface pipelines will be laid such that a 300 foot buffer exists between the edge of the right of way and the plants, use stabilizing and anchoring techniques when the pipeline crosses the habitat (exposed raw shale knolls and slopes derived from the Parachute Creek and Evacuation Creek members of the geologic Green River Formation) to ensure pipelines don't move towards the population, f. Construction activities will not occur from April 15th through May 30th within occupied habitat, g. Before and during construction, areas for avoidance should be visually identifiable in the field, e.g., flagging, temporary fencing, rebar, etc., h. Where technically and economically feasible, use directional drilling or multiple wells from the same pad, i. Designs will avoid concentrating water flows or sediments into occupied habitat, j. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and k. 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 Graham's beardtongue 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 well pads 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.

	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 conservation of the species.
UT-LN-96	AIR QUALITY MITIGATION MEASURES The lessee is given notice that the Bureau of Land Management (BLM) in coordination with the U.S. Environmental Protection Agency and the Utah Department of Air Quality, among others, has developed the following air quality mitigation measures that may be applied to any development proposed on this lease. Integration of and adherence to these measures may help minimize adverse local or regional air quality impacts from oil and gas development (including but not limited to construction, drilling, and production) on regional ozone formation. • All internal combustion equipment would be kept in good working order. • Water or other approved dust suppressants would be used at construction sites and along roads, as determined appropriate by the AO. • Open burning of garbage or refuse would not occur at well sites or other facilities. • Drill rigs would be equipped with Tier II or better diesel engines. • Vent emissions from stock tanks and natural gas TEG dehydrators would be controlled by routing the emissions to a flare or similar control device which would reduce emissions by 95% or greater. • Low bleed or no bleed pneumatics would be installed on separator dump valves and other controllers. • During completion, flaring would be limited as much as possible. Production equipment and gathering lines would be installed as soon as possible. • Well site telemetry would be utilized as feasible for production operations. • Stationary internal combustion engine would comply with the following standards: 2g NOx/bhp-hr for engines <300HP; and 1g NOx/bhp-hr for engines >300HP. Additional site-specific measures may also be employed to avoid or minimize effects to local or regional air quality. These additional measures will be developed and implemented in coordination with the U.S. Environmental Protection Agency, the Utah Department of Air Quality, and other agencies with expertise or jurisdiction as appropriate based on the size of the project and magnitude of emissions.
UT-LN-98	PROTECTION OF NATURAL SOUNDSCAPES Due to the proximity (within 3 miles) of the lease to sensitive noise receptors (e.g., communities, residences, parks or monuments, river corridors, sensitive wildlife habitats, protected natural areas, etc.) modifications to Surface Use Plan of Operations regardless of surface ownership, may be required to

	implement “reasonable measures ... to mitigate adverse impacts to other resource values, land uses or users (43 CFR 3101.12),” The lessee/operator is given notice that prior to project-specific approval, additional soundscape analyses may be required to comply with the National Environmental Policy Act, Federal Land Policy Management Act, and/or other applicable laws and regulations. Analysis may include evaluating sound levels of noise producing infrastructure and construction equipment, proximity to sensitive noise receptors, and/or noise propagation modeling. The analysis may indicate that the lessee/operator may be required to go beyond best management practices and implement the best available technology in order to minimize/mitigate impacts to resources sensitive to noise. Best available technology may include the installation and use of electric motors or multi-cylinder pump engines, hospital sound reducing mufflers, placement of exhaust systems to direct noise away from sensitive resources, installation of sound barriers, or other noise reducing measures.
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.
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 and/or photochemical 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-106	SPECIAL RECREATION MANAGEMENT AREA The lessee/operator is given notice that lands in this lease have been identified as being within a Special Recreation Management Area. Modifications to the Surface Use Plan of Operations may be required in order once an activity plan is prepared for the area to protect sensitive resources from surface disturbing activities in accordance with the Vernal RMP.
UT-LN-107	BALD EAGLE

	The Lessee/Operator is given notice that the lands in this parcel contains nesting/winter roost habitat for the bald eagle. The bald eagle was de-listed in 2007; however, it is still afforded protection under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 1940). Therefore, avoidance or use restrictions may be placed on portions of the lease. Application of appropriate measures will depend on whether the action is temporary or permanent, and whether it occurs within or outside the bald eagle breeding or roosting season. A <u>temporary</u> action is completed prior to the following breeding or roosting season leaving no permanent structures and resulting in no permanent habitat loss. A <u>permanent</u> action continues for more than one breeding or roosting season and/or causes a loss of eagle habitat or displaces eagles 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 will not lead to the need to consider listing the eagle as threatened or endangered. Integration of, and adherence to the following measures will facilitate review and analysis of any submitted permits under the authority of this lease. 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. 3. Water production will be managed to ensure maintenance or enhancement of riparian habitat. 4. Temporary activities within 1.0 mile of nest sites will not occur during the breeding season of January 1 to August 31, unless the area has been surveyed according to protocol and determined to be unoccupied. 5. Temporary activities within 0.5 miles of winter roost areas, e.g., cottonwood galleries, will not occur during the winter roost season of November 1 to March 31, unless the area has been surveyed according to protocol and determined to be unoccupied. 6. No permanent infrastructure will be placed within 1.0 mile of nest sites. 7. No permanent infrastructure will be placed within 0.5 miles of winter roost areas. 8. Remove big game carrion from within 100 feet of lease roadways occurring within bald eagle foraging range. 9. Avoid loss or disturbance to large cottonwood gallery riparian habitats.

	10. 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. 11. All areas of surface disturbance within riparian areas and/or adjacent uplands should be re-vegetated with native species. Additional measures may also be employed to avoid or minimize effects to the species between the lease sale stage and lease development stage. These additional measures will be developed and implemented in coordination with the U.S. Fish and Wildlife Service.
UT-LN-109	LISBON VALLEY COPPER MINE The lessee/operator is given notice that portions of this lease are within the permit boundary for the Lisbon Valley Copper Mine. This mine is an active open pit operation and parcels within the permit boundary may have waste rock piles, heap leach pad operations, open pit mining, exploration and other activities related to the copper mining operation. Any oil and gas exploration and development activities would have to be coordinated with the mining operator.
UT-LN-115	Light and Sound In accordance with the Vernal RMP Decision MIN-5, the BLM will seek to minimize light and sound pollution within the project area using the best available technology such as installation of multi-cylinder pumps, hospital sound reducing mufflers, and placement of exhaust systems to direct noise away from noise sensitive areas (e.g., sensitive habitat, campgrounds, river corridors, and Dinosaur National Monument). Light pollution will be mitigated 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. If a determination is made that natural barriers or view sheds will meet these mitigation objectives, the above requirements may not apply.
UT-LN-117	Shallow Ground Water Protection Zone This lease (or a portion thereof) may overlie an area of shallow ground water, the presence of which is supported by geologic and hydrologic data or water level measurements from a nearby well. Information such as depth to ground water, distance to the nearest surface water and/or nearest municipal water well, population potentially affected, soil type, and type of proposed drilling fluid will be used to determine the sensitivity level for reserve pit construction. At the time of development, drilling operators will additionally conform to the operational regulations in 43 CFR 3172: which requires the protection of all

	usable quality waters; 2) Onshore Oil and Gas Order No. 7 which prescribes measures required for the handling of produced water to ensure the protection of surface and ground water sources; and 3) the Surface Operating Standards and Guidelines for Oil and Gas Development (The Gold Book, Fourth Edition-Revised 2007) provides information and requirements for conducting environmentally responsible oil and gas operations. Additional mitigation measures may be necessary to prevent adverse impacts from oil and gas exploration and development activities. Mitigation measures may include submittal of an erosion control plan with best management practices (BMPs) that addresses sediment and water control with rigorous interim and final reclamation. Project activities in sensitive areas, or near water sources, require a semi or closed-loop drilling system. Conditions of Approval (COAs) may be attached to an application for permit to drill (APD) for shallow ground water protection, e.g., the surface casing must be completed at least 100 feet below the base of the usable water zone (source) and cement returned to surface.
UT-LN-121	NSO – PL 97-98 – PRIME SOILS OF STATEWIDE SIGNIFICANCE These soil units are to be avoided, no surface occupancy until cleared by United States Department of Agriculture, Natural Resources Conservation Service (NRCS), as described in Public Law 97-98.
UT-LN-128	FLOODPLAIN MANAGEMENT The lessee/operator is given notice that, in accordance with Executive Order 11988, to avoid adverse impact to floodplains: 1) facilities should be located outside the 100-year floodplain, or 2) would be minimized or mitigated by modification of surface use plans within floodplains present within the lease.
UT-LN-131	GREATER SAGE-GROUSE– NET CONSERVATION GAIN In Priority and General Habitat Management Areas (PHMA and GHMA) all actions that result in habitat loss and degradation will require mitigation that provides a net conservation gain to the Greater Sage-Grouse (GRSG). Mitigation must account for any uncertainty associated with the effectiveness of the mitigation and will be achieved through avoiding, minimizing and compensating for impacts. Mitigation will be conducted according to the mitigation framework found in Appendix F in the 2015 Utah Approved Management Plan Amendment.
UT-LN-132	GREATER SAGE-GROUSE – REQUIRED DESIGN FEATURES Apply the Required Design Features (RDF)* in Appendix C of the 2015 Utah Approved Management Plan Amendment when developing a lease in Priority and General Habitat Management Areas (PHMA and GHMA). *RDFs may not be required if it is demonstrated through the NEPA analysis that the RDF associated project/activity is:

	• Documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable; • An alternative RDF, state-implemented conservation measure, or plan-level protection is determined to provide equal or better protection for GRSG or its habitat; • Provide no additional protection to GRSG or its habitat.
UT-LN-133	GREATER SAGE-GROUSE – BUFFER In Priority and General Habitat Management Areas (PHMA and GHMA), the BLM will apply the lek buffer-distances identified in the USGS Report Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review (Open File Report 2014-1239) in accordance with Appendix B, Applying Lek-Buffer Distances, consistent with valid and existing rights and applicable law in authorizing management actions.
UT-LN-134	GRAHAM’S BEARDTONGUE (<i>PENSTEMON GRAHAMII</i>) & WHITE RIVER BEARDTONGUE (<i>P. SCARIOSUS VAR. ALBIFLUVIS</i>) CONSERVATION AREA This lease is subject to the management requirements set forth in the Conservation Agreement for Graham’s Beardtongue (<i>Penstemon grahamii</i>) and White River Beardtongue (<i>P. scariosus var. albifluvis</i>) (July 2014 as amended), to the extent this Conservation Agreement is further amended and/or in effect. 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 conservation of the species.
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.
T&E-02	BLACK-FOOTED FERRET (<i>MUSTELA NIGRIPES</i>) The lessee/operator is given notice that the lands in this parcel may exist within potential habitat for black-footed ferret, a species listed as endangered under the Endangered Species Act (ESA) (32 FR 4001). An experimental, non-essential population of black-footed ferret was established in Northwestern Colorado and Northeastern Utah via an ESA section 10(j) rule (63 FR 52824). Black-footed ferrets found are treated as a species proposed for ESA listing within the 10j boundary and as endangered outside the boundary. To minimize effects to black-footed ferret, the Bureau of Land Management (BLM) in coordination with the U.S. Fish and Wildlife Service (Service) developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance) comply with the ESA. Site-specific measures not listed here may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the Service and BLM to ensure continued compliance with the ESA. Furthermore, re-initiation of Section 7 consultation with the Service will be sought immediately if any unanticipated

	effects to individuals or populations of the species result from project activities. Conservation of prairie dog habitats is essential to black-footed ferret management due to the complete dependence of ferrets on prairie dogs as a prey base for survival. Therefore, avoidance and minimization measures for black-footed ferret are based on maintaining prairie dog habitat and numbers. Current avoidance and minimization measures are adapted from the Northeastern Region Black-Footed Ferret Management Plan published by the Utah Division of Wildlife Resources in April 2007 and include the following. 1. Determine the extent of suitable and occupied black-footed ferret habitat relative to your project. 2. Avoid surface disturbance during ferret breeding (March 1 to July 15) and emergence of young (a period of critical importance - May 1 to July 15). 3. Avoid prairie dog habitat and complexes during project activities. Otherwise, design activities to impact the smallest area possible and/or those areas with the lowest prairie dog densities. 4. Where technically and economically feasible, drill multiple wells from the same well pad (using directional or multi-lateral drilling techniques). 5. Where possible, locate drilling and ancillary facilities within existing rights of way. 6. If avoidance is not possible, place infrastructure close to prairie dog colony edges or in areas that keep surface disturbance of colonies to a minimum. Then after disturbance activities cease, reduce surface disturbance to the smallest possible size. 7. Keep road size (width) to a minimum. 8. When infrastructure is no longer needed, reclaim disturbed areas with a suitable seed mix approved by BLM. 9. Where possible, bury or modify power lines to reduce raptor perching/hunting sites. 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. Site-specific measures not listed here may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the Service and BLM to ensure continued compliance with the ESA. Furthermore, re-initiation of Section 7 consultation with the Service will be sought immediately if any unanticipated effects to individuals or populations of the species result from project activities.
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 10. 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 d. All surveys must be conducted by qualified individuals. 11. 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. 12. 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. 13. For riparian/wetland-associated species, e.g. Ute ladies-tresses, avoid loss or disturbance of riparian habitats. 14. Ensure that water extraction or disposal practices do not result in change of hydrologic regime. 15. Limit disturbances to and within suitable habitat by staying on designated routes. 16. Limit new access routes created by the project. 17. Place signing to limit ATV travel in sensitive areas. 18. Implement dust abatement practices near occupied plant habitat.

	19. All disturbed areas will be re-vegetated with native species comprised of species indigenous to the area. 20. Post construction monitoring for invasive species will be required. 21. 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. 22. 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. 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-12	PARIETTE CACTUS (<i>SCLEROCACTUS BREVISPINUS</i>) AND UINTA BASIN HOOKLESS CACTUS (<i>SCLEROCACTUS WETLANDICUS</i>) The lessee/operator is given notice that the lands in this parcel may exist within potential habitat for Pariette cactus and Uinta Basin hookless cactus, both species listed as threatened under the Endangered Species Act (ESA) (74 FR 47112). To minimize effects to the federally threatened Pariette cactus and Uinta Basin hookless cactus, the Bureau of Land Management (BLM) in coordination with the U.S. Fish and Wildlife Service (Service) developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance) are in compliance with the ESA. For the purposes of this document, the following terms are so defined: Potential habitat is defined as areas that satisfy the broad criteria of the species' habitat description or fall within the Service's potential habitat layer found in the Information for Planning and Consultation (IPaC) database. Suitable habitat is defined as areas that contain or exhibit the specific components or constituents necessary for plant persistence. Suitable habitat is determined by field assessments and may or may not contain Pariette cactus and Uinta Basin hookless cactus. Suitable habitat descriptions can be found in Federal Register Notice and species recovery plan links at

	https://www.fws.gov/endangered/species/recovery-plans.html. Occupied habitat is defined as areas currently or historically known to support Pariette cactus and Uinta Basin hookless cactus plus an avoidance buffer to protect active and dormant plants and dormant seed banks. Level 1 Core Conservation Areas are areas of occupied habitat identified by the Service where no additional disturbance will be permitted. Level 2 Core Conservation Areas are areas of occupied habitat identified by the Service where disturbance of up to 5% of the population may be permitted. Contact the Service for updates to the Core area boundaries. Avoidance areas are areas of suitable habitat that have not been surveyed and are assumed to be occupied. The following avoidance and minimization measures should be included in the Plan of Development: 23. Within potential habitat, pre-project habitat assessments will identify suitable habitat meeting the criteria described in the current US Fish and Wildlife Service- accepted protocol. Contact BLM or the Service for the most up-to-date Pariette cactus and Uinta Basin hookless cactus survey requirements and timing windows. Habitat assessments will be completed across 100% of the project disturbance and associated buffer area prior to any ground disturbing activities to determine if suitable Pariette cactus and Uinta Basin hookless cactus habitat is present. 24. Within suitable habitat, clearance-level species surveys will be conducted to determine occupancy. Surveys: - Must be conducted by qualified individual(s) and according to BLM and Service accepted survey protocols. - Will be conducted for all areas proposed for surface disturbance and buffer area prior to initiation of project activities. - Will occur within 300 feet (ft) from the edge of the proposed right-of-way (ROW) and/or project disturbance for surface pipelines, roads well pads and other facilities requiring removal of vegetation, OR within 50 ft from the edge of the ROW for hand laid surface pipelines where no mechanized travel will be used for maintenance, installation, or related activities. - Where clearance surveys are technically infeasible and otherwise hazardous due to topography, slope, etc., suitable habitat will be assessed and mapped for avoidance (hereafter, “avoidance areas”) and incorporate

	300-ft buffers. Avoidance areas are assumed to be occupied (see #4 below). 25. Within suitable but unoccupied habitat, the following conservation measures will be implemented: a. Reduce well pad size to the minimum needed, without compromising safety. b. Where technologically and economically feasible, use directional drilling or multiple wells from the same pad. c. Limit new access routes created by the project. d. Roads and utilities should share common ROWs where possible. e. Reduce the width of ROWs and minimize the depth of excavation needed for the roadbed. Where feasible, use the natural ground surface for the road within habitat. f. Place signing to limit off-road travel in sensitive areas. g. Stay on designated routes and other cleared/approved areas. h. Vehicles and equipment will be power washed prior to entering suitable habitat or when moving between infested areas in order to prevent spreading seeds from noxious and invasive species. i. Erosion control measures (e.g., silt fencing) will be implemented to minimize sedimentation or concentrating water flow toward Pariette cactus and Uinta Basin hookless cactus plants and populations located down slope of proposed surface disturbance activities. Such measures should only be installed within the area proposed for disturbance. j. Only water (no chemicals, brine, or produced water) will be used for dust abatement measures. and k. All disturbed areas will be re-vegetated with native species comprised of species indigenous to the area. Non-native species may be included in a seed mix provided that the selected species are sterile, non-rhizomatous, and unlikely to invade other areas. Seed mix should be approved by BLM botanists and the Service. 26. Within occupied habitat and avoidance areas: a. Follow the above recommendations for project design within suitable habitats. b. Buffers of 300 ft minimum will be maintained between the edge of disturbance and plants, populations, occupied habitat, and avoidance areas. Surface pipelines will be laid such that a 50-ft buffer exists between the edge of the ROW and plants and avoidance areas. Stabilizing

	and anchoring techniques should be used when the pipeline crosses suitable habitat to ensure pipelines don't move towards the population. Site-specific distances will need to be approved by the Service and BLM when disturbance will occur upslope of habitat. c. Stabilizing and anchoring techniques should be used when the pipeline crosses suitable habitat to ensure pipelines don't move towards the population. Site-specific distances will need to be approved by the Service and BLM when disturbance will occur upslope of habitat. d. 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. e. Ground disturbing activities will not occur during the flowering period. f. Dust abatement measures will be applied to disturbed areas during the reproductive period and throughout the lifetime of the project (initial construction through reclamation). g. Before and during construction, areas for avoidance should be visually identifiable in the field (e.g., flagging, temporary fencing, rebar, etc.). h. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat. Any produced oil, water, or condensate will be processed and treated off-site. i. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible. j. Speed limit signs will be posted and project related vehicle travel on dirt roads will obey a 15-mile-per-hour speed limit in order to reduce dust during the growing period. k. A qualified botanist will be on site during any ground disturbing activity to monitor surface disturbance activities and assist with implementation of applicable conservation measures. 27. Noxious weeds within Pariette cactus and Uinta Basin hookless cactus habitat on all federal lands may be controlled with herbicides, in accordance with the most recent BLM Herbicide PEIS Guidelines (http://www.blm.gov/wo/st/en/prog/more/veg_eis.html) or most recent BLM Field Office guidance,

	a. A Pesticide Use Permit (PUP) will be approved through the action agency prior to weed control activities in Pariette cactus and Uinta Basin hookless cactus habitat. An approved PUP will include the most recent BLM guidelines for herbicide use near sensitive plant species. b. All those involved in the herbicide application shall be accompanied by a qualified botanist/ecologist familiar with <i>Sclerocactus</i> to help herbicide applicators identify <i>Sclerocactus</i> and avoid effects on individual plants. 28. The lessee will observe the management and conservation measures developed for the Level 1 and 2 Core Conservation Areas that have been identified by the Service. These conservation measures include disturbance caps (no further disturbance in Core 1 Areas and a 5% disturbance cap in Core 2 Areas). Contact the Service for the most up to date Core 1 and Core 2 conservation areas. 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. Site-specific measures not listed here may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the Service and BLM to ensure continued compliance with the ESA. Furthermore, re-initiation of Section 7 consultation with the Service will be sought immediately if any unanticipated effects to individuals or populations of the species result from project activities.
T&E-22	UTE LADIES'-TRESSES (<i>SPIRANTHES DILUVIALIS</i>) The lessee/operator is given notice that the lands in this parcel may exist within potential habitat for Ute ladies'-tresses, a species listed as threatened under the Endangered Species Act (ESA) (57 FR 2048). To minimize effects to the federally threatened Ute ladies'-tresses, the Bureau of Land Management (BLM) in coordination with the U.S. Fish and Wildlife Service (Service) developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance) are in compliance with the ESA. Site-specific measures not listed here may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the Service and BLM

	to ensure continued compliance with the ESA. Furthermore, re-initiation of Section 7 consultation with the Service will be sought immediately if any unanticipated effects to individuals or populations of the species result from project activities. 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 or fall within the Service's potential habitat layer found in the Information for Planning and Consultation (IPaC) database. Suitable habitat is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence. Suitable habitat is determined by field assessment and may or may not contain Ute ladies'-tresses. Suitable habitat descriptions can be found in Federal Register Notice and species recovery plan links at https://www.fws.gov/endangered/species/recovery-plans.html. Occupied habitat is defined as areas currently or historically known to support Ute ladies'-tresses individuals plus an avoidance buffer to avoid the existing seedbank and indirect effects from dust or to pollinators. Avoidance areas are areas of suitable habitat that have not been surveyed and are assumed to be occupied. The following avoidance and minimization measures should be included in the Plan of Development: 29. Within potential habitat, pre-project habitat assessments will identify suitable habitat meeting the criteria described in the current US Fish and Wildlife Service- accepted protocol. Contact BLM or the Service for the most up-to date Ute ladies'-tresses survey requirements and timing windows. Habitat assessments will be completed across 100% of the project disturbance and buffer area prior to any ground disturbing activities to determine if suitable Ute ladies'-tresses habitat is present. 30. Within suitable habitat, clearance-level species surveys will be conducted to determine occupancy. Surveys: a. Must be conducted by qualified individual(s) and according to BLM and Service accepted survey protocols; b. Will be conducted for all areas proposed for surface disturbance and buffer area prior to initiation of project activities and within the same growing season, at a time when the plant can be detected. Surveyors should verify that the plant is flowering by contacting a BLM or Service botanist or demonstrating that the nearest known population is in flower;

	c. Will occur within 300 feet (ft) from the edge of the proposed right-of-way (ROW) and/or project disturbance for surface pipelines, roads well pads and other facilities requiring removal of vegetation, OR within 50 ft from the edge of the ROW for hand laid surface pipelines where no mechanized travel will be used for maintenance, installation, or related activities; d. Will be conducted for at least 1 year prior to any temporary disturbance in suitable habitat. Two additional years of surveys will be conducted after the temporary disturbance for a total of 3 years of surveys; and e. Will be conducted for three consecutive years prior to any permanent disturbance (e.g., road widening, new road construction, placement of other infrastructure). Surveys are valid for 3 growing seasons after the last survey is completed. f. Where clearance surveys are technically infeasible and otherwise hazardous due to topography, slope, etc., suitable habitat will be assessed and mapped for avoidance (hereafter, “avoidance areas”) and incorporate 300-ft avoidance buffers. Avoidance areas are assumed to be occupied (see #4 below). 31. Within suitable but unoccupied habitat, the following conservation measures will minimize disturbance and indirect effects to populations and individual plants: a. Reduce well pad size to the minimum needed, without compromising safety; b. Where technically and economically feasible, use directional drilling or multiple wells from the same pad; c. Limit new access routes created by the project; d. Roads and utilities should share common ROWs where possible; e. Reduce the width of ROWs and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat; f. Develop project designs to avoid altering site hydrology and concentrating water flows or sediments into occupied habitat; g. Place signing to limit off-road travel in sensitive areas; h. Stay on designated routes and other cleared/approved areas; i. Construction matting will be used to protect vegetation and soil from damage and compaction during initial construction and during activities that require the use of heavy construction equipment or a workover rig.

	j. Vehicles and equipment will be power washed prior to entering suitable habitat or when moving between infested areas in order to prevent spreading seeds from noxious and invasive species; k. Only water (no chemicals, brine, or produced water) will be used for dust abatement measures; l. Erosion control measures (e.g., silt fencing) will be implemented to minimize sedimentation or concentrating water flow toward Ute ladies'-tresses plants and populations located down slope of proposed surface disturbance activities. Such measures should only be installed within the area proposed for disturbance; m. All disturbed areas will be re-vegetated with native species comprised of species indigenous to the area. Non-native species may be included in a seed mix provided that the selected species are sterile, non-rhizomatous, and unlikely to invade other areas. BLM or Service botanists should approve seed mix. 32. Within occupied habitat and avoidance areas, the following conservation measures will be implemented to avoid direct disturbance and minimize indirect effects to populations and to individual plants: a. Follow the above (#3) recommendations for project design within suitable habitats; b. Buffers of 300 ft minimum will be maintained between the edge of surface disturbance or ROW and plants, populations, occupied habitat, and avoidance areas where feasible; c. 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; d. Ground disturbing activities will not occur during the flowering period; e. Dust abatement measures will be applied during the active growing period and when active ground disturbance is ongoing (initial construction, reclamation, shutting-in) throughout the lifetime of the project; f. Surface pipelines will be laid by hand such that a 50-ft buffer exists between the edge of the ROW and plants and avoidance areas. Stabilizing and anchoring techniques should be used when the pipeline crosses suitable habitat to ensure pipelines don't move towards the population. Site-specific distances will need to be

	approved by the Service and BLM when disturbance will occur upslope of habitat; g. Before and during construction, areas for avoidance should be visually identifiable in the field (e.g., flagging, temporary fencing, rebar, etc.); h. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat. Any produced oil, water, or condensate will be processed and treated off-site; i. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible; j. Speed limit signs will be posted and project related vehicle travel on dirt roads will obey a 15-mile-per-hour speed limit in order to reduce dust during the growing period; k. A qualified botanist will be on site during any ground disturbing activity to monitor surface disturbance activities and assist with implementation of applicable conservation measures. 33. Noxious weeds within Ute ladies'-tresses habitat on all federal lands may be controlled with herbicides, in accordance with the most recent BLM Herbicide PEIS Guidelines (http://www.blm.gov/wo/st/en/prog/more/veg_eis.html) or most recent BLM Field Office guidance. a. A Pesticide Use Permit (PUP) will be approved through the action agency prior to weed control activities in Ute ladies'-tresses habitat. An approved PUP will include the most recent BLM guidelines for herbicide use near sensitive plant species. b. All those involved in the herbicide application shall be accompanied by a qualified botanist/ecologist familiar with Ute ladies'-tresses to help herbicide applicators identify Ute ladies'-tresses and avoid effects on individual plants. 34. Additional monitoring or conservation measures to offset effects to Ute ladies'-tresses may be applied where disturbance occurs within 300 ft of individual plants. 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.
T&E-23	COLORADO RIVER THREATENED AND ENDANGERED FISH

