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DOI-BLM-UT-G010-2014-0251-EA

Draft Environmental Assessment QEP Energy Company Proposal to Vertically Drill Twenty-Two Oil Wells in the Ouray Park Field Greater Deadman Bench Project Area Uintah County, Utah October 2014

PREPARING OFFICE

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

DOI-BLM-UT-G010-2014-0251-EA

Draft Environmental Assessment
QEP Energy Company
Proposal to Vertically Drill Twenty-Two Oil Wells in the Ouray Park Field
Greater Deadman Bench Project Area
Uintah County, Utah
October 2014

Prepared by
U.S. Department of the Interior
Bureau of Land Management
Location: Township 7 South, Range 20 East, Sections 1, 2, 3, 10, 11, 12, 13, and 14; Uintah County
Applicant/Address: QEP Energy Company
Vernal, UT

U.S. Department of the Interior

Bureau of Land Management

Vernal Field Office

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Finding of No Significant Impact

Finding of No Significant Impact:

Based on the analysis of potential environmental impacts presented in DOI-BLM-UT-G010-2014–0251–EA, I have determined that the Proposed Action will not have any significant impacts on the environment, and an environmental impact statement is not required.

Signatures:

Recommended by:

Kevin Sadlier Natural Resource Specialist	[Date]

Approved by:

/s/ Jerry Kenczka	10/24/2014
Authorized Officer AFM for Minerals	[Date]

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Decision Record - Memorandum

Selected Action:

It is my decision to approve QEP Energy Company's (QEP's) proposal to develop 22 vertical oils wells on 22 well pads, three Central Processing Facilities, approximately 14.8 miles of new surface pipelines, approximately 10.2 miles of overhead power line, and approximately 7.2 miles of new access roads in Township 7 South, Range 20 East, Sections 1, 2, 3, 10, 11, 12, 13, and 14 of the Ouray Park Field within the Greater Deadman Bench Region, Uintah County, Utah. The selected alternative would result in 168.7 acres of surface disturbance.

This EA provides a site-specific analysis of potential impacts that would result from the implementation of the selected alternative and is tiered to the Greater Deadman Bench Region Final Environmental Impact Statement (BLM 2008a).

Conditions of Approval:

This decision is contingent on meeting all stipulations and monitoring requirements listed below, which were designed to minimize and/or avoid impacts.

Table 1. Applicant-Committed Resource Protection Measures

Resource	Resource Protection Measures
Air Quality	• QEP would keep all internal combustion equipment in good working order. • QEP would use dust suppressants such as water or other approved suppressants at construction sites and along roads, as determined appropriate by the AO. • QEP would not conduct open burning of garbage or refuse at well sites or other facilities. • QEP would install low-bleed pneumatics on separator dump valves and other controllers, which would result in lower VOC emissions. • QEP would limit flaring as much as possible during completion. Production equipment and gathering lines would be installed as soon as possible. • QEP would utilize well site telemetry as feasible for production operations. • Drill rigs would be equipped with Tier II or better diesel engines.
Erosion Control	• QEP would construct well pads and facility sites to prevent overland flow of water from entering or leaving sites through the use of berms, terraces, and grading depressions (BLM 2008c). • Diversion ditches constructed to reroute drainages around well pads would be designed to divert the water back to the original channel. If the water cannot be diverted back to the original channel, then the water would be diverted to the nearest channel with energy dissipating devices installed to prevent channel degradation (BLM 2008c). • Planned access roads and surface-disturbing activities would conform to standards outlined in the BLM and Forest Service publication: *Surface Operating*

Resource	Resource Protection Measures
	Standards for Oil and Gas Development, Gold Book 4th Edition (USDI and USDA 2007) (BLM 2008c).
Visual Resources	• Based on site-specific recommendations from the AO, surface equipment would be painted to blend in with the surroundings. Additionally, all surface equipment on a site (well pad, central tank facility, compressor station) would be painted the same color unless otherwise specified by OSHA (Occupational Safety and Health Administration) (BLM 2008c). The paint color identified during the onsite inspection is Covert Green (BLM 2013). • QEP would avoid, where feasible, the placement of facilities on hilltops or along ridgelines in visually sensitive areas classified as VRM Class III or higher. If facilities could not be relocated off ridgelines or hilltops in visually sensitive areas, QEP would consider the use of tanks with a smaller height as directed by the AO (BLM 2008c). • QEP would avoid the construction of straight-line access roads. Where feasible, access roads would be constructed to follow the natural contours of the landscape (BLM 2008c).
Vegetation	• QEP would monitor and control noxious and invasive weeds along access road use authorizations, pipeline route authorizations, well sites, or other applicable facilities by spraying or mechanical removal. On BLM-administered land, a Pesticide Use Proposal would be submitted and approved prior to the application of herbicides, pesticides, or other hazardous chemical (BLM 2008c). • QEP will work with the AO to monitor the success of interim and final reclamation. QEP and the AO will perform regular inspections on chosen sites reclaimed two years prior. The two-year gap will allow the seed to become established and give the vegetation two full growing seasons for a better measure of success. If QEP and the AO determine the reclamation is not trending in the right direction, remediation will be considered. • Power washing of all construction and drilling equipment would occur prior to the equipment entering the project area from outside the VFO area (BLM 2008c). • QEP would avoid placement of roads, pipelines, well pads, and ancillary facilities within 100 meters of riparian habitats. If avoidance is not feasible, then effects to riparian habitat would be minimized where possible (BLM 2008c).
Wildlife – General	• QEP has committed to construct a containment dike completely around those production facilities which contain fluids (i.e., production tanks, produced water tanks). These dikes would be constructed of compacted impervious subsoil, hold 110% of the capacity of the largest tank, and be independent of the back cut (BLM 2008b).

Resource	Resource Protection Measures
Wildlife – Raptors	● No construction and development activities would occur within 0.25 mile of burrowing owl nests between March 1 and August 31 (BLM 2008b). ● No construction and development activities would occur within 1.0 mile of bald eagle nests between January 1 and August 31 (BLM 2008b). ● If other raptor nests are identified in the Project Area, the protective buffers and timing limitations from the Approved RMP would apply (BLM 2008b). ● Unless otherwise agreed to by the AO in writing, power lines shall be constructed in accordance with the standards outlined in *Suggested Practices for Raptor Protection on Power Lines*, (APLIC 1996). QEP would construct power lines in accordance with these standards or will assume the burden and expense of proving pole designs not shown in the referenced publication are "raptor safe". A raptor expert acceptable to the AO shall provide such proof (BLM 2008c). ● As directed by the AO, QEP would place raptor perch guards on power line poles in areas near sensitive wildlife habitat areas such as sage-grouse leks and prairie dog towns (BLM 2008c). ● Artificial nest platforms will be constructed as directed by the AO within the project area in order to mitigate any unavoidable losses of potential, natural nesting areas (BLM 2008c)
Cultural Resources	● Equipment operators would be informed that if a cultural site is uncovered during construction, activities in the vicinity would immediately cease and the AO would be notified (BLM 2008c).
Paleontological Resources	● QEP has committed to provide a certified paleontological monitor to monitor construction of proposed development at the following locations where scientifically important fossils were identified during surveys: ○ OP 1G-1-7-20 - monitor construction for well pad, access road, and pipeline ○ OP 1G-10-7-20 - monitor construction for well pad, access road, and pipeline ○ OP 2G-1-7-20 - monitor construction for well pad, access road, and pipeline ○ OP 6G-1-7-20 - monitor construction for well pad, access road, and pipeline ○ OP 10G-1-7-20 - monitor construction for well pad, access road, and pipeline ○ OP 13G-11-7-20 – monitor construction for access road and pipeline ○ OP 16G-1-7-20 – monitor beginning of the construction process and thereafter spot monitor ○ CPFs 1 and 2 – monitor construction for pads, access roads, power lines, and pipelines ○ Section 14 - monitor construction for pipelines and power lines ● If paleontological resources are uncovered during ground disturbing activities, QEP would suspend all operations that would further disturb such materials and would immediately contact BLM's AO, who

Resource	Resource Protection Measures
	would arrange for a determination of significance and, if necessary, recommend a recovery or avoidance plan (BLM 2008c)

Rationale:

The subject lands were leased for oil or gas development under authority of the Mineral Leasing Act of 1920, as modified by the Federal Land Policy and Management Act of 1976 and the Federal Onshore Oil and Gas Leasing Reform Act of 1987. The lessee/operator has the right to explore for oil and gas on the lease as specified in 43 CFR 3103.1-2, and if a discovery is made, to produce oil and/or natural gas for economic gain.

The selected alternative meets the BLM's need to acknowledge and allow development of valid existing leases. The BLM objective to reduce impacts is met by the imposing of resource protection measures to protect other resource values.

Land Use Plan Conformance:

The selected alternative is in conformance with the BLM Utah Vernal Field Office Approved Resource Management Plan and Record of Decision (BLM 2008b) and the terms of the applicable leases.

The selected alternative is consistent with the 2011 Uintah County General Plan (County Plan), as amended, that encompasses the location of the proposed project. In general, the County Plan indicates support for development proposals such as the selected alternative through the plan's emphasis on multiple-use public land management practices, responsible use, and optimum utilization (Uintah County 2011).

The State of Utah School and Institutional Trust Lands Administration (SITLA) has leased much of the nearby state land for oil and gas production. Because the objectives of SITLA are to produce funding for the state school system, and because production on federal leases could lead to further interest in drilling on state leases in the area, it is assumed that the selected alternative is consistent with the objectives of the state.

Public Involvement:

The proposed project was posted on the ePlanning NEPA Register on October 8, 2014. No public requests for information on the project or public comments were received.

Alternatives Considered:

The EA analyzed the Proposed Action and No Action Alternatives. Onsite visits were conducted by Vernal Field Office Personnel. As a result of the onsite visits, the access road to well pad OP 9G-14-7-20 was realigned. The access road realignment was incorporated into the Proposed Action. The onsite notes did not identify any alternate locations for proposed facilities to be analyzed in the EA. The No Action Alternative was not selected because it would not best meet the BLMs need to acknowledge and allow development of valid existing leases.

Appeal or Protest Opportunities:

This decision is effective upon the date it is signed by the Authorized Officer. The decision is subject to appeal. Under BLM regulation, this decision is subject to administrative review in accordance with 43 CFR 3165. Any request for administrative review of this decision must include information required under 43 CFR 3165.3(b) (State Director Review), including all supporting documentation. Such a request must be filed in writing with the State Director, Bureau of Land Management, Utah State Office, P.O. Box 45155, Salt Lake City, Utah, 84145-0155, within 20 business days of the date this Decision is received or considered to have been received.

If you wish to file a petition for stay, the petition for stay should accompany your notice of appeal and shall show sufficient justification based on the following standards:

1. The relative harm to the parties if the stay is granted or denied;

2. The likelihood of the appellant's success on the merits;

3. The likelihood of irreparable harm to the appellant or resources if the stay is not granted; and,

4. Whether the public interest favors granting the stay.

Signature:

Authorizing Official:

/s/ Jerry Kenczka	10/24/2014
Authorized Officer	Date

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Acronyms and Abbreviations

AO:
Authorizing Officer

APD:
Application for Permit to Drill

AUM:
Animal Unit Month

bbl:
Barrel

BLM:
Bureau of Land Management

BMP:
Best Management Practice

BOP:
Blow Out Preventer

BTEX:
Benzene, Toluene, Ethylbenzene, Xylene

CERCLA:
Comprehensive Environmental Response, Compensation, and Liability Act

CFR:
Code of Federal Regulations

CIAA:
Cumulative Impact Analysis Area

CO:
Carbon Monoxide

COA:
Condition of Approval

DR:
Decision Record

EA:
Environmental Assessment

EIS:
Environmental Impact Statement

EPA:
Environmental Protection Agency

ESA:
Endangered Species Act

FLPMA:
Federal Land Policy and Management Act

FONSI:
Finding of No Significant Impact

GDBR:
Greater Deadman Bench Region

GHG:
Greenhouse Gas

GIS:
Geographic Information System

GNB:
Greater Natural Buttes

HAP:
Hazardous Air Pollutant

ID:
Interdisciplinary

IM:
Instruction Memorandum

IPC:
Intermountain Paleo-Consulting

kV:
Kilovolt

MBTA:
Migratory Bird Treaty Act

MOU:
Memorandum of Understanding

MSDS:
Material Safety Data Sheet

NAAQS:
National Ambient Air Quality Standards

NASA:
National Aeronautics Space Administration

NEPA:
National Environmental Policy Act

NI:
Not Impacted

NO_2:
Nitrogen Dioxide

NOAA:
National Oceanic and Atmospheric Administration

NO_X:
Nitrous Oxide

NP:
Not Present

NWI:
National Wetlands Inventory

O_3:
Ozone

OHV:
Off-Highway Vehicle

OSHA:
Occupational Safety and Health Administration

PFYC:
Potential Fossil Yield Classification

PGH:
Preliminary General Habitat

PI:
Potentially Impacted

PM:
Particulate Matter

PM_{10}:
particulate matter less than 10 microns in diameter

$PM_{2.5}$:
particulate matter less than 2.5 microns in diameter

ppb:
parts per billion

PPH:
Preliminary Priority Habitat

QEP:
QEP Energy Company

RMP:
Resource Management Plan

ROD:
Record of Decision

ROW:
Right-of-way

SARA:
Superfund Amendments and Reauthorization Act

SHPO:
State Historic Preservation Office

SITLA:
School and Institutional Trust Lands Administration

SO_2:
Sulfur Dioxide

SO_X:
Sulfur Oxides

SPCC:
Spill Prevention, Control, and Countermeasure

SWD:
Salt Water Disposal

TPY:
Tons per Year

U.S.C.:
United States Code

UDAQ:
Utah Department of Air Quality

UDEQ:
Utah Department of Environmental Quality

UDWR:
Utah Division of Wildlife Resources

USFWS:
U.S. Fish and Wildlife Service

USGCRP:
U.S. Global Change Research Program

USGS:
U.S. Geological Survey

VFO:
Vernal Field Office

VOC:
Volatile Organic Compound

µg/m^3:
micrograms per cubic meter

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Chapter 1. Introduction and Need for Proposed Action

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1.1. Introduction

This Environmental Assessment (EA) has been prepared to analyze the potential impacts of a QEP Energy Company (QEP) proposal to develop oil resources within the Ouray Park area of the Greater Deadman Bench Region (GDBR). QEP proposes to construct and operate well pads, vertical oil wells, access roads, Central Processing Facilities (CPFs), surface pipelines, and power lines in Township 7 South, Range 20 East, Sections 1, 2, 3, 10, 11, 12, 13 and 14 in the GDBR in Uintah County, Utah. The EA is a site-specific analysis of potential impacts that would result from the implementation of the Proposed Action or alternatives to the Proposed Action. This EA incorporates analysis from the GDBR Final Environmental Impact Statement (EIS) (BLM 2008a) as indicated. The EA assists the Bureau of Land Management (BLM) in project planning, ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any "significant" impacts would result from the Proposed Action. "Significance" is defined by NEPA and is found in regulation 40 Code of Federal Regulations (CFR) 1508.27. An EA provides evidence for determining whether to prepare an EIS or a Finding of No Significant Impact (FONSI) statement. A FONSI statement briefly presents the reasons why implementation of the selected alternative would not result in "significant" environmental impacts (effects) or "significant" impacts to resources. If the Authorized Officer (AO) determines that this project has "significant" impacts, then the BLM would prepare an EIS for the project. If not, the AO would sign a Decision Record (DR) for the EA approving the selected alternative.

1.2. Purpose and Need for the Proposed Action

The BLM's purpose is to allow QEP to develop its existing federal leases in order to meet domestic demands for oil while also preventing unnecessary or undue degradation to public land. The proposed development would exercise existing lease rights to drill for, extract, remove, and market commercial quantities of oil. The Mineral Leasing Act of 1920, as amended, and the regulations and policies by which it is implemented recognize the right of lease holders to develop federal mineral resources to meet continuing needs and economic demands, so long as unnecessary or undue degradation is not incurred. This includes the right to build and maintain necessary improvements, subject to lease terms and conditions. The lessee has the right to use as much of the leased lands as is necessary to explore, develop, and dispose of the leased resource (43 CFR 3101.1-2) subject to lease terms, conditions, and stipulations.

The BLM's need is to respond to the applicant's proposal while minimizing environmental impacts and preventing unnecessary or undue degradation of the land. The Federal Land Policy and Management Act of 1976 (FLPMA) mandates that the BLM manage public lands on the basis of multiple use [43 United States Code (U.S.C.) § 1701(a)(7)]. Minerals are identified as one of the principal uses of public lands in Section 103 of FLPMA [43 U.S.C. § 1702(c)]. The FLPMA mandates that these uses be permitted in a manner that assures adequate protection of other resource values.