	The lessee/operator is given notice that the lands in this parcel may exist within the range or within critical habitat for four species of endemic Colorado River fishes: razorback sucker (<i>Xyrauchen texanus</i>; 56 FR 54957), Colorado pikeminnow (<i>Ptychocheilus Lucius</i>; 32 FR 4001), humpback chub (<i>Gila cypha</i>; 86 FR 57588), and bonytail chub (<i>Gila elegans</i>; 45 FR 27710), species listed as endangered or threatened under the Endangered Species Act (ESA). To minimize effects to the federally endangered Colorado River fishes and their designated critical habitats (59 FR 13374), the Bureau of Land Management (BLM) in coordination with the U.S. Fish and Wildlife Service (Service) developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including, but not limited to, drilling, production, and maintenance) comply with the ESA. To avoid and minimize effects to Colorado River fishes and their designated critical habitats, the project proponent will: 35. Minimize Impacts to Riparian Habitats a. 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 degrade alluvial aquifers. b. Avoid surface-disturbing activities within the 100-year floodplain of the Colorado River, Green River, tributaries within the range of the species, and all associated back waters. c. Manage water production to ensure maintenance or enhancement of riparian habitat. Water produced from oil and gas wells will be removed from the site for treatment or returned to the well for production activities. d. Avoid loss or disturbance of riparian habitats. e. Conduct watershed analysis for leases in designated critical habitat and overlapping major tributaries to determine toxicity risk from permanent facilities. f. Implement the U.S Bureau of Reclamation Guidelines for Evaluating Pipeline Channel Crossing Hazards to Ensure Effective Burial (https://www.usbr.gov/tsc/techreferences/mands/mands-pdfs/GuidelinesForEvaluatingPipelineChannelHazards_09-2019_Final508.pdf) to minimize the potential for equipment damage and resulting leaks or spills when pipelines cross rivers or streams. g. Conduct a flash flood risk assessment for any facilities adjacent to 100-year floodplains. Closed loop drilling, and pipeline burial or suspension will be used to minimize damage from flash floods. 36. Avoid Direct Mortality to Individuals

	a. Conduct fish salvage prior to any in-water work within Colorado River fish occupied habitat. b. Minimize effects of surface water pumping on Colorado River fishes. Larval fish are very small (<0.5 inches total length) and incapable of directed swimming from time of hatching through the first 2-4 weeks of their life. Larval fish may be present in the Green, Colorado, Gunnison, San Juan, Dolores, and Yampa Rivers from as early as April 1 to as late as August 31 (earlier in dry years; later in wet years). The following measures will be taken to reduce entrainment of larval fish in surface water pumps: i. The best method to avoid entrainment is to pump from an off-channel location – one that does not connect to the river during high spring flows. An infiltration gallery constructed in a Service approved location is best. ii. If the pump head is located in the river channel the following stipulations apply: iii. Do not situate the pump in a low-flow or no-flow area, as these habitats tend to concentrate larval fishes. iv. Limit the amount of pumping, to the greatest extent possible, during that period of the year when larval fish may be present (see above). v. Limit the amount of pumping, to the greatest extent possible, during the midnight hours (10 pm to 2 am), as larval drift studies indicate that this is a period of greatest daily activity. Dusk and the afternoon are the preferred pumping times, as larval drift abundance is lowest during this time. vi. Screen all pump intakes with 3/32" mesh material. vii. Approach velocities for intake structures should follow the National Marine Fisheries Service's document "Fish Screening Criteria for Anadromous Salmonids." For projects with an in-stream intake that operate in stream reaches where larval fish may be present, the approach velocity should not exceed 0.33 feet per second (ft/s). viii. Report any fish impinged on the intake screen or entrained into irrigation canals to the Service and to the Utah Division of Wildlife Resources (UDWR): 1. USFWS Utah Ecological Services Field Office Address: 2369 Orton Circle, Suite 50, West Valley City, Utah 84119. Phone: 801-975-3330. Email: utahfieldoffice_esa@fws.gov

	2. UDWR Northeastern Region Address: 318 N. Vernal Ave., Vernal, UT 84078. Phone: 435-781-9453. 3. UDWR Southeastern Region Address: 319 N. Carbonville Rd., Suite A, Price, UT 84501. Phone: 435-613-3700. 37. Manage Water Depletion a. Complete Endangered Species Act section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) prior to depleting water from any portions of the Upper Colorado River or San Juan River drainages. Water depletions are considered an adverse effect to Colorado River fishes and their critical habitat and often require formal consultation. 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. Site-specific measures not listed here may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the Service and BLM to ensure continued compliance with the ESA. Furthermore, re-initiation of Section 7 consultation with the Service will be sought immediately if any unanticipated effects to individuals or populations of the species result from project activities.
T&E-25	MEXICAN SPOTTED OWL (STRIX OCCIDENTALIS LUCIDA) The lessee/operator is given notice that the lands in this parcel may exist within 0.5 miles of suitable habitat, Protected Activity Centers (PACs), or designated critical habitat for Mexican spotted owl, a species listed as threatened under the Endangered Species Act (ESA) (58 FR 14248). To minimize effects to the federally threatened Mexican spotted owl, the Bureau of Land Management (BLM) in coordination with the U.S. Fish and Wildlife Service (Service) developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance) comply with the ESA. For the purposes of this document, the following terms are so defined: Potential habitat is areas that satisfy the broad criteria of the species habitat description, fall within the Service’s potential habitat layer found in the Information for Planning and Consultation (IPaC) database or is identified by Service-accepted habitat models. Suitable habitat contains the canyon structure and features needed to support breeding or foraging as defined in the Recovery Plan. Suitable habitat is

	determined by field assessment and may or may not be occupied. Designated critical habitat is a specific geographic area(s) identified in our <i>Final Designation of Critical Habitat for the Mexican Spotted Owl</i> (69 FR 53181) that contains features essential for the conservation of listed species and may require special management and protection. Critical habitat may or may not be currently occupied by the species. Occupied habitat is identified through a protocol-level survey to be currently supporting Mexican spotted owl individuals. PACs are designated by a land management agency to sustain areas that are presently, recently, or historically occupied by breeding Mexican spotted owls. Species-specific information can be found in the Federal Register Notice and species recovery plan links at https://ecos.fws.gov/. Appropriate avoidance and minimization measures will depend on whether the action is temporary or long-term and whether it occurs within or outside of the owl breeding season, March 1 through August 31. A <u>temporary action</u> occurs for no more than one breeding season or is completed outside of the breeding season, leaves no permanent structures, and results in no permanent loss of suitable, critical, or occupied habitat. Temporary actions that occur outside of the breeding season are not likely to affect Mexican spotted owls. A <u>long-term action</u> continues for more than one breeding season, causes a loss of habitat or displaces owls through disturbance. Long-term or temporary actions that occur within suitable habitat require adherence to measures that avoid and minimize effects to the species. The following measures should be included in the Plan of Development: 1. Within potential habitat pre-project habitat assessments will identify suitable habitat within 0.5 miles of the project area. Habitat suitability should be determined in accordance with current BLM and Service-accepted guidelines. 2. Within critical habitat, the following conservation measures will minimize disturbance and indirect effects: a. An on-the-ground assessment is required to determine the presence of physical and biological features (PBFs) identified in our Final Designation of Critical Habitat for the Mexican Spotted Owl (69 FR 53181). b. Disturbance to PBFs necessary for the survival of the species will be avoided and PBFs will be maintained or enhanced through project actions. c. Activity within 0.5 mile of designated critical habitat would be conducted outside the breeding season (March 1 to August 31), unless surveyed and unoccupied.

	d. Limit disturbances by staying on designated routes. e. Limit new access routes created by the project within designated critical habitat. 3. Within suitable habitat, species surveys may be required and will be conducted by qualified individual(s) according to the most recent BLM and Service-accepted survey protocols. a. For all temporary actions that may affect owls or suitable habitat: i. If the action occurs entirely outside of the owl breeding season and leaves no permanent structure or habitat disturbance, the action can proceed without an occupancy survey. ii. If the action is proposed between March 1 to August 31, protocol surveys will be conducted in suitable habitat prior to commencing the action. b. For all long-term actions that may affect owls or suitable habitat: i. Protocol level surveys will be conducted in identified suitable habitat prior to commencing activities. 4. Within suitable but unoccupied habitat (including suitable habitat affected by temporary actions outside the breeding season), the following conservation measures will minimize disturbance and indirect effects: a. Reduce disturbance area size to the minimum needed, without compromising safety. b. 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 nesting. c. Limit disturbances by staying on designated routes. d. Limit new access routes created by the project. e. Temporary access routes and disturbance, such as staging sites, created by the project will be rehabilitated through such means as raking out scares, re-vegetation, gating access points, etc. f. Water production will be managed to ensure maintenance or enhancement or riparian habitat. g. All disturbed areas will be revegetated with native species comprised of species indigenous to the area. Non-native species may be included in a seed mix provided that the selected species are sterile, non-rhizomatous, and unlikely to invade other areas.

	5. Within 0.5 miles of occupied habitat or PACs, the following conservation measures will be implemented to avoid direct disturbance and minimize indirect effects: a. Follow the above recommendations (#3 and 4) for project design within suitable habitats. b. Activities will be conducted outside the breeding season. c. Avoid construction of permanent structures. d. Noise levels will not exceed 69 dBA consistently (>twice/hour) or for an extended period of time (>1 hr) within 50 m of suitable habitat, including canyon rims. Placement of noise-generating facilities should be contingent upon a noise analysis to ensure noise does not encroach upon suitable habitat. Measures to reduce noise levels at the source may be required. e. No activity will occur within 0.5 miles of an identified owl nest site. If nest site is unknown, no activity would occur within the designated current and historic PAC. f. A monitoring plan will be developed in coordination with the BLM and Service to assess effects to the species. 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. Site-specific measures not listed here may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the Service and BLM to ensure continued compliance with the ESA. Furthermore, re-initiation of Section 7 consultation with the Service will be sought immediately if any unanticipated effects to individuals or populations of the species result from project activities.
T&E-30	NAVAJO SEDGE (CAREX SPECUICOLA) The lessee/operator is given notice that the lands in this parcel may exist within potential habitat for Navajo sedge (<i>Carex specuicola</i>), a species listed as threatened under the Endangered Species Act (ESA)(50 FR 19370). To minimize effects to the Federally threatened Navajo sedge, the Bureau of Land Management (BLM, in coordination with the U.S. Fish and Wildlife Service (Service) developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas

	development (including but not limited to drilling, production, and maintenance) are in compliance with the ESA. For the purposes of this document, the following terms are so defined: Potential habitat is defined as areas that satisfy the broad criteria of the species' habitat description or fall within the Service's potential habitat layer found in the Information for Planning and Consultation (IPaC) database. Suitable habitat is defined as areas that contain or exhibit the specific components or constituents necessary for plant persistence. Suitable habitat is determined by field assessments and may or may not contain Navajo Sedge. Suitable habitat descriptions can be found in Federal Register Notice and species recovery plan links at: https://ecos.fws.gov/. Occupied habitat is defined as areas currently or historically known to support Navajo sedge individuals plus an avoidance buffer to avoid the existing seedbank and indirect effects from dust or to pollinators. Avoidance areas are areas of suitable habitat that have not been surveyed and are assumed to be occupied. The following avoidance and minimization measures should be included in the plan of development: 6. Within potential habitat, pre-project habitat assessments will identify suitable habitat meeting the criteria described in the current Service-accepted protocol. Contact BLM or the Service for the most up-to-date Navajo sedge habitat requirements and timing windows. Habitat assessments will be completed across 100 percent of the project disturbance and buffer area within potential habitat prior to any ground disturbing activities to determine if suitable Navajo sedge habitat is present. 7. Within suitable habitat, clearance-level species surveys will be conducted to determine occupancy. These surveys: a. Must be conducted by a qualified individual(s), and according to BLM and Service-accepted survey protocols (USFWS 2011). b. Will be conducted in all areas proposed for surface disturbance and buffer area prior to the initiation of project activities and at a time when the plant can be positively identified. Surveyors should verify that the plant is flowering by contacting a BLM or Service botanist or demonstrating that the nearest known population is in flower. c. Will occur within 300 feet (ft) from the edge of the proposed right-of-way (ROW) and/or project disturbance for surface pipelines, roads, well pads, and other facilities requiring removal of vegetation, or within 50 ft of the ROW for hand laid surface pipelines where no

	mechanized travel will be used for maintenance, installation or related activities. d. Will occur within 1.25-miles of proposed water depletions or other actions that will result in changes to the local hydrology. e. Where clearance surveys are technically infeasible and otherwise hazardous due to topography, slope, etc., suitable habitat will be assessed and mapped for avoidance (hereafter, “avoidance areas”) and incorporate 300-ft avoidance buffers. Avoidance areas are assumed to be occupied (see #4, below). 8. Within suitable but unoccupied habitat, the following conservation measures will be implemented: a. Ensure that water extraction or disposal practices do not result in change of hydrologic regime. b. Ensure above ground contaminants and by products are contained and properly managed. c. Ensure any casings near or in surface connected aquifers are properly sealed and managed. d. Reduce well pad size to the minimum needed, without compromising safety. e. Where technically and economically feasible, use directional drilling, horizontal drilling, or multiple wells from the same pad. Ensure that directional drilling does not intercept or degrade alluvial aquifers. f. Limit new access routes created by the project. g. Roads and utilities should share common ROWs where possible. h. Reduce the width of ROWs and minimize the depth of excavation needed for the roadbed. Where feasible, use the natural ground surface for the road within habitat. i. In riparian areas, construction matting will be used to protect wet soils from damage and compaction when the use of heavy construction equipment or a workover rig is required. j. Place signing to limit off-road travel in sensitive areas. k. Stay on designated routes and other cleared/approved areas. l. Vehicles and equipment will be power washed prior to entering suitable habitat or when moving between infested areas in order to prevent spreading seeds from noxious and invasive species. m. Only water (no chemicals, brine, or produced water) will be used for dust abatement measures.

	n. Existing roads will be graveled within 300 ft of suitable habitat. o. Place signing to reduce vehicle speed to 15 mph or lower on dirt or gravel roads within 300 feet of suitable habitat and 25 mph or lower in the project area. p. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim disturbed areas following completion of activities (drilling or mining) to the smallest area possible. q. All disturbed areas will be re-vegetated with native species comprised of species indigenous to the area. Non-native species may be included in a seed mix provided that the selected species are sterile, non-rhizomatous, and unlikely to invade other areas. BLM or Service botanists should approve seed mix. r. Post construction monitoring for invasive species will be required. 9. Within occupied habitat and avoidance areas, the follow conservation measures be implemented to avoid direct disturbance and indirect effects to populations and to individual plants: a. Follow the above recommendations (#1-3) for project design. 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 activities will not occur within occupied habitat. d. Before and during construction, areas for avoidance should be visually identifiable in the field (e.g., flagging, temporary fencing, rebar, etc). e. Place produced oil, water, condensate tanks, or any other by-products in centralized locations, away from occupied habitat. Any produced oil, water, or condensate will be processed and treated off-site. f. A qualified botanist will be onsite during construction to monitor the surface disturbance activity and assist with implementation of applicable conservation measures. g. No surface will be allowed in any down dip (the direction in which a geological stratum slopes downwards) of strata associated with a Navajo sedge water source. Surface disturbance will not occur within a 300-ft buffer from the outer edge of these down dip(s).

	10. Subsurface development in geologic strata associated with Navajo sedge a. No subsurface occupancy that impacts water availability and quality within the associated aquifer beyond the initial drilling will be allowed in any down dip (the direction in which a geological stratum slopes downwards) of strata associated with a Navajo sedge water source. b. Water depletions or hydrologic alteration activities that extend beyond the initial drilling period will incorporate 1.25-mile subsurface buffers. however, site specific buffer distances will need to be approved by Service and BLM when disturbance will occur upslope of occupied habitat c. Ensure any casings near or in aquifers are properly sealed and managed. d. Fracking that may impact geological strata associated with Navajo sedge water source will not be allowed within 1.25-miles of the edge of occupied habitat 11. Noxious weeds within Navajo sedge suitable and occupied habitat on all federal lands may be controlled with herbicides, in accordance with the most recent BLM Herbicide PEIS Guidelines (http://www.blm.gov/wo/st/en/prog/more/veg_eis.html) or most recent BLM Field Office guidance. a. A Pesticide Use Permit (PUP) will be approved through the action agency prior to weed control activities in Navajo sedge habitat. An approved PUP will include the most recent BLM guidelines for herbicide use near sensitive plant species. b. All those involved in the herbicide application shall be accompanied by a qualified botanist/ecologist familiar with Navajo sedge to help herbicide applicators identify Navajo sedge and avoid effects on individual plants. 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. Site-specific measures not listed here may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the Service and BLM to ensure continued compliance with the ESA. Furthermore, re-initiation of Section 7 consultation with the Service will be sought immediately if any unanticipated effects to individuals or populations of the species result from project activities.

T&E-31	WESTERN YELLOW-BILLED CUCKOO (<i>COCCYZUS AMERICANUS</i>) The lessee/operator is given notice that the lands in this parcel may exist within 0.5 miles of suitable habitat or designated critical habitat for Western yellow-billed cuckoo, a species listed as threatened under the Endangered Species Act (ESA) (79 FR 59991). To minimize effects to the federally threatened Western yellow-billed cuckoo, the Bureau of Land Management (BLM) in coordination with the U.S. Fish and Wildlife Service (Service) developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to construction, drilling, production, and maintenance) comply with the ESA. For the purposes of this document, the following terms are so defined: Potential habitat is riparian areas that satisfy the broad criteria of the species' habitat description and fall within the Service's potential habitat layer found in the Information for Planning and Consultation (IPaC) database. Suitable habitat includes riparian habitat that contains the vegetative and hydrologic features needed to support <i>breeding, foraging, or migration</i>, as described in the most current Service-accepted guidelines. Suitable habitat is determined by field assessment and may or may not be presently occupied by the species. Suitable <i>foraging</i> and <i>migration</i> habitats may have fewer, smaller, or more disjunct patches of riparian vegetation with less understory vegetation than suitable breeding habitat. Designated critical habitat is a specific geographic area(s) identified in our <i>Final Designation of Critical Habitat for the Western yellow-billed cuckoo</i> (86 FR 20798) that contains features essential for the conservation of listed species and may or may not currently be occupied by the species. Occupied habitat is identified through a protocol-level survey to be currently supporting cuckoo individuals. If habitat is found to be occupied during a single breeding season, it is assumed to be occupied through the following breeding season. Avoidance areas are areas of suitable breeding habitat that have not been surveyed and are assumed to be occupied. Species-specific information can be found in the Federal Register Notice and species recovery plan links at https://ecos.fws.gov/. Appropriate avoidance and minimization measures will depend on whether the action is temporary or long-term, the type of habitat impacted, and whether it occurs within or outside of the cuckoo nesting season, June 1 through August 31. A <u>temporary action</u> occurs for no

	more than one breeding season or is completed outside of the breeding season, leaves no permanent structures, and results in no permanent loss of suitable, critical, or occupied habitat. Temporary actions that occur outside of the breeding season are not likely to affect western yellow-billed cuckoo. A <u>long-term or permanent action</u> continues for more than one breeding season, causes a loss of habitat, or may displace cuckoo through disturbances. Long-term actions or temporary actions that occur within 0.5 miles of suitable habitat require adherence to measures to avoid and minimize effects to the species. The following measures should be included in the Plan of Development: 12. Within potential habitat, pre-project habitat assessments will identify suitable habitat within 0.5 miles of the project area. Habitat suitability should be determined in accordance with current BLM and Service-accepted guidelines. 13. Within critical habitat, the following conservation measures will minimize disturbance and indirect effects: a. An on-the-ground assessment is required to determine the presence of physical and biological features (PBFs) identified in our <i>Final Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo</i> (86 FR 20798). i. Disturbance to PBFs necessary for the survival of the species will be avoided and PBFs will be maintained or enhanced through project actions. ii. If riparian vegetation is lost and cannot be restored in the same area, habitat loss may be mitigated by restoring riparian habitat in the same critical habitat unit, as approved by the BLM and Service. b. In habitat where PBFs are present, the conservation measures for suitable habitat (#3) and related habitat type, (#4 through 6) below, will be followed. 14. Within all suitable habitat, the following conservation measures will minimize disturbance and indirect effects: a. Limit activities to designated routes. b. Limit new access routes. c. Avoid or minimize disturbance and loss of riparian habitat and reduce disturbance area size to the minimum needed, without compromising safety. d. Manage water production to maintain or enhance riparian habitat.

	e. For projects that involve drilling, where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in riparian habitat. f. Water produced as a by-product or extracted as a result of project activities will be managed to avoid changes to the hydrologic regime that would result in loss or degradation of riparian habitat. g. All areas of surface disturbance within riparian areas or adjacent uplands will be re-vegetated with native species. i. Revegetation sites will be monitored and maintained to improve planting establishment and survival for two to three growing seasons. If not successful, revegetation sites will be replanted/reseeded in coordination with the Service and BLM. ii. If riparian vegetation is lost and cannot be restored in the same area, habitat loss may be mitigated by restoring riparian habitat in alternate areas, as approved by the BLM and Service. h. Project-related increases to noise levels in suitable habitat shall not exceed 10 dBA above existing ambient levels for temporary projects (< 1 breeding season) or 3 dBA above existing ambient levels for permanent projects. i. Project proponents will conduct a noise analysis determining appropriate buffer distance between suitable habitat and project activities to avoid exceeding noise thresholds. This analysis may also aid in determining appropriate sound-dampening devices and conservation measures to reduce potential adverse effects to cuckoos. 15. Within suitable breeding habitat, the following conservation measures will be implemented to avoid direct disturbance and minimize indirect effects: a. For projects occurring in the yellow-billed cuckoo breeding season or projects that will result in permanent disturbance: i. Species surveys are required and will be conducted by qualified individual(s) according to the most recent BLM and Service-accepted survey protocols.

	1. If the habitat is occupied or occupancy is unknown, conservation measures for occupied habitat (#6, below) will be followed. 2. If the habitat is not occupied, project may proceed during the breeding season following the conservation measures for suitable habitat (#3), above. b. For projects temporary projects occurring entirely outside of the breeding season, species surveys are not required, and the project may proceed following the conservation measures for suitable habitat (#3), above. 16. For projects occurring within foraging habitat or migration habitat, the following conservation measures will be implemented: a. For projects occurring in the breeding and/or migratory season: i. In migratory habitat or foraging habitat within 1000 ft of occupied breeding habitat or avoidance area: 1. If project actions are to exceed 10 dBA above existing ambient levels, project proponents will avoid disturbance types that exceed this threshold during known active period (i.e. sunrise to four hours after sunrise and four hours before sunset to sunset). ii. In foraging habitat within 1000 ft of unoccupied breeding habitat: 1. Project may proceed as planned following the conservation measures for suitable habitat (#3), above. b. For projects occurring outside of breeding and migration windows the project may proceed following the conservation measures for suitable habitat (#3), above. 17. Within 0.5 miles of occupied habitat or avoidance areas, the following conservation measures will be implemented to avoid direct disturbance and minimize indirect effects: a. Follow the above recommendations (#3 and #4) for suitable habitat.

	b. Activities will be conducted outside of the breeding season. c. Avoid construction of permanent structures. d. A monitoring plan will be developed in coordination with the BLM and Service to assess effects to the species. Biological monitors may be required. Biological monitors will observe project activities to ensure that there are no adverse effects to the species. 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. Site-specific measures not listed here may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the Service and BLM to ensure continued compliance with the ESA. Furthermore, re-initiation of Section 7 consultation with the Service will be sought immediately if any unanticipated effects to individuals or populations of the species result from project activities.
T&E-35	SILVERSPOT BUTTERFLY (<i>Speyeria nokomis nokomis</i>) The lessee/operator is given notice that the lands located in this parcel may exist within potential habitat for silverspot butterfly, a species listed as threatened under the Endangered Species Act (ESA) (51 FR 16526). To minimize effects to the Federally threatened silverspot butterfly, 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. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance) are in compliance with the ESA. Site-specific measures not listed here may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the Service and BLM to ensure continued compliance with the ESA. Furthermore, re-initiation of Section 7 consultation with the Service will be sought immediately if any unanticipated effects to individuals or populations of the species result from project activities. For the purposes of this document, the following terms are so defined: Potential habitat is defined as areas that satisfy the broad criteria of the species habitat description or fall within the Service’s potential

	habitat layer found in the Information for Planning and Consultation (IPaC) database. Suitable habitat is defined as areas that contain or exhibit the specific components or constituents necessary for species persistence. Suitable habitat is determined by field assessment and may or may not contain silverspot butterfly. As silverspot butterfly is obligate on the host plant bog violet (<i>Viola nephrophylla</i>), all occupied bog violet habitat within potential habitat for silverspot butterfly is considered suitable habitat for silverspot butterfly. More detailed suitable habitat descriptions can be found in Federal Register Notice and species recovery plan links at https://ecos.fws.gov/. Occupied habitat is defined as areas currently or historically known to support silverspot individuals, plus an avoidance buffer to avoid the bog violet existing seedbank and indirect effects from dust or to pollinators. Avoidance areas are areas of suitable habitat that have not been surveyed and are assumed to be occupied. The following avoidance and minimization measures should be included in the Plan of Development: 18. Within potential habitat, pre-project habitat assessments will identify suitable habitat meeting the criteria described in the current Service-accepted protocol. Contact BLM or the Service for the most up-to-date silverspot habitat requirements and timing windows. Habitat assessments will be completed across 100 percent of the project disturbance and buffer area within potential habitat prior to any ground disturbing activities to determine if suitable habitat, including bog violets, are present. If bog violets are not present, there is no need to conduct further surveys, even if all other criteria of suitable habitat are met. 19. Within suitable habitat, clearance-level species surveys will be conducted to determine occupancy. Surveys: a. Must be conducted by qualified individuals(s) and according to BLM and Service accepted survey protocols; b. Will be conducted in all areas proposed for surface disturbance and buffer areas prior to initiation of project activities and within two years, at a time when the plant can be detected. Surveyors should verify that butterflies are active by contacting a BLM or Service biologist or demonstrating that the nearest known population has active butterflies; c. Will occur within 300 feet (ft) from the edge of the proposed right-of-way (ROW) and/or project disturbance for surface pipelines, roads, well pads, and other facilities requiring removal of vegetation, OR within 50

	ft from the edge of the ROW for hand laid surface pipelines where no mechanized travel will be used for maintenance, installation, or related activities; d. Where clearance surveys are technically infeasible and otherwise hazardous due to topography, slope, etc., suitable habitat will be assessed and mapped for avoidance (hereafter, avoidance areas) and incorporate 300-ft avoidance buffers. Avoidance areas are assumed to be occupied (see #4, below). 20. Within suitable but unoccupied habitat, the following conservation measures will minimize disturbance and indirect effects to populations, individuals, and host plants: a. Reduce well pad size to the minimum needed without compromising safety; b. Where technically and economically feasible, use directional drilling or multiple wells from the same pad; c. Limit new access routes created by the project; d. Roads and utilities should share common ROWs where possible; e. Reduce the width of ROWs and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat; f. Place signing to limit off-road travel in sensitive areas; g. Stay on designated routes and other cleared/approved areas; h. Vehicles and equipment will be power washed prior to entering suitable habitat or when moving between infested areas in order to prevent spreading seeds from noxious and invasive species; i. Only water (no chemicals, brine, or produced water) will be used for dust abatement measures; 21. All disturbed areas will be re-vegetated with native species comprised of species indigenous to the area and must include bog violet in the wetland portion of the disturbance area. BLM or Service botanists should approve seed mix. 22. Within occupied habitat and avoidance areas, the following conservation measures will be implemented to avoid direct disturbance and minimize indirect effects to populations and individual plants: a. Follow the above recommendations (#3) for project design within suitable habitats; b. Buffers of 300 ft minimum will be maintained between the edge of surface disturbance or ROW and plants, populations, occupied habitat, and avoidance areas where feasible. Surface pipelines will be laid by hand

	and such that a 50-ft buffer exists between the edge of the ROW and plants and avoidance areas. Stabilizing and anchoring techniques should be used when the pipeline crosses suitable habitat to ensure pipelines don't move towards the population. Site-specific distances will need to be approved by the Service and BLM when disturbance will occur upslope of habitat; Construction activities will not occur within occupied habitat; c. No ground disturbance will occur during the butterfly's active period; d. Erosion control measures (e.g., silt fencing) will be implemented to minimize sedimentation or concentrating water flow toward bog violet plants and populations located down slope of proposed surface disturbance activities. Such measures should only be installed within the area proposed for disturbance; e. Dust abatement measures will be applied to disturbed areas during the butterfly's active period throughout the lifetime of the project any time activities occur that could result in increased dust (initial construction through reclamation); f. Before and during construction, areas for avoidance should be visually identifiable in the field (e.g., flagging temporary fencing, rebar, etc.); g. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat. Any produced oil, water, or condensate will be processed and treated off-site; h. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible. i. Speed limit signs will be posted and project related vehicle travel on dirt roads will obey a 15-mile-per-hour speed limit in order to reduce dust during the growing period; j. A qualified biologist will be onsite during any ground disturbing activity to monitor surface disturbance activities and assist with implementation of applicable conservation measures. 23. Noxious weeds within suitable or occupied silverspot habitat on all federal lands may be controlled with herbicides, in accordance with the most recent BLM Herbicide PEIS Guidelines (http://www.blm.gov/wo/st/en/prog/more/veg_eis.html) or most recent BLM Field Office guidance.