1.3. Conformance with BLM Land Use Plans

The Proposed Action would be in conformance with the BLM Utah Vernal Field Office (VFO) Approved Resource Management Plan (RMP)/Record of Decision (ROD) (BLM 2008b) and the terms of the applicable leases. The RMP/ROD recognizes valid existing rights (RMP/ROD, page 21). The Minerals and Energy Resources Management Objectives encourage the drilling of oil

and gas wells by private industry (RMP/ROD, page 97). The Approved RMP/ROD also allows for processing applications, permits, operating plans, mineral exchanges, and leases on public lands in accordance with policy and guidance. It also allows for management of public lands to support goals and objectives of other resources programs, respond to public requests for land use authorizations, and acquire administrative and public access where necessary (RMP/ROD, page 86). The BLM has determined that the Proposed Action would not conflict with other decisions in the VFO Approved RMP/ROD (BLM 2008b).

1.4. Relationship to Statutes, Regulations, or Other Plans

The Proposed Action and No Action Alternative are consistent with federal, state, and local laws, regulations, and plans (see sections below). Refer to Section 1.5 (pages 1-7 through 1-8) of the GDBR Final EIS (BLM 2008a) for additional information on applicable statutes, regulations, and other policy considerations, and Section 1.8 (pages 1-11 through 1-15) for additional information on permit requirements.

1.4.1. Federal Laws and Statutes

The subject lands were leased for oil or gas development under authority of the Mineral Leasing Act of 1920, as amended, in part, by the FLPMA of 1976, and the Federal Onshore Oil and Gas Leasing Reform Act of 1987.

1.4.2. State and Local Laws and Statutes

There are no comprehensive State of Utah plans for the vicinity of the Proposed Action. The Proposed Action is consistent with the 2011 Uintah County General Plan (County Plan), as amended, that encompasses the location of the Proposed Action. In general, the County Plan indicates support for development proposals such as the Proposed Action through the plan's emphasis on multiple-use public land management practices, responsible use, and optimum utilization (Uintah County 2011).

The State of Utah School and Institutional Trust Lands Administration (SITLA) has leased much of the nearby State land for oil and gas production. Because the objectives of SITLA are to produce funding for the state school system, and because production on federal leases could lead to further interest in drilling on state leases in the area, it is assumed that the Proposed Action is consistent with the objectives of the state.

Utah's Standards for Rangeland Health (BLM 1997) address upland soils, riparian/wetlands, desired and native species, and water quality. These resources are analyzed later in this document or, if not affected, are listed in Appendix A, *Interdisciplinary Team Checklist* (p. 81).

1.5. Identification of Issues

BLM reviewed QEP's proposed activities to assess the type and magnitude of potential impacts to resources and resource uses. A list of all resources considered is contained in Appendix A, *Interdisciplinary Team Checklist* (p. 81). The "Potentially Impacted" (PI) resources, as identified by the BLM, are listed below with issue statements describing the potential impact. These resources are carried forward for description in the Affected Environment section (Chapter 3) and

analysis in the Environmental Impacts section (Chapter 4) of this EA. Resources that the BLM identified as "Not Impacted" (NI) by the Proposed Action or "Not Present" (NP) in the Project Area, as documented in the ID Team Checklist, were not carried forward for detailed analysis.

1.5.1. Air Quality and Greenhouse Gas Emissions

Issue 1: Emissions from earth-moving equipment, vehicle traffic, drilling and completion activities, production operations, daily tailpipe and fugitive dust emissions, and other sources could adversely affect air quality and contribute to greenhouse gas emissions (GHGs).

1.5.2. Invasive Plants/Noxious Weeds, Soils, and Vegetation

Issue 1: Development of well pads, CPFs, pipelines, access roads, and power lines would result in an estimated 168.7 acres of surface disturbance on BLM administered lands until interim reclamation is successful, which would result in the potential spread and establishment of invasive plants and noxious weeds.

Issue 2: Development of well pads, CPFs, pipelines, access roads, and power lines would result in an estimated 168.7 acres of surface disturbance on BLM administered lands until interim reclamation is successful, which would result in direct and indirect impacts to vegetation and soils.

1.5.3. Livestock Grazing and Rangeland Health Standards

Issue 1: The Proposed Action would result in approximately 17.5 acres of surface disturbance in the Ouray Valley allotment and 192.8 total acres (151.3 acres on BLM-administered lands and 41.5 acres on State land) of surface disturbance in the Twelve Mile allotment that could reduce the quantity and quality of forage, fragment the allotments, increase potential for vehicle/livestock collisions, increase potential for damage to range improvements, and result in other potential impacts to livestock operators and the ability of allotments to meet rangeland health standards.

1.5.4. Paleontology

Issue 1: Class III Paleontological surveys conducted for proposed development locations identified scientifically important fossil locations in survey areas for eight proposed well pad locations (seven on BLM-administered lands, one on State land), two proposed CPFs (one on BLM-administered lands, one on State land), and one area of proposed pipelines and power lines in Section 14. Proposed development at these locations could result in direct and indirect impacts to paleontological resources.

1.5.5. Wildlife

Non-USFWS Designated

Issue 1: Activities associated with the Proposed Action may have adverse effects on general wildlife species and water depletions could affect fish species and fisheries including BLM sensitive species and State of Utah species of concern in the Colorado River Basin. Proposed development overlaps existing white-tailed prairie dog colonies, Utah Division of Wildlife

Resources (UDWR)-designated pronghorn and mule deer crucial yearlong habitat, and yearlong substantial mule deer habitat.

Migratory Birds (including raptors)

Issue 2: Migratory birds and raptors, including bald eagle roosts and burrowing owl habitat, are present in or in close proximity to the Project Area and could be affected by surface disturbance and other project-related activity.

Threatened, Endangered, Proposed or Candidate Wildlife Species

Issue 3: The greater sage-grouse is a U.S. Fish and Wildlife Service (USFWS) candidate species, a wildlife species of concern by the UDWR, and a BLM sensitive species. The Project Area overlaps greater sage-grouse brood rearing habitat and occupied habitat, which is identified as Preliminary Priority Habitat (PPH) in BLM IM 2012-043. Proposed well pads, pipelines, power lines, and CPFs would overlap sage-grouse PPH.

Issue 4: Four endangered fish species are historically associated with the Upper Colorado River Basin and its tributaries. Fresh water used for drilling, completion, and dust suppression activities associated with the Proposed Action would contribute to new water depletions of the Colorado River Basin that could affect these federally listed fish species.

Chapter 2. Description of Alternatives

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2.1. Introduction

This chapter provides a description of the Proposed Action and No Action Alternative. No additional action alternatives have been identified. This EA considers a No Action Alternative to provide a baseline for comparison of the impacts of the Proposed Action. The Proposed Action integrates the terms and conditions in the GDBR ROD (BLM 2008b).

2.2. Proposed Action

QEP proposes to develop oil resources on BLM-administered land in Township 7 South, Range 20 East, Sections 1, 2, 3, 10, 11, 12, 13 and 14 within the Ouray Park area of the GDBR, Uintah County, Utah (Figure 2.1, "General Location and Proposed Action" (p. 16)). Proposed facilities include well pads for drilling vertical wells, access roads, CPFs, surface pipelines, and power lines.

The Proposed Action would result in an estimated 210.2 acres of surface disturbance, including 168.7 acres of surface disturbance on BLM-administered land and 41.5 acres of surface disturbance on State land[1]. Specifically, QEP's Proposed Action includes the following components, as depicted on Figure 2.1, "General Location and Proposed Action" (p. 16) and described in Table 2.1, "Proposed Action Development and Surface Disturbance" (p. 16):

- Vertical drilling of up to 22 new oil wells from 22 new single-well pads on BLM-administered land resulting in 72.2 acres of surface disturbance (Table 2.1, "Proposed Action Development and Surface Disturbance" (p. 16), Table B.1, "Surface Disturbance on BLM-administered Land (acres)" (p. 96)). Vertical drilling of up to six new oil wells from six new single-well pads on State land resulting in 16.0 acres of surface disturbance (Table 2.1, "Proposed Action Development and Surface Disturbance" (p. 16)) [1].
- Development of three CPFs on BLM-administered land resulting in 9.2 acres of surface disturbance (Table 2.1, "Proposed Action Development and Surface Disturbance" (p. 16)) and development of one CPF on State land resulting in 2.8 acres of surface disturbance (Table 2.1, "Proposed Action Development and Surface Disturbance" (p. 16)).
- Installation of approximately 14.8 miles of surface pipelines on BLM-administered land and 6.3 miles of surface pipelines on State land.[2,3]
- Installation of approximately 10.2 miles of new overhead power lines (62.0 acres of surface disturbance) on BLM-administered land and 3.5 miles (21.0 acres of surface disturbance) of power lines on State land [3].
- Development of approximately 7.2 miles of access roads (25.3 acres of surface disturbance) on BLM-administered land and 0.5 miles of new access roads (1.7 acres of surface disturbance) on State land.

[1] Proposed well pads, CPF 2, and linear infrastructure (e.g., roads, pipelines, power lines) these facilities on State land are dependent on pipelines, transmission lines, and access roads on BLM-administered land that are analyzed in this EA.
[2]Installation of the proposed surface pipelines would not require clearing or blading of vegetation. As a result, there would be no new surface disturbance associated with installation of the surface pipelines.
[3]In addition to the 22 proposed wells, proposed power lines and pipelines would connect five producing wells on BLM-administered lands that were approved under prior EA(s)/FONSI(s).

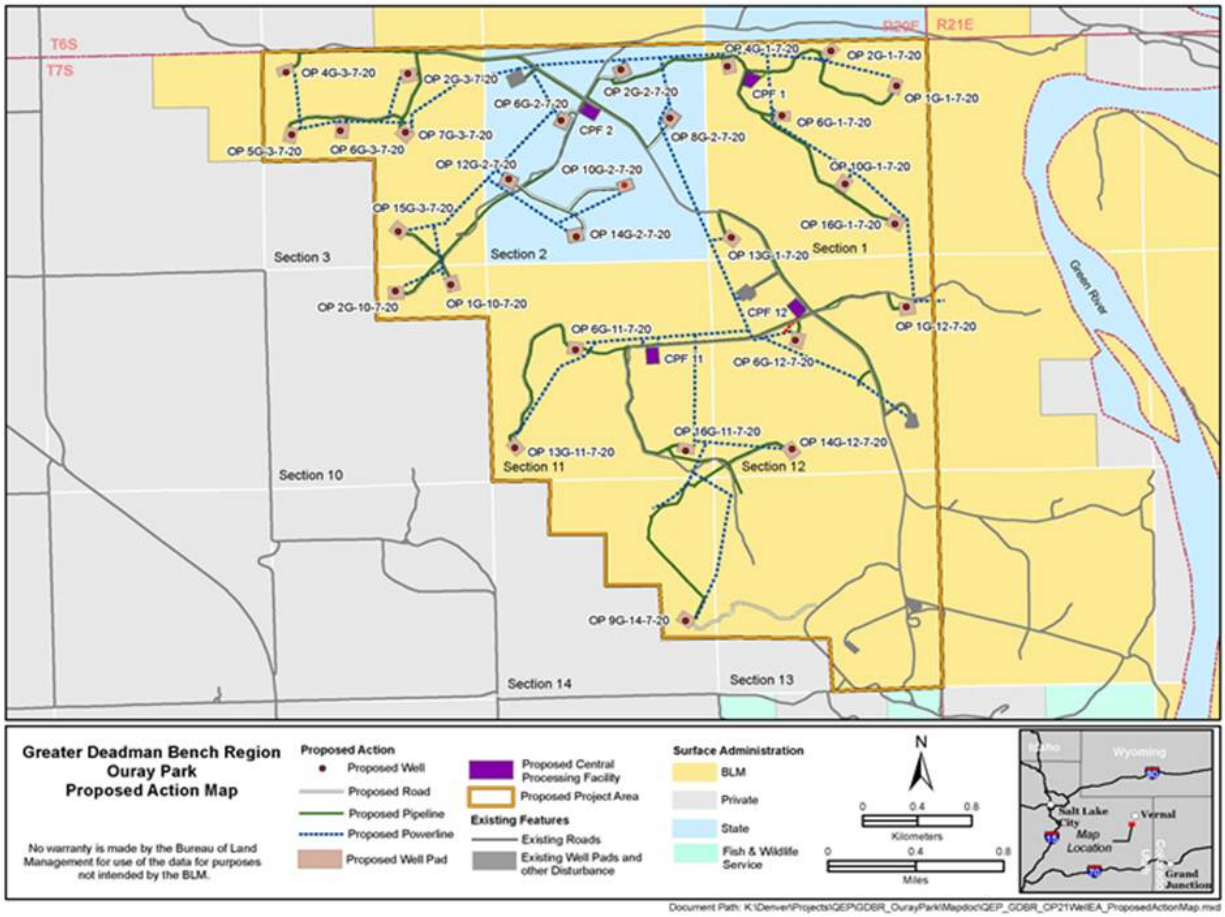

Figure 2.1. General Location and Proposed Action

Table 2.1. Proposed Action Development and Surface Disturbance

Feature	BLM-administered Land Total	State Land Total	Project Area Total[1]
Well Pads and Central Processing Facilities			
Number of Proposed New Vertical Oil Wells on New Single-Well Pads	22	6	28
Proposed New Well Pad Disturbance (acres)	72.2	16	88.2
Number of Proposed New CPFs	3	1	4
Proposed New CPF Disturbance (acres)	9.2	2.8	12.0
Existing Well Pads and Other Disturbance (acres)[2]	8.1	3.0	11.1
Access Roads			
Proposed New Roads (miles)	7.2	0.5	7.7
Proposed New Road Disturbance (acres)[3]	25.3	1.7	27.0
Existing Roads (miles)[4]	9.0	2.8	11.8

Feature	BLM-administered Land Total	State Land Total	Project Area Total[1]
Existing Road Disturbance (acres)[4]	32.7	10.3	43
Pipelines[5]			
Proposed New Surface Pipelines (miles)	14.8	6.3	21.1
Proposed New Surface Pipelines Disturbance (acres)[6]	0	0	0
Power Lines			
Proposed New Power Lines (miles)	10.2	3.5	13.7
Proposed New Power Line Disturbance (acres)[7]	62.0	21.0	83.0
Surface Disturbance Totals			
Total New Surface Disturbance (acres)	**168.7**	**41.5**	**210.2**
Total Existing Disturbance (acres)	**40.8**	**13.3**	**54.1**
Total Disturbance including Existing and Proposed Development in the Project Area[8] (acres)	**209.5**	**54.8**	**264.3**
Total Acres of New Long-Term Disturbance (acres)[9]	**41.8**	**5.8**	**47.6**

Source: Applications for Permit to Drill (on file with the BLM).
Note: Refer to Table B.1, "Surface Disturbance on BLM-administered Land (acres)" (p. 96) for a description of surface disturbance by proposed development location on BLM-administered Land.

[1] The Project Area is defined as the full extent of BLM and State land within U.S. Geological Survey (USGS) quadrangle sections that intersect Proposed Action features.
[2] Existing well pad and other disturbance totals includes all existing well pads and other existing surface disturbance in the Project Area digitized based on aerial imagery.
[3] Disturbance for proposed access roads are as reported in the Applications for Permit to Drill (APDs). Access roads would be located within a 30-foot wide temporary construction corridor.
[4] Existing road mileage and surface disturbance totals for roads includes total existing miles and acreage of roads in the Project Area. This total also includes other linear surface disturbance digitized based on aerial imagery.
[5] Existing data for buried pipelines in the Project Area is unavailable. Aerial imagery was used to digitize existing surface disturbance in the Project Area and all disturbance from linear scarring/disturbance is included under existing disturbance for access roads.
[6] Installation of surface pipelines would not require blading or clearing of vegetation. As a result, this EA assumes no surface disturbance associated with existing surface pipelines or installation of proposed surface pipelines.
[7] Assumes surface disturbance within a 50-foot wide temporary construction corridor.
[8] Long-term surface disturbance is based on the well pad reclamation estimates included in the APDs, no interim reclamation at CPFs, an 18-foot permanent running surface for new roads, and full reclamation of corridors for power lines during interim reclamation.
[9]Long-term surface disturbance for wells on State land is estimated based on an average of 0.78 unreclaimed acres per well on BLM-administered land.

2.2.1. Construction and Disturbance

The applications for permit to drill (APDs) and plans of development (PODs) submitted to the BLM describe the location and layout of proposed facilities. Site-specific conditions may require slight deviations from what is described in the APDs and PODs; however, QEP would not exceed the amount of surface disturbance described in the APDs and PODs, and analyzed in this EA. The construction of project components under the Proposed Action would result in an estimated 210.2 acres of surface disturbance, including 168.7 acres of surface disturbance on BLM-administered land, as described in Table 2.1, "Proposed Action Development and Surface Disturbance" (p. 16).

2.2.2. Access Roads

The Proposed Action would include the construction of new access roads as described in Table 2.1, "Proposed Action Development and Surface Disturbance" (p. 16). QEP would construct access roads within a 30-foot wide temporary construction corridor and the permanent running surface of the access roads would be 18 feet wide. QEP would limit surface disturbance for construction to the 30-foot wide construction corridor, and limit vehicular traffic to the approved 18-foot permanent running surface.