	24. A Pesticide Use Permit (PUP) will be approved through the action agency prior to any pesticide use in suitable or occupied silverspot habitat. An approved PUP will include the most recent BLM guidelines for pesticide use near sensitive species¹; 25. All those involved in an herbicide application shall be accompanied by a qualified biologist familiar with bog violets and silverspot butterfly to help herbicide applicators identify both species and avoid effects on individual host plants. 26. Insecticides will not be used within suitable or occupied silverspot habitat without further coordination and potential consultation with the Service, due to the high level of direct risk posed to the listed species by insecticide use. 27. Additional monitoring or conservation measures to offset effects to silverspot butterfly and host plants may be applied where disturbance occurs within 300 ft of individual host plants. 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 Service. ¹ Bog violet is not a sensitive species but for the purposes of pesticide applications should be treated as such due to its status as host plant for a listed insect species and the fact that its presence in areas within the range of silverspot butterfly signifies suitable habitat.

APPENDIX D COMMENTS AND BLM RESPONSES

The BLM evaluated all comments received and parsed them into substantive or non-substantive comments according to the guidance in the DOI Handbook of NEPA Implementing Procedures (516 DM 1, Appendix 3) . Summarized substantive comments contained in Table 71 are representative of topics raised, and single responses are provided for similarly stated topics. Due to their length, the BLM has summarized or excerpted comments below.

Substantive comments 1) question, with reasonable basis, the accuracy of the information in the analysis; 2) question, with reasonable basis, the adequacy of, methodology for, or assumptions used for the analysis; 3) present new information relevant to the analysis; 4) present reasonable alternatives other than those analyzed; or 5) cause changes or revisions in one or more of the alternatives.

Non-substantive comments generally 1) expressed opposition to or support for the proposed action or alternatives or agreed or disagreed with BLM policy or resource decisions without reasoning, justification, or supporting data; 2) did not pertain to the project area or the project; or 3) took the form of vague or open-ended questions and did not warrant a specific response. Similarly, comments that merely cited other comments or sources without providing reasoning or additional explanation were considered non-substantive.

While the BLM does not provide specific responses to each of these comments because they do not meet the criteria for being substantive, the agency thanks these commenters for their feedback. The BLM received XXXX comments, XX of which contained substantive comments.

Table 70. Public submissions with assigned commentor codes and resource/topic areas.

Organization	Commenter Code	Resource/Topic Area

Table 71. Comment summary and BLM response.

Comment Number	Resource/Topic	Summarized Comment	Addressed in the EA, Section	Comment Response

APPENDIX E LEASING PREFERENCE RATING FOR NOMINATED LEASE PARCELS

BACKGROUND

The following states have a permanent injunction on implementation on any stop or pause on quarterly sales: Louisiana, Alabama, Alaska, Arkansas, Georgia, Mississippi, Missouri, Montana, Nebraska, Oklahoma, Texas, Utah, and West Virginia.

Upon the conclusion of the 30-day Public Scoping period, the BLM completed the parcel preference review process. In accordance with 43 C.F.R. 3120.32, the BLM has considered five criteria in evaluating the lands to be offered. All the parcels nominated are rated as low preference based on one or more criteria. Given the BLM's ability to mitigate resource impacts through the attachment of stipulations and lease notices at the leasing stage and coupled with site-specific analysis and pre-disturbance biological surveys at the lease development stage, impacts to resources are expected to be avoided, minimized, and reduced, such that any reasonably foreseeable impacts can be effectively addressed, therefore all parcels have been carried forward for further consideration.

Lease Parcel Preference Criteria

1. Proximity to existing oil and gas development, giving preference to lands upon which a prudent operator would seek to expand existing operations;
2. The presence of important fish and wildlife habitats or connectivity areas, giving preference to lands that would not impair the proper functioning of such habitats or corridors;
3. The presence of historic properties, sacred sites, or other high value cultural resources, giving preference to lands that do not contribute to the cultural significance of such resources;
4. The presence of recreation and other important uses or resources, giving preference to lands that do not contribute to the value of such uses or resources; and
5. Potential for development, giving preference to lands with high potential for development

Table 72 Preference determination by parcel based on 43 CFR 3120.32 criteria for BLM's Utah Lease Sale

Parcel Number	CRITERIA FOR LEASING RELATED TO DOI'S REPORT ON THE FEDERAL OIL AND GAS LEASING PROGRAM					Preference for Leasing	
	O&G Proximity	Plant and Wildlife Habitat[1]	Cultural Resources	Recreation[2] (Other Resources)	Development Potential[3]	High	Low
1662	High	Great plains toad, greater sage-grouse brood rearing habitat general habitat, big free-tailed bat, fringed myotis, spotted bat, monarch, elk crucial winter habitat, pinyon jay: LOW	High	High	High		XX
1672	High	Greater sage grouse brood rearing, lewis woodpecker big free-tailed bat, fringed myotis, spotted bat, elk calving habitat, mule deer fawning habitat, pinyon jay: LOW	High	High	High		XX
1673	High	Greater sage grouse brood rearing general habitat, lewis woodpecker big free-tailed bat, fringed myotis, spotted bat, monarch, pinyon jay, elk calving habitat: LOW	High	High	High		XX
1674	High	Colorado river cutthroat trout present: LOW Mexican spotted owl, greater sage-grouse designated brood rearing and winter in general habitat, lewis' woodpecker big free-tailed bat, fringed myotis, spotted bat, monarch butterfly, pinyon jay elk crucial winter range: LOW	High	High	High		XX
1678	High	Greater sage-grouse general habitat management area, lewis' woodpecker big free-tailed bat, fringed myotis, spotted bat, mule deer winter crucial, pinyon jay, mule deer migration corridor, elk crucial winter range: LOW	High	High	High		XX
1680	High	Golden eagle big free-tailed bat, fringed myotis, spotted bat, mule deer and elk winter crucial habitat, short eared owl, pinyon jay: LOW	High	High	High		XX
1681	High	Golden eagle, greater sage-grouse brood rearing and winter general habitat, big free-tailed bat, fringed myotis, spotted bat, short eared owl: HIGH	High	High	High	XX	

Parcel Number	CRITERIA FOR LEASING RELATED TO DOI'S REPORT ON THE FEDERAL OIL AND GAS LEASING PROGRAM					Preference for Leasing	
	O&G Proximity	Plant and Wildlife Habitat[1]	Cultural Resources	Recreation[2] (Other Resources)	Development Potential[3]	High	Low
1683	High	Golden eagle, greater sage-grouse general brood rearing and winter habitat, big free-tailed bat, fringed myotis, spotted bat, white tailed prairie dog, burrowing owl, short eared owl: HIGH	High	High	High	XX	
1684	High	Greater sage-grouse general brood rearing, big free-tailed bat, fringed myotis, spotted bat, short eared owl, mule deer and elk crucial winter habitat, pinyon jay: HIGH Penstemon conservation area and occupied habitat for Graham's and White River penstemon: Low	High	High	High		XX
1687	High	Greater sage-grouse general brood rearing, big free-tailed bat, fringed myotis, spotted bat, short eared owl: HIGH	High	High	High	XX	
1688	High	Greater sage-grouse general brood rearing and winter habitat, big free-tailed bat, fringed myotis, spotted bat, short eared owl, pinyon jay: HIGH	High	High	High	XX	
1689	High	Big free-tailed bat, fringed myotis, spotted bat, mule deer crucial winter habitat, short eared owl, pinyon jay: LOW Penstemon conservation area and occupied habitat for Graham's and White River penstemon: Low	High	Low (VRM 2)	High		XX
1691	High	Burrowing owl, white tailed prairie dog, big free-tailed bat, fringed myotis, spotted bat, short eared owl, greater sage grouse general brood rearing and winter habitat: HIGH	High	High	High	XX	
1696	High	Greater sage-grouse general winter and brood rearing habitat, big free-tailed bat, fringed myotis, spotted bat, white tailed prairie dog, burrowing owl, mule deer fawning habitat, mule deer crucial winter range, short eared owl: LOW	High	High	High		XX

Parcel Number	CRITERIA FOR LEASING RELATED TO DOI'S REPORT ON THE FEDERAL OIL AND GAS LEASING PROGRAM					Preference for Leasing	
	O&G Proximity	Plant and Wildlife Habitat[1]	Cultural Resources	Recreation[2] (Other Resources)	Development Potential[3]	High	Low
1698	High	Big free-tailed bat, fringed myotis, spotted bat, white tailed prairie dog, burrowing owl, greater sage grouse general brood rearing and wintering habitat short eared owl, pinyon jay, ferruginous hawk, golden eagle: HIGH	High	High	High	XX	
1702	High	Ferruginous hawk, greater sage-grouse general brood rearing and wintering habitat, big free-tailed bat, fringed myotis, spotted bat, white tailed prairie dog, burrowing owl, ferruginous hawk, short eared owl, pinyon jay: HIGH	High	High	High	XX	
1703	High	Colorado river cutthroat trout present: LOW Lewis' woodpecker, fringed myotis, spotted bat, mule deer and elk crucial winter habitat, monarch butterfly, pinyon jay, mule deer migration corridor: LOW	High	High	High		XX
1705	Low	Lewis' woodpecker big free-tailed bat, fringed myotis, spotted bat, elk crucial winter habitat, elk calving habitat, pinyon jay: LOW	High	High	High		XX
1715	High	Colorado river cutthroat trout present: LOW Great plains toad, greater sage-grouse general brood rearing habitat, lewis' woodpecker big free-tailed bat, fringed myotis, spotted bat, monarch butterfly, pinyon jay elk crucial winter range: LOW	High	High	High		XX
1717	High	Big free-tailed bat, fringed myotis, spotted bat, mule deer and elk crucial winter habitat, short eared owl, pinyon jay: LOW Occupied Graham's penstemon habitat: Low	High	High	High		XX
1719	Low	Lewis' woodpecker big free-tailed bat, fringed myotis, spotted bat, mule deer and elk crucial winter habitat, pinyon jay: LOW	High	High	High		XX

Parcel Number	CRITERIA FOR LEASING RELATED TO DOI'S REPORT ON THE FEDERAL OIL AND GAS LEASING PROGRAM					Preference for Leasing	
	O&G Proximity	Plant and Wildlife Habitat[1]	Cultural Resources	Recreation[2] (Other Resources)	Development Potential[3]	High	Low
1734	High	Golden eagle, big free-tailed bat, fringed myotis, spotted bat, mule deer and elk crucial wintering habitat, short eared owl, pinyon jay: LOW Penstemon conservation area and occupied habitat for Graham's penstemon: Low	High	High	High		XX
1742	High	Burrowing owl, white tailed prairie dog, greater sage-grouse general winter and brood rearing habitat, big free-tailed bag, fringed myotis, spotted bat, short eared owl, pinyon jay, golden eagle, mule deer crucial winter range: LOW	High	High	High		XX
1765	Low	Lewis' woodpecker big free-tailed bat, fringed myotis, spotted bat, mule deer and elk crucial winter habitat, pinyon jay: HIGH	High	High	High	XX	
1767	Low	Colorado river cutthroat trout present: LOW Lewis' woodpecker big free-tailed bat, fringed myotis, spotted bat, mule deer and elk crucial winter habitat, monarch, pinyon jay: LOW Occupied habitat for Graham's penstemon: LOW	High	High	High		XX
1789		bald eagle winter roost habitat, big free-tailed bat, fringed myotis, spotted bat, short eared owl, pinyon jay: HIGH	High	Low (VRM 2, SRMA)	High	XX	
1791	Low	Lewis' woodpecker, big free-tailed bat, fringed myotis, spotted bat, mule deer fawning habitat, elk crucial winter habitat, elk calving habitat, pinyon jay: LOW	High	High	High		XX
1792	Low	Lewis' woodpecker, big free-tailed bat, fringed myotis, spotted bat, elk crucial winter habitat, mule deer fawning habitat, elk calving habitat, pinyon jay: LOW	High	High	High		XX

Parcel Number	CRITERIA FOR LEASING RELATED TO DOI'S REPORT ON THE FEDERAL OIL AND GAS LEASING PROGRAM					Preference for Leasing	
	O&G Proximity	Plant and Wildlife Habitat[1]	Cultural Resources	Recreation[2] (Other Resources)	Development Potential[3]	High	Low
1798	High	Critical Habitat for Colorado pikeminnow and razorback sucker: LOW big free-tailed bat, fringed myotis, spotted bat, mule deer fawning habitat, mule deer winter crucial range, short eared owl, monarch: LOW Penstemon conservation area and occupied habitat for White River penstemon: Low	High	High	High		XX
1799	High	Big free-tailed bat, fringed myotis, spotted bat, short eared owl, pinyon jay: HIGH Critical Habitat for Colorado Pikeminnow and Razorback sucker: Low	High	High	High		XX
1808	High	Big free-tailed bat, fringed myotis, spotted bat, mule deer and elk winter crucial habitat, short eared owl, pinyon jay: LOW Penstemon conservation area occupied habitat for Graham's penstemon: Low	High	High	High		XX
1810	High	Greater sage-grouse general brood rearing habitat, big free-tailed bat, fringed myotis, spotted bat, mule deer and elk crucial winter habitat: LOW P Penstemon conservation area occupied habitat for Graham's penstemon: Low	High	High	High		XX
1815	High	Greater sage-grouse general brood rearing habitat, big free-tailed bat, fringed myotis, spotted bat, pinyon jay, mule deer and elk crucial winter range: LOW Occupied Graham's penstemon habitat: LOW	High	High	High		XX
1816	High	Greater sage-grouse general brood rearing, big free-tailed bat, fringed myotis, spotted bat, short eared owl: HIGH	High	High	High	XX	
1817	High	Big free-tailed bat, fringed myotis, spotted bat, mule deer crucial winter habitat, short eared owl: LOW	High	High	High		XX

Parcel Number	CRITERIA FOR LEASING RELATED TO DOI'S REPORT ON THE FEDERAL OIL AND GAS LEASING PROGRAM					Preference for Leasing	
	O&G Proximity	Plant and Wildlife Habitat[1]	Cultural Resources	Recreation[2] (Other Resources)	Development Potential[3]	High	Low
1818	High	Greater sage-grouse general brood rearing habitat, Lewis' woodpecker, big free-tailed bat, fringed myotis, spotted bat, pinyon jay, mule deer migration corridor, mule deer and elk crucial winter range: LOW	High	High	High		XX
1823	High	Golden eagle, big free-tailed bat, fringed myotis, spotted bat, greater sage-grouse general brood rearing, white tailed prairie dog, burrowing owl, short eared owl: HIGH	High	High	High	XX	
1825	High	Golden eagle, big free-tailed bat, fringed myotis, spotted bat, greater sage-grouse general brood rearing and winter habitat, short eared owl: HIGH	High	High	High	XX	
7772	High	Burrowing owl, ferruginous hawk, golden eagle, bald eagle winter roost habitats, gunnison prairie dog, pinyon jay Lewis's woodpecker, allens big-eared bat, big free-tailed bat, fringed myotis, gunnisons prairie dog, kit fox, Spotted bat, townsend's big-eared bat: LOW	High	High	High		XX
7778	High	Big free-tailed bat, fringed myotis, spotted bat, mule deer and elk winter crucial habitat, pinyon jay, mule deer migration corridor: LOW	High	High	High		XX
7779	High	Golden eagle, big free-tailed bat, fringed myotis, spotted bat, mule deer crucial winter range, short eared owl, pinyon jay: LOW Penstemon conservation area and occupied habitat for Graham's penstemon: Low	High	High	High		XX
7781	High	Greater sage-grouse general brood rearing and wintering, big free-tailed bat, fringed myotis, spotted bat, white tailed prairie dog, burrowing owl, short eared owl: HIGH	High	High	High	XX	

Parcel Number	CRITERIA FOR LEASING RELATED TO DOI'S REPORT ON THE FEDERAL OIL AND GAS LEASING PROGRAM					Preference for Leasing	
	O&G Proximity	Plant and Wildlife Habitat[1]	Cultural Resources	Recreation[2] (Other Resources)	Development Potential[3]	High	Low
7782	High	Ferruginous hawk, big free-tailed bat, fringed myotis, spotted bat, Greater sage-grouse brood rearing and wintering habitat, white tailed prairie dog, burrowing owl, short eared owl: HIGH	High	High	High	XX	
7784	High	White tailed prairie dog, burrowing owl, ferruginous hawk, greater sage-grouse general brood rearing and wintering, big free-tailed bat, fringed myotis, spotted bat, short eared owl, golden eagle: HIGH Prairie dog colonies within the black-footed ferret Primary Management Zone: Low	High	High	High		XX
7785	Low	Lewis' woodpecker, big free-tailed bat, fringed myotis, spotted bat, white tailed prairie dog, burrowing owl, pinyon jay, mule deer and elk crucial winter range: LOW	High	High	High		XX
7786	High	Big free-tailed bat, fringed myotis, spotted bat, mule deer and elk crucial winter range, short eared owl, pinyon jay: LOW Penstemon conservation area occupied habitat for Graham's and White River penstemon: Low	High	High	High		XX
7793	Low	Lewis' woodpecker, big free-tailed bat, fringed myotis, spotted bat, pinyon jay, mule deer and elk crucial winter range: LOW	High	High	High		XX
7809	Low	Colorado river cutthroat trout present: LOW Lewis' woodpecker, big free-tailed bat, fringed myotis, spotted bat, monarch butterfly, pinyon jay, mule deer migration corridor, elk crucial winter range:LOW	High	High	High		XX

Parcel Number	CRITERIA FOR LEASING RELATED TO DOI'S REPORT ON THE FEDERAL OIL AND GAS LEASING PROGRAM					Preference for Leasing	
	O&G Proximity	Plant and Wildlife Habitat[1]	Cultural Resources	Recreation[2] (Other Resources)	Development Potential[3]	High	Low
7813	High	White tailed prairie dog, burrowing owl, golden eagle, greater sage-grouse general brood rearing and winter habitat, big free-tailed bat, fringed myotis, spotted bat, short eared owl: HIGH Prairie dog colonies within the black-footed ferret Primary Management Zone: Low	High	High	High		XX
7814	High	White tailed prairie dog, burrowing owl, big free-tailed bat, fringed myotis, spotted bat, short eared owl: HIGH Prairie dog colonies within the black-footed ferret Primary Management Zone: Low	High	High	High		XX
7823	High	Burrowing owl, white tailed prairie dog, greater sage-grouse general brood rearing and wintering habitat, big free-tailed bat, fringed myotis, spotted bat, short eared owl: HIGH	High	High	High	XX	
7824	High	Mule deer and elk crucial winter range, ferruginous hawk, golden eagle, mexican spotted owl, townsend's big eared bat, fringed myotis, pinyon jay, bald eagle winter roost habitat, burrowing owl, Lewis' woodpecker, allens big-eared bat, big free-tailed bat, gunnisons prairie dog, kit fox, spotted bat, : LOW	High	High	High		XX
7825	High	Golden eagle, townsend's big-eared bat, fringed myotis, Mexican spotted owl, Pinyon Jay, bald eagle winter roost habitat wintering habitat, burrowing owl, lewis' woodpecker, allens big-eared bat, big free-tailed bat, gunnison prairie dog, kit fox, spotted bat, : LOW	High	High	High		XX
7826	High	Big free-tailed bat, fringed myotis, spotted bat, greater sage-grouse brood rearing and wintering habitat, white tailed prairie dog, burrowing owl, short eared owl: HIGH	High	High	High	XX	

Parcel Number	CRITERIA FOR LEASING RELATED TO DOI'S REPORT ON THE FEDERAL OIL AND GAS LEASING PROGRAM					Preference for Leasing	
	O&G Proximity	Plant and Wildlife Habitat[1]	Cultural Resources	Recreation[2] (Other Resources)	Development Potential[3]	High	Low
7830	High	Big free-tailed bat, fringed myotis, spotted bat, bald eagle winter roost habitat, mule deer fawning habitat, mule deer crucial winter range, short eared owl, pinyon jay: LOW	High	Low (VRM 2)	High		XX
7833	High	Big free-tailed bat, fringed myotis, spotted bat, ferruginous hawk, white tailed prairie dog, burrowing owl, greater sage grouse winter and brood rearing habitat, short eared owl: HIGH	High	High	High	XX	
7837	High	Big free-tailed bat, fringed myotis, spotted bat, ferruginous hawk, greater sage-grouse general brood rearing and wintering habitat, white tailed prairie dog, burrowing owl, short eared owl, pinyon jay, mule deer crucial winter range: LOW	High	High	High		XX
7840	High	Big free-tailed bat, fringed myotis, spotted bat, greater sage-grouse general brood rearing and wintering habitat, mule deer crucial winter range, pinyon jay: LOW	High	High	High		XX

APPENDIX F SUMMARY OF THE TYPICAL PHASES OF OIL AND GAS DEVELOPMENT

INTRODUCTION

There are three phases of oil and gas lease development, including Well Development, Production and Operation, and Well Reclamation. Well Development includes the construction of the well pad, access road and associated pipelines, along with the actual drilling of the well. Production and Operation. The production phase begins when the well starts producing in saleable quantities. This phase also includes all the maintenance and monitoring actions conducted during the productive lifetime of the well. The well abandonment and reclamation phase occurs after the productive life of the well has concluded. Well abandonment and reclamation involve plugging wells and reclaiming the surface according to BLM guidelines and requirements.

WELL DEVELOPMENT

During construction activity, the area is cleared of vegetation, and the pad is constructed. Clearing of the proposed well pad and access road are typically limited to the smallest area possible to provide safe and efficient work areas for all phases of construction. All clearing activities are accomplished by cutting, mowing, and/or grading vegetation, as necessary. Cut vegetation may be mulched and spread on site or hauled to a commercial waste disposal facility. Guidelines and best practices can be found in the BLM publication “Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development” **Invalid source specified.**, commonly referred to as “the Gold Book.”

Next, heavy equipment, including but not limited to, bulldozers, graders, front-end loaders, and/or track hoes are used to construct the pad, along with other features, as needed for development. Other features may include, but are not limited to, an access road, reserve pit, pipeline, and/or fracturing pond. Cut and fills may be required to level the pad or road surfaces. Reserve pits⁹, if authorized, are lined using an impermeable liner or other lining mechanism (i.e., bentonite or clay) to prevent fluids from leaching into the soil. Access roads may have cattle guards, gates, drainage control, or pull-outs installed, among a host of other features that may be necessary based on the site-specific situation. Long-term surface disturbances such as pads and roads are typically surfaced with a layer of crushed rock. Areas not needed for long-term development are reclaimed by recontouring the surface and re-establishing vegetation.

Throughout the drilling operation phase, equipment is moved on site and used to install the drill rig and other associated infrastructure. At this stage, the well is drilled and completed. Well completion includes setting the casing to depth, cementing the casing,¹⁰ and perforating the

⁹ A conventional reserve pit is a lined earthen pit excavated adjacent to a well pad and is commonly used for the disposal of drilling muds and fluids in gas or oil fields (USFWS 2009).

¹⁰ According to BLM regulations from 43 CFR 3160: 43 CFR 3170: Subpart 3172, casing and cementing programs are conducted to protect and/or isolate all usable water zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. The casing setting depth is calculated to position the casing seat opposite a competent formation which will contain the maximum pressure to which it will be exposed during normal drilling operations.

casing in target zones. If a well is going to be drilled directionally,¹¹ horizontally,¹² or vertically¹³ this phase may be followed by hydraulic fracturing which involves pumping fracturing fluid into a formation at a calculated, predetermined rate and pressure to generate fractures or cracks in the target formation.

A pipeline, if needed, is laid within a right-of-way that is first cleared of vegetation. A backhoe, or similar piece of equipment, digs a trench to a depth at least 36 inches below ground surface. After the trench is dug, the pipeline is assembled by welding pieces of pipe together to fit the contour of the pipeline's path. Once inspected, the pipe can be lowered into the trench and covered with stockpiled subsoil originally removed from the trench. Each pipeline undergoes hydrostatic testing prior to natural gas being pumped through the pipeline. This ensures the pipeline is strong enough and absent any leaks. Table 52 includes some of the common wastes (hazardous and nonhazardous) that are produced during construction.

In many cases, small diameter (less than 6 inches) surface gathering lines are used for local collection and transportation of products. In these cases, the pipeline can be laid directly on the surface to avoid disturbing vegetation and the associated risk of weed infiltration. These pipelines are commonly made of steel, high-density polyethylene (HDPE), or Thermoplastic Polyurethane (TPU) / Nitrile Rubber (NBR) lay-flat hose.

PRODUCTION, OPERATIONS

When construction of the well-pad is complete, the drilling rig and associated equipment are moved on site and erected. Usually, a conventional rotary drill rig is used. The drill rig must be capable of withstanding all the anticipated conditions that may be encountered while drilling. Wells may be drilled directionally, horizontally, or vertically based on the target formation. The depth of the well is entirely dependent on the target formation depth and may be several hundred feet deep to over 20,000 feet deep.

When a conventional reserve pit system is used, drilling fluid or mud is circulated through the drill pipe to the bottom of the hole, through the bit, up the bore of the well, and finally to the surface. When drilling mud emerges from the hole, it enters the reserve pit where it remains until all fluids are evaporated and the solids can be buried. Drilling and completing a well can often

Determination of casing setting depth is based on all relevant factors, including presence/absence of hydrocarbons; fracture gradients; usable water zones; formation pressures; lost circulation zones; other minerals; or other unusual characteristics. Any isolating medium other than cement shall receive approval prior to use. The deepest casing may not be cemented and may remain open hole depending on the type of formation it is located in.

¹¹ Vertical drilling is the process of drilling a well from the surface vertically to a subsurface location where the target oil or gas reservoir is located (U.S. Department of Energy 2015).

¹² Horizontal drilling is the process of drilling a well from the surface to a subsurface location just above the target oil or gas reservoir called the "kickoff point," then deviating the well bore from the vertical plane around a curve to intersect the reservoir at the "entry point" with a near-horizontal inclination and remaining within the reservoir until the desired bottom hole location is reached (North Dakota Department of Mineral Resources 2008).

¹³ Directional drilling is the process of controlling the direction and deviation of drilling a well from the surface to a subsurface location without disturbing the land directly above the target oil or gas reservoir (U.S. Department of Energy 2015).

require 1,000-4,000 bbls of water. The source and method of transport of the water is analyzed when the APD is evaluated.

A closed-loop system operates in a similar fashion except that when the drilling mud emerges from the hole, it passes through equipment used to screen and remove drill cuttings (rock chips) and sand-sized solids rather than going into a pit. When the solids have been removed, the drilling mud is placed into holding tanks, and from the tank, used again.

In either situation the drilling mud is maintained at a specific weight and viscosity to cool the bit, seal off any porous zones (thereby protecting aquifers and preventing damage to producing zone productivity), control subsurface pressure, lubricate the drill string, clean the bottom of the hole, and bring the drill cuttings to the surface. Water-based or oil-based muds can be used. This choice is dependent on the site-specific conditions.

Once a well has been drilled, completion operations begin. Well completion involves setting casing to depth and perforating the casing in target zones.

Wells are often treated during completion to improve the recovery of hydrocarbons by increasing the rate and volume of hydrocarbons moving from the natural oil and gas reservoir into the wellbore. These processes are known as well-stimulation treatments, which create new fluid passageways in the producing formation or remove blockages within existing passageways. They include fracturing, acidizing, and other mechanical and chemical treatments often used in combination. The results from different treatments are additive and complement each other.

HYDRAULIC FRACTURING OVERVIEW

Hydraulic fracturing is a technique used to enhance oil and gas production by increasing permeability in geological formations. This allows oil and gas to flow more easily into the wellbore. The process can help overcome natural challenges, such as low permeability or blockage due to damage near the wellbore that affects fluid flow **Invalid source specified..** While hydraulic fracturing has been utilized for oil and gas recovery since the early 1900s, advancements in technology have made it more common today, especially alongside horizontal drilling.

THE HYDRAULIC FRACTURING PROCESS

The hydraulic fracturing process involves high-pressure pumps that inject a fracturing fluid into the formation at a specific rate and pressure. This generates fractures or cracks in the target area. For shale developments, fracturing fluids are primarily water-based and mixed with additives that facilitate the transport of proppants into the fractures. Proppants, which can include materials like sand or walnut hulls, help keep the fractures open once the pumping stops. After initiating the fracture, additional fluids are pumped to extend the fracture and carry proppants deeper into the formation, maintaining the necessary downhole pressure as the fracture expands.

COMPOSITION OF FRACTURING FLUIDS

The fracturing fluid typically consists of over 99% water and sand, with less than 1% being various chemical additives that adjust the properties of the mixture. Since large volumes of water are needed for hydraulic fracturing, the specific amount can vary based on the area being treated. In some cases, water is recycled, or produced water is used instead.

Currently, water-based fracturing fluids with friction-reducing additives, often referred to as "slick water," are predominantly used in shale gas plays. **Invalid source specified..** The number of chemical additives used can vary based on the specific conditions of the well, with typical treatments utilizing low concentrations of three to twelve different chemicals. Each additive serves a specific purpose, such as preventing bacterial growth or protecting the well casing from corrosion. Since these fluids are tailored to meet the unique needs of different formations, there is no universal formula for the types and volumes of additives. Additionally, service companies have developed various compounds with similar functions adaptable to different well environments, with even small changes in concentration potentially affecting performance. **Invalid source specified..**

PRE-FRACTURING PREPARATIONS

Before any hydraulic fracturing treatment, operators and service companies conduct a series of tests to ensure that the well's casing, cement, and fracturing equipment are in proper working order and can safely withstand the pressures and flow rates involved in the treatment.

FRACTURING STAGES IN HORIZONTAL WELLS

Hydraulic fracturing in horizontal shale gas wells is usually done in stages. The lateral lengths of these horizontal wells can range from 1,000 to over 5,000 feet. Depending on the length, treatment may involve isolating smaller sections of the lateral for fracturing, with each isolated section referred to as a "stage." Stages are treated sequentially, starting from the farthest end of the wellbore and moving toward the surface until the entire lateral has been stimulated. During drilling, the BLM is present to oversee critical processes such as casing and cementing the surface casing, which helps protect groundwater. Before hydraulic fracturing occurs, all surface casings and some deeper zones must be cemented from the bottom of the cased hole to the surface. The cemented well is then pressure-tested for leaks, and sometimes a cement bond log is performed to ensure proper adhesion to the casing and formation. If the fracturing operation is classified as "non-routine" for that area, the BLM will always be present during the process, especially if any abnormal conditions arise during drilling or well completion.

NATURALLY OCCURRING RADIOACTIVE MATERIAL (NORM)

Some soils and geological formations contain low levels of naturally occurring radioactive material (NORM). This material emits low levels of radiation, which is something everyone is exposed to daily. In the context of oil and natural gas production, NORM typically consists of small amounts of uranium and thorium found within the rock. As these elements decay, they produce Radium-226 and Radium-228, which can be brought to the surface in drill cuttings and produced water. Additionally, Radon-222, a gas produced from radium decay, can also accompany shale gas. When NORM is extracted, it may remain in the rock pieces of drill cuttings or in solution with produced water and may occasionally form scales or sludges. The radiation emitted is weak and cannot penetrate dense materials like steel pipes and tanks. According to the EPA, Utah has very low levels of NORM associated with oil and gas production waste (EPA, 2023).

PRODUCTION OPERATIONS

Production equipment used during the life of the well may include a three-phase separator-dehydrator, flowlines, a meter run, tanks for condensate, produced oil and water, and heater treater. A pumpjack may be required if the back pressure of the well is too high. Production facilities are arranged to facilitate safety and maximize reclamation opportunities. All permanent aboveground structures not subject to safety considerations are painted a standard BLM environmental color or as landowner specified.

Workovers may be performed multiple times over the life of the well. Because oil and gas production usually declines over the years, operators perform workover operations, which involve cleaning, repairing, and maintaining the well for the purposes of increasing or restoring production.

RECLAMATION AND ABANDONMENT

Well abandonment (whether dry hole or depleted producer) and reclamation of location, access road, and other facilities requires BLM approval. After approval, wellbores are plugged with cement as necessary to prevent fluid or pressure mitigation and to protect and isolate mineral and water resources. Wellheads are removed, and both the surface casing and the production casing are cut off below ground in compliance with federal and state regulations.**Invalid source specified.** The well pad, reserve pit and access are reclaimed according to BLM guidelines. This may include backfilling the pit, recontouring the surface to blend with natural surroundings and redistributing topsoil. All surfaces are then reseeded per BLM and state requirements specified in the Application for Permit to Drill (APD) approval.

COMMON WASTES

Table 73 includes some of the common wastes (hazardous and nonhazardous) that are produced during oil and gas development.

Table 73. Common Wastes Produced during Oil and Gas Development

Phase	Waste	
Well Development Construction, Well Drilling and Completion (including hydraulic fracturing)	Domestic wastes (e.g., food scraps, paper, etc.)	
	Excess construction materials	Woody debris
	Used lubricating oils	Paints
	Solvents	Sewage
	Drilling muds, including additives (i.e., chromate and barite) and cuttings;	
	Well drilling, completion, workover, and stimulation fluids (i.e., oil derivatives such as polycyclic aromatic hydrocarbons (PAHs), spilled chemicals, suspended and dissolved solids, phenols, cadmium, chromium, copper, lead, mercury, nickel)	
	Equipment, power unit and transport maintenance wastes (i.e., batteries; used filters, lubricants, oil, tires, hoses, hydraulic fluids; paints; solvents)	
	Fuel and chemical storage drums and containers	

Phase	Waste	
	Cementing wastes	Drilling rig wash
	Production testing wastes	Excess drilling chemicals
	Excess construction materials	Processed water
	Scrap metal	Contaminated soil including hazardous and non-hazardous materials (potential)
	Sewage	Domestic wastes
Production & Operations	Power unit and transport maintenance wastes (i.e., batteries; used filters, lubricants, filters, tires, hoses, coolants, antifreeze; paints; solvents, used parts)	
	Discharged produced water	
	Production chemicals	
	Workover wastes (e.g., brines)	
Well Reclamation Including abandonment, recontouring, and re-seeding	Construction materials	
	Decommissioned equipment	
	Contaminated soil (potential)	
	Equipment or wastes that could contain hazardous and nonhazardous materials	

APPENDIX G GENERAL CONFORMITY APPLICABILITY

The Clean Air Act's (CAA) General Conformity Rule mandates that the BLM evaluate reasonably foreseeable emissions that result from its actions in a nonattainment area to determine if they conform with the applicable regulatory agency implementation plans (40 CFR 93.153).

The rule takes into account air pollution emissions associated with actions that are federally funded, licensed, permitted, or approved, and ensures emissions do not contribute to air quality degradation, thus preventing the achievement of state and federal air quality goals. In short, general conformity refers to the process of evaluating plans, programs, and projects to determine and demonstrate they meet the requirements of the CAA and an applicable implementation plan.

The General Conformity Rule divides the air conformity process into two distinct areas, applicability and determination. Federal agencies must initially assess if an action is subject to the Conformity Rule (Applicability Analysis) and then if the action conforms to an applicable implementation plan (Conformity Determination). Guidance from Information Bulletin 2014-084 was used to perform an applicability analysis in order to determine if a conformity determination is needed for this Lease Sale.

The general conformity rules are not applicable to this Lease Sale because: 1) leasing does not directly authorize pollutant emitting activities, and no direct emissions would result, 2) indirect emissions are not reasonably foreseeable as defined in 40 CFR 93.152 as it is unknown what design features or mitigation measures an operator will use, and 3) it is unknown what emissions sources would be included in an air quality permit and not subject to a general conformity review. The BLM has evaluated the proposed Lease Sale in accordance with the provisions of 40 CFR Part 93, Subpart B. Based on a review of 40 CFR 93.153(c), BLM has determined that the requirement to perform a full conformity determination is not required for the Proposed Action for the following reasons:

- Under 40 CFR 93.153(c)(2), a conformity determination is not required for actions “which would result in no emissions increase or an increase in emissions that is clearly de minimis,” such as the “granting of leases.” Leasing does not authorize emissions generating activities and therefore does not directly result in an emissions increase. Additionally, 40 CFR 93.153(c)(3) lists Initial Outer Continental Shelf leasing as not having reasonably foreseeable emissions and onshore leasing is similar where lease sales “are made on a broad scale and are followed by exploration and development plans on a project level.” At the leasing stage the BLM does not have a development plan for lease parcels and has determined that indirect emissions are not reasonably foreseeable until the project level.
- A conformity determination also is not required “where the emissions (direct or indirect) are not reasonably foreseeable.” 40 CFR 93.153(c)(3). As defined in the CAA, “Reasonably foreseeable emissions are projected future direct and indirect emissions that are identified at the time the conformity determination is made; the location of such emissions is known and the emissions are quantifiable as described and documented by the Federal agency based on its own information and after reviewing any information presented to the Federal agency.” 40 CFR 93.152 While this EA provides information for the factors that should be considered to determine a reasonable *estimate* of foreseeable emissions for the proposed lease parcels and overall for the region for purposes of NEPA

indirect and cumulative impacts analysis, it does not have specific information about whether or how the specific parcel under consideration will be developed during the initial 10 year lease period, such that a more precise emissions inventory could be reasonably estimated and compared to the thresholds provided in 40 CFR 93.153(b).

- Furthermore, 40 CFR 93.153(d) provides, “[notwithstanding the other requirements of this subpart, a conformity determination is not required for:
 - The portion of an action that includes major or minor new or modified stationary sources that require a permit under the new source review program (Section 110(a)(2)(c) and Section 173 of the [CAA]) or the prevention of significant deterioration program (title I, part C of the [CAA]).” 40 CFR 93.153(d)(1). It is uncertain at this time, but highly likely, that several project design features, for example equipment sets, such as storage vessels, truck loading, wellsite stationary engines, VOC control devices, dehydration units, and other equipment will require at least a minor new source review (permit) prior to constructing such facilities to implement any subsequent development proposals. Emissions from such permitted facilities would not be subject to the general conformity analysis provisions. Potential sources that would be permitted, and not subject to general conformity provisions, are identified in Utah Administrative Code R307-504-511 or the Federal Implementation Plan for the Indian Country Minor New Source Review Program for the Oil and Natural Gas Industry (80 FR 51991).

For all of these reasons, a conformity determination is not required for the sale of the lease parcels under consideration.

APPENDIX H EMISSIONS TABLES

This appendix provides the per well emissions factors (GHG's and non-GHG's) by phase (well development and production operations) and the total emissions calculated for each alternative on an annual basis. An emissions factor is a value that relates the quantity of a pollutant released into the atmosphere with an activity that generates the pollutant. They are typically expressed in units of weight or mass (e.g. pounds, kilograms, tons) per activity (e.g. duration of equipment operation, construction of an oil or gas well). Emissions factors are the basis for developing emissions inventories that are used for air quality management decisions. The BLM uses emissions inventories to evaluate the change to county-level emissions, comparison between NEPA alternatives, and as inputs for air quality models if modeling is warranted. Over time emissions factors may change due to new emissions regulations, development of control technologies, or data and information improvements for emissions.

Air pollutant emissions from oil and gas activities occur during construction and operations of a well. Construction related emissions occur from the use of heavy machinery during pad construction, drilling, testing and completion, venting and flaring, interim reclamation, and vehicles. Construction emissions are typically a one-time occurrence. Operation related emissions occur from well workovers, pump engines, heaters, tanks, truck loading, fugitive leaks, pneumatics, dehydrators, compressor engines, reclamation, and vehicle traffic. Emissions from operation activities occur throughout the life of a well. Several factors may influence actual emissions including location, geological formation, well depth, equipment used, supporting infrastructure, and other factors. To estimate emissions for this Lease Sale the BLM used the emission factors from the AMR (BLM, 2024) for a weighted average gas well due to there being both vertical and horizontal drilling proposed in this lease. These single well emissions are presented in Table 74. Annual emissions for each alternative are based on the single well emissions factors and the estimated number of wells developed and operating in each year and are presented in Table 75 and Table 76 for Alternative A, Table 77 and Table 78 for Alternative B, and Table 79 and Table 80 for Alternative C.

Table 74. Single Well Emissions Factors in Tons Per Year (TPY) and Metric Tonnes (t)

Well Type	CO (TPY)	NO _x (TPY)	PM ₁₀ (TPY)	PM _{2.5} (TPY)	SO ₂ (TPY)	VOC (TPY)	HAP (TPY)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)
Weighted Average – Well Construction	1.97	0.59	1.13	11.08	5.31	0.07	0.12	1,493.1	0.28	0.010
Weighted Average – Well Production	0.71	0.23	7.87	2.11	3.45	0.01	0.64	1,177.01	3.78	0.002

Table 75. Annual CAP and HAP Emissions for the Proposed Action Alternative (Alternative A) in Tons Per Year

Calendar Year	Year	# Wells		Well Development Emissions							Well Operation Emissions							Sum of Well Development and Operation Emissions						
		Developed	Operating	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs
2026	1	21	21	41.4	12.4	23.7	232.7	111.5	1.5	2.5	14.9	4.8	165.3	44.3	72.5	0.2	13.4	56.3	17.2	189.0	277.0	184.0	1.7	16.0
2027	2	27	48	53.2	15.9	30.5	299.2	143.4	1.9	3.2	34.1	11.0	377.8	101.3	165.6	0.5	30.7	87.3	27.0	408.3	400.4	309.0	2.4	34.0
2028	3	18	66	35.5	10.6	20.3	199.4	95.6	1.3	2.2	46.9	15.2	519.4	139.3	227.7	0.7	42.2	82.3	25.8	539.8	338.7	323.3	1.9	44.4
2029	4	21	87	41.4	12.4	23.7	232.7	111.5	1.5	2.5	61.8	20.0	684.7	183.6	300.2	0.9	55.7	103.1	32.4	708.4	416.3	411.7	2.3	58.2
2030	5	26	113	51.2	15.3	29.4	288.1	138.1	1.8	3.1	80.2	26.0	889.3	238.4	389.9	1.1	72.3	131.5	41.3	918.7	526.5	527.9	3.0	75.4
2031	6	40	153	78.8	23.6	45.2	443.2	212.4	2.8	4.8	108.6	35.2	1,204.1	322.8	527.9	1.5	97.9	187.4	58.8	1,249.3	766.0	740.3	4.3	102.7
2032	7	29	182	57.1	17.1	32.8	321.3	154.0	2.0	3.5	129.2	41.9	1,432.3	384.0	627.9	1.8	116.5	186.4	59.0	1,465.1	705.3	781.9	3.9	120.0
2033	8	27	209	53.2	15.9	30.5	299.2	143.4	1.9	3.2	148.4	48.1	1,644.8	441.0	721.1	2.1	133.8	201.6	64.0	1,675.3	740.2	864.4	4.0	137.0
2034	9	30	239	59.1	17.7	33.9	332.4	159.3	2.1	3.6	169.7	55.0	1,880.9	504.3	824.6	2.4	153.0	228.8	72.7	1,914.8	836.7	983.9	4.5	156.6
2035	10	35	274	69.0	20.7	39.6	387.8	185.9	2.5	4.2	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	263.5	83.7	2,195.9	965.9	1,131.2	5.2	179.6
2036	11	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2037	12	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2038	13	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2039	14	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2040	15	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2041	16	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2042	17	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2043	18	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2044	19	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2045	20	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2046	21	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2047	22	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2048	23	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2049	24	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2050	25	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2051	26	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2052	27	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2053	28	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2054	29	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2055	30	0	274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4	194.5	63.0	2,156.4	578.1	945.3	2.7	175.4
2056	31	0	253	0.0	0.0	0.0	0.0	0.0	0.0	0.0	179.6	58.2	1,991.1	533.8	872.9	2.5	161.9	179.6	58.2	1,991.1	533.8	872.9	2.5	161.9
2057	32	0	226	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.5	52.0	1,778.6	476.9	779.7	2.3	144.6	160.5	52.0	1,778.6	476.9	779.7	2.3	144.6
2058	33	0	208	0.0	0.0	0.0	0.0	0.0	0.0	0.0	147.7	47.8	1,637.0	438.9	717.6	2.1	133.1	147.7	47.8	1,637.0	438.9	717.6	2.1	133.1
2059	34	0	187	0.0	0.0	0.0	0.0	0.0	0.0	0.0	132.8	43.0	1,471.7	394.6	645.2	1.9	119.7	132.8	43.0	1,471.7	394.6	645.2	1.9	119.7
2060	35	0	161	0.0	0.0	0.0	0.0	0.0	0.0	0.0	114.3	37.0	1,267.1	339.7	555.5	1.6	103.0	114.3	37.0	1,267.1	339.7	555.5	1.6	103.0
2061	36	0	121	0.0	0.0	0.0	0.0	0.0	0.0	0.0	85.9	27.8	952.3	255.3	417.5	1.2	77.4	85.9	27.8	952.3	255.3	417.5	1.2	77.4
2062	37	0	92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	65.3	21.2	724.0	194.1	317.4	0.9	58.9	65.3	21.2	724.0	194.1	317.4	0.9	58.9
2063	38	0	65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.2	15.0	511.6	137.2	224.3	0.7	41.6	46.2	15.0	511.6	137.2	224.3	0.7	41.6
2064	39	0	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.9	8.1	275.5	73.9	120.8	0.4	22.4	24.9	8.1	275.5	73.9	120.8	0.4	22.4
	Total (MT)			539.8	161.7	309.6	3,035.9	1,454.9	19.18	32.88	5,836.2	1,890.6	64,691.4	17,344.2	28,359.0	82.20	5,260.80	6,376	2,052	65,001	20,380	29,814	101	5,294
	Max Year	40	274	78.8	23.6	45.2	443.2	212.4	2.80	4.80	194.5	63.0	2,156.4	578.1	945.3	2.74	175.36	263.5	83.7	2,195.9	965.9	1,131.2	5.2	179.6
	Average Year	27	211	54.0	16.2	31.0	303.6	145.5	1.9	3.3	149.6	48.5	1,658.8	444.7	727.2	2.1	134.9	163.5	52.6	1,666.7	522.6	764.5	2.6	135.7
	Minimum Year			35.5	10.6	20.3	199.4	95.6	1.3	2.2	14.9	4.8	165.3	44.3	72.5	0.2	13.4	24.9	8.1	189.0	73.9	120.8	0.4	16.0
Max Development Year (Short-Term)																		263.5	83.7	2,195.9	965.9	1,131.2	5.2	179.6
Max Production Year (Long-Term)																		194.5	63.0	2,156.4	578.1	945.3	2.7	175.4

Table 76 Annual GHG Emissions for Proposed Action Alternative (Alternative A) in Metric Tonnes

Years	# Wells		Well Development Emissions				Well Operation Emissions				Mid-Stream Emissions				End-Use Emissions			
	Developed	Operating	CO ₂	CH ₄	N ₂ O	CO ₂ e (100-yr)	CO ₂	CH ₄	N ₂ O	CO ₂ e (100-yr)	CO ₂	CH ₄	N ₂ O	CO ₂ e (100-yr)	CO ₂	CH ₄	N ₂ O	CO ₂ e (100-yr)
1	21	21	31,354.5	5.9	0.2	31,587.0	27,363.4	611.7	0.5	45,735.3	62,842.9	433.1	1.0	76,014.0	457,753.3	15.4	2.8	458,980.5
2	27	48	40,312.9	7.6	0.3	40,611.9	47,173.6	1,057.6	0.9	78,934.6	108,829.9	764.2	1.7	132,059.3	789,537.1	26.4	4.8	791,638.8
3	18	66	26,875.3	5.0	0.2	27,074.6	45,852.6	1,033.8	0.9	76,892.7	106,716.5	776.1	1.6	130,290.2	768,163.1	25.4	4.6	770,179.2
4	21	87	31,354.5	5.9	0.2	31,587.0	52,205.1	1,177.6	1.0	87,560.2	121,582.8	886.6	1.9	148,509.7	874,649.0	28.9	5.2	876,942.0
5	26	113	38,819.8	7.3	0.3	39,107.7	62,754.9	1,416.2	1.2	105,274.4	146,261.0	1,069.6	2.2	178,744.5	1,051,487.9	34.8	6.3	1,054,241.2
6	40	153	59,722.8	11.2	0.4	60,165.8	87,543.4	1,971.6	1.6	146,741.5	203,388.1	1,469.0	3.1	248,014.0	1,466,320.4	48.7	8.8	1,470,179.9
7	28	181	41,806.0	7.8	0.3	42,116.0	83,739.0	1,893.9	1.5	140,596.0	195,832.5	1,450.9	3.0	239,885.7	1,403,608.1	46.2	8.3	1,407,263.2
8	28	209	41,806.0	7.8	0.3	42,116.0	85,133.7	1,929.1	1.5	143,043.2	199,678.7	1,495.9	3.0	245,087.9	1,427,446.8	46.8	8.4	1,431,146.0
9	30	239	44,792.1	8.4	0.3	45,124.3	89,774.5	2,036.3	1.6	150,900.5	210,894.5	1,589.3	3.2	259,131.5	1,505,520.4	49.3	8.9	1,509,411.8
10	35	274	52,257.5	9.8	0.4	52,645.0	99,371.0	2,254.8	1.8	167,053.1	233,560.7	1,763.5	3.6	287,084.5	1,666,550.2	54.6	9.8	1,670,854.1
11	0	274	0.0	0.0	0.0	0.0	58,974.6	1,356.8	1.0	99,682.2	141,604.9	1,153.3	2.1	176,556.4	991,417.3	31.6	5.6	993,886.1
12	0	274	0.0	0.0	0.0	0.0	43,386.0	1,005.7	0.7	73,549.4	105,372.0	891.1	1.6	132,359.8	730,301.1	22.9	4.0	732,083.1
13	0	274	0.0	0.0	0.0	0.0	34,653.4	807.4	0.6	58,865.7	84,829.5	735.5	1.3	107,095.1	583,832.0	18.2	3.2	585,236.3
14	0	274	0.0	0.0	0.0	0.0	28,946.1	677.1	0.5	49,248.7	71,290.4	629.8	1.1	90,349.1	488,017.2	15.1	2.6	489,177.7
15	0	274	0.0	0.0	0.0	0.0	24,882.7	584.0	0.4	42,390.4	61,588.3	552.3	0.9	78,296.9	419,751.0	12.9	2.2	420,739.9
16	0	274	0.0	0.0	0.0	0.0	21,826.1	513.7	0.3	37,224.4	54,251.3	492.6	0.8	69,150.9	368,368.7	11.2	1.9	369,229.7
17	0	274	0.0	0.0	0.0	0.0	19,436.3	458.5	0.3	33,180.7	48,489.2	445.0	0.7	61,946.9	328,175.5	10.0	1.7	328,937.1
18	0	274	0.0	0.0	0.0	0.0	17,513.4	414.1	0.3	29,923.7	43,834.6	406.0	0.7	56,112.8	295,819.5	8.9	1.5	296,501.7
19	0	274	0.0	0.0	0.0	0.0	15,931.1	377.4	0.2	27,241.3	39,991.4	373.5	0.6	51,285.0	269,185.4	8.1	1.4	269,802.5
20	0	274	0.0	0.0	0.0	0.0	14,605.6	346.6	0.2	24,992.4	36,761.9	345.9	0.5	47,220.1	246,865.6	7.4	1.3	247,428.7
21	0	274	0.0	0.0	0.0	0.0	13,478.7	320.4	0.2	23,079.2	34,008.6	322.2	0.5	43,748.3	227,884.6	6.8	1.2	228,401.8
22	0	274	0.0	0.0	0.0	0.0	12,508.9	297.8	0.2	21,431.3	31,632.7	301.6	0.5	40,747.6	211,542.7	6.3	1.1	212,020.7
23	0	274	0.0	0.0	0.0	0.0	11,665.2	278.1	0.2	19,997.1	29,561.3	283.4	0.4	38,127.4	197,324.8	5.9	1.0	197,768.7
24	0	274	0.0	0.0	0.0	0.0	10,924.8	260.8	0.2	18,737.6	27,739.1	267.4	0.4	35,819.3	184,842.2	5.5	0.9	185,256.4
25	0	274	0.0	0.0	0.0	0.0	10,269.7	245.4	0.1	17,622.7	26,123.7	253.1	0.4	33,770.4	173,796.2	5.1	0.9	174,184.2
26	0	274	0.0	0.0	0.0	0.0	9,686.1	231.7	0.1	16,628.9	24,681.8	240.2	0.4	31,939.3	163,953.3	4.8	0.8	164,318.0
27	0	274	0.0	0.0	0.0	0.0	9,162.9	219.5	0.1	15,737.6	23,386.9	228.6	0.3	30,293.0	155,127.9	4.6	0.8	155,471.9
28	0	274	0.0	0.0	0.0	0.0	8,691.3	208.4	0.1	14,933.9	22,217.6	218.0	0.3	28,804.9	147,171.1	4.3	0.7	147,496.4
29	0	274	0.0	0.0	0.0	0.0	8,264.1	198.3	0.1	14,205.4	21,156.5	208.4	0.3	27,453.1	139,961.5	4.1	0.7	140,269.9
30	0	274	0.0	0.0	0.0	0.0	7,875.4	189.2	0.1	13,542.2	20,189.5	199.6	0.3	26,219.9	133,399.3	3.9	0.6	133,692.4
31	0	253	0.0	0.0	0.0	0.0	7,066.0	169.8	0.1	12,151.4	18,119.5	179.3	0.3	23,535.3	119,694.3	3.5	0.6	119,957.1
32	0	226	0.0	0.0	0.0	0.0	6,156.8	148.0	0.1	10,589.9	15,799.6	156.6	0.2	20,530.9	104,301.6	3.0	0.5	104,530.3
33	0	208	0.0	0.0	0.0	0.0	5,501.1	132.3	0.1	9,463.0	14,121.9	140.1	0.2	18,354.7	93,197.7	2.7	0.5	93,401.8
34	0	187	0.0	0.0	0.0	0.0	4,796.2	115.4	0.1	8,253.9	12,331.6	122.9	0.2	16,042.5	81,270.4	2.4	0.4	81,447.8
35	0	161	0.0	0.0	0.0	0.0	4,022.8	96.9	0.1	6,924.6	10,352.4	103.4	0.2	13,474.9	68,172.9	2.0	0.3	68,321.5
36	0	121	0.0	0.0	0.0	0.0	2,952.2	71.3	0.0	5,086.7	7,624.6	76.8	0.1	9,945.1	50,051.2	1.4	0.2	50,159.5
37	0	93	0.0	0.0	0.0	0.0	2,216.7	53.6	0.0	3,820.7	5,732.3	58.0	0.1	7,482.4	37,587.6	1.1	0.2	37,668.7
38	0	65	0.0	0.0	0.0	0.0	1,511.6	36.6	0.0	2,606.7	3,916.0	39.8	0.1	5,116.9	25,637.0	0.7	0.1	25,692.0
39	0	35	0.0	0.0	0.0	0.0	793.5	19.2	0.0	1,369.1	2,060.4	21.1	0.0	2,696.0	13,460.8	0.4	0.1	13,489.6
Total (MT)	274		409,101	76.72	2.740	412,135	1,098,611	25,216.40	18.876	1,855,213	2,628,357	21,143.83	39.755	3,269,296	18,461,147	591.33	104.907	18,507,408
Max Year			59,722.8	11.20	0.400	60,166	99,371.0	2,254.76	1.795	167,053	233,560.7	1,763.53	3.555	287,085	1,666,550.2	54.56	9.810	1,670,854
Average Year			28,169.5	646.6	0.5	47,569.6	67,393.8	542.1	1.0	83,828.1	108,829.9	764.2	1.7	132,059.3	789,537.1	26.4	4.8	791,638.8
			Development Percent of Total =				Operations Percent of Total =				Mid-Stream Percent of Total =				End-Use Percent of Total =			
			2%				8%				14%				77%			

Table 77 Annual Cap and HAP Emissions for the Graham's and White River Penstemon avoidance Alternative (Alt B) in Tons per