QEP would gravel or cap the roadbed as necessary to provide well-constructed and safe roads. Should conditions warrant, QEP would install rock, gravel, or culverts along the proposed access roads. Culverts and low water crossings proposed for access to well pads are summarized in Table 2.2, "Culverts and Low Water Crossings Proposed for Access to Well Pads" (p. 18) below. QEP would install cattle guards on the access road to well pads OP 9G-14-7-20 and OP 13G-11-7-20.

Table 2.2. Culverts and Low Water Crossings Proposed for Access to Well Pads

Well Pad	18" Culvert (No.)	24" Culvert (No.)	36" Culvert (No.)	Low Water Crossing (No.)
OP 1G-1-7-20	2	1	2	-
OP-1G-10-7-20	3	-	-	-
OP 1G-12-7-20	2	-	-	-
OP 2G-1-7-20	2	2	1	-
OP 4G-1-7-20	4	2	-	2
OP 5G-3-7-20	4	-	2	-
OP 6G-1-7-20	1	3	-	-
OP 6G-3-7-20	2	-	-	-
OP 6G-11-7-20	1	-	-	-
OP 7G-3-7-20	1	-	-	-
OP 9G-14-7-20	2	-	1	-
OP 10G-1-7-20	4	3	-	1
OP 13G-1-7-20	2	-	-	-
OP 13G-11-7-20	3	-	-	3
OP 14G-12-7-20	2	-	-	-
OP 15G-3-7-20	1	-	-	1
OP 16G-1-7-20	-	1	-	1
OP 16G-11-7-20	1	-	-	-
Total	**37**	**12**	**6**	**8**
Source: Applications for Permit to Drill (on file with the BLM).				

In accordance with Onshore Order #1, QEP would, using Best Management Practices (BMPs), improve or maintain existing roads to a condition that is the same as or better than before operations began. QEP would maintain roads until final abandonment and reclamation of well pads and/or other facilities is complete. QEP would maintain the road surface and shoulders in a safe and usable condition, and roads would be maintained in accordance with the original construction standards. Road maintenance would include, but not be limited to, blading, ditching, culvert installation and cleanout, gravel surfacing (where excessive rutting or erosion may occur) and dust control, as necessary to ensure safe operating conditions. QEP would conduct snow removal on roads on an as-needed basis to accommodate safe travel. When snow is removed from the road during the winter months, the snow would be pushed outside of the borrow ditches, and the turnouts kept clear so that snowmelt would be channeled away from the road.

QEP would employ construction BMPs and the Conditions of Approval (COAs) listed in the GDBR Final EIS (BLM 2008a) and ROD (BLM 2008b) to control onsite and offsite erosion, and keep disturbed areas along access roads free of trash during operations.

QEP would construct road drainage crossings consistent with the typical dry creek drainage crossing type and consistent with road construction practices in the BLM VFO RMP and ROD (BLM 2008c). The crossing design would control excess siltation, accumulation of debris and blockage in any drainages.

2.2.3. Power Lines

As part of the Proposed Action, QEP is proposing to construct 13.7 miles (10.2 miles on BLM-administered land and 3.5 miles on State land) of 14.4 to 24.9 kilovolt (kV) overhead power lines. The power lines would provide electrification of the well sites and CPFs in the Ouray Park Field. QEP would install the overhead power lines from the take point on the Moon Lake power line (located next to the OP 4G-2-7-20 well pad) to each well and CPF in the Project Area (Figure 2.1, “General Location and Proposed Action” (p. 16)). All main power lines would be 24.9 kV; power lines connecting well pads and CPFs to the main lines would be 14.4 kV. QEP would install power line transformers at each well pad and CPF.

QEP would install power lines above ground within a 50-foot wide permanent corridor, on 40- to 45-foot tall Class 4 wood poles with an 11-inch base. QEP would treat wood poles with Benta. The span between poles would average 300 feet for a total of 222 poles. Installation of the poles would include drilling a hole to a depth of approximately six feet using a conventional digger truck with an 18-inch auger. QEP would use guy wires and anchors to install the poles within the 50-foot wide permanent corridor. QEP would install marker balls on main roads where necessary and implement the applicant-committed resource protection measures for raptor protection that are listed in Table 1, “Applicant-Committed Resource Protection Measures” (p. 28).

Access for construction and maintenance of the proposed power lines would be from existing roads and along the authorized access corridor. QEP would not construct access roads for power line maintenance. QEP would own and operate the power lines. The power lines would operate year round and the authorized access is requested for a minimum term of 30 years. Due to the relatively low voltage of the proposed power lines, corrosion of collocated pipelines is not anticipated.

2.2.4. Well Pad Construction

A Location Layout Diagram describing drill pad cross-sections, cuts and fills, and locations of mud tanks, reserve pits, flare pit or flare box, pipe racks, trailer parking, spoil dirt stockpiles, and the surface material stockpiles were included with the APDs. QEP would locate the flare pit or flare box on the well pad downwind from the prevailing wind direction.

Well pad construction would start with vegetation clearing and topsoil stripping to a depth determined by the BLM. Based on the onsite forms (BLM 2013), QEP would save six inches of topsoil for subsequent reclamation. QEP would stockpile excess soil and brush removed from the well pad in an area adjacent to the proposed well pads, which would be saved for future reclamation of the well pad. Construction materials for the well pads would include native sand/soil/rock materials present in the area. QEP would use standard cut-and-fill techniques using a bulldozer, grader, front-end loader, or backhoe to level the well pads. QEP would divert drainages that cross the well location around the well pad by using ditches, water diversion drains or berms. Refer to Figure 2.1, "General Location and Proposed Action" (p. 16) and Table 2.1, "Proposed Action Development and Surface Disturbance" (p. 16) for the locations of the proposed well pads and associated surface disturbance.

2.2.5. Drilling and Completion Operations

QEP would conduct drilling operations in compliance with all Federal Oil and Gas Onshore Orders, all State of Utah Division of Oil, Gas, and Mining rules and regulations, and all applicable local rules and regulations.

The drilling operation would generally be conducted in two phases. The first phase would utilize a small drilling rig (similar in type to a water well drilling rig) to drill to a depth of approximately 600 to 1,000 feet. The surface hole would be cased with steel casing and cemented in place entirely from about 600 to 1,000 feet up to the surface. The BLM would be notified in advance of running surface casing and cement in order to witness these operations, if so desired. This part of the drilling operation would normally take two to three days to complete. Drillers would install a Blow Out Preventer (BOP) on the surface casing and test it and the surface casing for pressure integrity prior to the second phase of drilling. The BOP and related equipment would meet the minimum requirements of Onshore Oil and Gas Order No. 2, and the BLM would be notified in advance of all pressure tests in order to witness these tests if so desired. During the second phase, a larger drilling rig would drill the remainder of the hole to a depth of approximately 10,000 feet.

Drillers would run and cement steel production casing in place from surface to approximately 5,000 to 7,000 feet, in accordance with the well design, the drilling program included in the APDs, and in accordance with applicable COAs. QEP would re-test the BOP equipment prior to drilling the final section of the well below this intermediate casing point. Upon drilling the hole to the total depth, a series of logging tools would be run in the well to evaluate the potential hydrocarbon resource. If the evaluation concludes that adequate hydrocarbon resources are present and recoverable, then steel production casing would be run to total depth and cemented in place in accordance with the well design, the drilling program included in the APDs, and in accordance with applicable COAs. The casing and cementing program were designed to isolate and protect the various formations encountered in the wellbore and to prohibit pressure communication or fluid migration between zones.

Once production casing has been cemented in place, the drilling rig would be removed, and a completion rig would be moved in. The well completion would consist of running a cement bond log to evaluate the cementing integrity and to correlate (on depth) the cased hole logs to the open hole logs, perforating the casing across the hydrocarbon producing zones, and then a stimulation treatment of the formation to enhance its transmissibility of oil and gas. The typical stimulation in the area is a hydraulic fracture treatment of the reservoir, where a slurry of sand suspended in a viscous fluid (gelled water) is pumped into the producing formation with sufficient hydraulic horsepower to fracture the rock formation. The sand serves as a proppant to keep the created fracture open, thereby allowing reservoir fluids to move more readily into the well.

As indicated in the well site layouts included in the APDs, QEP would excavate reserve pits at the proposed well pad locations. The primary purpose of the reserve pits would be to receive the drill cuttings from the wellbore (mainly shale, sand, and miscellaneous rock minerals). A secondary purpose of the reserve pits would be to contain drilling fluids carried over with the cuttings and fluids that are periodically discharged from the rig's steel tanks (usually to flush out cuttings that have settled in the tanks). The reserve pit would not contain any hazardous substances.

QEP would construct the reserve pits on the well pad locations and the pits would not be located within natural drainages where a flood hazard exists or surface runoff could destroy or damage the pit walls. QEP would construct the reserve pits so that it would not leak, break, or allow discharge of liquids and the pits would be lined with a synthetic reinforced 30-millimeter liner, and a felt liner if bedrock is encountered. The liner would overlap the pit walls and be covered with dirt and/or rocks to hold the liner in place. QEP would post warning signs and construct fences around reserve pits as directed by the AO and required by regulations to prevent unauthorized access and to alert staff and public land users to potential hazards in the area.

QEP would fence any open pits during operations according to the following minimum standards. The reserve pits would be fenced and maintained until they are backfilled.

- Thirty-nine inch new wire would be used with at least one strand of barbed wire on top of the net wire. Barbed wire is not necessary if a pipe or some type of reinforcement rod is attached to the top of the entire fence.
- The net wire would be no more than two inches above the ground.
- The barbed wire would be three inches over the net wire.
- Total height of the fence would be at least 42 inches.
- Corner posts would be cemented and/or braced in such a manner as to keep the fence tight at all times.
- Standard steel, wood, or pipe posts would be used between the corner braces; the maximum distance between any two fence posts would be no greater than 16 feet.
- All wire would be stretched using a stretching device before it is attached to corner posts.

QEP would fence the reserve pit on three sides during drilling operations and put the fourth side in place when the rig moves off location. QEP would fence and maintain the reserve pit until it is backfilled.

Upon termination of drilling and completion operations, the liquid contents of the reserve pit would be used at the next drill site or would be removed and disposed of at an approved waste disposal facility within six months after drilling is terminated. Upon well completion, any hydrocarbons in the pit would be removed in accordance with 43 CFR 3162.7-1.

2.2.6. Production

If the wells prove productive, QEP would install production facilities on the permanent portions of the well pad locations. Wells would initially be constructed as independent well locations. Product would be contained in two 500-barrel (bbl) tanks and then transported from the location to a delivery site.

QEP would construct containment dikes completely around production facilities that contain fluids (i.e., production tanks, produced water tanks). QEP would construct these dikes using steel and road base to hold 110 percent of the capacity of the largest tank and they would be independent of the back cut. QEP would not use topsoil for the construction of these dikes. QEP would place all loading lines inside the berm surrounding the tank batteries. All permanent (on site six months or longer) above the ground structures constructed or installed, including pumping units, would be painted Covert Green.

QEP anticipates that production facilities to centrally gather and process production from multiple wells on the same lease would be constructed 12 to 18 months after initial well drilling and completion, as described in Section 2.2.7, "Central Processing Facilities and Pipelines" (p. 22).

2.2.7. Central Processing Facilities and Pipelines

The Proposed Action includes construction of four new CPFs, including three new CPFs on BLM-administered land and one on state land (Figure 2.1, "General Location and Proposed Action" (p. 16)). CPFs would separate saleable oil from produced water from the proposed well pads. Equipment located at each CPF would include oil tanks, separators, station pumps, and boilers. Each CPF would also have a trace system that runs to each proposed well serviced by the CPF. The average trace system would hold approximately 60 bbl of glycol/water mix. Trace fluid would be heated at the CPF and circulated to and from each well location through surface pipeline to keep the oil heated allowing the oil to flow through the pipelines. The four proposed CPFs would require an average of 3.0 acres of surface disturbance per CPF.

The Proposed Action would include a network of surface pipelines for transport of gas, oil, and liquids between well locations, CPFs, and the existing pipeline gathering systems in the GDBR. The Proposed Action does not include buried pipelines. QEP would install a surface pipeline bundle between proposed well locations and the CPFs for gathering and transport of oil, gas, and water between CPFs and proposed wells. QEP would install a surface fuel gas pipeline in the same corridor as the surface pipeline bundle to supply fuel gas for pumping units, line heaters, and other burners in the Project Area. QEP would also install surface pipelines from the proposed CPFs to the existing pipeline gathering system in the GDBR.

The surface pipelines would consist of the following:

- A single bundle of pipes consisting of multiple two-inch pipelines, a four-inch or smaller pipeline, and two 1¼-inch pipelines that QEP would insulate and cover with tin. The pipeline descriptions and purposes are as follows:
    - Two-inch SCH 40 steel pipelines would be used for a test pipeline from each well to a CPF for testing a well individually.

  - Four-inch SCH 40 steel pipelines would be used as bulk pipelines to gather and transport production from multiple wells to a CPF.

  - 1¼-inch SCH 40 pipelines would be used to transport hot glycol or water to heat trace the bundle in order to maintain appropriate operating temperatures to keep production moving to the CPF.

- A three-inch or smaller poly pipeline would be installed in order to transport fuel gas to pumping units, line heaters, and burners where necessary. This line would follow the same route as the bundle of pipe listed above.

- A four-inch or smaller surface SCH 40 steel pipe would be installed to transport sales gas from the CPF to the main gas gathering system in the field.

QEP would string pipelines along the proposed route and weld them in place. After all the piping has been welded in place, QEP would bundle the lines and cover them with tin and insulation. Where necessary, the pipe bundle would be placed on stands or blocks for safety and or operational necessity. QEP would not clear or blade vegetation during installation of the surface pipelines.

QEP is proposing a 30-foot permanent authorized access for all pipelines. All lines would follow existing or planned roads, except where topography and or lease boundaries do not allow. QEP would bury all pipeline road crossings to a minimum of 36 inches below the borrow area. The pipelines would operate year round and the authorized access is requested for a minimum term of 30 years.

QEP would paint all permanent, aboveground facilities, buildings, valving and metering, not subject to safety requirements, a flat non-contrasting color which simulates “standard environmental colors.” The color suitable for this site is Covert Green.

2.2.8. Water Supply

QEP would obtain fresh water for drilling and completion operations from Wonsits Valley Water Right No. 49-251 (filed May 7, 1964) or Red Wash Water Right No. 49-2153 (filed March 25, 1960). QEP would haul water to well pad locations using existing roads and the proposed new access roads as described in Section 2.2.2 (*Access Roads*). In accordance with Instruction Memorandum (IM) FWS/R6 FR-ES 2006, *Programmatic Water Depletion Biological Opinion for Oil and Gas Development Administered or Permitted by the Bureau of Land Management* (USFWS 2006) and the USFWS Section 7 Agreement from 1993 (USFWS 1993), these water rights were issued prior to January 1988 and are considered historic depletions; therefore, QEP will not be required to pay a depletion fee to the Recovery Program. Also, consultation for water depletions was completed under the GDBR Final EIS (BLM 2008a). Water use per well is estimated at 2.58 acre-feet, resulting in a total estimated water use of 72.2 acre-feet for the Proposed Action, including 22 proposed wells on BLM-administered land and six proposed wells on state land (Davis 2014).

2.2.9. Waste Disposal

QEP would handle all wastes subject to regulation in compliance with applicable laws to minimize the potential for leaks or spills to the environment.

All refuse (i.e., trash and other solid waste including cans, paper, cable, etc.) generated during construction, drilling, completion, and well testing activities would be contained in a portable, self-contained, fully-enclosed trash cage during operations. QEP would not burn trash on location. All debris and other waste material not contained in the trash cage would be cleaned up and removed from the location immediately after removal of the drilling rig. QEP would haul all trash and waste material by truck to the Uintah County Landfill.

QEP would provide portable, self-contained chemical porta-toilets for human waste disposal. Upon completion of operations, or as needed, QEP would pump the toilet holding tanks and haul the contents to Ashley Valley Sewer and Water System for disposal. QEP would observe all applicable regulations pertaining to disposal of human and solid wastes.

2.2.10. Produced Water Disposal

Where necessary, and if conditions allow (i.e., freeboard, etc.), produced liquids (e.g., produced water) from newly completed wells may be temporarily disposed of into pits for a period not to exceed 90 days as per Onshore Order No. 7. After the 90 days, any produced water from the proposed wells would be contained in a water tank and would then be hauled by truck to third party surface evaporative pits or one of the following pre-approved disposal sites:

- Red Wash Disposal well located in SESE, Section 28, Township 7 South, Range 23 East.
- West End Disposal located in NESE, Section 28, Township 7 South, Range 22 East.
- NBE 12 SWD-10-9-23 located in the NWSW, Section 10, Township 9 South, Range 23 East.

QEP would not apply produced water, oil, and other byproducts to roads or well pads for the control of dust or weeds. QEP would not dump produced fluids on roads, well sites, or other areas.

2.2.11. Hazardous Materials

No chemicals subject to reporting under Superfund Amendments and Reauthorization Act (SARA) Title III (hazardous materials) in an amount greater than 10,000 pounds would be used, produced, stored, transported, or disposed of annually in association with the drilling, testing, or completing of wells. Furthermore, extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities, would not be used, produced, stored, transported, or disposed of in association with the drilling, testing, or completing of the proposed wells. QEP's Vernal, Utah Field Office maintains a file containing current Material Safety Data Sheets (MSDS) for all chemicals, compounds, and/or other potentially hazardous substances that would be used during construction, drilling, completion, production and gas gathering operations in the GDBR.

QEP would develop drilling and operational plans that cover potential emergencies including fire, employee injuries, chemical releases, and spill prevention. QEP and its contractors would comply with all applicable federal laws and regulations existing or hereafter enacted or promulgated governing the location, handling and storage of hazardous substances. QEP and its contractors would locate, handle, and store hazardous substances in an appropriate manner that prevents them from contaminating soil and water resources or otherwise sensitive environments. Any release of hazardous substances (e.g., leaks, spills, etc.) in excess of the reportable quantity as established by 40 CFR, Part 117, would be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended. If the release of a hazardous

substance in a reportable quantity would occur, QEP would provide a copy of a report to the BLM's AO and all other appropriate federal and state agencies.

QEP has evaluated its overall field operations within the GDBR and has prepared and implemented Spill Prevention, Control and Countermeasure (SPCC) Plans. The plans include accidental discharge reporting procedures, spill response and cleanup measures, and maintenance of dikes, and copies are kept at QEP's Vernal, Utah field office as well as the Denver, Colorado office. A Hazardous Communication Program also is kept at QEP's Vernal field office, and SARA Title III (community right to know) information is submitted yearly as required and copies are kept in QEP's Denver office, as well as in QEP's Vernal office.

2.2.12. Invasive Plants/Noxious Weeds

QEP will be responsible for noxious and invasive weed control from all project activities for the life of the project. If use of herbicides is deemed necessary, a Pesticide Use Proposal would be submitted for approval to the BLM. QEP would only use herbicides in the season or growth stage during which they are most effective. Herbicides would be applied only by certified personnel using approved precautionary and application procedures in compliance with all applicable federal, state, and local regulations. QEP would not use herbicides within 100 feet of open water or during extremely windy conditions. Aerial application of herbicides would be prohibited within 0.25 mile of known special status plant species locations, and hand application of herbicides would not occur within 500 feet of such occurrences. QEP would use certified weed-free seed mixtures and mulches minimizing the potential for noxious weed introduction. Where feasible, QEP would consider mowing as an alternative to herbicide applications. QEP would conduct mowing prior to seed head establishment or bloom.

QEP would implement a weed control program for all existing and proposed access roads, pipeline rights-of-way (ROWs), and well pads. Weed control would include annual treatments that are monitored and continued until desirable vegetation out-competes invasive or noxious weeds.

For additional information on management of invasive plants and noxious weeds, refer to QEPs Reclamation Plan for the Uinta Basin (QEP 2009).

2.2.13. Reclamation

2.2.13.1. Measures Common to Interim and Final Reclamation

QEP would undertake surface reclamation in two phases: interim and final reclamation. QEP would conduct interim reclamation following well completion. QEP would conduct interim reclamation on all disturbed areas no longer required for safe production operations. QEP would conduct final reclamation following completion of well plugging and the facility abandonment processes. As per Onshore Order No. 1, Section XII.B., QEP would complete earthwork for interim and final reclamation within six months of well completion or well plugging (weather permitting).

QEP would re-contour areas to be reclaimed to a natural appearance. Fill and stockpiled spoils no longer necessary to the operation would be spread on the cut slopes and covered with stockpiled topsoil. Where possible, QEP would leave the land surface "rough" after re-contouring to ensure

that the maximum surface area would be available to support the reestablishment of vegetative cover.

QEP would rip compacted areas such as roads and well pads in a crosshatch pattern to a depth of 18 to 24 inches to improve soil aeration, water infiltration, and root penetration. Ripped areas would be disced, if necessary, to fill in deep furrows (where topsoil would be lost) and break up large clods (to which topsoil will not adhere). QEP would typically use motor graders, front-end loaders, dozers, or tractors equipped with ripping shanks for ripping. Ripper shanks would be set approximately one to two feet apart. QEP would typically accomplish discing using a tractor-drawn disc set two to six inches deep. After compaction relief (ripping and discing) all of the topsoil would be redistributed on the reclaimed area to a pre-disturbance depth.

QEP would generally re-seed during the fall between August 15 and when the ground freezes. If fall seeding is not feasible and erosion control is needed, QEP may seed between spring thaw and May 15. QEP would seed reclaimed areas with seed mixtures that promote re-establishment of pre-disturbance plant communities. Seed mixes would be selected from a list provided or approved by the BLM, or a specific seed mix would be proposed by QEP to the BLM and used after its approval. All seed would be certified weed-free. QEP would drill seed on the contour to an appropriate depth. When drill-seeding is not practical due to steep slopes or rocky surfaces, seeding rates would be doubled, seed would be broadcast, and the area would be raked, "walked" with tracked equipment, or dragged with a chain or harrow to cover seed.

Dry mulch may be considered as one method to enhance the reestablishment of desired plant communities. Where mulching is deemed appropriate, the reclaimed area would be uniformly mulched with certified weed-free grass, hay, small grain straw, or wood fiber at a rate of one to two tons/acre. Alternatively, QEP may apply cotton, jute, or synthetic netting. Mulch would be crimped or disced into the soil, tackified, or incorporated into erosion control blankets to prevent it from blowing or washing away and from entering waterways.

Alternative mulching techniques may be considered on steep slopes where it is unsafe to operate equipment, at sites where soils have 35 percent or more surface rock content, or on notably unstable areas. Alternative techniques may include hydromulch, biodegradable erosion control netting, or matting.

QEP would conduct reclamation assessments, monitoring, and reporting in accordance with the *Green River District Reclamation Guidelines* (BLM 2011a) and QEP's *Reclamation Plan for the Uinta Basin* (QEP 2009). QEP would submit annual reclamation evaluation reports to the BLM VFO by March 31 of each year.

2.2.13.2. Interim Reclamation

Interim reclamation includes measures that would stabilize soils and control erosion until final reclamation techniques are applied. QEP would salvage the top six inches of topsoil from all disturbance areas and would stockpile the topsoil separately from subsoil materials. QEP would stockpile topsoil salvaged from the reserve pit separately near the reserve pits.

Topsoil stockpiles would be adequately protected until the topsoil is reapplied on the surface during reclamation. Temporary erosion control measures such as temporary vegetation cover, application of mulch, netting, or soil stabilizers may be used to minimize wind and water erosion and sedimentation prior to vegetation establishment.

After QEP has completed a well and put it into production, the reserve pit would be evaporated. Depending on the time of year and precipitation accumulations, the reserve pit may evaporate naturally. If the reserve pit does not evaporate naturally within one summer season (i.e., June – August) after drilling is completed, alternative evaporation techniques may be applied. Some alternative techniques may include: trickle systems, evaporation misters and aerators, evaporation ponds, pit solidification, or water hauling.

Once the reserve pit is as dry as possible, QEP would remove all debris in the pit. Excess pit liner would be cut off and removed and the remaining liner would be torn and perforated while backfilling the pit. QEP would bury the reserve pit liner to a minimum of four feet deep. The reserve pit would be backfilled, recontoured to blend with the natural landscape, and crowned convexly to allow for settling and to prevent standing water. QEP would reclaim and revegetate any areas not needed for production operations in accordance with the common reclamation measures listed above.

2.2.13.3. Final Reclamation

As soon as practical after the conclusion of drilling and testing operations, QEP would plug and abandon unproductive drill holes. QEP would cap the well casing with a metal plate a minimum of 0.25 inches thick. QEP would weld the cap in place and the well location and identity would be permanently inscribed on the cap as required in 43 CFR 3162.6(d). The cap would be constructed with a weep hole. The depth of the permanent cap would be determined at the time of final abandonment.

At final abandonment, QEP would remove all wellhead equipment and facilities from the well pad and all water control structures (e.g., culverts, drainage pipes) not needed to facilitate successful reclamation.

QEP would restore abandoned well sites, roads and other disturbed areas as near as practical to their original condition. Where applicable, these conditions may include the reestablishment of irrigation systems, reestablishment of appropriate soil conditions, and the reestablishment of vegetation as specified.

QEP would recontour all disturbed surfaces to approximate natural contours. Access roads to be reclaimed would be ripped, re-contoured to approximately the original contour of the ground, and seeded in accordance with BLM seeding specifications. QEP would commence reclamation of the well pad and access road as soon as practical after final abandonment.

When reclamation is deemed successful by QEP and the BLM, QEP would submit a Final Abandonment Notice (FAN) to the BLM and when approved, would request a bond release.

2.2.14. Applicant-Committed Environmental Protection Measures

QEP adopted resource protection measures from Attachment 1 of the GDBR ROD (BLM 2008c), from the VFO RMP (BLM 2008b), and from input received during onsite visits (BLM 2013). Table 1, “Applicant-Committed Resource Protection Measures” (p. 28) identifies Applicant-Committed Resource Protection Measures that are specific to proposed development in the Project Area, and that may become Applicant-Committed Resource Protection Measures in the Decision Record for the Proposed Action.

Table 2.3. Applicant-Committed Resource Protection Measures

Resource	Resource Protection Measures
Air Quality	● QEP would keep all internal combustion equipment in good working order. ● QEP would use dust suppressants such as water or other approved suppressants at construction sites and along roads, as determined appropriate by the AO. ● QEP would not conduct open burning of garbage or refuse at well sites or other facilities. ● QEP would install low-bleed pneumatics on separator dump valves and other controllers, which would result in lower VOC emissions. ● QEP would limit flaring as much as possible during completion. Production equipment and gathering lines would be installed as soon as possible. ● QEP would utilize well site telemetry as feasible for production operations. ● Drill rigs would be equipped with Tier II or better diesel engines.
Erosion Control	● QEP would construct well pads and facility sites to prevent overland flow of water from entering or leaving sites through the use of berms, terraces, and grading depressions (BLM 2008c). ● Diversion ditches constructed to reroute drainages around well pads would be designed to divert the water back to the original channel. If the water cannot be diverted back to the original channel, then the water would be diverted to the nearest channel with energy dissipating devices installed to prevent channel degradation (BLM 2008c). ● Planned access roads and surface-disturbing activities would conform to standards outlined in the BLM and Forest Service publication: *Surface Operating Standards for Oil and Gas Development, Gold Book 4th Edition* (USDI and USDA 2007) (BLM 2008c).
Visual Resources	● Based on site-specific recommendations from the AO, surface equipment would be painted to blend in with the surroundings. Additionally, all surface equipment on a site (well pad, central tank facility, compressor station) would be painted the same color unless otherwise specified by OSHA (Occupational Safety and Health Administration) (BLM 2008c). The paint color identified during the onsite inspection is Covert Green (BLM 2013). ● QEP would avoid, where feasible, the placement of facilities on hilltops or along ridgelines in visually sensitive areas classified as VRM Class III or higher. If facilities could not be relocated off ridgelines or hilltops in visually sensitive areas, QEP would consider the use of tanks with a smaller height as directed by the AO (BLM 2008c). ● QEP would avoid the construction of straight-line access roads. Where feasible, access roads would be constructed to follow the natural contours of the landscape (BLM 2008c).

Resource	Resource Protection Measures
Vegetation	● QEP would monitor and control noxious and invasive weeds along access road use authorizations, pipeline route authorizations, well sites, or other applicable facilities by spraying or mechanical removal. On BLM-administered land, a Pesticide Use Proposal would be submitted and approved prior to the application of herbicides, pesticides, or other hazardous chemical (BLM 2008c). ● QEP will work with the AO to monitor the success of interim and final reclamation. QEP and the AO will perform regular inspections on chosen sites reclaimed two years prior. The two-year gap will allow the seed to become established and give the vegetation two full growing seasons for a better measure of success. If QEP and the AO determine the reclamation is not trending in the right direction, remediation will be considered. ● Power washing of all construction and drilling equipment would occur prior to the equipment entering the project area from outside the VFO area (BLM 2008c). ● QEP would avoid placement of roads, pipelines, well pads, and ancillary facilities within 100 meters of riparian habitats. If avoidance is not feasible, then effects to riparian habitat would be minimized where possible (BLM 2008c).
Wildlife – General	● QEP has committed to construct a containment dike completely around those production facilities, which contain fluids (i.e., production tanks, produced water tanks). These dikes would be constructed of compacted impervious subsoil, hold 110% of the capacity of the largest tank, and be independent of the back cut (BLM 2008b).
Wildlife – Raptors	● No construction and development activities would occur within 0.25 mile of burrowing owl nests between March 1 and August 31 (BLM 2008b). ● If other raptor nests are identified in the Project Area, the protective buffers and timing limitations from the Approved RMP would apply (BLM 2008b). ● Unless otherwise agreed to by the AO in writing, power lines shall be constructed in accordance with the standards outlined in *Suggested Practices for Raptor Protection on Power Lines*, (APLIC 1996). QEP would construct power lines in accordance with these standards or will assume the burden and expense of proving pole designs not shown in the referenced publication are "raptor safe". A raptor expert acceptable to the AO shall provide such proof (BLM 2008c). ● As directed by the AO, QEP would place raptor perch guards on power line poles in areas near sensitive wildlife habitat areas such as sage-grouse leks and prairie dog towns (BLM 2008c). ● Artificial nest platforms will be constructed as directed by the AO within the project area in order to mitigate any unavoidable losses of potential, natural nesting areas (BLM 2008c).

Resource	Resource Protection Measures
Cultural Resources	● Equipment operators would be informed that if a cultural site is uncovered during construction, activities in the vicinity would immediately cease and the AO would be notified (BLM 2008c).
Paleontological Resources	● QEP has committed to provide a certified paleontological monitor to monitor construction of proposed development at the following locations where scientifically important fossils were identified during surveys: ○ OP 1G-1-7-20 - monitor construction for well pad, access road, and pipeline. ○ OP 1G-10-7-20 - monitor construction for well pad, access road, and pipeline. ○ OP 2G-1-7-20 - monitor construction for well pad, access road, and pipeline. ○ OP 6G-1-7-20 - monitor construction for well pad, access road, and pipeline. ○ OP 10G-1-7-20 - monitor construction for well pad, access road, and pipeline. ○ OP 13G-11-7-20 – monitor construction for access road and pipeline. ○ OP 16G-1-7-20 – monitor beginning of the construction process and thereafter spot monitor. ○ CPFs 1 and 2 – monitor construction for pads, access roads, power lines, and pipelines. ○ Section 14 - monitor construction for pipelines and power lines. ● If paleontological resources are uncovered during ground disturbing activities, QEP would suspend all operations that would further disturb such materials and would immediately contact BLM's AO, who would arrange for a determination of significance and, if necessary, recommend a recovery or avoidance plan (BLM 2008c)

2.3. No Action Alternative

Under the No Action Alternative, the BLM would deny the Proposed Action described in this EA. Currently approved drilling and completion of wells and development of infrastructure would continue as described in approved decision documents. Selection of the No Action Alternative would not preclude other oil and gas activities or proposals within the Project Area. Development of existing well pads, roads, and pipelines in the Project Area has resulted in an estimated 54.1 acres of surface disturbance. Refer to Table 2.1, “Proposed Action Development and Surface Disturbance” (p. 16) for additional information on existing surface disturbance in the Project Area.

2.4. Alternatives Considered but Eliminated from further Analysis

The BLM did not identify any alternatives besides the Proposed Action that would meet the purpose and need of this project.

Chapter 3. Affected Environment

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The BLM ID Team, as documented in the ID Team Checklist (Appendix A, *Interdisciplinary Team Checklist* (p. 81)) evaluated the Project Area. The checklist indicates which resources of concern are present, which resources would be affected by the alternatives and require analysis in the EA, and which resources are either not present in the Project Area or would not be affected to a degree that requires detailed analysis. The description of the affected environment in this section focuses on those resources identified as "PI" (present with potential for impact that needs to be analyzed in detail in the EA) in the ID Team Checklist.

Mineral extraction activities, livestock grazing, and associated surface disturbance have historically affected the Project Area. QEP proposes to construct and operate well pads, vertical oil wells, access roads, CPFs, surface pipelines, and power lines on state- and BLM-administered lands in the Ouray Park area of the GDBR, Uintah County, Utah. This EA is tiered to the GDBR ROD (BLM 2008c) and incorporates the GDBR Final EIS (BLM 2008a) by reference; as a result, this chapter summarizes and cites the affected environment description from the GDBR Final EIS and provides additional site-specific information, where appropriate.

3.1. Air Quality and Greenhouse Gas Emissions

The Project Area is located in the Uinta Basin, a semiarid, mid-continental climate regime typified by dry, windy conditions and limited precipitation, and wide seasonal temperature variations subject to abundant sunshine and rapid nighttime cooling. The Uinta Basin is designated as unclassified/attainment by the Environmental Protection Act (EPA) under the Clean Air Act. This classification indicates that the concentration of criteria pollutants in the ambient air is below National Ambient Air Quality Standards (NAAQS), or that adequate air monitoring is not available to determine attainment. Refer to Section 3.3 (pages 3-25 through 3-28) in the GDBR Final EIS (BLM 2008a) for additional information on climate in the region.