Calendar Year	Year	# Wells		Well Development Emissions							Well Operation Emissions							Sum of Well Development and Operation Emissions						
		Developed	Operating	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs
2026	1	17	17	33.5	10.0	19.2	188.4	90.3	1.2	2.0	12.1	3.9	133.8	35.9	58.7	0.2	10.9	45.6	13.9	153.0	224.2	148.9	1.4	12.9
2027	2	22	39	43.3	13.0	24.9	243.8	116.8	1.5	2.6	27.7	9.0	306.9	82.3	134.6	0.4	25.0	71.0	22.0	331.8	326.1	251.4	1.9	27.6
2028	3	14	53	27.6	8.3	15.8	155.1	74.3	1.0	1.7	37.6	12.2	417.1	111.8	182.9	0.5	33.9	65.2	20.5	432.9	267.0	257.2	1.5	35.6
2029	4	17	70	33.5	10.0	19.2	188.4	90.3	1.2	2.0	49.7	16.1	550.9	147.7	241.5	0.7	44.8	83.2	26.1	570.1	336.1	331.8	1.9	46.8
2030	5	21	91	41.4	12.4	23.7	232.7	111.5	1.5	2.5	64.6	20.9	716.2	192.0	314.0	0.9	58.2	106.0	33.3	739.9	424.7	425.5	2.4	60.8
2031	6	33	124	65.0	19.5	37.3	365.6	175.2	2.3	4.0	88.0	28.5	975.9	261.6	427.8	1.2	79.4	153.1	48.0	1,013.2	627.3	603.0	3.6	83.3
2032	7	23	147	45.3	13.6	26.0	254.8	122.1	1.6	2.8	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	149.7	47.4	1,182.9	565.0	629.3	3.1	96.8
2033	8	22	169	43.3	13.0	24.9	243.8	116.8	1.5	2.6	120.0	38.9	1,330.0	356.6	583.1	1.7	108.2	163.3	51.9	1,354.9	600.4	699.9	3.2	110.8
2034	9	24	193	47.3	14.2	27.1	265.9	127.4	1.7	2.9	137.0	44.4	1,518.9	407.2	665.9	1.9	123.5	184.3	58.6	1,546.0	673.2	793.3	3.6	126.4
2035	10	28	221	55.2	16.5	31.6	310.2	148.7	2.0	3.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	212.1	67.4	1,770.9	776.6	911.1	4.2	144.8
2036	11	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2037	12	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2038	13	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2039	14	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2040	15	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2041	16	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2042	17	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2043	18	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2044	19	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2045	20	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2046	21	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2047	22	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2048	23	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2049	24	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2050	25	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2051	26	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2052	27	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2053	28	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2054	29	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2055	30	0	221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4	156.9	50.8	1,739.3	466.3	762.5	2.2	141.4
2056	31	0	204	0.0	0.0	0.0	0.0	0.0	0.0	0.0	144.8	46.9	1,605.5	430.4	703.8	2.0	130.6	144.8	46.9	1,605.5	430.4	703.8	2.0	130.6
2057	32	0	182	0.0	0.0	0.0	0.0	0.0	0.0	0.0	129.2	41.9	1,432.3	384.0	627.9	1.8	116.5	129.2	41.9	1,432.3	384.0	627.9	1.8	116.5
2058	33	0	168	0.0	0.0	0.0	0.0	0.0	0.0	0.0	119.3	38.6	1,322.2	354.5	579.6	1.7	107.5	119.3	38.6	1,322.2	354.5	579.6	1.7	107.5
2059	34	0	151	0.0	0.0	0.0	0.0	0.0	0.0	0.0	107.2	34.7	1,188.4	318.6	521.0	1.5	96.6	107.2	34.7	1,188.4	318.6	521.0	1.5	96.6
2060	35	0	130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	92.3	29.9	1,023.1	274.3	448.5	1.3	83.2	92.3	29.9	1,023.1	274.3	448.5	1.3	83.2
2061	36	0	97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	68.9	22.3	763.4	204.7	334.7	1.0	62.1	68.9	22.3	763.4	204.7	334.7	1.0	62.1
2062	37	0	74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.5	17.0	582.4	156.1	255.3	0.7	47.4	52.5	17.0	582.4	156.1	255.3	0.7	47.4
2063	38	0	52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.9	12.0	409.2	109.7	179.4	0.5	33.3	36.9	12.0	409.2	109.7	179.4	0.5	33.3
2064	39	0	28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.9	6.4	220.4	59.1	96.6	0.3	17.9	19.9	6.4	220.4	59.1	96.6	0.3	17.9
Total (MT)				435.4	130.4	249.7	2,448.7	1,173.5	15.47	26.52	4,707.3	1,524.9	52,178.1	13,989.3	22,873.5	66.30	4,243.20	5,142.7	1,655.3	52,427.8	16,438.0	24,047.0	81.8	4,269.7
Max Year		33	221	65.0	19.5	37.3	365.6	175.2	2.31	3.96	156.9	50.8	1,739.3	466.3	762.5	2.21	141.44	212.1	67.4	1,770.9	776.6	911.1	4.2	144.8
Average Year		22	170	43.5	13.0	25.0	244.9	117.4	1.5	2.7	120.7	39.1	1,337.9	358.7	586.5	1.7	108.8	131.9	42.4	1,344.3	421.5	616.6	2.1	109.5
Minimum Year				27.6	8.3	15.8	155.1	74.3	1.0	1.7	12.1	3.9	133.8	35.9	58.7	0.2	10.9	19.9	6.4	153.0	59.1	96.6	0.3	12.9
Max Development Year (Short-Term)																		212.1	67.4	1,770.9	776.6	911.1	4.2	144.8
Max Production Year (Long-Term)																		156.9	50.8	1,739.3	466.3	762.5	2.2	141.4

Table 78 Annual GHG Emissions for the Graham's and White River Pentsemon Avoidance Alternative (Alternative B) in Metric Tonnes

Years	# Wells		Well Development Emissions				Well Operation Emissions				Mid-Stream Emissions				End-Use Emissions			
	Developed	Operating	CO ₂	CH ₄	N ₂ O	CO ₂ e (100-yr)	CO ₂	CH ₄	N ₂ O	CO ₂ e (100-yr)	CO ₂	CH ₄	N ₂ O	CO ₂ e (100-yr)	CO ₂	CH ₄	N ₂ O	CO ₂ e (100-yr)
1	17	17	25,382.19	4.76	0.17	25,570.45	22,236.82	496.75	0.43	37,156.77	51,014.24	350.04	0.78	61,659.26	371,948.60	12.53	2.29	372,947.46
2	22	39	32,847.54	6.16	0.22	33,091.17	38,594.83	864.36	0.74	64,553.51	88,892.11	620.03	1.36	107,741.08	645,839.98	21.66	3.95	647,563.62
3	14	53	20,902.98	3.92	0.14	21,058.02	36,692.57	826.43	0.68	61,506.92	85,259.86	616.17	1.30	103,977.58	614,597.53	20.40	3.70	616,214.80
4	17	70	25,382.19	4.76	0.17	25,570.45	42,327.22	953.28	0.79	70,950.42	98,343.03	710.45	1.50	119,924.82	708,969.86	23.53	4.27	710,835.76
5	21	91	31,354.47	5.88	0.21	31,587.02	50,982.73	1,148.76	0.95	85,474.68	118,539.67	858.81	1.81	144,626.81	854,015.39	28.32	5.13	856,260.37
6	33	124	49,271.31	9.24	0.33	49,636.75	72,150.05	1,622.09	1.35	120,858.10	167,176.43	1,194.72	2.56	203,477.63	1,208,134.83	40.23	7.31	1,211,328.46
7	23	147	34,340.61	6.44	0.23	34,595.31	69,054.73	1,559.09	1.27	115,863.41	161,059.13	1,181.07	2.46	196,926.35	1,157,134.66	38.23	6.91	1,160,161.13
8	22	169	32,847.54	6.16	0.22	33,091.17	68,980.45	1,560.64	1.26	115,831.90	161,402.07	1,198.21	2.46	197,780.46	1,156,296.35	38.06	6.87	1,159,304.81
9	24	193	35,833.68	6.72	0.24	36,099.46	72,762.50	1,647.77	1.33	122,227.98	170,502.35	1,272.85	2.60	209,142.57	1,219,891.10	40.08	7.22	1,223,057.33
10	28	221	41,805.96	7.84	0.28	42,116.03	80,418.30	1,821.91	1.46	135,110.57	188,565.19	1,411.17	2.87	231,402.24	1,348,340.46	44.27	7.97	1,351,836.31
11	0	221	0.00	0.00	0.00	0.00	47,903.52	1,099.76	0.82	80,900.79	114,642.85	923.26	1.73	142,629.28	805,003.52	25.77	4.57	807,019.64
12	0	221	0.00	0.00	0.00	0.00	35,311.57	816.45	0.59	59,802.07	85,433.00	713.56	1.29	107,048.33	594,128.20	18.76	3.30	595,587.90
13	0	221	0.00	0.00	0.00	0.00	28,241.24	656.19	0.46	47,920.94	68,841.87	589.04	1.03	86,677.59	475,572.86	14.87	2.60	476,725.57
14	0	221	0.00	0.00	0.00	0.00	23,612.65	550.73	0.38	40,127.15	57,892.74	504.39	0.87	73,160.67	397,891.70	12.35	2.15	398,845.94
15	0	221	0.00	0.00	0.00	0.00	20,313.06	475.25	0.32	34,562.42	50,038.89	442.32	0.75	63,424.63	342,476.78	10.56	1.83	343,290.93
16	0	221	0.00	0.00	0.00	0.00	17,828.51	418.22	0.28	30,366.85	44,095.08	394.52	0.66	56,031.66	300,726.44	9.23	1.59	301,435.97
17	0	221	0.00	0.00	0.00	0.00	15,884.38	373.47	0.24	27,080.26	39,424.19	356.40	0.59	50,205.60	268,041.56	8.18	1.41	268,669.78
18	0	221	0.00	0.00	0.00	0.00	14,318.94	337.36	0.22	24,431.34	35,649.16	325.21	0.53	45,485.52	241,712.31	7.35	1.26	242,275.46
19	0	221	0.00	0.00	0.00	0.00	13,030.07	307.56	0.20	22,248.58	32,530.87	299.16	0.48	41,578.26	220,026.80	6.67	1.14	220,536.67
20	0	221	0.00	0.00	0.00	0.00	11,949.82	282.53	0.18	20,417.72	29,909.58	277.06	0.45	38,287.49	201,845.18	6.09	1.04	202,310.62
21	0	221	0.00	0.00	0.00	0.00	11,031.05	261.21	0.16	18,859.46	27,674.14	258.05	0.41	35,476.28	186,376.58	5.61	0.95	186,804.40
22	0	221	0.00	0.00	0.00	0.00	10,239.94	242.82	0.15	17,516.88	25,744.61	241.51	0.38	33,045.94	173,053.73	5.19	0.88	173,449.29
23	0	221	0.00	0.00	0.00	0.00	9,551.59	226.80	0.14	16,348.00	24,061.90	226.98	0.36	30,923.44	161,458.43	4.83	0.82	161,826.04
24	0	221	0.00	0.00	0.00	0.00	8,947.22	212.71	0.13	15,321.16	22,581.36	214.11	0.34	29,053.44	151,275.27	4.51	0.76	151,618.41
25	0	221	0.00	0.00	0.00	0.00	8,412.38	200.23	0.12	14,411.98	21,268.58	202.64	0.32	27,393.26	142,261.57	4.23	0.72	142,583.14
26	0	221	0.00	0.00	0.00	0.00	7,935.76	189.09	0.11	13,601.40	20,096.56	192.33	0.30	25,909.37	134,227.51	3.99	0.67	134,529.92
27	0	221	0.00	0.00	0.00	0.00	7,508.41	179.09	0.11	12,874.27	19,043.85	183.03	0.28	24,575.07	127,022.35	3.76	0.63	127,307.63
28	0	221	0.00	0.00	0.00	0.00	7,123.09	170.06	0.10	12,218.39	18,093.15	174.58	0.27	23,368.82	120,524.84	3.56	0.60	120,794.71
29	0	221	0.00	0.00	0.00	0.00	6,773.96	161.88	0.09	11,623.85	17,230.36	166.88	0.26	22,273.06	114,636.29	3.38	0.57	114,892.25
30	0	221	0.00	0.00	0.00	0.00	6,456.17	154.42	0.09	11,082.48	16,443.88	159.83	0.24	21,273.29	109,275.58	3.22	0.54	109,518.91
31	0	204	0.00	0.00	0.00	0.00	5,793.94	138.59	0.08	9,945.90	14,758.21	143.47	0.22	19,093.35	98,067.61	2.89	0.48	98,285.95
32	0	182	0.00	0.00	0.00	0.00	5,043.98	120.70	0.07	8,660.01	12,856.27	125.20	0.19	16,639.16	85,380.34	2.51	0.42	85,570.18
33	0	168	0.00	0.00	0.00	0.00	4,518.71	108.15	0.06	7,758.79	11,520.84	112.28	0.17	14,913.41	76,491.74	2.25	0.38	76,661.71
34	0	151	0.00	0.00	0.00	0.00	3,937.44	94.35	0.05	6,763.75	10,055.56	98.44	0.15	13,029.50	66,665.36	1.96	0.33	66,812.99
35	0	130	0.00	0.00	0.00	0.00	3,302.14	79.17	0.05	5,673.76	8,440.57	82.82	0.12	10,942.63	55,914.74	1.64	0.27	56,038.34
36	0	97	0.00	0.00	0.00	0.00	2,404.38	57.80	0.03	4,135.66	6,170.35	61.18	0.09	8,018.29	40,732.50	1.19	0.20	40,821.79
37	0	74	0.00	0.00	0.00	0.00	1,793.33	43.14	0.02	3,085.56	4,607.41	45.82	0.07	5,991.25	30,384.76	0.88	0.15	30,451.22
38	0	52	0.00	0.00	0.00	0.00	1,227.95	29.58	0.02	2,114.03	3,161.78	31.62	0.05	4,116.73	20,810.92	0.60	0.10	20,856.22
39	0	28	0.00	0.00	0.00	0.00	643.94	15.54	0.01	1,109.41	1,662.57	16.74	0.02	2,168.17	10,916.78	0.32	0.05	10,940.41
Total (MT)	221		329968.5	61.88	2.210	332,416	895,239	20,503.95	15.531	1,510,497	2,134,684	16,975.94	32.327	2,649,392	15,038,071	483.69	86.033	15,075,972
Max Year			49271.3	9.24	0.330	49,637	80,418.3	1,821.91	1.462	135,111	188,565.2	1,411.17	2.873	231,402	1,348,340.5	44.27	7.973	1,351,836
Average Year			22,954.9	525.7	0.4	38,730.7	54,735.5	435.3	0.8	67,933.1	94,735.5	435.3	0.8	67,933.1	385,591.6	12.4	2.2	386,563.4
			Development Percent of Total =				Operations Percent of Total =				Mid-Stream Percent of Total =				End-Use Percent of Total =			
			2%				8%				14%				77%			

Table 79 Annual CAP and HAP Emissions for the Greater Sage-grouse Avoidance Alternative (Alt C) in Tons per year

Calendar Year	Year	# Wells		Well Development Emissions							Well Operation Emissions							Sum of Well Development and Operation Emissions						
		Developed	Operating	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs	PM ₁₀	PM _{2.5}	VOC	NO _x	CO	SO ₂	HAPs
2026	1	11	11	21.7	6.5	12.4	121.9	58.4	0.8	1.3	7.8	2.5	86.6	23.2	38.0	0.1	7.0	29.5	9.0	99.0	145.1	96.4	0.9	8.4
2027	2	15	26	29.6	8.9	17.0	166.2	79.7	1.1	1.8	18.5	6.0	204.6	54.9	89.7	0.3	16.6	48.0	14.8	221.6	221.1	169.4	1.3	18.4
2028	3	9	35	17.7	5.3	10.2	99.7	47.8	0.6	1.1	24.9	8.1	275.5	73.9	120.8	0.4	22.4	42.6	13.4	285.6	173.6	168.5	1.0	23.5
2029	4	12	47	23.6	7.1	13.6	133.0	63.7	0.8	1.4	33.4	10.8	369.9	99.2	162.2	0.5	30.1	57.0	17.9	383.5	232.1	225.9	1.3	31.5
2030	5	13	60	25.6	7.7	14.7	144.0	69.0	0.9	1.6	42.6	13.8	472.2	126.6	207.0	0.6	38.4	68.2	21.5	486.9	270.6	276.0	1.5	40.0
2031	6	22	82	43.3	13.0	24.9	243.8	116.8	1.5	2.6	58.2	18.9	645.3	173.0	282.9	0.8	52.5	101.6	31.8	670.2	416.8	399.7	2.4	55.1
2032	7	15	97	29.6	8.9	17.0	166.2	79.7	1.1	1.8	68.9	22.3	763.4	204.7	334.7	1.0	62.1	98.4	31.2	780.3	370.9	414.3	2.0	63.9
2033	8	15	112	29.6	8.9	17.0	166.2	79.7	1.1	1.8	79.5	25.8	881.4	236.3	386.4	1.1	71.7	109.1	34.6	898.4	402.5	466.1	2.2	73.5
2034	9	17	129	33.5	10.0	19.2	188.4	90.3	1.2	2.0	91.6	29.7	1,015.2	272.2	445.1	1.3	82.6	125.1	39.7	1,034.4	460.6	535.3	2.5	84.6
2035	10	18	147	35.5	10.6	20.3	199.4	95.6	1.3	2.2	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	139.8	44.4	1,177.2	509.6	602.7	2.7	96.2
2036	11	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2037	12	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2038	13	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2039	14	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2040	15	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2041	16	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2042	17	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2043	18	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2044	19	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2045	20	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2046	21	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2047	22	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2048	23	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2049	24	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2050	25	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2051	26	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2052	27	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2053	28	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2054	29	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2055	30	0	147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1	104.4	33.8	1,156.9	310.2	507.2	1.5	94.1
2056	31	0	136	0.0	0.0	0.0	0.0	0.0	0.0	0.0	96.6	31.3	1,070.3	287.0	469.2	1.4	87.0	96.6	31.3	1,070.3	287.0	469.2	1.4	87.0
2057	32	0	121	0.0	0.0	0.0	0.0	0.0	0.0	0.0	85.9	27.8	952.3	255.3	417.5	1.2	77.4	85.9	27.8	952.3	255.3	417.5	1.2	77.4
2058	33	0	112	0.0	0.0	0.0	0.0	0.0	0.0	0.0	79.5	25.8	881.4	236.3	386.4	1.1	71.7	79.5	25.8	881.4	236.3	386.4	1.1	71.7
2059	34	0	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	71.0	23.0	787.0	211.0	345.0	1.0	64.0	71.0	23.0	787.0	211.0	345.0	1.0	64.0
2060	35	0	87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	61.8	20.0	684.7	183.6	300.2	0.9	55.7	61.8	20.0	684.7	183.6	300.2	0.9	55.7
2061	36	0	65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.2	15.0	511.6	137.2	224.3	0.7	41.6	46.2	15.0	511.6	137.2	224.3	0.7	41.6
2062	37	0	50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.5	11.5	393.5	105.5	172.5	0.5	32.0	35.5	11.5	393.5	105.5	172.5	0.5	32.0
2063	38	0	35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.9	8.1	275.5	73.9	120.8	0.4	22.4	24.9	8.1	275.5	73.9	120.8	0.4	22.4
2064	39	0	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.8	4.1	141.7	38.0	62.1	0.2	11.5	12.8	4.1	141.7	38.0	62.1	0.2	11.5
Total (MT)				289.6	86.7	166.1	1,628.8	780.6	10.29	17.64	3,131.1	1,014.3	34,706.7	9,305.1	15,214.5	44.10	2,822.40	3,420.7	1,101.0	34,872.8	10,933.9	15,995.1	54.4	2,840.0
Max Year		22	147	43.3	13.0	24.9	243.8	116.8	1.54	2.64	104.4	33.8	1,156.9	310.2	507.2	1.47	94.08	139.8	44.4	1,177.2	509.6	602.7	2.7	96.2
Average Year		15	113	29.0	8.7	16.6	162.9	78.1	1.0	1.8	80.3	26.0	889.9	238.6	390.1	1.1	72.4	87.7	28.2	894.2	280.4	410.1	1.4	72.8
Minimum Year				17.7	5.3	10.2	99.7	47.8	0.6	1.1	7.8	2.5	86.6	23.2	38.0	0.1	7.0	12.8	4.1	99.0	38.0	62.1	0.2	8.4
Max Development Year (Short-Term)																		139.8	44.4	1,177.2	509.6	602.7	2.7	96.2
Max Production Year (Long-Term)																		104.4	33.8	1,156.9	310.2	507.2	1.5	94.1

Table 80 Annual GHG Emissions for the Greater Sage-grouse Avoidance Alternative (Alternative C) in Metric Tonnes

	# Wells		Well Development Emissions				Well Operation Emissions				Mid-Stream Emissions				End-Use Emissions																			
Years	Developed	Operating	CO ₂	CH ₄	N ₂ O	CO ₂ e (100-yr)	CO ₂	CH ₄	N ₂ O	CO ₂ e (100-yr)	CO ₂	CH ₄	N ₂ O	CO ₂ e (100-yr)	CO ₂	CH ₄	N ₂ O	CO ₂ e (100-yr)																
1	11	11	16,423.8	3.1	0.1	16,545.6	14,098.2	316.1	0.3	23,591.0	32,528.9	228.5	0.5	39,475.6	235,963.0	7.9	1.4	236,590.9																
2	15	26	22,396.1	4.2	0.2	22,562.2	25,642.4	575.6	0.5	42,926.8	59,267.7	419.4	0.9	72,012.3	429,259.6	14.3	2.6	430,398.9																
3	9	35	13,437.6	2.5	0.1	13,537.3	23,581.5	533.4	0.4	39,594.2	55,155.3	408.9	0.8	67,568.8	395,272.5	13.0	2.3	396,301.6																
4	12	47	17,916.8	3.4	0.1	18,049.7	28,420.5	642.1	0.5	47,697.6	66,353.8	488.5	1.0	81,187.4	476,289.9	15.7	2.8	477,533.5																
5	13	60	19,409.9	3.6	0.1	19,553.9	32,017.3	725.7	0.6	53,801.6	75,126.8	563.7	1.1	92,237.6	536,861.6	17.6	3.2	538,251.9																
6	22	82	32,847.5	6.2	0.2	33,091.2	46,759.6	1,055.2	0.9	78,439.7	108,971.3	796.6	1.7	133,164.7	783,471.2	25.9	4.7	785,523.0																
7	15	97	22,396.1	4.2	0.2	22,562.2	44,548.9	1,009.4	0.8	74,850.2	104,479.5	782.5	1.6	128,232.1	746,949.2	24.5	4.4	748,885.1																
8	15	112	22,396.1	4.2	0.2	22,562.2	45,295.1	1,028.0	0.8	76,153.3	106,502.3	805.3	1.6	130,943.3	759,675.9	24.9	4.5	761,636.5																
9	17	129	25,382.2	4.8	0.2	25,570.4	48,986.3	1,112.3	0.9	82,374.6	115,267.5	874.0	1.8	141,791.9	821,650.9	26.9	4.8	823,768.9																
10	18	147	26,875.3	5.0	0.2	27,074.6	52,045.8	1,184.6	0.9	87,600.8	122,917.2	944.7	1.9	151,578.1	873,323.3	28.4	5.1	875,560.6																
11	0	147	0.0	0.0	0.0	0.0	30,978.3	715.4	0.5	52,438.2	74,808.9	621.0	1.1	93,622.2	521,109.7	16.5	2.9	522,394.3																
12	0	147	0.0	0.0	0.0	0.0	22,803.4	530.7	0.4	38,719.7	55,730.1	480.7	0.8	70,284.6	384,115.1	12.0	2.1	385,041.7																
13	0	147	0.0	0.0	0.0	0.0	18,213.0	426.2	0.3	30,992.2	44,882.5	397.2	0.7	56,902.3	307,083.2	9.5	1.6	307,812.7																
14	0	147	0.0	0.0	0.0	0.0	15,209.8	357.4	0.2	25,925.3	37,723.1	340.3	0.6	48,018.2	256,636.7	7.8	1.3	257,239.0																
15	0	147	0.0	0.0	0.0	0.0	13,070.6	308.2	0.2	22,310.0	32,589.0	298.6	0.5	41,618.7	220,677.5	6.7	1.1	221,190.2																
16	0	147	0.0	0.0	0.0	0.0	11,461.3	271.1	0.2	19,586.3	28,705.0	266.4	0.4	36,759.7	193,607.5	5.8	1.0	194,053.4																
17	0	147	0.0	0.0	0.0	0.0	10,203.1	242.0	0.1	17,454.2	25,654.0	240.7	0.4	32,931.3	172,432.2	5.2	0.9	172,826.3																
18	0	147	0.0	0.0	0.0	0.0	9,190.7	218.5	0.1	15,737.0	23,189.2	219.7	0.3	29,830.2	155,387.4	4.6	0.8	155,740.1																
19	0	147	0.0	0.0	0.0	0.0	8,357.9	199.1	0.1	14,322.9	21,154.0	202.1	0.3	27,263.7	141,358.8	4.2	0.7	141,677.6																
20	0	147	0.0	0.0	0.0	0.0	7,660.4	182.8	0.1	13,137.5	19,443.8	187.2	0.3	25,102.5	129,604.7	3.8	0.6	129,895.3																
21	0	147	0.0	0.0	0.0	0.0	7,067.5	168.9	0.1	12,129.1	17,985.9	174.4	0.3	23,256.6	119,610.6	3.5	0.6	119,877.4																
22	0	147	0.0	0.0	0.0	0.0	6,557.3	157.0	0.1	11,260.8	16,727.9	163.3	0.2	21,661.1	111,007.8	3.3	0.5	111,254.2																
23	0	147	0.0	0.0	0.0	0.0	6,113.6	146.6	0.1	10,505.2	15,631.2	153.5	0.2	20,268.0	103,524.6	3.0	0.5	103,753.3																
24	0	147	0.0	0.0	0.0	0.0	5,724.3	137.5	0.1	9,841.8	14,666.4	144.8	0.2	19,040.7	96,956.0	2.8	0.5	97,169.2																
25	0	147	0.0	0.0	0.0	0.0	5,379.9	129.4	0.1	9,254.6	13,811.3	137.1	0.2	17,951.3	91,144.5	2.7	0.4	91,344.1																
26	0	147	0.0	0.0	0.0	0.0	5,073.2	122.1	0.1	8,731.3	13,048.0	130.1	0.2	16,977.7	85,966.9	2.5	0.4	86,154.4																
27	0	147	0.0	0.0	0.0	0.0	4,798.3	115.6	0.1	8,262.1	12,362.6	123.8	0.2	16,102.4	81,325.4	2.4	0.4	81,502.2																
28	0	147	0.0	0.0	0.0	0.0	4,550.5	109.8	0.1	7,838.9	11,743.7	118.1	0.2	15,311.2	77,141.4	2.2	0.4	77,308.5																
29	0	147	0.0	0.0	0.0	0.0	4,326.1	104.5	0.1	7,455.5	11,182.2	112.9	0.2	14,592.5	73,350.9	2.1	0.3	73,509.3																
30	0	147	0.0	0.0	0.0	0.0	4,121.9	99.7	0.1	7,106.5	10,670.4	108.2	0.2	13,936.8	69,901.5	2.0	0.3	70,051.9																
31	0	136	0.0	0.0	0.0	0.0	3,709.1	89.7	0.0	6,394.5	9,599.4	97.3	0.1	12,536.2	62,899.8	1.8	0.3	63,035.2																
32	0	121	0.0	0.0	0.0	0.0	3,215.5	77.8	0.0	5,545.7	8,334.0	84.7	0.1	10,892.8	54,538.9	1.6	0.3	54,655.9																
33	0	112	0.0	0.0	0.0	0.0	2,892.5	70.0	0.0	4,988.0	7,493.9	76.1	0.1	9,792.6	49,056.7	1.4	0.2	49,162.1																
34	0	100	0.0	0.0	0.0	0.0	2,503.0	60.6	0.0	4,318.9	6,498.9	66.4	0.1	8,503.1	42,462.1	1.2	0.2	42,552.9																
35	0	87	0.0	0.0	0.0	0.0	2,133.9	51.6	0.0	3,680.2	5,530.3	56.2	0.1	7,228.0	36,192.7	1.0	0.2	36,270.4																
36	0	65	0.0	0.0	0.0	0.0	1,552.5	37.7	0.0	2,681.1	4,043.2	41.6	0.1	5,299.3	26,347.8	0.8	0.1	26,403.7																
37	0	50	0.0	0.0	0.0	0.0	1,161.1	28.2	0.0	2,006.9	3,033.5	31.5	0.0	3,983.1	19,713.1	0.6	0.1	19,754.6																
38	0	35	0.0	0.0	0.0	0.0	785.9	19.2	0.0	1,360.3	2,064.3	21.7	0.0	2,718.8	13,351.2	0.4	0.1	13,379.1																
39	0	18	0.0	0.0	0.0	0.0	384.5	9.5	0.0	667.9	1,023.0	11.1	0.0	1,357.2	6,541.8	0.2	0.0	6,555.1																
Total (MT)	147		219,481	41.16	1.470	221,109	580,595	13,369.26	9.831	981,682	1,395,900	11,418.82	21.076	1,741,935	9,761,763	310.74	54.915	9,786,015																
Max Year			32,847.5	6.16	0.220	33,091	52,045.8	1,184.62	0.928	87,601	122,917.2	944.66	1.868	151,578	873,323.3	28.42	5.093	875,561																
Average Year							14,887.0	342.8	0.3	25,171.3	35,792.3	292.8	0.5	44,665.0	250,301.6	8.0	1.4	250,923.5																
			Development Percent of Total =				2%				Operations Percent of Total =				8%				Mid-Stream Percent of Total =				14%				End-Use Percent of Total =				77%			

APPENDIX I SAGE-GROUSE PRIORITIZATION

Final Utah Greater Sage-grouse (GRSG) Plan Conformance and Leasing Considerations Quarter 1, 2026 Lease Sale November 11, 2025

For the Quarter 1 lease-sale (2026), the BLM has prioritized leasing in Greater Sage-grouse habitat, based on an evaluation and balancing of biological components (described below) and fluid mineral components (described below), to fully comply with applicable provisions of the 2015 Greater Sage Grouse (GRSG) Resource Management Plan Amendment (ARMPA) to reduce impacts from potential fluid mineral development on GRSG and its habitat. This lease-sale applies Management Actions (MAs) from the ARMPA and associated stipulations that pertain to unleased fluid minerals in GRSG management areas as listed above. Implementation of these MAs and stipulations help to mitigate disturbance, habitat loss, and cumulative impacts to GRSG. The ARMPA provides that “priority will be given to development in non-habitat areas first and then in the least suitable habitat for GRSG” (Objective MR-1).