NAAQS are standards that have been set for the purpose of protecting human health and welfare with an adequate margin of safety. Pollutants for which standards have been set include ground level ozone, (O_3), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), and particulate matter (PM) less than 10 microns in diameter (PM_{10}) or 2.5 microns in diameter ($PM_{2.5}$). Airborne particulate matter consists of tiny coarse-mode (PM_{10}) or fine-mode ($PM_{2.5}$) particles or aerosols combined with dust, dirt, smoke, and liquid droplets. $PM_{2.5}$ is primarily derived from the incomplete combustion of fuel sources and secondarily formed aerosols, whereas PM_{10} is primarily derived from crushing, grinding, or abrasion of surfaces. Table 3.1, "Ambient Air Quality Background Values" (p. 33) lists ambient air quality background values for the Uinta Basin and NAAQS standards.

Table 3.1. Ambient Air Quality Background Values

Pollutant	Averaging Period(s)	Uinta Basin Background Concentration (µg/m³)	NAAQS (µg/m³)
SO_2	Annual	0.8[2]	--[1]
	24-hour	3.9[2]	--[1]
	3-hour	10.1[2]	1,300
	1-hour	19.0[2]	197
NO_2	Annual	8.1[3]	100
	1-hour	60.2[3]	188

Pollutant	Averaging Period(s)	Uinta Basin Background Concentration (µg/m³)	NAAQS (µg/m³)
PM_{10}	Annual	7.0[4]	--[6]
	24-hour	16.0[4]	150
$PM_{2.5}$	Annual	9.4[3]	15
	24-hour	17.8[3]	35
CO	8-hour	3,450[4]	10,000
CO	1-hour	6,325[4]	40,000
O_3	8-hour	100.0[3,5]	75

µg/m³ micrograms per cubic meter
[1]The 24-hour and annual SO2 NAAQS have been revoked by EPA
[2]Based on 2009 data from Wamsutter Monitoring Station Data (EPA AQS Database)
[3]Based on 2010/2011 data from Redwash Monitoring Station (EPA AQS Database)
[4]Based on 2006 data disclosed in the Greater Natural Buttes Final EIS (BLM 2012a)
[5]Ozone is measured in parts per billion (ppb)
[6]The annual PM10 NAAQS has been revoked by EPA

Existing point and area sources of air pollution within the Uinta Basin include the following:

- Exhaust emissions (primarily CO, nitrogen oxides [NO_X], $PM_{2.5}$, and hazardous air pollutants [HAPs]) from existing natural gas fired compressor engines used in transportation of natural gas in pipelines.
- Natural gas dehydrator still-vent emissions of CO, NO_X, $PM_{2.5}$, and HAPs.
- Gasoline and diesel-fueled vehicle tailpipe emissions of volatile organic compounds (VOCs), NO_X, CO, SO_2, PM_{10}, and $PM_{2.5}$.
- Oxides of sulfur (SO_X), NO_X, and fugitive dust emissions from coal-fired power plants, and coal mining/ processing.
- Fugitive dust (in the form of PM_{10} and $PM_{2.5}$) from vehicle traffic on unpaved roads, wind erosion in areas of soil disturbance, and road sanding during winter months.
- Long-range transport of pollutants from distant sources.

The EPA established two year-round air quality-monitoring sites in summer 2009 near Redwash (southeast of Vernal, Utah) and Ouray (southwest of Vernal). The EPA certified these monitors as Federal Reference Monitors in the fall of 2011. These monitors can be used to make NAAQS compliance determinations. The complete EPA Ouray and Redwash monitoring data can be found at http://www.epa.gov/airdata/.

Both monitoring sites have recorded numerous exceedances of the eight-hour ozone standard during the winter months (January through March 2010, 2011, and 2013). High concentrations of ozone may form under a “cold pool” process. This process occurs when stagnant air conditions form with very low mixing heights under clear skies, with snow-covered ground and abundant sunlight. These conditions, combined with area precursor emissions (NO_X and VOCs), can create intense episodes of ozone. The high ozone numbers did not occur during January through March of 2012 due to a lack of snow cover. This phenomenon has also been observed in similar locations in Wyoming. Winter ozone formation is a newly recognized issue, and the methods of analyzing and managing this problem are still being developed. Existing photochemical models are currently unable to replicate winter ozone formation reliably. This is due to the very low mixing heights associated with the unique meteorology of the ambient conditions. Further research is needed to definitively identify ozone precursor sources that contribute to observed ozone concentrations.

The Utah Department of Air Quality (UDAQ) conducted limited monitoring of $PM_{2.5}$ in Vernal, Utah in December 2006. During the 2006-2007 winter season, $PM_{2.5}$ levels were higher than the $PM_{2.5}$ health standards that became effective in December 2006. The $PM_{2.5}$ levels recorded in Vernal were similar to other areas in northern Utah that experience wintertime inversions. The most likely causes of elevated $PM_{2.5}$ at the Vernal monitoring station are those common to other areas of the western U.S. (combustion and dust) plus nitrates and organics from oil and gas activities in the basin. $PM_{2.5}$ monitoring that has been conducted in the vicinity of oil and gas operations in the Uinta Basin by the Redwash and Ouray monitors beginning in summer 2009 has not recorded any exceedances of either the 24-hour or annual NAAQS.

HAPs are pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental impacts. The EPA has classified 187 air pollutants as HAPs. Examples of listed HAPs associated with the oil and gas industry include formaldehyde, benzene, toluene, ethylbenzene, and isomers of xylene (BTEX) compounds, and normal-hexane (n-hexane). There are no applicable federal or state ambient air quality standards for assessing potential HAP impacts to human health. Refer to Section 3.3 (pages 3-29 through 3-34) in the GDBR Final EIS (BLM 2008a) for additional information on air quality conditions relevant to the Project Area.

3.1.1. Greenhouse Gases

Greenhouse gases keep the planet's surface warmer than it would be otherwise. However, as concentrations of these gases increase, the Earth's temperature is climbing above past levels. According to National Oceanic and Atmospheric Administration (NOAA) and National Aeronautics and Space Administration (NASA) data, the Earth's average surface temperature has increased approximately 1.2 to 1.4 degrees Fahrenheit in the last 100 years. Temperatures in most areas of the United States are projected to rise another two degrees to four degrees Fahrenheit over the next few decades. Past records and future projections predict an overall increase in regional temperatures, largely in the form of warmer nights and effectively higher average daily minimum temperatures. They conclude that this warming is causing a decline in spring snowpack and reduced flows in the Colorado River. The U.S. Global Change Research Program (USGCRP) projects a region-wide decrease in precipitation, although with substantial variability in interannual conditions. For eastern Utah, the projections range from an approximate five percent decrease in annual precipitation to decreases as high as 40 percent of annual precipitation. For more information on climate change, refer to the USGCRP assessments, reports, and data (USGCRP 2014).

3.2. Invasive Plants/Noxious Weeds, Soils, and Vegetation

3.2.1. Vegetation and Invasive Plants/Noxious Weeds

The dominant vegetation classes in the Project Area include Desert Shrub (1,906 acres); Badland/Rock Outcrop (1,805 acres) and Sagebrush (196 acres). Invasive Annual Grassland comprises approximately 817 acres within the Project Area (USGS 2011). Vegetation in the vicinity of proposed development consists predominantly of a mixed desert shrub community dominated by black sagebrush (*Artemisia nova*). Invasive species observed in areas proposed for development include cheatgrass (*Bromus tectorum*), halogeton (*Halogeton glomeratus*), and Russian thistle (*Sasola kali*). Table 3.2, "Plant Species Observed in the Project

Area" (p. 36) identifies common plant species and invasive plant species observed during onsite visits of areas proposed for development.

Table 3.2. Plant Species Observed in the Project Area

Scientific Name	Common Name
Shrubs	
Artemisia nova	Black sagebrush
Artemisia tridenta	Wyoming big sagebrush
Atriplex confertifolia	Shadscale
Atriplex corrugate	Mat saltbush
Chrysothamnus nauseosus	Rubber rabbitbrush
Ephedra viridis	Mormon tea
Grayia spinosa	Spiny hopsage
Picrothamnus desertorum	Budsage
Sarcobatus vermiculatus	Black greasewood
Grasses and Forbs	
Achnatherum hymenoides	Indian ricegrass
Hesperostipa comate	Needle and thread
Pleuraphis jamesii	Galleta grass
Sphaeralcea coccinea	Scarlet globemallow
Succulents	
Opuntia spp.	Prickly pear cactus
Invasive Species	
Bromus tectorum	Cheatgrass
Halogeton glomeratus	Halogeton
Salsola kali	Russian thistle
Source: BLM 2013	

Refer to Section 3.5 (pages 3-43 through 3-47) in the GDBR Final EIS (BLM 2008a) for more information on vegetation and invasive/noxious weed species relevant to the Project Area.

3.2.2. Soils

Geologic formations in the Uinta Basin include Tertiary and Cretaceous age sediments, which consist mainly of lacustrine deposits containing clay, silt, and lime. Elevations in the Project Area range from approximately 4,826 to 4,984 feet. Soils in the area consist predominantly of sandy loam with a few locations of clay loam. The proposed wells, CPFs and associated infrastructure would be located primarily on rolling hills (BLM 2013).

Cryptobiotic soils or, biological soil crusts were observed during onsite visits at eight of the 22 proposed well locations on BLM-administered land. These soils typically consist of soil cyanobacteria, lichens, and mosses, which are well-developed and increase the stability of otherwise easily eroded soils (Belknap 1997). Biological soil crusts are generally found where there are openings in the vascular plant cover and protect open areas from wind and water erosion (BLM 2008b).

Refer to Section 3.4 (pages 3-34 through 3-42) in the GDBR Final EIS (BLM 2008a) for more information on soil resources relevant to the Project Area.

3.3. Livestock Grazing and Rangeland Health Standards

The Project Area and proposed development overlaps the Ouray Valley allotment and the Twelve Mile allotment (Figure 3.1, "Livestock Grazing Features" (p. 38)). The Ouray Valley allotment is used for continuous use cattle grazing from October 15 through December 26 and has 26 active Animal Use Months (AUMs) available for forage on BLM-administered land. The Twelve Mile allotment is a deferred cattle allotment from October 1 through April 30 and has 2,784 active AUMs available for forage on BLM-administered land. Approximately 26 AUMs from the Ouray Valley allotment and 212 AUMs from the Twelve Mile allotment overlap the Project Area. The only identified rangeland improvement in the Project Area is a fence in Township 7 S, Range 20 E, Sections 11, 13, and 14, which marks the boundary between the Ouray Valley and Twelve Mile allotments (Figure 3.1, "Livestock Grazing Features" (p. 38)).

Refer to Section 3.11 (pages 3-77 through 3-78) in the GDBR Final EIS (BLM 2008a) for additional information on Rangeland Management.

3.3.1. Rangeland Health Standards

The BLM Utah Rangeland Health Standards address four conditions that must be met in order to achieve the Fundamentals of Rangeland Health. These include: 1) soil productivity, 2) riparian/wetland function, 3) desired species composition, and 4) water quality standards. Utah Guidelines for Grazing Management include management practices that can be applied to achieve Utah's standards.

The Ouray Valley allotment is classified as a "Custodial" management category which indicates that public lands produce less than 10 percent of the forage in the allotment or are less than 10 percent of the land area. The Twelve Mile allotment is classified as an "Improve" management category which indicates that current livestock grazing management level of use on public land is a significant causal factor in the non-achievement of land health standards, or where a change in mandatory terms and conditions in the grazing authorization is or may be necessary (BLM 1997).

The Ouray Valley Allotment is meeting fully Rangeland Health Surveys as of 2005 with None to Slight Departure from Soil Stability, Hydrologic Function and Biotic Integrity. The Twelve Mile Allotment has some moderate and slight to moderate departures due to cheatgrass (*Bromus tectorum*) and Russian thistle (*Salsola kali*) both classified as invasive species.

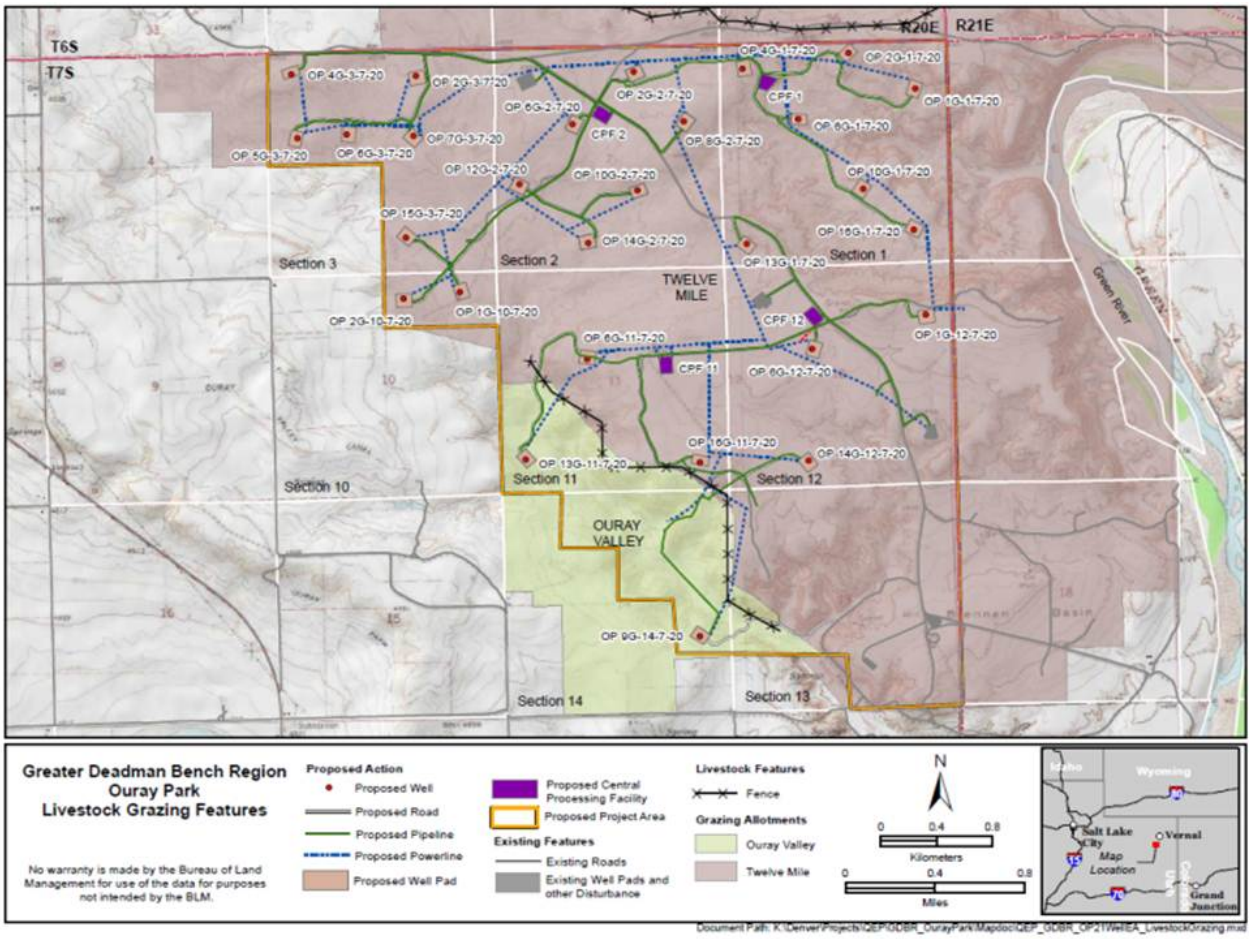

Figure 3.1. Livestock Grazing Features

3.4. Paleontology

Fossils on federal lands are protected under provisions of FLPMA, as amended, 43 U.S.C. 1737(b), PL 94-579; PL 111-011, Omnibus Public Land Management Act of 2009, Subsection D, Section 6302; and 43 CFR 3802 and 3809 (BLM 2012a). The BLM uses a Potential Fossil Yield Classification (PFYC) system of geologic units with respect to their potential for the production of scientifically important fossils, which ranges from PFYC 1 (lowest fossil potential) to PFYC 5 (highest fossil potential).

The Project Area is located in the Duchesne River Formation of the lower Brennan Basin Member of the Middle Eocene Age, which is known to be the most fossiliferous of the four members of this formation and has fauna regarded as Uintan in age with a PFYC of 4 (high) to 5 (very high). The Duchesne River Formation is composed of pale reddish sandstones and mudstones of low gradient meandering streams and overbank floodplain deposits in a broad east-west stretch across the northern part of the Uinta Basin (BLM 2008a, IPC 2013a, IPC 2014b).

Intermountain Paleo-Consulting (IPC) conducted paleontological surveys for the well pads, CPFs, and linear features (pipelines, power lines, and access roads) between 2012 and 2014. Based on these recent surveys, scientifically important fossils were observed at the following locations (Table 3.3, “Scientifically Important Fossils Observed in the Project Area” (p. 39)):

Table 3.3. Scientifically Important Fossils Observed in the Project Area

Location	Proposed Development Features	PFYC Class
Township 7 S, Range 20 E, Section 1	OP 1G-1-7-20 well pad, access road and pipeline (IPC 2013a).	5
Township 7 S, Range 20 E, Section 1	OP 2G-1-7-20 well pad, access road and pipeline (IPC 2013a).	4
Township 7 S, Range 20 E, Section 1	OP 6G-1-7-20 well pad, access road and pipeline (IPC 2013b).	5
Township 7 S, Range 20 E, Section 1	OP 10G-1-7-20 well pad, access road and pipeline (IPC 2013b).	5
Township 7 S, Range 20 E, Section 1	CPF 1 and associated access roads , power lines, and pipelines (IPC 2014a).	5
Township 7 S, Range 20 E, Section 2	OP 2G-2-7-20[1] well pad, access roads and pipelines (IPC 2014b).	5
Township 7 S, Range 20 E, Section 2	OP 12G-2-7-20[1] well pad, access roads and pipelines (IPC 2014b).	5
Township 7 S, Range 20 E, Section 2	CPF 21 and associated access roads , power lines, and pipelines (IPC 2014a).	5
Township 7 S, Range 20 E, Section 10	OP 1G-10-7-20 well pad, access road and pipeline (IPC 2014b).	5
Township 7 S, Range 20 E, Section 11	OP 13G-11-7-20 well pad, access road and pipeline (IPC 2013c) .	4
Township 7 S, Range 20 E, Section 11	OP 13G-11-7-20 access road and pipeline reroutes (IPC 2014c).	5
Township 7 S, Range 20 E, Section 11	CPF 11 (IPC 2014a).	5
Township 7 S, Range 20 E, Section 14	Pipeline Sections and power lines (IPC 2014a).	5
Source: IPC 2013a (IPC # 13-61); IPC 2013b (IPC #13-55); IPC 2013c (IPC #13-54); IPC 2014a (IPC # 14-07); IPC 2014b (IPC # 13-30); IPC 2014c (IPC # 14-14). [1]State land		

Refer to Section 3.8 (pages 3-72 through 3-74) of the GDBR Final EIS (BLM 2008a) for additional information on paleontological resources in the GDBR Wildlife Section.

3.5. Wildlife

3.5.1. Non-USFWS Designated Wildlife

Wildlife species and habitats occurring within the Project Area are typical of the Uinta Basin arid and semi-arid desert shrub and badlands communities. The dominant vegetation species include shadscale, rabbitbrush, black greasewood, and mat saltbush. The desert shrub community is the most variable vegetative community in the GDBR and tends to be sparsely vegetated with shallow soils (BLM 2008a).

Big Game Species

According to the Utah Division of Wildlife Resources (UDWR), UDWR-designated pronghorn crucial, year-long habitat overlaps the majority (95 percent) of the Project Area. Pronghorn substantial, year-long habitat does not overlap the Project Area; however, it exists just to the north of the Project Area (Figure 3.2, “Wildlife Map” (p. 41)) (UDWR 2013). UDWR-designated mule

deer habitat overlaps 974 acres (24 percent) of the Project Area. Substantial year-long habitat overlaps 891 acres, and crucial, year-long habitat overlaps 84 acres. Crucial year-long habitat is habitat on which the local population of a wildlife species depends for survival because there are no alternative ranges or habitats available; this habitat is essential to the life history requirements of a wildlife species. Substantial year-long habitat is habitat that is used by a wildlife species but is not crucial for population survival. Degradation of unavailability of substantial habitat will not lead to significant declines in carrying capacity or numbers of the wildlife species (UDWR 2013) (Figure 3.2, "Wildlife Map" (p. 41)). None of the proposed wells or CPFs fall within crucial, year-long habitat for mule deer. Elk also occur around the Project Area; however, crucial habitat for elk does not overlap the Project Area (UDWR 2013).

Refer to Section 3.6.3 (pages 3-48 through 3-50) in the GDBR Final EIS (BLM 2008a) for additional information about big game species in the GDBR.

White-Tailed Prairie Dog (Cynomys leucurus)

White-tailed prairie dog (*Cynomys leucurus*) habitat and active colonies were observed during the onsite visits for proposed development (Sadlier 2014). The white-tailed prairie dog is listed as a species of concern by the UDWR as well as a BLM sensitive species, and has been petitioned to be federally listed as threatened or endangered under the ESA (Endangered Species Act). Colonies of this species occur in mountain valleys, semi-desert grasslands, and open shrublands.

Refer to Section 3.6.8.1 (pages 3-60 through 3-61) in the GDBR Final EIS (BLM 2008a) for additional information about fish species in the GDBR.

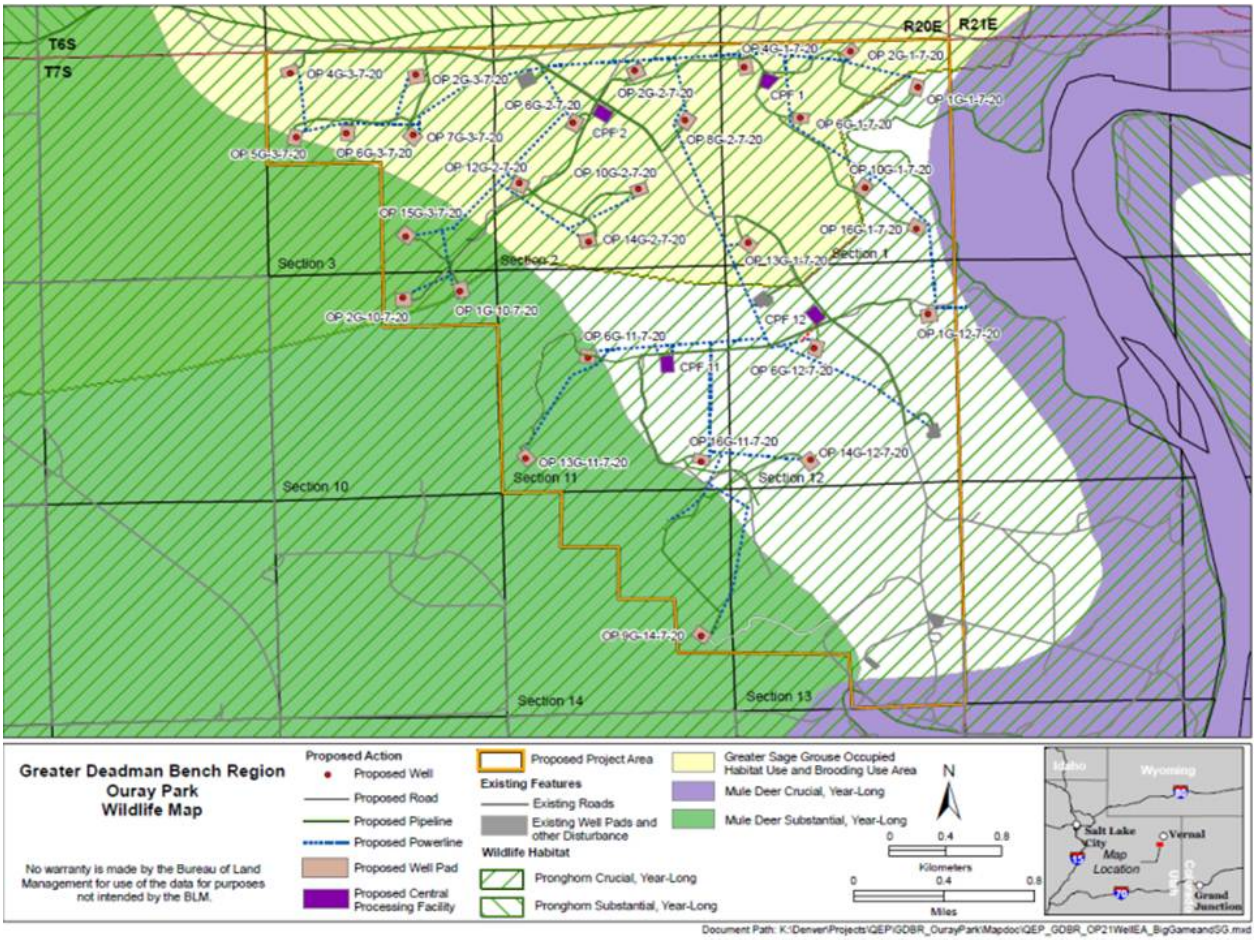

Figure 3.2. Wildlife Map

Fish Species and Fisheries

The Utah Department of Environmental Quality (UDEQ) designates the Green River near Ouray and the White River from the Green River confluence to the Colorado state line as warm water fisheries (Utah Administrative Code 2007). Game fish species found in the Green and White rivers include channel catfish (*Ictalurus punctatus*), smallmouth bass (*Micropterus dolomieu*), crappie (*Pomoxis spp.*), bluegill (*Lepomis macrochirus*), green sunfish (*Lepomis cyanellus*), black bullhead (*Ameiurus melas*), northern pike (*Esox lucius*), walleye (*Sander vitreus*), carp (*Cyprinus spp.*), and the occasional trout (*Oncorhynchus spp.*) (Monroe 2007). However, channel catfish were the most abundant game species identified from previous electrofishing and fyke/trammel net surveys (Bestgen et al. 2007; Irving and Modde 1994). Other game fish species generally occur in relatively low numbers. Native fish species that occur in the Green and White rivers include Colorado pikeminnow (*Ptychochelilus lucius*) (endangered), razorback sucker (*Xyrauchen texanus*) (endangered), bonytail (*Gila elegans*) (endangered), humpback chub (*Gila cypha*) (endangered) (see Section 3.6.3), mottled sculpin (*Cottus bairdii*), and speckled dace (*Rhinichthys osculus*) (Monroe 2007).

The flannelmouth sucker (*Catostomus latipinnis*), roundtail chub (*Gila robusta*) and bluehead sucker (*Catostomus discobolus*) are state sensitive species due to declining population numbers and distribution, and they receive special management under a conservation agreement in order

to preclude the need for a federal listing. Special status fish species include those fish species, BLM sensitive species, and State of Utah species of concern. Native fish, such as flannelmouth sucker and bluehead sucker, and introduced species such as carp, channel catfish, and red shiner were the most abundant fish species identified during previous surveys (Bestgen et al. 2007; Irving and Modde 1994).

Refer to Section 3.6.7 (page 3-59 through 3-60) in the GDBR Final EIS (BLM 2008a) for additional information about fish species in the GDBR.

3.5.2. Migratory Birds (including raptors)

The Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act were implemented for the protection of migratory birds and eagles. Unless permitted by regulations, the MBTA makes it unlawful to pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or migratory bird products. In addition to the MBTA, Executive Order 13186 sets forth the responsibilities of federal agencies to further implement the provisions of the MBTA by integrating bird conservation principles and practices into agency activities and by ensuring that federal actions evaluate the effects of actions and agency plans on migratory birds. Pursuant to Executive Order 13186, a Memorandum of Understanding (MOU) (BLM MOU WO-230-2010-04[BLM 2010]) between the BLM and USFWS outlined a collaborative approach to promote the conservation of migratory bird populations and avoid or minimize adverse impacts on migratory birds in coordination with state, tribal, and local governments.

Migratory bird species commonly associated with the desert shrub community within the Project Area include the horned lark (*Eremophila alpestris*), sage sparrow (*Amphispiza belli*), vesper sparrow (*Pooecetes gramineus*), black-throated sparrow (*Amphispiza bileneata*), sage thrasher (*Oreoscoptes montanus*), Brewer's sparrow (*Spizella breweri*), western kingbird (*Tyrannus verticalis*), Say's phoebe (*Sayornis saya*), prairie falcon (*Falco mexicanus*), and Swainson's hawk (*Buteo swainsoni*) (BLM 2008a).

Common raptor species that breed in the region include the golden eagle (*Aquila chrysaetos*), ferruginous hawk (*Buteo regalis*), Swainson's hawk (*Buteo swainsoni*), red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), northern harrier (*Circus cyaneus*), prairie falcon (*Falco mexicanus*), American kestrel (*Falco sparverius*), great-horned owl (*Bubo virginianus*), and long-eared owl (*Strix otus*) (BLM 2008a).

Refer to the sections below for additional information on raptor species with identified nests proximate to the Project Area. Refer to Section 3.6.4 (page 3-50 through page 3-55) for raptors and Section 3.6.6 (page 3-59) of the GDBR Final EIS (BLM 2008a) for additional information on other migratory birds and raptors that may inhabit the region.

Bald Eagle (*Haliaeetus leucocephalus*)

The USFWS removed the bald eagle from the endangered species list in August 2007 because populations of the bald eagle had sufficiently recovered (72 FR 37346). Habitat within and adjacent to the GDBR is primarily used by bald eagles for wintering habitat which is typically associated with food source concentrations. These areas include major rivers that remain unfrozen where fish and waterfowl are available, and near ungulate winter ranges that provide

carrion (Montana Bald Eagle Working Group 1990). Based on available Geographic Information System (GIS) data there are three bald eagle roosts approximately 0.75 mile east of the Project Area along the Green River (UDWR 2006, BLM 2001a). In accordance with the BLM VFO Approved RMP/ROD (BLM 2008b), bald eagle roosts have an associated protective seasonal and spatial buffer which limit surface-disturbing activities, such as construction activities, based on species-specific requirements. The seasonal protective buffer for bald eagle roosts limits surface-disturbing activities within 0.5 mile of roost locations between November 1 to March 31. None of the proposed wells, CPFs, associated roads, pipelines, and power lines are within the 0.5 mile buffer for roosts sites. The project area may still provide wintering habitat for bald eagles.

Refer to Section 3.6.8.3 (page 3-62) of the GDBR Final EIS (BLM 2008a) for additional information on bald eagle.

Burrowing Owl (*Athene cunicularia*)

The burrowing owl is listed as a UDWR Species of Special Concern and BLM sensitive species. Burrowing owls prefer open areas within deserts, grasslands, and shrubsteppe. Burrowing owl typically inhabit well-drained, level to gently sloping areas characterized by sparse vegetation and bare ground.

Burrowing owls are typically found in open grasslands, where abandoned burrows dug by mammals such as ground squirrels (*Spermophilus spp.*), prairie dogs (*Cynomys spp.*) and badgers (*Taxidea taxus*) are available. Burrowing owls may enlarge or modify these burrows, making them more suitable for nesting. Potentially suitable habitat for this species is present throughout the Project Area.

During the onsite visits, potential nesting habitat for burrowing owls was observed at 11 of the 22 proposed well pad locations, and two of the CPFs locations, as identified below:

- OP 16G-1-7-20
- OP 2G-3-7-20
- OP 5G-3-7-20
- OP 6G-3-7-20
- OP 7G-3-7-20
- OP 1G-10-7-20
- OP 6G-11-7-20
- OP 16G-11-7-20
- OP 1G-12-7-20
- OP 6G-12-7-20
- OP 14G-12-7-20
- CPF 11
- CPF 12

Refer to Section 3.6.8.7 (Page 3-63) of the GDBR Final EIS (BLM 2008a) for more information on the burrowing owl.

3.5.3. Threatened, Endangered, Proposed, or Candidate Wildlife Species

An endangered species is a species listed under the ESA as being in danger of extinction throughout all or a portion of its range. A threatened species is a species listed under the ESA as likely to become endangered within the near future throughout all or a portion of its range. Special status species are species that are candidates to list pursuant to the ESA, or sensitive species designated by the BLM or the state of Utah.

There is no designated critical habitat for threatened and endangered species within the Project Area.

Greater Sage-Grouse (*Centrocercus urophasianus*)

The greater sage-grouse is a USFWS candidate species, a wildlife species of concern by the UDWR, and a BLM sensitive species. On March 5, 2010, the USFWS determined that the greater sage-grouse warrants protection under the ESA; however, the USFWS concluded that proposing the species for protection is precluded by the need to take action on other species facing more immediate and severe extinction threats. Therefore, greater sage-grouse in Utah continue to be managed by the UDWR, while most of their habitat is located on federal or private lands. The Utah BLM manages resources and resource uses in potential sage-grouse habitat in accordance with the BLM Washington IM 2012-043 (*Greater Sage-Grouse Interim Management Policies and Procedures*) (BLM 2011b). If the greater sage-grouse becomes listed, Section 9 of the ESA would prohibit certain activities that directly or indirectly affect endangered species. Under the ESA and its regulations, it is illegal for any person to take (including harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these) any endangered fish or wildlife species and most threatened fish and wildlife species.

In the GDBR, the sage-grouse is primarily found in sagebrush dominated desert shrub community (BLM 2008a). This species occupies different habitat types during the year depending on season, weather, and nutritional requirements. Based on available GIS data there are no known sage-grouse leks within five miles of the Project Area, and no recent observations of sage-grouse in the Project Area (UDWR 2013). However, the CPF 1, eleven proposed wells, pipelines, power lines, roads, and associated facilities and infrastructure on BLM-administered and state land in the northern portion of the Project Area would overlap greater sage-grouse occupied and brood-rearing habitat which is identified as Preliminary Priority Habitat (PPH) in BLM IM 2012-043 [1](Figure 3.2, “Wildlife Map” (p. 41)). Refer to Section 3.6.8.8 (pages 3-63 through 3-65) in the GDBR Final EIS (BLM 2008a) for more information on the greater sage-grouse.