The 2015 GRSG Record of Decision (ROD), describes how this objective is intended “to guide development to lower conflict areas and, as such, protect important habitat.” This leasing prioritization strategy was developed as one of the tools the BLM would apply to meet that objective. Review of plan conformance is conducted during the lease sale process and again during proposed site-specific actions, such as when processing an Application for Permit to Drill (APD). At both stages, the BLM coordinates with the State of Utah to address any concerns related to GRSG or wildlife.

The BLM has prioritized leasing and development outside Priority Habitat Management Areas (PHMA) and General Habitat Management Areas (GHMA) to limit surface disturbance and encourage new development in areas outside GRSG habitat, consistent with the ROD. In addition to the multiple MAs in the ARMPA, the following framework was used to assist the BLM UT in its prioritization process for the subject parcels in this Lease Sale.

The ARMPA includes several MAs and stipulations intended to achieve the desired condition explained in the Objective MR-1, which is “leasing and development of fluid mineral resources...outside of [Priority Habitat Management Areas] PHMA and [General Habitat Management Areas] GHMA” and to give priority “to development in non-habitat areas first and then in the least suitable habitat for GRSG”. The no surface occupancy (NSO) stipulation represents a fluid mineral leasing allocation decision for PHMA and provides that certain areas may be “open to leasing, subject to NSO stipulations” which preclude any new surface occupying fluid mineral development in PHMA.

There are also several MAs that help to avoid sensitive areas and that limit future surface disturbance and disruptive developments in PHMA and GHMA. These include (1) disturbance caps (MA-SSS-3B), (2) density caps (MA-SSS-3C), (3) noise restrictions (MA-SSS-3E), (4) tall structure restrictions (MA-SSS-3F), (5) seasonal restrictions (MA-SSS-3G), (6) buffers (MA-

SSS-3H and MA-SSS-5C)), and (7) application of Required Design Features (MA-SSS-3I and MA-SSS-5D). The overlapping combination of all these measures achieves Objective MR-1 by creating a strong economic incentive to lease and develop outside PHMA as a result of the significant restrictions on development within PHMA. Even if PHMA were leased, it would be “subject to [these] applicable stipulations for the conservation of GRSG” as specifically noted in Objective MR-1. In combination with the land use allocations and stipulations in the ARMPA, a strategy that encourages new development in areas that would not conflict with GRSG could help the agency determine which lands to offer for leasing on a quarterly basis. In addition to those MAs, this prioritization strategy outlines a process to help inform the BLM Authorized Officer in identifying areas of important habitat and sensitive areas in an effort to encourage leasing and development to lower conflict areas. This prioritization occurs at both the leasing stage as described here in this appendix, and again at the development stage where habitat availability and quality would be considered, as described in ARMPA MA-MR-6.

1.1 PRIORITIZATION PROCESS OUTLINE

The BLM has evaluated all parcels nominated in this Lease Sale within GRSG PHMA and GHMA in terms of their biological components, such as: (1) the amount of PHMA/GHMA in each parcel; (2) the parcel’s proximity to active leks; (3) habitat treatments since the ARMPA; (4) areas identified for GRSG habitat recovery from wildfire; and (5) input from the Adaptive Management Strategy Team in coordination with the Utah Division of Wildlife Resources where appropriate. These components are included in Table 1.

The BLM has also evaluated parcels in terms of certain fluid mineral considerations: (1) whether the parcel is adjacent to existing leases; (2) the parcel’s proximity to and density of existing oil and gas well(s) (producing well(s)); (3) whether there are nearby oil and gas agreements (communitization, exploratory unit, and secondary recovery); (4) potential drainage cases; (5) oil and gas potential; and (6) the well data map. These components are included in Table 2.

BIOLOGICAL COMPONENTS

For this Lease Sale, GRSG associated parcels occur within the Uintah population area for a total of thirty-two (32) parcels (see Tables 1 and 2). The Uintah population area includes seven separate habitat and distinct populations. Threats that USFWS noted in the COT report for the Uintah population area include fire, conifer encroachment, weeds/annual grasses, energy, mining, infrastructure, recreation, and urbanization.

The parcels are within the McCoy Flats, Deadman Bench, East Bench and Book Cliffs GHMA. This area is primarily Wyoming big sagebrush and black sagebrush in the low elevation and pinyon-juniper with pockets of mountain sagebrush in the upper elevations. The McCoy Flats GHMA is adjacent to the Uintah PHMA. In the Uintah Basin, there are three separate, isolated, and small GRSG subpopulations (Deadman’s Bench, East Bench, and Book Cliffs) where the GRSG population has steadily declined and one of the primary threats may be related to oil and gas development. Lek counts within these areas were in a steady decline prior to the 2015 GRSG ARMPA (BLM 2015) and based on recent communications with UDWR, there are no active leks within these areas. UDWR does not recognize any of these GHMA areas in the State’s Sage-grouse Management Areas (SGMAs) in the 2019 Utah Conservation Plan for Greater Sage-

Grouse (UDWR 2019). Threats that USFWS noted in the COT report for the Uintah population area include fire, conifer encroachment, weeds/annual grasses, energy, mining, infrastructure, recreation, and urbanization. There are no active leks within close proximity (within 3.1 miles) to the lease parcels. The nearest active lek is within 10.4 miles of the McCoy Flats parcel 7823. This lek is located in the higher elevation sagebrush benches in PHMA in the Uintah population area.

The thirty-two (32) nominated parcels in this Lease Sale that are within GRSG habitat have been evaluated based on the biological and fluid components listed below in the tables. Three parcels from the Moab Field Office 1662, 1672, and 1673, are on land that is administered by the VFO and subject to the VFO Resource Management Plan (RMP).

Table 1. Overview of Biological Components of Each Parcel Considered

Parcel #	(Field Office/ GRSG Population)	Parcel Size (Acres)	% w/in PHMA	% w/in GHMA	Occupied leks w/in 3.1 mi (#)	Habitat treatments since ARMPA (acres)	Wildfire since ARMPA (acres)	Adaptive Management Trigger Met (Yes/No)
UT-2026-03-1662	Moab/Uintah	1160	0%	100%	0	0.00	0.00	No
UT-2026-03-1672	Moab/Uintah	279	0%	100%	0	0.00	0.00	No
UT-2026-03-1673	Moab/Uintah	1768	0%	82%	0	0.00	0.00	No
UT-2026-03-1674	Vernal/Uintah	2234	0%	49%	0	187.97	0.00	No
UT-2026-03-1678	Vernal/Uintah	1277	0%	41%	0	186.92	0.00	No
UT-2026-03-1681	Vernal/Uintah	961	0%	65%	0	0.00	0.00	No
UT-2026-03-1683	Vernal/Uintah	160	0%	100%	0	0.00	0.00	No
UT-2026-03-1684	Vernal/Uintah	1149	0%	6%	0	267.71	0.00	No
UT-2026-03-1687	Vernal/Uintah	40	0%	100%	0	0.00	0.00	No
UT-2026-03-1688	Vernal/Uintah	160	0%	100%	0	0.00	0.00	No
UT-2026-03-1691	Vernal/Uintah	1278	0%	84%	0	0.00	0.00	No
UT-2026-03-1696	Vernal/Uintah	278	0%	100%	0	0.00	0.00	No
UT-2026-03-1698	Vernal/Uintah	1577	0%	100%	0	0.00	0.00	No
UT-2026-03-1702	Vernal/Uintah	1041	0%	100%	0	161.11	0.00	No
UT-2026-03-1715	Vernal/Uintah	2153	0%	23%	0	0.00	0.00	No
UT-2026-03-1742	Vernal/Uintah	1168	0%	100%	0	54.37	95.19	No
UT-2026-03-1810	Vernal/Uintah	2040	0%	1%	0	5.98	0.00	No
UT-2026-03-1815	Vernal/Uintah	160	0%	54%	0	8.30	0.00	No
UT-2026-03-1816	Vernal/Uintah	40	0%	100%	0	2.89	0.00	No
UT-2026-03-1817	Vernal/Uintah	80	0%	100%	0	0.00	0.00	No
UT-2026-03-1818	Vernal/Uintah	2395	0%	81%	0	529.89	0.00	No

Parcel #	(Field Office/ GRSG Population)	Parcel Size (Acres)	% w/in PHMA	% w/in GHMA	Occupied leks w/in 3.1 mi (#)	Habitat treatments since ARMPA (acres)	Wildfire since ARMPA (acres)	Adaptive Management Trigger Met (Yes/No)
UT-2026-03-1823	Vernal/Uintah	80	0%	100%	0	0.00	0.00	No
UT-2026-03-1825	Vernal/Uintah	1280	0%	75%	0	0.00	0.00	No
UT-2026-03-7781	Vernal/Uintah	2553	0%	100%	0	0.00	0.00	No
UT-2026-03-7782	Vernal/Uintah	1748	0%	100%	0	0.00	0.00	No
UT-2026-03-7784	Vernal/Uintah	1878	0%	83%	0	0.00	0.00	No
UT-2026-03-7813	Vernal/Uintah	319	0%	100%	0	0.00	0.00	No
UT-2026-03-7823	Vernal/Uintah	887	0%	100%	0	0.00	0.00	No
UT-2026-03-7826	Vernal/Uintah	120	0%	100%	0	0.00	0.00	No
UT-2026-03-7833	Vernal/Uintah	119	0%	100%	0	0.00	0.00	No
UT-2026-03-7837	Vernal/Uintah	1924	0%	80%	0	276.48	0.00	No
UT-2026-03-7840	Vernal/Uintah	896	0%	100%	0	248.84	0.00	No

FLUID MINERAL COMPONENTS

As noted in the ARMPA, any parcel considered for leasing in PHMA would be subject to an NSO stipulation, thus no surface disturbance would occur on those parcels. There are no lease parcels within PHMA. In addition to the NSO stipulation, for all parcels in PHMA and GHMA, seasonal stipulations would also apply, which limit certain activities within various proximity to leks during certain times of the year. Application of other management actions and Required Design Features would help inform whether it is possible to directionally drill from an authorized surface location outside of PHMA or on a valid existing lease.

I.2 EVALUATION FOR QUARTER 1(2026) NOMINATED PARCELS:

Fifty-eight (58) parcels were evaluated for the Quarter 1 (2026) Lease Sale. Of those parcels, 26 were located outside of PHMA/GHMA entirely and none were located within PHMA. These 26 parcels should be a priority for leasing in accordance with the 2015 GRSB ARMPA to lease outside of PHMA/GHMA. Thirty-two (32) of the nominated parcels were (either entirely or partially) located within GHMA. All parcels within GHMA were evaluated through the prioritization process and presented to the Authorized Officer. After all resource issues were carefully evaluated, including the biological and fluid mineral components described above, all parcels in GHMA were brought forward for the NEPA evaluation in the Quarter 1 (2026) Lease Sale in various alternatives.

A summary of the prioritization for the thirty-two (32) parcels nominated for the Quarter 1 (2026) sale that were in GRSB habitat is listed below.

Table 2. Overview of the Fluid Minerals Components of Each Parcel Considered

Parcel #7746	(Field Office/ GRSG Population)	Parcel Size (Acres)	% w/in 3.1 mi		Distance to Closest O&G Location	Well Density w/in 1 Mile	Within Existing O&G Agreement	O&G Potential (Per Square Mile)
			Leased %	HBP %				
UT-2026-03-1662	Moab/Uintah	1160	9.65%	9.65%	Producing well 0.4 miles to the W	0.22	No	Oil: 49.82 Mbbbl, Gas: 1293.42 MMcf
UT-2026-03-1672	Moab/Uintah	279	13.56%	13.56%	Producing well 1.2 miles to the W	0.0	No	Oil: 23.32 Mbbbl, Gas: 1422.16 MMcf
UT-2026-03-1673	Moab/Uintah	1768	4.85%	4.85%	Producing well 0.1 miles to the N	0.07	No	Oil: 55.38 Mbbbl, Gas: 1624.96 MMcf
UT-2026-03-1674	Vernal/Uintah	2234	20.4%	20.4%	Producing well 0.3 miles to the N	0.06	No	Oil: 28.38 Mbbbl, Gas: 722.45 MMcf
UT-2026-03-1678	Vernal/Uintah	1277	22.84%	22.84%	Producing well 2.2 miles to the S	0.0	No	Oil: 54.12 Mbbbl, Gas: 921.37 MMcf
UT-2026-03-1681	Vernal/Uintah	961	64.95%	64.95%	Producing well 1.9 miles to the NW	0.0	No	Oil: 55.44 Mbbbl, Gas: 1626.92 MMcf
UT-2026-03-1683	Vernal/Uintah	160	45.44%	45.44%	Producing well 3.7 miles to the N	0.0	No	Oil: 55.44 Mbbbl, Gas: 1626.92 MMcf
UT-2026-03-1684	Vernal/Uintah	1149	45.61%	45.61%	Producing well 3.8 miles to the E	0.0	No	Oil: 32.74 Mbbbl, Gas: 756.09 MMcf
UT-2026-03-1687	Vernal/Uintah	40	80.43%	80.43%	Producing well 0.2 miles to the W	1.19	No	Oil: 55.44 Mbbbl, Gas: 1626.92 MMcf
UT-2026-03-1688	Vernal/Uintah	160	68.53%	68.53%	Producing well 1.7 miles to the W	0.0	No	Oil: 54.32 Mbbbl, Gas: 922.91 MMcf
UT-2026-03-1691	Vernal/Uintah	1278	86.54%	86.54%	Producing well 0.1 miles to the S	2.78	No	Oil: 55.44 Mbbbl, Gas: 1626.92 MMcf
UT-2026-03-1696	Vernal/Uintah	278	64.16%	64.16%	Active service well 1.6 miles to the N	0.0	No	Oil: 55.44 Mbbbl, Gas: 1626.92 MMcf
UT-2026-03-1698	Vernal/Uintah	1577	51.85%	51.85%	Producing well 2.6 miles to the S	0.0	No	Oil: 49.52 Mbbbl, Gas: 885.79 MMcf
UT-2026-03-1702	Vernal/Uintah	1041	76.03%	76.03%	Producing well 0.1 miles to the W	0.29	No	Oil: 54.32 Mbbbl, Gas: 879.45 MMcf
UT-2026-03-1715	Vernal/Uintah	2153	15.92%	15.92%	Producing well 0.3 miles to the NW	0.19	No	Oil: 2.68 Mbbbl, Gas: 547.11 MMcf
UT-2026-03-1742	Vernal/Uintah	1168	55.52%	55.52%	Active service well 1.3 miles to the W	0.0	No	Oil: 32.46 Mbbbl, Gas: 752.1 MMcf
UT-2026-03-1810	Vernal/Uintah	2040	40.96%	40.96%	Producing well 0.1 miles to the W	0.36	No	Oil: 52.42 Mbbbl, Gas: 1465.85 MMcf
UT-2026-03-1815	Vernal/Uintah	160	33.27%	33.27%	Producing well 0.1 miles to the N	0.74	No	Oil: 55.44 Mbbbl, Gas: 1670.38 MMcf
UT-2026-03-1816	Vernal/Uintah	40	38.55%	38.55%	Producing well 6.7 miles to the NW	0.0	No	Oil: 55.44 Mbbbl, Gas: 1626.92 MMcf
UT-2026-03-1817	Vernal/Uintah	80	51.36%	51.36%	Producing well 4.4 miles to the S	0.0	No	Oil: 19.16 Mbbbl, Gas: 1390.01 MMcf
UT-2026-03-1818	Vernal/Uintah	2395	32.69%	32.69%	Producing well 1.1 miles to the S	0.0	No	Oil: 51.53 Mbbbl, Gas: 901.36 MMcf

Parcel #7746	(Field Office/ GRSG Population)	Parcel Size (Acres)	% w/in 3.1 mi		Distance to Closest O&G Location	Well Density w/in 1 Mile	Within Existing O&G Agreement	O&G Potential (Per Square Mile)
			Leased %	HBP %				
UT-2026-03-1823	Vernal/Uintah	80	55.54%	55.54%	Producing well 2.2 miles to the N	0.0	No	Oil: 55.44 Mbbl, Gas: 1626.92 MMcf
UT-2026-03-1825	Vernal/Uintah	1280	30.5%	30.5%	Producing well 1.4 miles to the N	0.0	No	Oil: 55.44 Mbbl, Gas: 1626.92 MMcf
UT-2026-03-7781	Vernal/Uintah	2553	78.98%	78.98%	Producing well 0.1 miles to the N	0.79	No	Oil: 55.44 Mbbl, Gas: 1626.92 MMcf
UT-2026-03-7782	Vernal/Uintah	1748	83.54%	83.54%	Producing well 0.4 miles to the W	0.59	No	Oil: 55.44 Mbbl, Gas: 1626.92 MMcf
UT-2026-03-7784	Vernal/Uintah	1878	73.03%	73.03%	Producing well 0.1 miles to the W	0.36	No	Oil: 55.4 Mbbl, Gas: 1594.31 MMcf
UT-2026-03-7813	Vernal/Uintah	319	77.51%	77.51%	Active service well 1.0 miles to the S	0.15	No	Oil: 54.18 Mbbl, Gas: 878.35 MMcf
UT-2026-03-7823	Vernal/Uintah	887	81.71%	81.71%	Producing well 0.4 miles to the E	0.3	No	Oil: 41.12 Mbbl, Gas: 2830.59 MMcf
UT-2026-03-7826	Vernal/Uintah	120	76.97%	76.97%	Active service well 0.4 miles to the S	0.38	No	Oil: 55.44 Mbbl, Gas: 1626.92 MMcf
UT-2026-03-7833	Vernal/Uintah	119	79.16%	79.16%	Producing well 1.1 miles to the NE	0.0	No	Oil: 54.32 Mbbl, Gas: 879.45 MMcf
UT-2026-03-7837	Vernal/Uintah	1924	68.55%	68.55%	Producing well 0.1 miles to the S	0.14	No	Oil: 54.32 Mbbl, Gas: 879.45 MMcf
UT-2026-03-7840	Vernal/Uintah	896	40.34%	40.34%	Producing well 4.1 miles to the SW	0.0	No	Oil: 14.91 Mbbl, Gas: 155.73 MMcf

PARCELS CONSIDERED LOW PRIORITY FOR LEASING AT THIS TIME

After consideration of the biological and fluid mineral components for the thirty-two (32) parcels in GRSG habitat in the Quarter 1 (2026) Lease Sale, the BLM biologists identified 10 parcels that are considered low priority for leasing at this time, which include parcels 1696, 1698, 1742, 1816, 1817, 1818, 1823, 1825, 7823, and 7840. These parcels were determined to have a lower priority for leasing because they are generally associated with greater biological components (i.e., primarily winter seasonal habitat, habitat improvement projects) and fewer fluid mineral components (i.e., greater distances to active or producing wells). No parcels are within an Existing Oil and Gas Agreement area. All 10 of the lower priority for leasing parcels are within a high oil and gas potential area. The distances from the closest producing wells to these parcels range from 0.4 miles to 6.7 miles as listed in Table 2. In accordance with MA-MR-1 in the 2015 GRSG ARMPA, BLM biologists have prioritized leasing in areas that are outside of PHMA and GHMA based on the expressions of interest identified for the Quarter 1 2026 lease sale, which included a total of 58 parcels, of which 26 parcels are entirely located outside of PHMA and GHMA; therefore, these parcels located outside of GRSG PHMA and GHMA (non-habitat) should be highest priority for leasing. In consideration of those parcels that are located in GHMA in this lease sale, the BLM biologists assessed those parcels based on the biological and fluid mineral components prioritizing those parcels in consideration of seasonal habitat values, habitat improvement projects, and proximity of parcels to anthropogenic disturbances associated with existing oil and gas leases.

Historically, the Deadman's Bench, East Bench and Book Cliffs GHMA area contained seven occupied GRSG leks. All of these leks are unoccupied and/or historical and substantial declines were occurring prior to the 2015 GRSG ARMPA (BLM 2015). Leks continue to be monitored by UDWR occasionally and all counts have been zero (0) (UDWR personal communication May 2, 2025). The GHMA habitat in these areas is identified as nesting, summer, and winter habitat. One of the primary reasons for identifying these 10 parcels as lower priority for leasing is due to their distance from heavier oil and gas development within the area, as well as, protecting the integrity of habitat restoration treatments, which were completed to improve the sagebrush community for sage-grouse and mule deer.

PARCELS CONSIDERED HIGHER PRIORITY FOR LEASING AT THIS TIME

Of the thirty-two (32) proposed parcels within GHMA, twenty-two (22) were determined to have a higher priority for leasing because they are generally where fewer biological component(s) are present, and more than one fluid mineral component is also present. All proposed parcels within this Lease Sale are eligible for leasing with the applicable MAs, stipulations, and notices in conformance with the ARMPA. Application of stipulations have been confirmed by the Utah State Office Leasing Team.

This prioritization process helped to inform which proposed parcels (low priority for leasing and high priority for leasing) should be carried forward and analyzed in the NEPA document, which is being prepared in connection with the leasing decision for the Quarter 1 (2026) Lease Sale. In the Decision Record, the Authorized Officer will make a determination whether all, some, or none of the proposed parcels, will be offered during the Lease Sale based on this prioritization analysis and any other appropriate factors.

Parcels 1662, 1672, 1673, 1674, 1678, 1681, 1683, 1684, 1687, 1688, 1691, 1702, 1715, 1810, 1815, 7781, 7782, 7784, 7813, 7826, 7833, and 7837 have a relative high percentage of leased lands and leased lands held by production in this Lease Sale. All are within an area that has high oil and gas potential as listed in Table 2. There are producing wells in close proximity to many of the parcels, ranging from 0.1 miles up to 3.8 miles as listed in Table 2. Therefore, these parcels would be a high priority to lease at this time. Although these parcels are within GHMA, the absence of active leaks, degraded habitat, and adjacency to developed leases reduce risk to GRSG, while the parcels' proximity to producing wells and existing anthropogenic disturbance enhances development efficiency.

Since the parcels that are considered high priority for this sale have the appropriate stipulations and notices attached to them from the 2015 UT GRSG ARMPA, they would all be considered for leasing in the NEPA alternatives.

All of the parcels (lower and higher priority for leasing) moved forward for NEPA analysis will include the following lease notices to protect GRSG:

Lease Notices:

- UT-LN-131 - Greater Sage-Grouse – Net Conservation Gain
- UT-LN-132 - Greater Sage-Grouse – Required Design Features
- UT-LN-133 - Greater Sage-Grouse – Buffer

PARCELS WHERE ADAPTIVE MANAGEMENT TRIGGERS HAVE BEEN TRIPPED

Based on the most recent review of the Adaptive Management Triggers in coordination with UDWR, the Uintah PHMA has not hit any population or habitat triggers. BLM Utah does not have any parcels within areas where an adaptive management trigger has been tripped for this lease sale and all of the parcels are within GHMA; therefore, the 2015 GRSG ARMPA adaptive management does not apply.

I.3 HABITAT ASSESSMENT FRAMEWORK

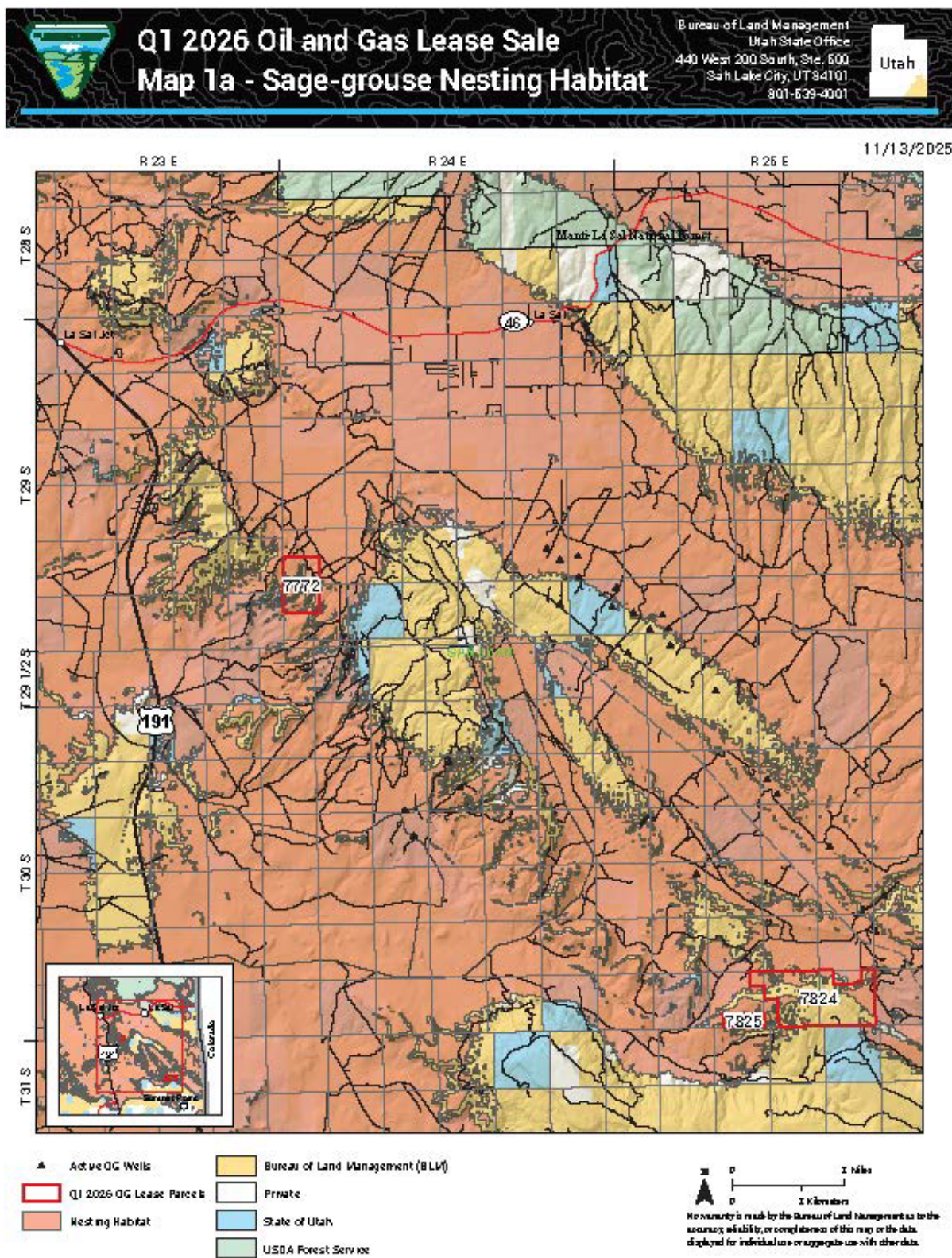
Habitat for the Greater Sage-Grouse (GRSG) Emery, Carbon, Strawberry and Uintah GRSG populations were assessed using the mid-scale indicators from the Sage-Grouse Habitat Assessment Framework (Stiver et al. 2015). These 4 populations intersect with the Central Wasatch / Tavaputs mid-scale area that occurs within Utah and overlaps the lease parcels. The Central Wasatch / Tavaputs mid-scale assessment area encompasses GRSG habitat across much of Central and Eastern Utah.

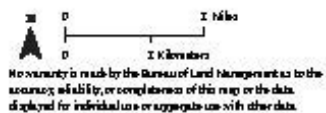
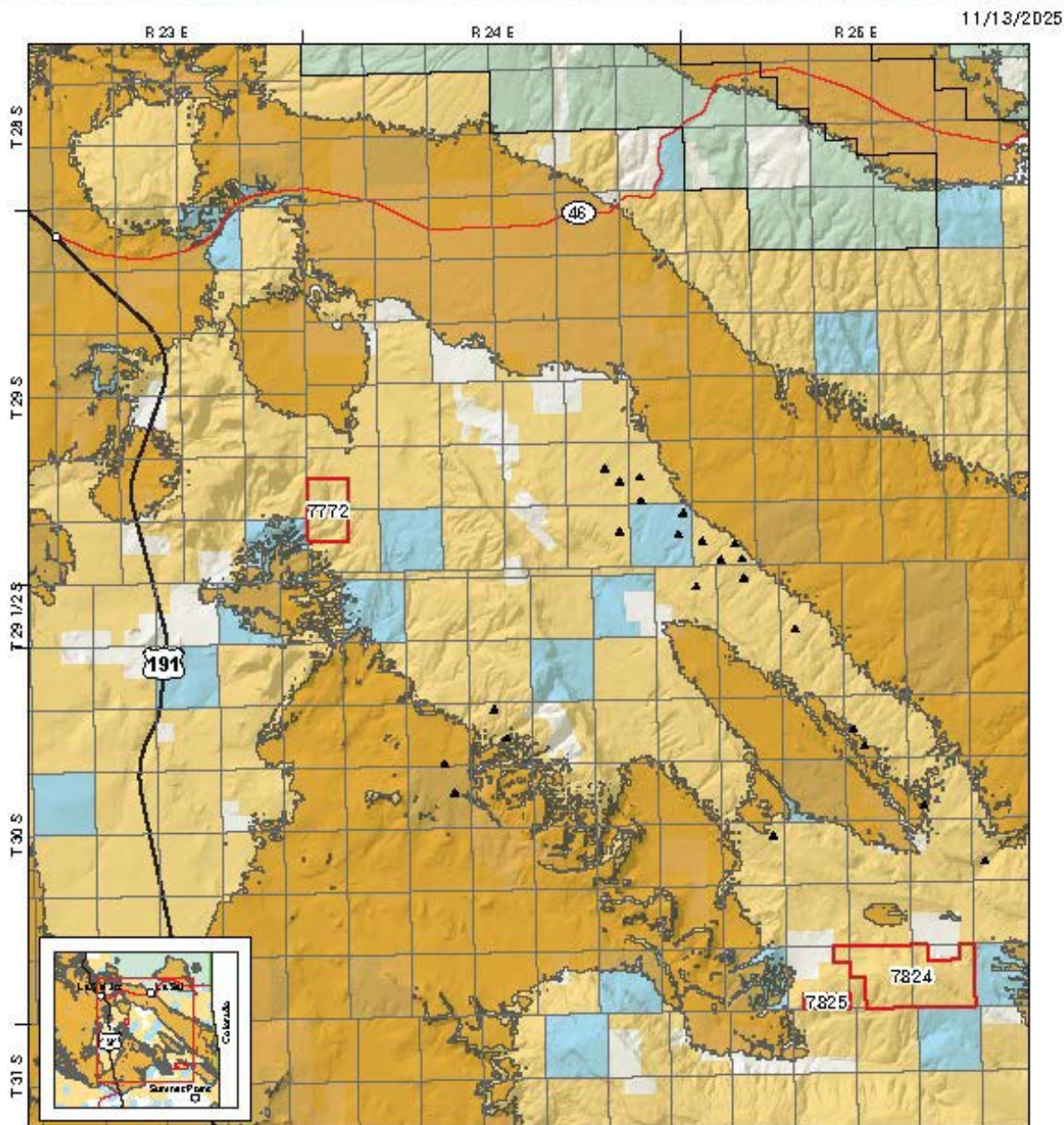
The Central Wasatch / Tavaputs Mid-scale area for greater sage-grouse was rated as Marginal due to a combination of habitat fragmentation, limited connectivity, and significant disturbance pressures across the landscape (BLM 2025). Fine-scale and Site-scale habitat assessment reports have not been finalized at this time.

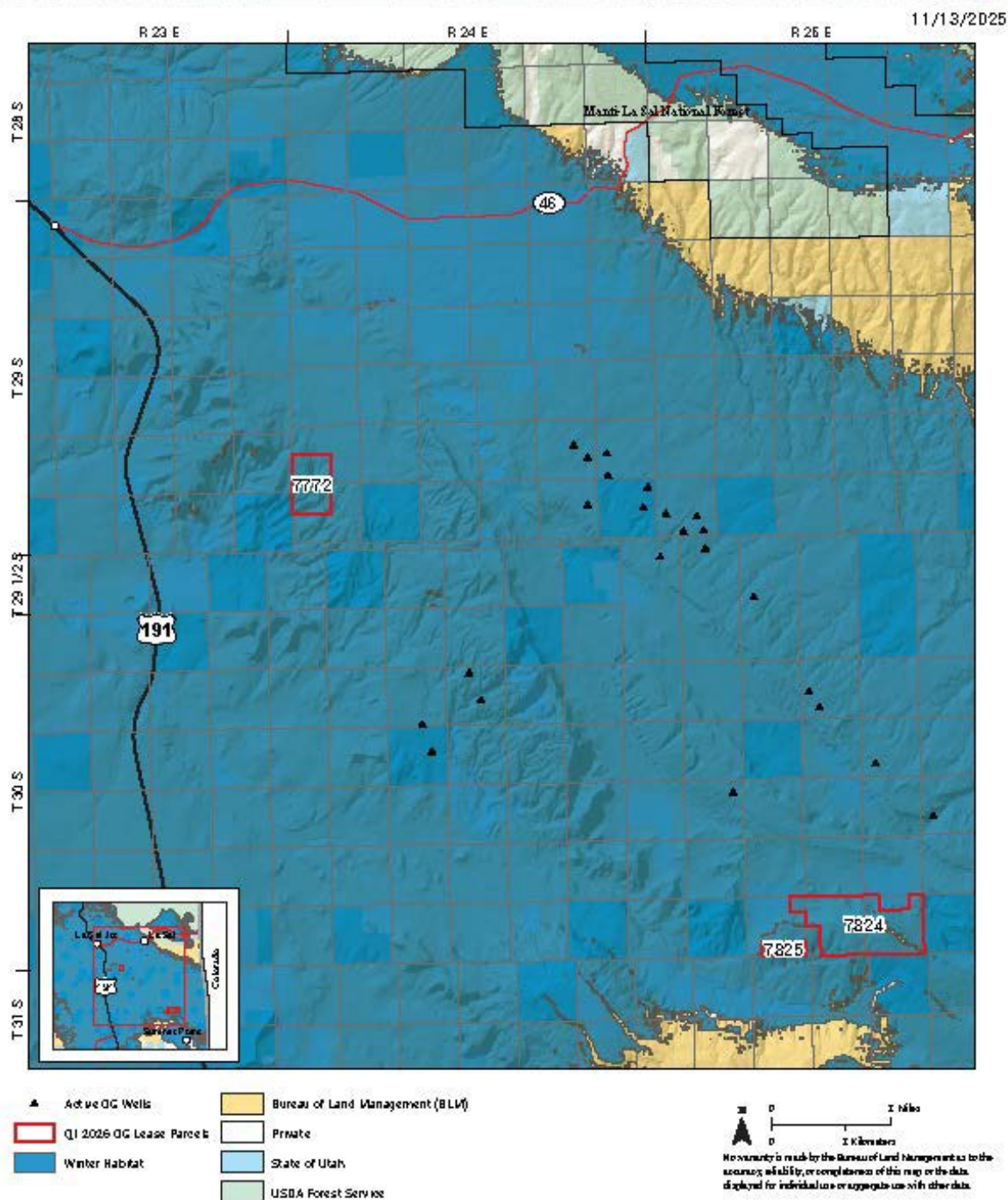
Attachments:

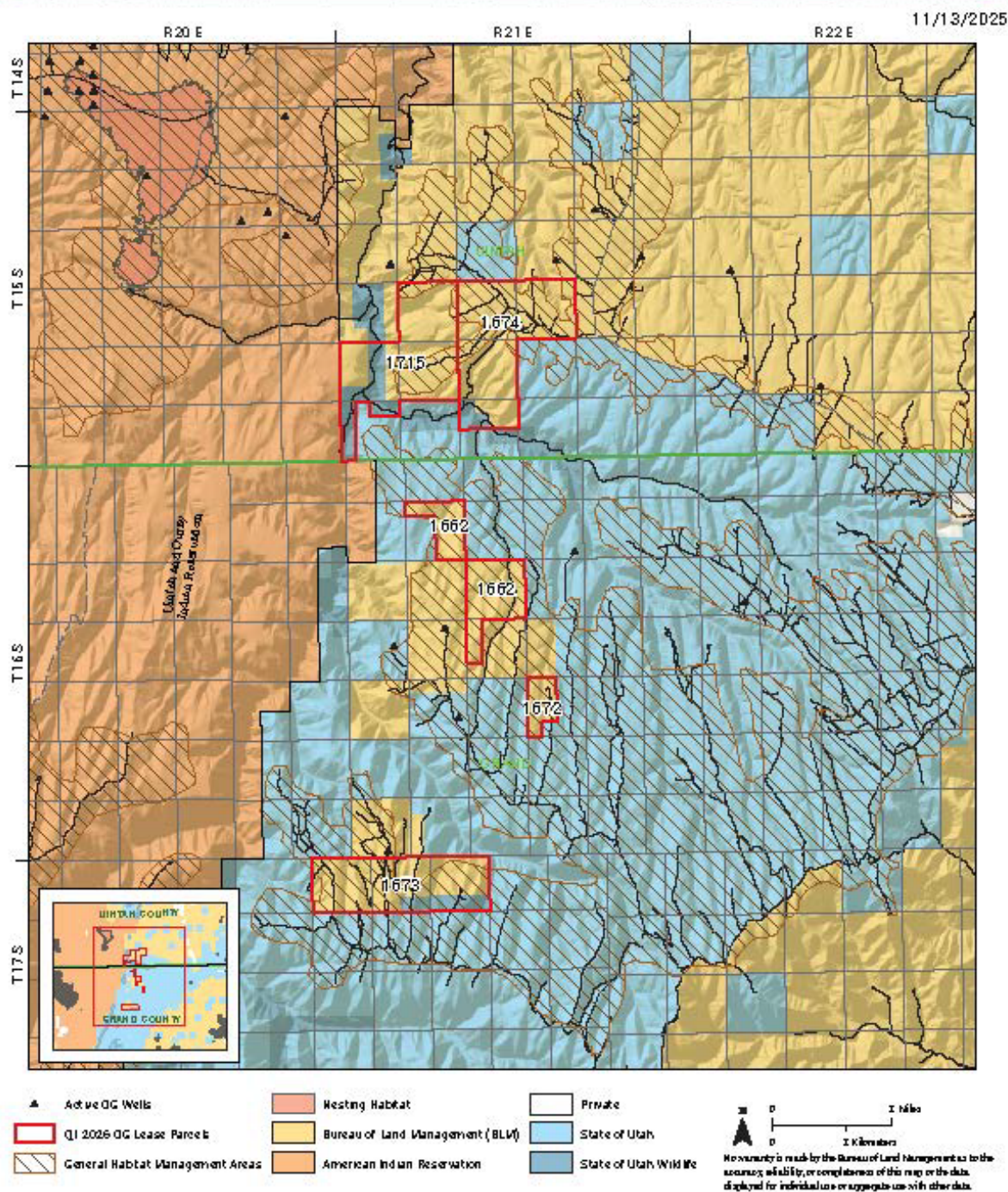
- 1) Stipulations and notices in full
- 2) Maps

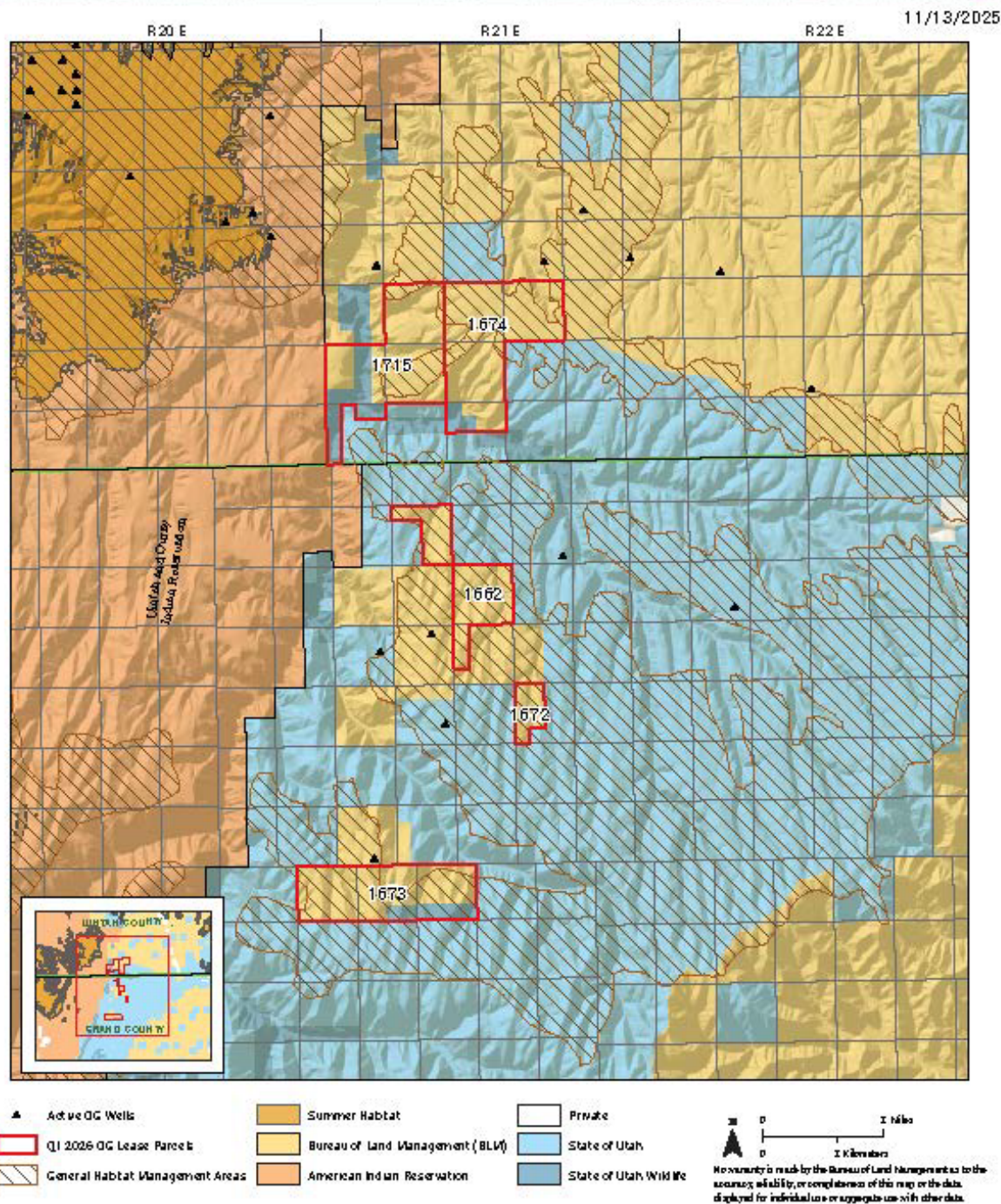
UT-LN-131	Greater Sage-Grouse – Net Conservation Gain In Priority and General Habitat Management Areas (PHMA and GHMA) all actions that result in habitat loss and degradation will require mitigation that provides a net conservation gain to the Greater Sage-Grouse (GRSG). Mitigation must account for any uncertainty associated with the effectiveness of the mitigation and will be achieved through avoiding, minimizing and compensating for impacts. Mitigation will be conducted according to the mitigation framework found in Appendix F in the 2015 Utah Approved Management Plan Amendment.
UT-LN-132	GREATER SAGE-GROUSE – REQUIRED DESIGN FEATURES Apply the Required Design Features (RDF)* in Appendix C of the 2015 Utah Approved Management Plan Amendment when developing a lease in Priority and General Habitat Management Areas (PHMA and GHMA). *RDFs may not be required if it is demonstrated through the NEPA analysis that the RDF associated project/activity is: • Documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable; • An alternative RDF, state-implemented conservation measure, or plan-level protection is determined to provide equal or better protection for GRSG or its habitat; • Provide no additional protection to GRSG or its habitat.
UT-LN-133	GREATER SAGE-GROUSE - BUFFER In Priority and General Habitat Management Areas (PHMA and GHMA), the BLM will apply the lek buffer-distances identified in the USGS Report Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review (Open File Report 2014-1239) in accordance with Appendix B, Applying Lek-Buffer Distances, consistent with valid and existing rights and applicable law in authorizing management actions.