Colorado River Fish Species

The BLM has identified four endangered fish species that are historically associated with the Upper Colorado River Basin and its tributaries. Federal and state listed species include the Colorado pikeminnow, humpback chub, bonytail, and razorback sucker. These fish have experienced severe population declines due to flow alterations, habitat loss or alteration, and introduction of non-native fish species. Habitats for these fish include backwaters, sloughs, oxbow lakes, and seasonally inundated floodplains and reservoirs (59 FR 13374). The Project Area does

[1]Per WO IM 2012-043, Preliminary Priority Habitat comprises areas that have been identified as having the highest conservation value to maintaining sustainable greater sage-grouse populations. These areas would include breeding, late brood-rearing, and winter concentration areas.

not occur within critical habitat for the Colorado River Basin listed fish species. Refer to Section 3.6.9 (pages 3-67 through 3-70) of the GDBR Final EIS (BLM 2008a) for more information on the threatened and endangered Colorado River fish species.

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Chapter 4. Environmental Impacts

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The analysis in this chapter is tiered to the GDBR ROD (BLM 2008c), incorporates by reference the analysis in the GDBR Final EIS (BLM 2008a), and provides additional site-specific analysis and information, where appropriate, to inform decision-making on this specific development proposal. Environmental impacts are only discussed for resources identified as "PI" (present with potential for relevant impact that needs to be analyzed in detail in the EA) in the ID Team Checklist (Appendix A, *Interdisciplinary Team Checklist* (p. 81)).

4.1. Proposed Action Environmental Impacts

This section analyzes the impacts of the Proposed Action on the potentially impacted resources described in the affected environment chapter (Chapter 3).

4.1.1. Air Quality and Greenhouse Gas Emissions

This Proposed Action is considered a minor air pollution source under the Clean Air Act and is not controlled by regulatory agencies. At present, control technology is not required by regulatory agencies since the Uinta Basin is designated as unclassified/attainment. The Proposed Action would result in different emission sources during the two project phases: well development and well production. Annual estimated emissions from the Proposed Action are summarized in Table 4.1, "First Year Emissions (tons/year)" (p. 49). Refer to Section 4.3 (pages 4-5 through 4-11) in the GDBR Final EIS (BLM 2008a) for more information on potential air quality impacts.

Table 4.1. First Year Emissions (tons/year)

Pollutant	Wells on BLM-administered Land		Wells on State Land		Total[1,4]
	Development[1,2]	Production[1]	Development[3,2]	Production[3]	
NO_X	134.4	0.0	36.7	0.0	171.1
CO	194.0	0.0	52.9	0.0	247.0
VOC	46.6	122.1	12.7	33.3	214.8
SO_2	0.2	0.0	0.1	0.0	0.3
PM_{10}	2.0	0.0	0.5	0.0	2.5
$PM_{2.5}$	2.0	0.0	0.5	0.0	2.5
Benzene	0.9	0.0	0.2	0.0	1.1
Toluene	0.7	0.0	0.2	0.0	0.8
Ethylbenzene	0.0	0.0	0.0	0.0	0.0
Xylene	0.2	0.0	0.1	0.0	0.3
n-Hexane	0.9	0.4	0.2	0.1	1.7
Formaldehyde	1.1	0.0	0.2	0.0	1.4

[1]Emissions include the 22 producing wells on BLM-administered land and associated operations traffic during the year in which the project is developed.
[2]Development emissions would likely only occur during the first year while wells and other infrastructure are being developed.
[3]Emissions include six producing wells on State land and associated operations traffic during the year in which the project is developed.
[4]Total emissions after the first year would be substantially lower following completion of development.

Well development includes NO_X, SO_2, and CO tailpipe emissions from earth-moving equipment, vehicle traffic, drilling, and completion activities. Fugitive dust concentrations would occur from vehicle traffic on unpaved roads and from wind erosion where soils are disturbed. Drill rig and

fracturing engine operations would result mainly in NO_X and CO emissions, with lesser amounts of SO_2. These emissions would be short-term during the drilling and completion phases.

During well production, continuous NO_X, CO, VOC, and HAP emissions would originate from well pad separators, condensate storage tank vents, and daily tailpipe and fugitive dust emissions from operations traffic. Road dust (PM_{10} and $PM_{2.5}$) would also be produced by vehicles servicing the wells.

Under the Proposed Action, total emissions of NO_X and VOC, ozone precursors, from the 22 wells proposed on BLM-administered land and the six wells proposed on state land would be 171.1 tons per year for NO_X, and 214.8 tons per year of VOC (Table 4.1, "First Year Emissions (tons/year)" (p. 49)). Emissions would be dispersed and/or diluted to the extent where any local ozone impacts from the Proposed Action would be indistinguishable from background conditions.

The primary sources of HAPs would be from oil storage tanks and smaller amounts from other production equipment. Small amounts of HAPs would also be emitted by construction equipment. These emissions are estimated to be minor and would be less than one ton per year.

Greenhouse Gases

The assessment of greenhouse gas emissions and climate change remains in its earliest stages of formulation. Applicable EPA rules do not require any controls and have yet to establish any emission limits related to GHG emissions or impacts. The lack of scientific models that predict climate change on a regional or local level prohibits the quantification of potential future impacts of decisions made at the local level, particularly for small-scale projects such as the Proposed Action. Drilling and development activities from the Proposed Action are anticipated to release a negligible amount of greenhouse gases into the local airshed.

Mitigation Measures for Air Quality and Greenhouse Gas Emissions

This EA tiers to and incorporates the COAs included in Attachment 1 of the GDBR ROD (BLM 2008b). No additional mitigation measures were identified for air quality during preparation of this EA.

4.1.2. Invasive Plants/Noxious Weeds, Soils, and Vegetation

Vegetation and Invasive Plants/Noxious Weeds

The Proposed Action would disturb approximately 210.2 total acres (168.7 acres of BLM-administered land and 41.5 acres of State land) of vegetation habitat, primarily in mixed desert shrub communities. QEP would conduct interim reclamation on all disturbed areas no longer required for safe production operations.

Direct impacts to vegetation are primarily associated with clearing of vegetation during construction and degradation of habitat through soil compaction and loss of topsoil. Indirect impacts to vegetation resources may include the spread and establishment of introduced, invasive plant species. The extent of invasive species establishment would depend, in part, on the success of reclamation and revegetation and the degree and success of noxious weed control efforts. Refer to Section 4.5 (page 4-17 through 4-18) of the GDBR Final EIS (BLM 2008a) for more information on potential impacts to vegetation.

Mitigation Measures for Vegetation and Invasive Plants/Noxious Weeds

This EA is tiered to and incorporates the Applicant-Committed Resource protection measures and mitigation measures included in Attachment 1 of the GDBR ROD (BLM 2008c). Refer to Section 2.2.14, "Applicant-Committed Environmental Protection Measures" (p. 27) of this EA for Applicant-Committed Resource Protection Measures that are specific to well pads and development in the Project Area. No additional mitigation measures were identified for vegetation during preparation of this EA.

Soils

The Proposed Action would disturb approximately 210.2 total acres (168.7 acres on BLM-administered land and 41.5 acres on State land) of soils, primarily in sandy loam and clay loam soils.

Potential direct impacts to 210.2 acres of soils include mixing of soil horizons, soil compaction, short-term loss of topsoil and site productivity, contamination of soils with petroleum products, loss of soil/topsoil through wind and water erosion, and vegetation loss. Loss of soil/topsoil in disturbed areas would increase competition by annual weed species with native species. Increased erosion could occur due to construction and operation of well pads, CPFs, and associated facilities; however, soils with faster infiltration rates, higher levels or organic matter, and improved soil structure (such as sandy loam soils) have a greater resistance to erosion (Belknap 1997).

Biological soil crusts were observed on eight of the 22 well pad locations on BLM-administered lands within the Project Area during onsite visits (BLM 2013). The presence of biological soil crusts in arid and semi-arid lands can result in reduced soil erosion by both wind and water, fixed atmospheric nitrogen, and retained soil moisture, and can provide a living organic surface mulch (BLM 2008b). Disturbance can directly and indirectly affect many aspects of the structure and function of biological soil crusts. Direct impacts to biological soil crusts from the Proposed Action could include soil compaction, which influences soil water and nutrient-holding capacity and can lead to changes in biological soil crust community species composition. Compressional disturbances from vehicles may impact these soils more than trampling by humans because vehicles often turn soils over and bury crustal organisms. Vehicle tracks often channel water off-site, which can slow or prevent soil crust recovery. The Proposed Action could also result in loss of species diversity, biomass, and surface cover of biological crust components, which can lead to the invasion of exotic annual plants, which poses a long-term threat to biological soil crusts as the crust-dominated interspace between perennial native plants is invaded (BLM 2001b).

Refer to Section 4.4 (pages 4-12 through 4-17) of the GDBR Final EIS (BLM 2008a) for more information on potential impacts to soils.

To minimize potential impacts to soils, QEP has committed to the Applicant-Committed Resource Protection Measures for soils in the GDBR ROD Attachment 1 (BLM 2008c).

Mitigation Measures for Soils

This EA is tiered to and incorporates the Applicant-Committed Resource Protection Measures and mitigation measures included in Attachment 1 of the GDBR ROD (BLM 2008c). Refer to Section 2.2.14, "Applicant-Committed Environmental Protection Measures" (p. 27) of this EA for Applicant-Committed Resource Protection Measures that are specific to well pads and

development in the Project Area. No additional mitigation measures were identified for soils during preparation of this EA.

4.1.3. Livestock Grazing and Rangeland Health Standards

The Proposed Action would result in approximately 17.5 acres of surface-disturbance on BLM-administered land in the Ouray Valley allotment, which is 2.4 percent of the total Ouray Valley allotment acreage. This equates to approximately 1.0 AUM [1]that would be at least temporarily unavailable to foraging animals, including authorized livestock, in the Ouray Valley allotment. The Proposed Action would result in surface disturbance on 192.8 acres (151.3 acres of BLM-administered land and 41.5 acres of State land), or approximately 0.4 percent of the Twelve Mile allotment. This equates to approximately 11.2 AUMs that would be at least temporarily unavailable to foraging animals, including authorized livestock, in the Twelve Mile allotment.

Direct impacts from construction and production activities in the Ouray Valley and Twelve Mile allotments would include the loss of forage and the potential for increased mortality and injuries to livestock resulting from increased vehicle traffic. In addition, livestock could be displaced from preferred grazing areas and range study plots by construction and production activities. Although only two of the 28 proposed well pads (22 on BLM-administered land and six on state land) are located in the Ouray Valley allotment, the Proposed Action would affect a greater percentage of the Ouray Valley allotment due to its relatively small size. The Proposed Action could also result in potential short-term adverse impacts to the fence between the Ouray Valley and Twelve Mile allotments in Township 7 S, Range 20 E, Sections 11 and 13 and proposed pipelines in Township 7 S, Range 20 E, Section 11.

Indirect impacts to livestock grazing would include the spread of noxious and invasive species, fugitive dust, and fragmentation of allotments. Following surface-disturbance activities, noxious weeds and invasive plant species may readily spread and colonize areas that typically lack or have minimal vegetation cover or areas that have been recently disturbed. The spread of halogeton in disturbed areas could lead to the loss of available native forage and increased livestock mortality as the consumption of halogeton can lead to intoxication and death in cattle (Torrell et al. 2000).

Even with the implementation of Applicant-Committed Resource Protection Measures in the GDBR ROD (BLM 2008c), the Proposed Action may contribute to decreasing the functionality of the allotments. An allotment becomes non-functional when it is no longer able to support grazing. The decision on whether an allotment is no longer functional would be made by the permittee and the BLM during the grazing allotment permit renewal process or any allotment evaluation determined necessary by the BLM. Refer to Section 4.11 (page 4-59 through 4-60) in the GDBR Final EIS (BLM 2008a) for additional information on potential impacts to range resources.

Rangeland Health Standards and Guidelines

The Proposed Action would result in 17.5 acres of surface disturbance in the Ouray Valley allotment and a total of 192.8 acres of surface disturbance in the Twelve Mile allotment affecting soils, vegetation, and available forage as described in Section 4.1.2 of this EA. The Twelve Mile allotment is classified as an “Improve” management category which indicates that current livestock grazing management level of use on public land is a significant causal factor in the non-achievement of land health standards, or where a change in mandatory terms and conditions

[1]The mean number of AUMs per acre of land within the Vernal Field Office is estimated at 0.06 AUMs per acre (BLM 2008b).

in the grazing authorization is or may be necessary (BLM 1997). Additional disturbance and associated impacts may further contribute to the Twelve Mile allotment not meeting BLM Utah Rangeland Health Standards by reducing the productivity of soils and the amount and quality of desired vegetation species for foraging animals.

Although much of the disturbed landscape is slated for reclamation, those efforts have not proven to be highly successful within this semi-arid shrub steppe environment area for rangeland forage. Therefore, it is assumed that ecological impacts are continuing to occur and have the potential to directly and indirectly affect the area's ability to meet Rangeland Health Standards.

Mitigation Measures for Livestock Grazing and Rangeland Health Standards

This EA is tiered to and incorporates the Applicant-Committed Resource Protection Measures and mitigation measures included in Attachment 1 of the GDBR ROD (BLM 2008c). Refer to Section 2.2.14, "Applicant-Committed Environmental Protection Measures" (p. 27) of this EA for Applicant-Committed Resource Protection Measures that are specific to well pads and development in the Project Area. The BLM did not identify any additional site-specific mitigation measures during preparation of this EA beyond those listed in Attachment 1 of the GDBR ROD (BLM 2008c).

4.1.4. Paleontology

The Proposed Action would result in approximately 210.2 total acres (168.7 acres on BLM-administered land and 41.5 acres on State land) of surface disturbance resulting from construction and development. All proposed project activities would occur on the Duchesne River Formation of the Middle Eocene Age, which has a PFYC of 4 (high) to 5 (very high). Based on the project location within a PFYC 4 to 5 area and presence of high fossil potential areas, fossil locations and occurrences may be encountered during project-related construction. Proposed project activities associated with well pad, access road, and pipeline construction in Township 7 S, Range 20 E, Sections 1, 10, and 11; CPF, access road, pipeline, and power line construction in Sections 1, 2, and 11, and pipeline construction in Section 14 are located within areas identified as high fossil potential areas (IPC 2013a, IPC 2013b, IPC 2013c, IPC 2014a, IPC 2014b, IPC 2014c). Therefore, proposed project activities may result in direct impacts to existing, undiscovered paleontological resources. Direct impacts to paleontological resources are primarily associated with loss of vertebrate fossils from surface-disturbing activities, illegal collecting, and potential vandalism. Refer to Section 4.8 (page 4-52 through 4-55) in the GDBR Final EIS (BLM 2008a) for additional information on potential impacts to paleontological resources.

Per the Applicant-Committed Resources Protection Measures in the GDBR ROD (BLM 2008c), if paleontological resources are uncovered during ground-disturbing activities, QEP would suspend all operations that would further disturb such materials and immediately contact the BLM's AO, who would arrange for a determination of significance and, if necessary, recommend a recovery or avoidance plan (BLM 2008c). As indicated in Table 1, "Applicant-Committed Resource Protection Measures" (p. 28), QEP has committed to using a qualified paleontological monitor during construction in areas where scientifically important fossils were identified during surveys. Use of a paleontological monitor at locations where scientifically important fossils were identified and QEP's commitment to suspend activities if fossils are uncovered would reduce the potential for impacts to paleontological resources.

Mitigation Measures for Paleontology

This EA is tiered to and incorporates the Applicant-Committed Resource Protection Measures and mitigation measures included in Attachment 1 of the GDBR ROD (BLM 2008c). Refer to Section 2.2.14, "Applicant-Committed Environmental Protection Measures" (p. 27) of this EA for Applicant-Committed Resource Protection Measures that are specific to well pads and development in the Project Area. The BLM did not identify any additional site-specific mitigation measures during preparation of this EA beyond those listed in Attachment 1 of the GDBR ROD (BLM 2008c).

4.1.5. Wildlife

Non-USFWS Designated Wildlife

Big Game Species

All proposed wells, CPFs, and associated roads, pipelines, and power lines in the Project Area overlap crucial year-long habitat for pronghorn. Mule deer crucial, year-long habitat overlaps the Project Area; however, it does not overlap any proposed development (Figure 3.2, "Wildlife Map" (p. 41)). Mule deer substantial, year-long habitat overlaps the following seven wells and associated roads, pipelines, and power lines:

- Wells OP 5G-3-7-20 and OP 15G-3-7-20 in Township 7 S, Range 20 E, Section 3.
- Wells OP 2G-10-7-20 and OP 1G-10-7-20 in Township 7S, Range 20E, Section 10.
- Wells OP 6G-11-7-30 and OP 13G-11-7-20 in Township 7S, Range 20E, Section 11.
- Well OP 9G-14-7-20 Township 7S, Range 20E, Section 14.