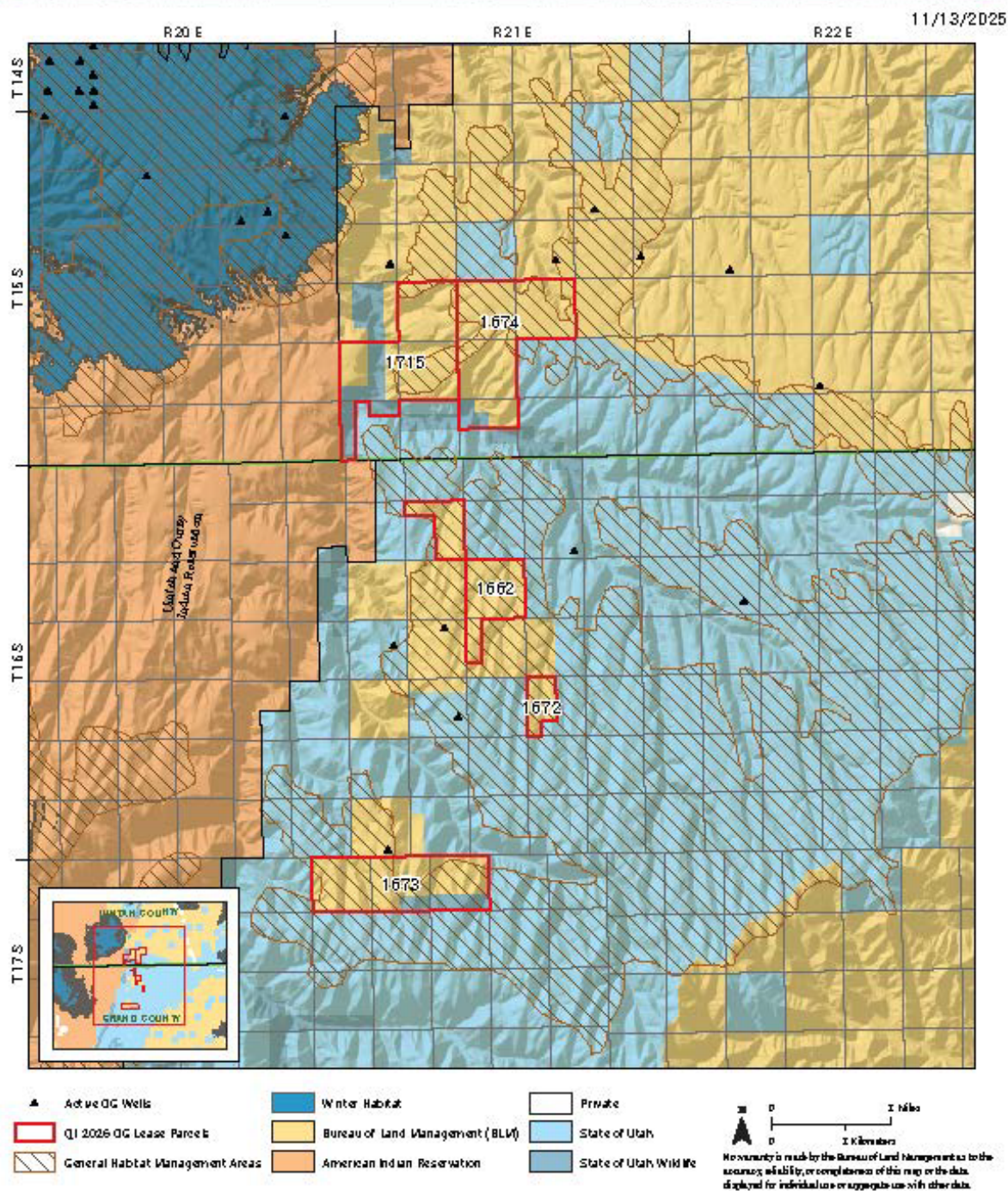


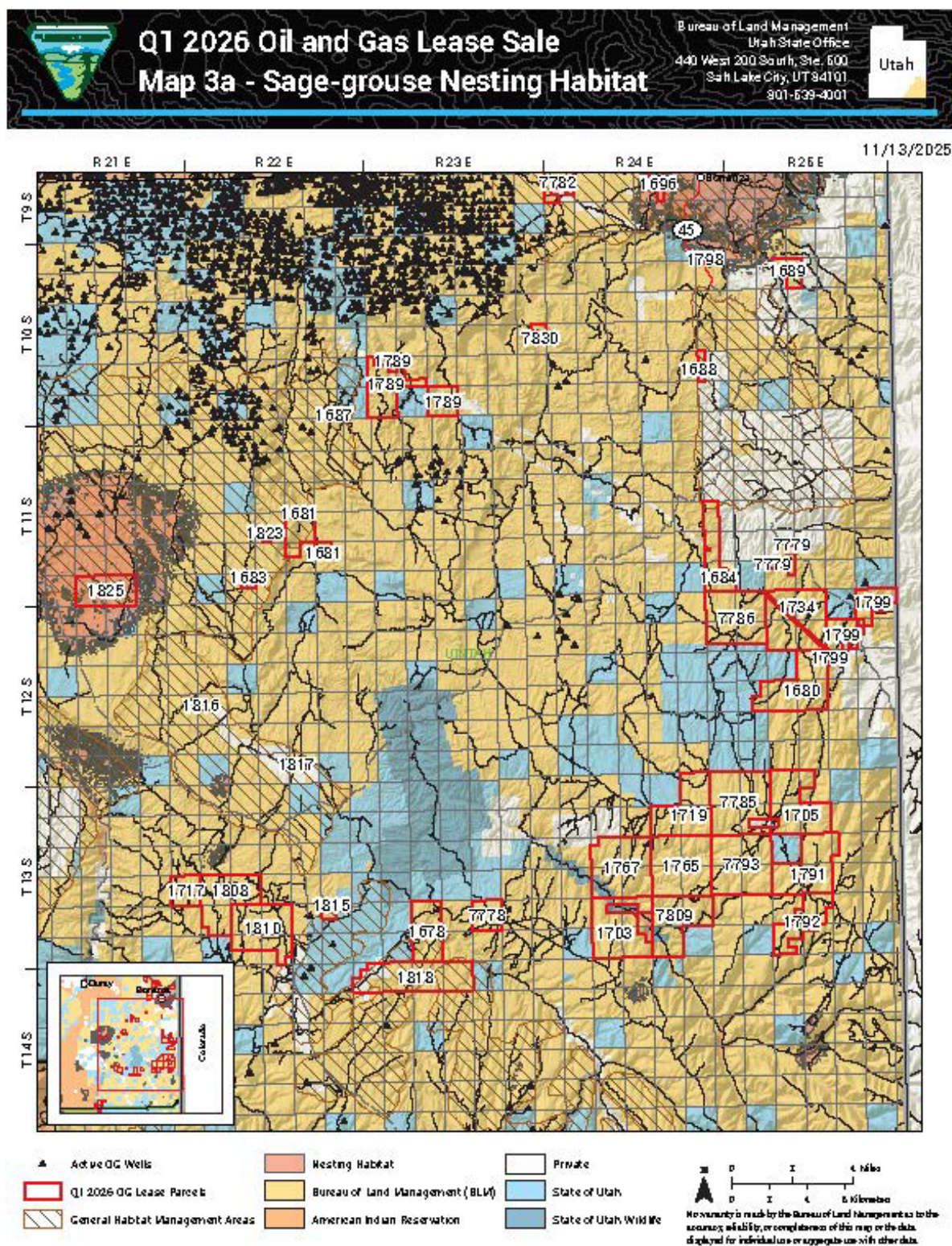


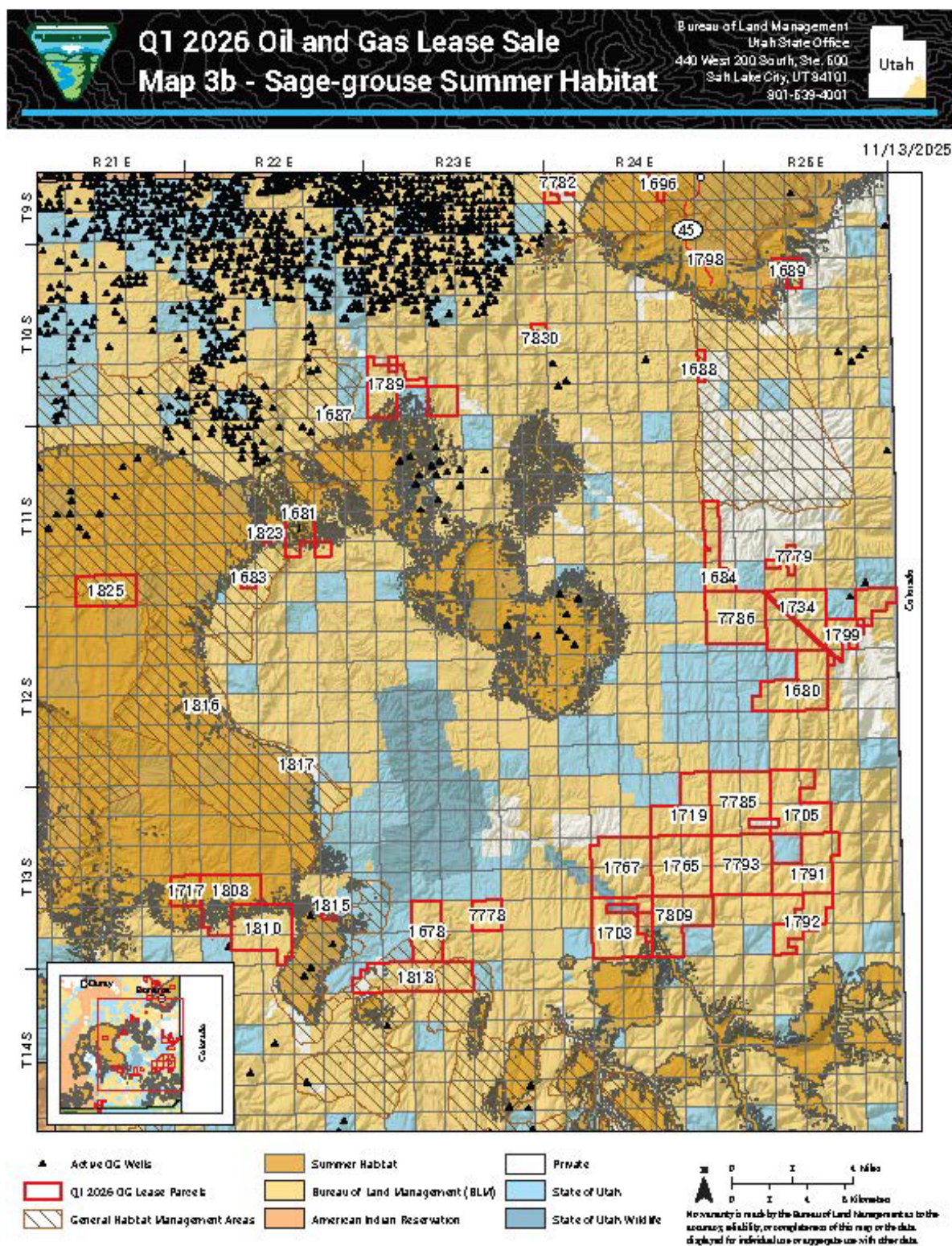


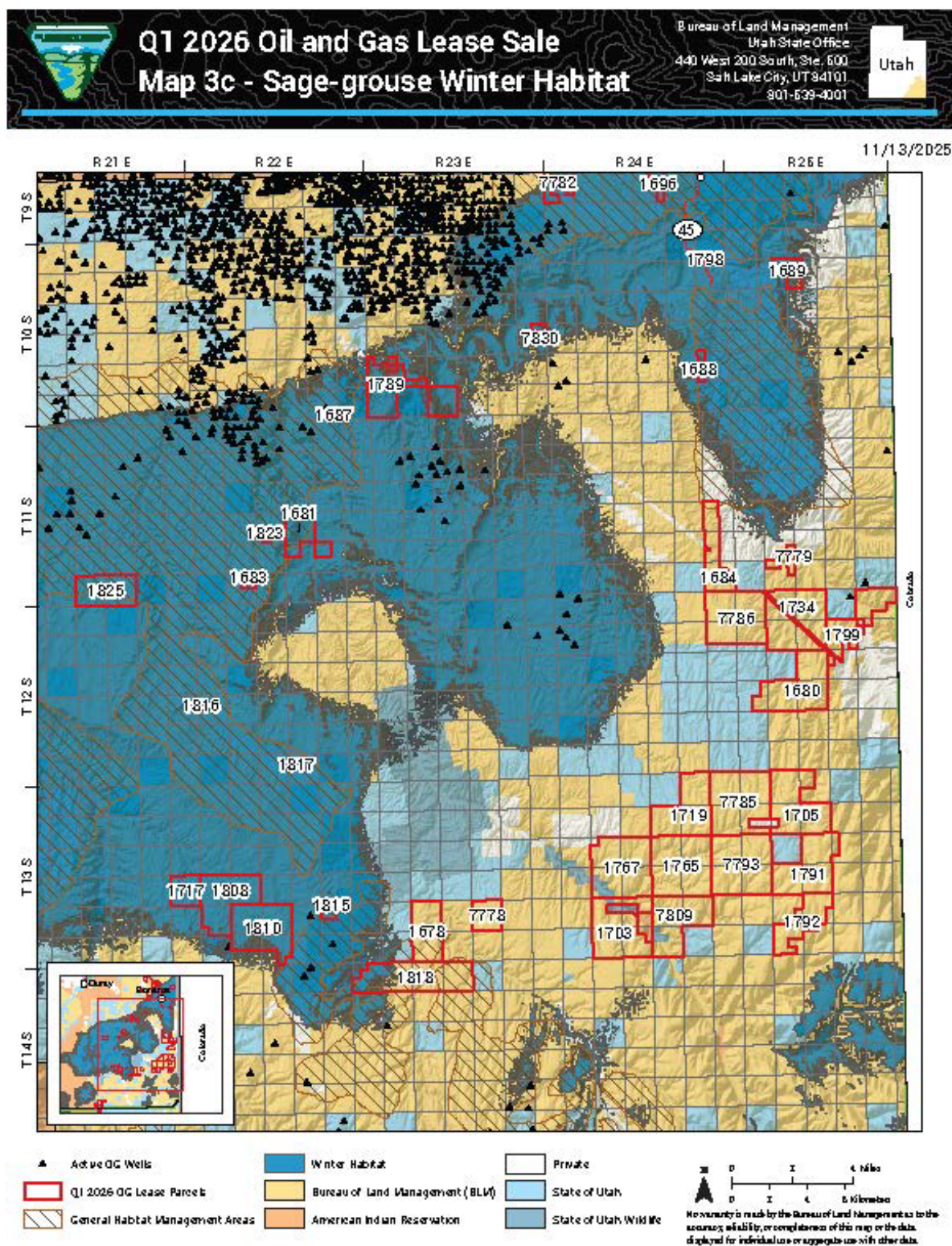


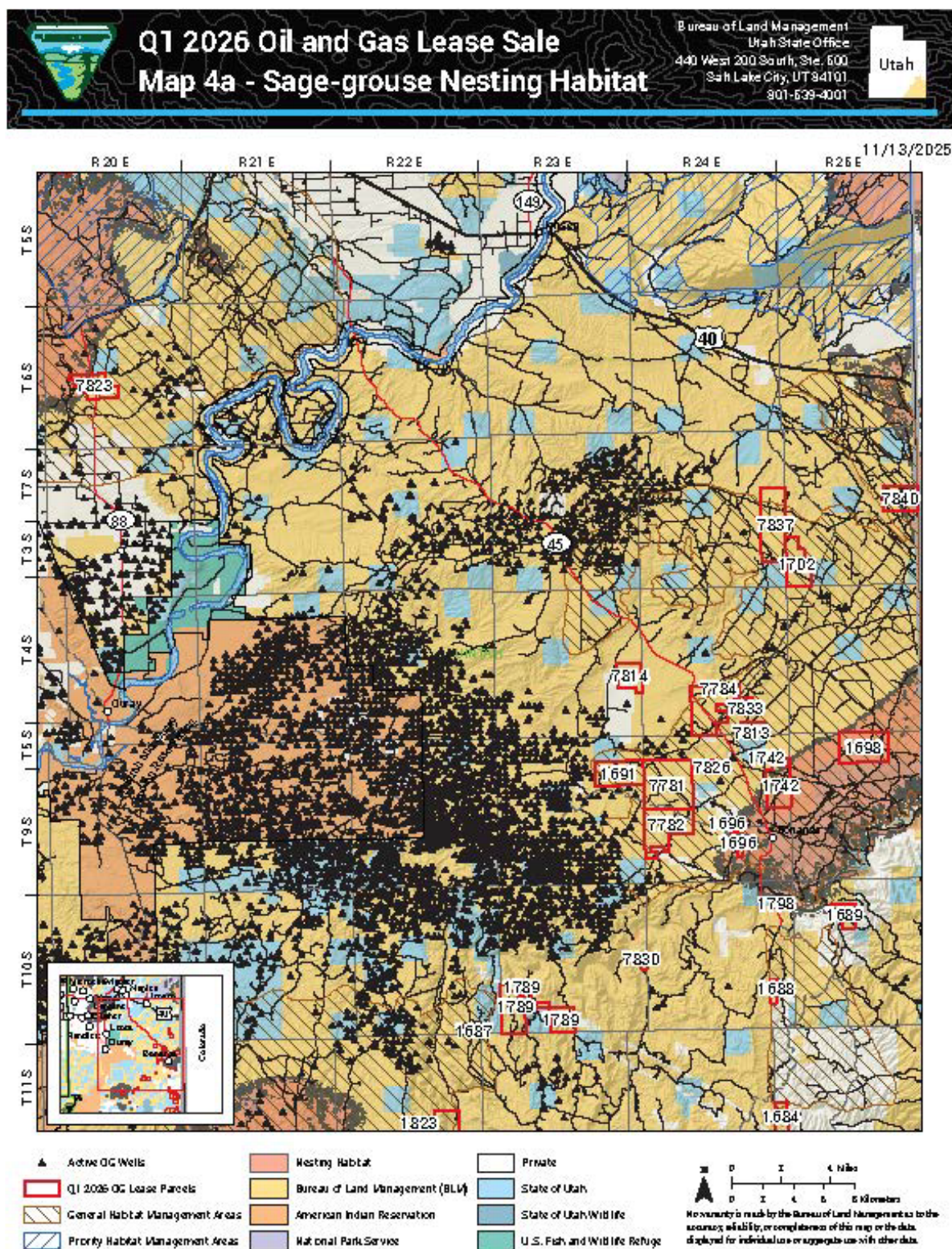


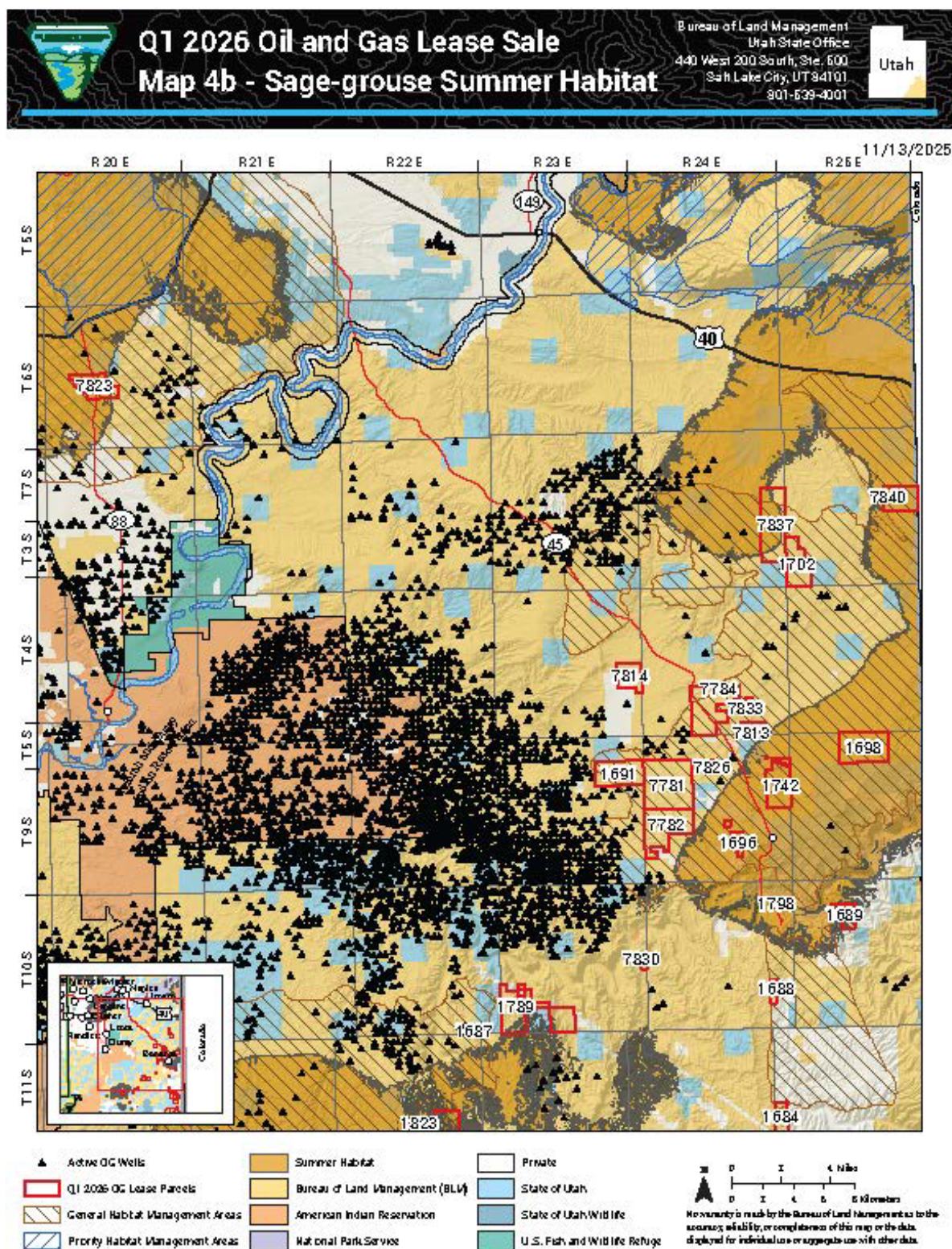


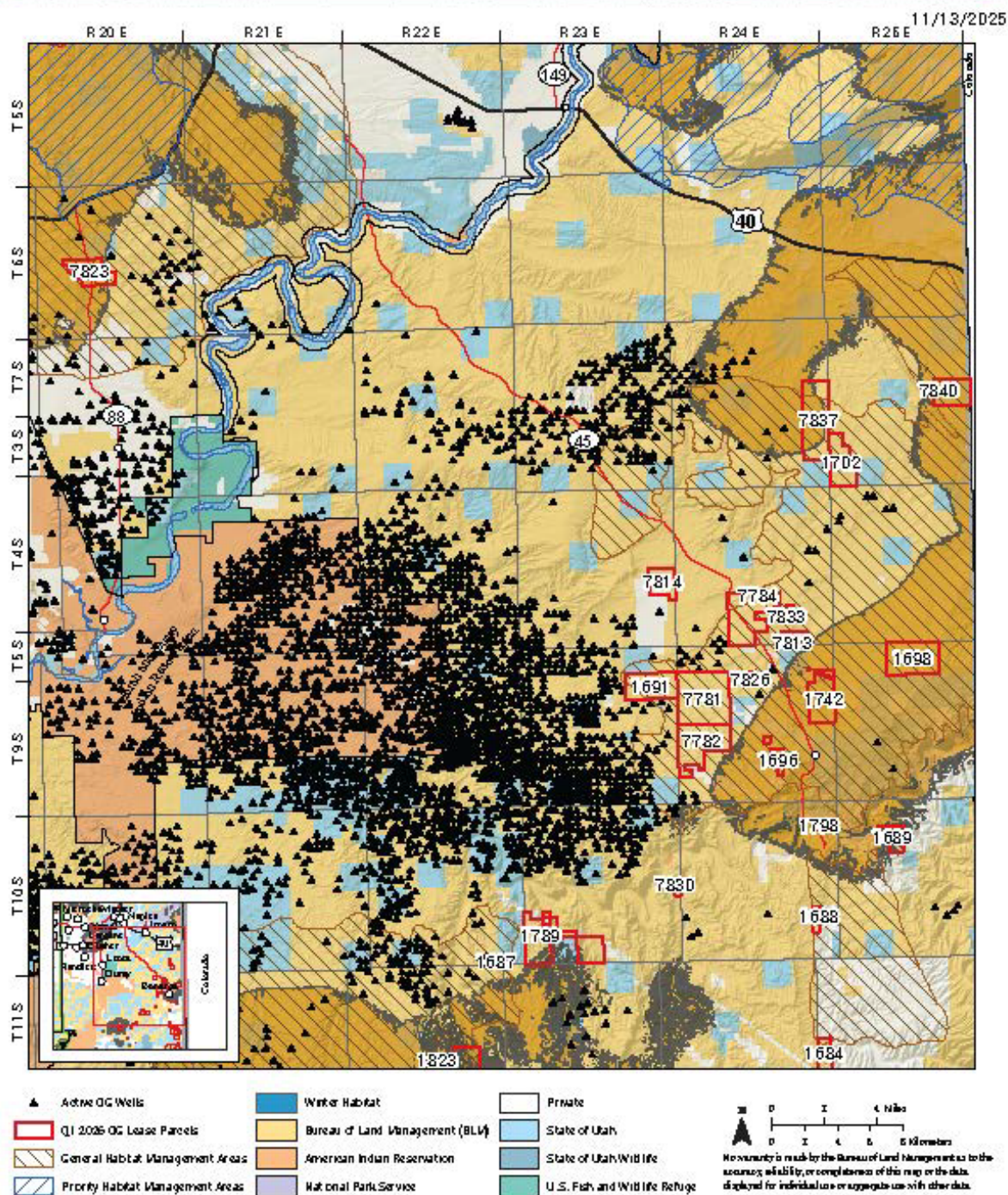












APPENDIX J METHODS USED FOR ESTIMATING NUMBER OF OIL AND GAS WELLS, SURFACE DISTURBANCE AND PRODUCTION VOLUMES

J.1 PRODUCTION AND DISTURBANCE ESTIMATES

The production and disturbance estimate for the first quarter 2026 oil and gas lease sale Environmental Assessment (Lease Sale EA) is based on historical oil and gas development information in Utah. Information from the Bureau of Land Management's (BLM) oil and gas statistics, recent applications for permit to drill (APDs), the S&P Global Enerdeq Browser database, and the Utah Division of Oil and Gas (UDOGM) production reports are used to estimate the number and type of wells, and the potential quantity of oil and gas and water that may be produced from the nominated lease parcels. While future development may not mirror prior development, the historical data provides a reasonable estimate for development that may occur on lease parcels in the absence of development plans from operators.

J.2 ESTIMATE OF THE NUMBER OF WELLS DEVELOPED

The BLM compiles a large amount of statistical information relating to oil and gas leasing on Federal lands (BLM, Programmatic Biological Assessment on Fluid Mineral Development Small Water Depletions of the Upper Colorado River Basin in Utah, 2025). The following website (<https://www.blm.gov/programs-energy-and-minerals-oil-and-gas-oil-and-gas-statistics>) contains tables and spreadsheets with data that include the numbers of BLM-administered oil and gas leases, APDs, and producing oil and gas wells. Information from this website is used to determine the previously issued Federal leases that are held by production and well spacing on these leases. The percentage of leases held by production is determined by dividing the acreage of producing leases by the total leased acreage. Surface Hole Location (SHL) well spacing (SHLs/acre) is determined by dividing the number of Federally producing wells by the acreage of producing leases. In Utah 46.98% of previously issued leases are held by production, and there are 0.0081 wells per acre or 8 wells for every 1,000 producing lease acres based on data from the most recent reporting year (2024). To estimate the number of wells for the nominated lease parcels, the number of nominated lease acres to be offered was multiplied by the percentage of acres currently held by production and the current well spacing per acre.

$$\begin{aligned} \# \text{ Wells} &= \text{Lease Acres Offered} * \text{Current Acres Held by Production} \\ &\quad * \text{Current Well Spacing per Acre} \end{aligned}$$

J.3 ESTIMATE OF OIL AND GAS PRODUCTION

The Estimated Ultimate Recovery (EUR) is determined by analyzing 10-years' worth of production data from the S&P Global Enerdeq Browser database. **Invalid source specified.** database data for oil and gas wells in federal mineral producing states, including Utah. The analysis of the individual wells provided an estimate of the total potential mineral yield, or estimated ultimate recovery (EUR), and the associated decline rates that could be expected from any new wells developed within the authorization scopes analyzed in this report. Enerdeq provides subscription-based access to more than 5 million completions and 2.5 million production entities and provides an adequate sample size for most regions to apply statistical

methods for determining the EUR. The queried data for Utah was scrubbed to eliminate non-target wells (injection, water, etc.) and then organized by region to query the most recent 10-years' worth of production data by individual well. This 10-year query provides individual well production by age, data that is necessary to develop decline curve profiles and provide aggregate production estimates over the life of a well. Oil and gas wells typically produce high quantities of minerals initially, followed by a period of rapid decline that settles into a very shallow decline over the remainder of the well's economic life. The BLM used regression analysis techniques on the production data to generate what would be considered to be an average, or a "typical well" decline equation for wells in each basin lease parcels are located in (Uinta Basin and Paradox Basin). The EUR for each basin was calculated for an estimated life span of 30 years. These EUR volumes are then applied to the estimated number of new wells projected for the applicable authorization boundaries in each region to estimate aggregate or life-of-project GHG emissions.

J.4 ESTIMATE OF PRODUCED WATER

The estimate of produced water from the leases is determined using monthly production report data from the Utah Division of Oil, Gas, and Mining (UDOGM, 2025). These monthly reports contain the monthly, year-to-date, and cumulative total production of oil, gas, and water. Using the 2025 year-to-date production data a ratio of water produced to the number of oil and gas produced can be determined. These ratios are then multiplied by the EUR of oil and gas to determine the amount of water produced from the potential development of lease parcels.

J.5 ESTIMATE OF SURFACE DISTURBANCE

Surface disturbance varies based on the type of well drilled (vertical or horizontal). Vertical wells are assumed to be drilled on a single well pad, and horizontal wells are assumed to be drilled on multi-well pads. Based on agency expertise, the average horizontal well in the Vernal Field Office has a disturbance of 1.5 acres/well (1 acre for the pad and 0.5 for the associated road) and a vertical well has disturbance of 5 acres/well (3 acres for the pad and 2 acres for the road). Historical APD data from 2022 in Utah shows that 71.86% of wells were drilled horizontally and 28.14% were drilled vertically or directionally (BLM, 2015). In Moab and Monticello, all wells are assumed to be drilled on single wells pads, and each well is anticipated to have 8.2 acres of total surface disturbance (3.7 acres for the pad, 3.3 acres for the road, and 1.2 acres for a pipeline) (BLM, 2016).

J.6 ESTIMATE OF REASONABLY FORESEEABLE DEVELOPMENT FOR THE LEASE SALE

Using the above information, estimates of the number of wells developed and surface disturbance is provided in Table 81, and estimates for produced oil, gas, and water are provided in Table 82. Parcel-level surface disturbance and well count estimates are provided in Table 83. The parcel-level estimates are calculated by scaling down from the field office level using the ratio of parcel acreage to total acreage in the field office.

Table 81 Estimated Number of Wells and Surface Disturbance

Field Office	Parcels Offered	Acres Offered	Total Wells	Horizontal Wells	Vertical Wells	Surface Disturbance (Acres)
Vernal	52	66,797.17	254	183	71	629.5
Moab	5	4,789.84	19	14	5	155.8
Monticello	1	120.00	1	1	0	8.2

Table 82 Estimated Ultimate Recovery (EUR) of Oil, Gas, and Water

Field Office	Single Well EUR (Oil bbl)	Single Well EUR (Gas mcf)	Single Well EUR (Water bbl)	Total EUR (Oil bbl)	Total EUR (Gas mcf)	Total EUR (Water bbl)
Vernal	353,559	1,058,911	938,708	89,803,986	268,963,394	238,431,749
Moab	237,510	149,580	445,368	4,512,690	2,842,020	8,461,984
Monticello	237,510	149,580	445,368	237,510	149,580	445,368

Table 83 Surface Disturbance Estimates for Each Parcel

Field Office	Parcel Number	Acres	Wells	Surface Disturbance
Moab	1662	1,161.88	4.6	37.8
Moab	1672	280	1.1	9.1
Moab	1673	1,775.84	7.0	57.8
Vernal	1674	2,240.00	8.5	21.1
Vernal	1678	1,280.00	4.9	12.1
Vernal	1680	2,159.38	8.2	20.4
Vernal	1681	960	3.7	9.0
Vernal	1683	160	0.6	1.5
Vernal	1684	1,151.54	4.4	10.9
Vernal	1687	40	0.2	0.4
Vernal	1688	160	0.6	1.5
Vernal	1689	480	1.8	4.5
Vernal	1691	1,280.00	4.9	12.1
Vernal	1696	280	1.1	2.6
Vernal	1698	1,570.36	6.0	14.8

Field Office	Parcel Number	Acres	Wells	Surface Disturbance
Vernal	1702	1,040.00	4.0	9.8
Vernal	1703	2,080.00	7.9	19.6
Vernal	1705	2,143.95	8.2	20.2
Vernal	1715	2,161.20	8.2	20.4
Vernal	1717	627.88	2.4	5.9
Vernal	1719	1,980.40	7.5	18.7
Vernal	1734	2,467.92	9.4	23.3
Vernal	1742	1,192.34	4.5	11.2
Vernal	1765	2,560.00	9.7	24.1
Vernal	1767	2,520.00	9.6	23.7
Vernal	1789	2,039.04	7.8	19.2
Vernal	1791	2,040.00	7.8	19.2
Vernal	1792	1,280.00	4.9	12.1
Vernal	1798	10	0.0	0.1
Vernal	1799	1,469.52	5.6	13.8
Vernal	1808	1,880.00	7.1	17.7
Vernal	1810	2,040.00	7.8	19.2
Vernal	1815	160	0.6	1.5
Vernal	1816	40	0.2	0.4
Vernal	1817	80	0.3	0.8
Vernal	1818	2,396.72	9.1	22.6
Vernal	1823	80	0.3	0.8
Vernal	1825	1,280.00	4.9	12.1
Moab	7772	412.12	1.6	13.4
Vernal	7778	640	2.4	6.0
Vernal	7779	240	0.9	2.3
Vernal	7781	2,545.7888	9.7	24.0
Vernal	7782	1,748.52	6.6	16.5
Vernal	7784	1,880.00	7.1	17.7
Vernal	7785	2,556.39	9.7	24.1
Vernal	7786	2,236.60	8.5	21.1
Vernal	7793	2,548.24	9.7	24.0
Vernal	7809	1,920.00	7.3	18.1
Vernal	7813	320	1.2	3.0
Vernal	7814	680	2.6	6.4
Vernal	7823	880	3.3	8.3
Moab	7824	1,160.00	4.6	37.7
Monticello	7825	120	1.0	8.2

Field Office	Parcel Number	Acres	Wells	Surface Disturbance
Vernal	7826	120	0.5	1.1
Vernal	7830	120	0.5	1.1
Vernal	7833	120	0.5	1.1
Vernal	7837	1,920.00	7.3	18.1
Vernal	7840	991.38895.38	3.4	8.4

APPENDIX K ABBREVIATIONS AND CONTRIBUTORS

ACHP	Advisory Council on Historic Preservation
ac-ft	acre-foot
AIRFA	American Indian Religious Freedom Act
AMR	Air Monitoring Report
AO	Authorized Officer
AOI	Area of Influence
APD	Application for Permit to Drill
APE	Area of Potential Effects
ARMPA	Approve Resource Management Plan Amendment
bbl	barrel(s)
Bcf	Billion Cubic Feet
BLM	Bureau of Land Management
BSU	Biologically Significant Unit
CAA	Clean Air Act
CAP	Criteria Air Pollutants
CFR	Code of Federal Regulations
CH ₄	methane
CO	carbon monoxide
CO ₂	carbon dioxide

CO ₂ e	carbon dioxide equivalent
COA	condition of approval
CRCT	Colorado River Cutthroat Trout
CSU	Controlled Surface Use
EA	Environmental Assessment
EIA	U.S. Energy Information Administration
EIS	Environmental Impact Statement
EOI	Expression of Interest
EPA	U.S. Environmental Protection Agency
EPCA	Energy Policy and Conservation Act
ESA	Endangered Species Act
EUR	Estimated Ultimate Recovery
FLPMA	Federal Land Policy and Management Act of 1976
FOOGLRA	Federal Onshore Oil and Gas Leasing Reform Act
GHG	Greenhouse Gas
GHMA	General Habitat Management Area
GIS	Geographic information system
GRSG	Greater Sage-grouse
HAP	Hazardous air pollutant
HUD	Hydrologic unit code

IDT	Interdisciplinary team
IRA	Inflation Reduction Act
mcf	Thousand cubic feet
MLA	Mineral Leasing Act of 1920
Mt	Megatonnes
N ₂ O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxide(s)
NORM	Naturally occurring radioactive material
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSO	No surface occupancy
O ₃	Ozone
OHV	Off highway vehicle
PFYC	Potential Fossil Yield Classification
PHMA	Priority Habitat Management Area

PLPCO	Utah Public Lands Policy Coordinating Office
PM _{2.5}	Particulate matter equal to or less than 2.5 microns in diameter
PM ₁₀	Particulate matter equal to or less than 10 microns in diameter
ppb	Parts per billion
ppm	Parts per million
PRPA	Paleontological Resources Preservation Act
PSD	Prevention of significant degradation
RFD	Reasonably foreseeable development
RMP	Resource management plan
ROD	Record of Decision
ROW	Right of way
SE	Socioeconomics
SHPO	State Historic Preservation Office
TMDL	Total Maximum Daily Load
UTLA	Utah Trust Lands Administration
SME	Surface Management Entity
SQM	Sky Quality Meter
SO ₂	Sulfur dioxide
SOP	Standard Operating Procedures
STEO	Short-term energy outlook

T&E	Threatened and Endangered
THPO	Tribal Historic Preservation Office
UDOGM	Utah Division of Oil, Gas, and Mining
UDWR	Utah Division of Wildlife Resources
UDWRi	Utah Division of Water Rights
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VFO	Vernal Field Office
VOC	Volatile organic compound
VRM	Visual Resource Management

NAME	AREA OF EXPERTISE	ORGANIZATION
Alan Bass	Rangeland Resources, Weeds	BLM UTSO
Dave Cook and Cambree Carroll	Wildlife Biologist	BLM UTSO and VFO
April Crawley	Planning and Environmental Specialist	BLM UTSO
Jared Dalebout	Hydrologist	BLM UTSO
Ray Kelsey	National Conservation Lands Program Lead	BLM UTSO
Cassie Mellon	Aquatic Ecologist	BLM UTSO

NAME	AREA OF EXPERTISE	ORGANIZATION
Nathan Packer	Natural Resource Specialist	BLM UTSO
Aaron Roe	Botanist: Threatened and Endangered Species, Vegetation	BLM UTSO
Christine Fletcher	Greater Sage-Grouse Coordinator	BLM UTSO
Bill Stevens	Economist	BLM MbFO
Tylia Varilek	Archaeologist	BLM UTSO
Erik Vernon	Air Quality Specialist	BLM UTSO
Catherine Chachere	Physical Scientist	BLM UTSO
Tyler Elgiar	Natural Resource Specialist	BLM GRDO
Jessica Montcalm	Tribal Liaison	BLM UTSO
Nathan Thomas	Branch Chief for Outdoor and Heritage Resources	BLM UTSO
Georgia Knauss	Regional Paleontologist	BLM UTSO
Dave Jacobson	Outdoor Recreation Planner-Travel and Transportation Lead	BLM UTSO
Jack River	Forester	BLM UTSO