The Proposed Action would result in approximately 210.2 acres (168.7 acres on BLM-administered land and 41.5 acres on State land) of new surface disturbance in pronghorn crucial, year-long habitat. The Proposed Action would result in approximately 39.7 acres of new surface disturbance in mule deer substantial, year-long habitat. Degradation or unavailability of substantial, year-long habitat could lead to declines in carrying capacity and/or numbers of mule deer in the area (BLM 2008a).

Direct impacts to big game species from the Proposed Action would include reduction or degradation of available forage for pronghorn and mule deer and increased potential for wildlife-vehicle collisions. Under the Proposed Action, the indirect impact of greatest concern to big game species is displacement or avoidance resulting from increased human activity, noise from equipment operation, and increased vehicular traffic. Additional indirect impacts could include the spread of noxious and invasive weed species that reduce habitat quality and potential for dust effects from unpaved road traffic (BLM 2012a).

Refer to Section 4.6 (4-28 through 4-31) in the GDBR Final EIS (BLM 2008a) for additional information on potential impacts to big game species.

White-tailed Prairie Dog

The Proposed Action would result in the loss of approximately 210.2 acres (168.7 acres on BLM-administered land and 41.5 acres on State land) of potential white-tailed prairie dog habitat, making it less suitable for this species to establish and expand colonies. Due to the scattered distribution of the species, avoidance of all occupied burrows is often impractical. Direct impacts

could include loss of habitat until successful reclamation is completed and increased potential for direct mortality of individuals from construction activities and increased vehicular traffic in and near prairie dog colonies. Indirect impacts would include habitat fragmentation, displacement of individuals, increased noise levels and human presence in the Project Area, and habitat degradation by dispersal of noxious and invasive weed species. Weed invasions may lead to a decrease in the amount of native perennials and bare ground, thereby degrading habitat for prairie dogs by decreasing visibility, forage quality, and suitability for colony establishment. Refer to Section 4.6 (page 4-35) in the GDBR Final EIS (BLM 2008a) for additional information on potential impacts to white-tailed prairie dog.

Fish Species and Fisheries

Drilling and completion of 22 wells on BLM-administered land and six wells on state land would result in an estimated 72.2 acre-feet of water depletions from the Upper Colorado River Drainage System for dust abatement, construction, and drilling operations. Water depletions could reduce the ability of the Upper Colorado River Basin to create and maintain the physical habitat (areas inhabited or potentially habitable to fish for use of spawning, development of fish larvae, feeding, or serving as corridors between these areas).

Refer to Section 4.6 (page 4-34) in the GDBR Final EIS (BLM 2008a) for additional information on potential impacts to non-USFWS designated fish species.

Mitigation Measures for Non-USFWS Designated Wildlife

This EA is tiered to and incorporates the Application-Committed Resource Protection Measures and mitigation measures included in Attachment 1 of the GDBR ROD (BLM 2008c). Refer to Section 2.2.14, "Applicant-Committed Environmental Protection Measures" (p. 27) of this EA for Applicant-Committed Resource Protection Measures that are specific to well pads and development in the Project Area. No additional mitigation measures were identified for non-USFWS designated wildlife species during preparation of this EA.

Migratory Birds (including raptors)

The Proposed Action would result in the loss of approximately 210.2 acres (168.7 acres on BLM-administered land and 41.5 acres on State land) of potential breeding, nesting, and foraging habitat for migratory birds and raptors. Additional impacts could include displacement from suitable habitats due to increased noise levels and visual disturbances on the landscape; reduced habitat values in foraging areas due to prey displacement or weed invasion; potential loss of prey habitat; and an increased potential for collisions with vehicles traveling in the Project Area. Development would also result in indirect impacts such as habitat fragmentation, habitat degradation by dispersal of noxious and invasive weed species, and dust effects from unpaved road traffic.

If project development and production activities were to occur during the breeding season (April 1 through July 31 for passerine species or January 1 through August 31 for raptor species), then nest or nesting territory abandonment or loss of eggs or young could occur. However, the degree of these potential impacts would depend on a number of variables including the location of the nest site, species relative sensitivity, breeding phenology, and possible topographic shielding. If it is determined that there are active nest sites, construction and development activities within a half mile of the nest site would be prohibited between the nesting period, unless the BLM grants an exception.

The project area contains wintering habitat for bald eagles. Wintering bald eagles are likely to search for prey from November to March near open waterways and big game winter ranges. Bald eagles may avoid areas where construction/drilling activities are taking place. If construction occurs during the winter months, construction/drilling activities could result in short term, temporary displacement from winter foraging habitat. Development would also result in indirect impacts such as temporary habitat loss, changes/losses in vegetation structure, reduction of secondary prey species (e.g., prairie dogs, rabbits, mice).

Although there are no identified burrowing owl nests in the Project Area, the BLM identified burrowing owl potential habitat at the following eleven proposed well locations, and two CPFs locations during the onsite visits.

- OP 16G-1-7-20
- OP 2G-3-7-20
- OP 5G-3-7-20
- OP 6G-3-7-20
- OP 7G-3-7-20
- OP 1G-10-7-20
- OP 6G-11-7-20
- OP 16G-11-7-20
- OP 1G-12-7-20
- OP 6G-12-7-20
- OP 14G-12-7-20
- CPF-11
- CPF-12

If it is determined that active burrowing owl nests are located within 0.25-mile of proposed development locations, construction and development activities would be prohibited within 0.25 mile of the nests between March 1 and August 31.

If active nests for other raptor species are identified, seasonal protective buffers identified in the BLM Vernal RMP and ROD would apply (BLM 2008c).

Mitigation Measures for Migratory Birds (including raptors)

This EA is tiered to and incorporates the Applicant-Committed Resource Protection Measures and mitigation measures included in Attachment 1 of the GDBR ROD (BLM 2008c). Refer to Section 2.2.14, “Applicant-Committed Environmental Protection Measures” (p. 27) of this EA for Applicant-Committed Resource Protection Measures that are specific to well and development in the Project Area. .

Wildlife – Threatened, Endangered, Proposed, or Candidate

Greater Sage-Grouse

The Proposed Action would result in approximately 121.7 acres of total surface disturbance (80.2 acres on BLM-administered land; 41.5 acres on State land) in UDWR identified occupied greater sage-grouse occupied and brood-rearing habitat (UDWR 2013), which IM 2012-043 identifies

as Preliminary Priority Habitat (PPH) area for greater sage-grouse[2]. No surface disturbance would occur in identified Preliminary General Habitat (PGH). According to UDWR GIS data, there are no known greater sage-grouse leks within five miles of the Project Area. (UDWR 2013). Direct impacts to greater sage-grouse may include the loss and/or modification of sagebrush communities, increased collision potential associated with vehicle traffic, as well as increased predation by raptors, corvids, and coyotes. Indirect impacts to greater sage-grouse may include decreased suitable nesting and foraging habitat, increased habitat fragmentation due to increased development in the Project Area, increased noise levels and human presence, dispersal of noxious weeds and invasive plant species, and dust effects from unpaved road traffic.

Proposed development would result in an estimated 121.7 acres of surface disturbance in greater sage-grouse PPH.

The BLM coordinated with UDWR for greater sage-grouse on May 13, 2014. UDWR indicated that there is no recent documentation of sage-grouse occurrence within the Project Area (Maxfield 2014). The BLM attempted coordination with the Public Lands Policy Coordination Office (PLPCO), and no response was received.

Colorado River Fish Species

The Proposed Action would result in an estimated 72.2 acre-feet of water depletions from removal of water from the Upper Colorado River Drainage System for dust abatement, construction, and drilling operations. Potential impacts to Colorado River fish species would be similar to those described above for Fish Species and Fisheries.

The Proposed Action is within the scope of the Programmatic Section 7 consultation that was completed and documented in the Final Biological Opinion (Attachment 3) of the GDBR ROD (BLM 2008c). Based on the removal of water from the Green River (i.e., water depletions) for construction and drilling operations, the Proposed Action "***may affect, is likely to adversely affect***" the endangered Colorado pikeminnow, humpback chub, bonytail, and razorback sucker, as described in the GDBR Final EIS (BLM 2008a). The Proposed Action may also affect individuals of bluehead sucker, roundtail chub, and flannelmouth sucker, but it would not result in a trend toward the listing of the species.

The USFWS has determined that any water right number filed before 1988 is a historic depletion and does not require depletion fees (IM FWS/R6 FR-ES 2006, Programmatic Water Depletion Biological Opinion for Oil and Gas Development Administered or Permitted by the Bureau of Land Management). Refer to Section 3.6.9 (pages 3-67 through 3-69) and Appendix 3.5.2 in the GDBR Final EIS (BLM 2008a) for more information on threatened and endangered fish species.

Refer to Section 4.6.1.1 (page 4-39 through 4-40) in the GDBR Final EIS (BLM 2008a) and the Final Biological Opinion in the GDBR ROD (BLM 2008c) for additional information on water depletions and potential impacts to threatened and endangered fish species.

Mitigation Measures for Threatened, Endangered, Proposed, or Candidate Wildlife Species

[2]Per WO IM 2012-043, Preliminary Priority Habitat comprises areas that have been identified as having the highest conservation value to maintaining sustainable greater sage-grouse populations. These areas would include breeding, late brood-rearing, and winter concentration areas. Preliminary General Habitat comprises areas of occupied seasonal or year-round habitat outside of priority habitat.

This EA tiers to and incorporates the Applicant-Committed Resource Protection Measures and mitigation measures included in the GDBR ROD (BLM 2008c). Refer to Section 2.2.14, "Applicant-Committed Environmental Protection Measures" (p. 27) of this EA for Applicant-Committed Resource Protection Measures that are specific to well pads and development in the Project Area. No additional mitigation measures were identified for threatened, endangered, proposed or candidate species during preparation of this EA.

4.2. No Action Alternative Environmental Impacts

Under the No Action Alternative, there would be no impacts from the Proposed Action, as the proposed development would be denied. Under the No Action Alternative, currently approved oil and gas development and other activities in the Project Area would continue. Development of existing wells and associated infrastructure in the Project Area has resulted in approximately 54.1 acres of surface disturbance. Refer to Table 2.1, "Proposed Action Development and Surface Disturbance" (p. 16) for additional information on existing wells and surface disturbance in the Project Area and associated surface disturbance.

4.2.1. Air Quality and Greenhouse Gas Emissions

Under the No Action Alternative, QEP would not develop the proposed oil wells or develop the associated CPFs, pipelines, and infrastructure. The existing wells in the Project Area would continue to produce emissions until they are plugged and abandoned. Refer to Section 4.3.1.2 (page 4-11) in the GDBR Final EIS (BLM 2008a) for additional information on potential air quality impacts under the No Action Alternative.

4.2.2. Invasive Plants/Noxious Weeds, Soils, and Vegetation

Development of existing wells in the Project Area has resulted in approximately 54.1 acres of surface disturbance (Table 2.1, "Proposed Action Development and Surface Disturbance" (p. 16)) resulting in direct and indirect impacts to invasive plants/noxious weeds, soils, and vegetation similar to those effects described above for the Proposed Action. Under the No Action Alternative, there would be no direct disturbance or indirect effects to vegetation or soils from surface-disturbing activities associated with the Proposed Action. Refer to Section 4.4.1.2 (page 4-15 through 4-17) and Section 4.5.1.2 (pages 4-21 through 4-27) in the GDBR Final EIS (BLM 2008a) for more information on soil and vegetation impacts under the No Action Alternative.

4.2.3. Livestock Grazing and Rangeland Health Standards

Under the No Action Alternative, there would be no direct disturbance or indirect effects such as fragmentation. Therefore, no impact to the Ouray Valley and Twelve Mile allotments, associated livestock AUMs, or the allotment's compliance with Rangeland Health Standards would occur. Refer to Section 4.11.1.2 (page 4-60) in the GDBR Final EIS (BLM 2008a) for more information on livestock grazing and rangeland health standards impacts under the No Action Alternative.

4.2.4. Paleontology

Under the No Action Alternative, there would be no direct disturbance for development of wells, CPFs, access roads, and power lines. Therefore, no impact to scientifically important paleontological resources would occur. Refer to Section 4.8.1.2 (page 4-54 through 4-55) in the GDBR Final EIS (BLM 2008a) for more information on paleontological resources under the No Action Alternative.

4.2.5. Wildlife

Non-USFWS Designated Wildlife

The development of existing wells in the Project Area has resulted in approximately 54.1 acres of existing surface disturbance (Table 2.1, "Proposed Action Development and Surface Disturbance" (p. 16)) resulting in direct and indirect impacts to wildlife habitat and available forage for big game species, white-tailed prairie dog, and fish species and fisheries similar to those effects described above for the Proposed Action. Under the No Action Alternative, there would be no direct disturbance to non-USFWS designated wildlife or their habitat from surface-disturbing activities associated with the Proposed Action. Refer to Section 4.6.1.2 (pages 4-40 and 4-43) in the GDBR Final EIS (BLM 2008a) for more information on impacts to non-USFWS designated wildlife species under the No Action Alternative.

Migratory Birds (including raptors)

The development of existing wells in the Project Area has resulted in approximately 54.1 acres of existing surface disturbance (Table 2.1, "Proposed Action Development and Surface Disturbance" (p. 16)) resulting in direct and indirect impacts to migratory birds similar to those effects described above for the Proposed Action. Under the No Action Alternative, there would be no direct disturbance to migratory birds or raptor species from surface-disturbing activities associated with the Proposed Action. Refer to Section 4.6.1.2 (page 4-41 through 4-43) in the GDBR Final EIS (BLM 2008a) for more information on impacts to migratory birds and raptor species under the No Action Alternative.

Wildlife – Threatened, Endangered, Proposed, or Candidate

Greater Sage-Grouse

The development of existing wells in the Project Area has resulted in approximately 54.1 acres of surface disturbance (Table 2.1, "Proposed Action Development and Surface Disturbance" (p. 16)) resulting in direct and indirect impacts to greater sage-grouse similar to those effects described above for the Proposed Action. Under the No Action Alternative, the development of well pads, CPFs, access roads, and power lines associated with the Proposed Action would not occur. Therefore, there would be no direct or indirect disturbance to greater sage-grouse PPH habitat. Refer to Section 4.6.1.2 (pages 4-46 and 4-47) in the GDBR Final EIS (BLM 2008a) for more information on impacts to greater sage-grouse under the No Action Alternative.

Colorado River Fish Species

Under the No Action Alternative, there would be no direct impacts to threatened, endangered, candidate, or proposed fish species in the Colorado River Basin from surface-disturbing activities or water depletions associated with the Proposed Action. Refer to Section 4.6.1.2 (pages

4-47 through 4-48) in the GDBR Final EIS (BLM 2008a) for more information on impacts to USFWS designated threatened, endangered, candidate, or proposed fish species under the No Action Alternative.

Chapter 5. Reasonably Foreseeable Development and Cumulative Impacts

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Cumulative impacts are those impacts that result from the incremental impact of each alternative when added to other past, present, and reasonably foreseeable actions, regardless of which agency or person undertakes such other actions. Each section below identifies the Cumulative Impact Analysis Areas (CIAAs) for individual resources and resource issues and the rationale for the selection of each area.

Proposed drilling, surface disturbance, and other activities under the Proposed Action (as described in Chapter 2 of this EA) are within the bounds of the cumulative impact analysis in the GDBR Final EIS (BLM 2008a). The GDBR Final EIS (BLM 2008a) identified past, present, and reasonably foreseeable development for oil and gas activities in the Uinta Basin, and analyzed cumulative impacts to resources and resource uses from the drilling and development of oil and gas resources in the GDBR. As a result, the cumulative impact analysis in this chapter tiers to and incorporates by reference the analysis in the GDBR Final EIS (BLM 2008a). The analysis in this chapter provides additional site-specific analysis and information, where appropriate, to inform decision-making on this specific development proposal.

5.1. Past, Present, and Reasonably Foreseeable Development

Past, present, and reasonably foreseeable future development in the GDBR primarily includes oil and gas development; other significant activities include livestock grazing, vegetation management through prescribed burning, and recreational projects. Past, present, and reasonably foreseeable future oil and gas development in the GDBR has resulted and will continue to result in approximately 31,175 acres of surface disturbance.[1] Refer to Section 5.2 (pages 5-1 through 5-12) in the GDBR Final EIS (BLM 2008a) for additional information on past, present, and reasonably foreseeable development.

5.2. Cumulative Impacts

5.2.1. Air Quality and Greenhouse Gas Emissions

The CIAA for air quality is the Uinta Basin. The potential impact of the Proposed Action to Uinta Basin ozone levels cannot be accurately modeled. However the GNB included the GDB project in emissions inventory. The GNB (Greater Natural Buttes) Final EIS *Air Quality Technical Support Document* (BLM 2012b), which is the most recent regional air model information available for the Uinta Basin, and the *GNB Final EIS* (BLM 2012a) Section 5.3.1, are incorporated by reference and summarized below. The *GNB Final EIS* (BLM 2012a) discloses that most of the cumulative emissions in the Uinta Basin are associated with oil and gas exploration and production activities. Consequently, past, present, and reasonably foreseeable wells in the Uinta Basin are a part of the cumulative actions considered in this analysis. Table 5.1, "2006 Uinta Basin Oil and Gas Operations Emissions Summary" (p. 64) summarizes the 2006 Uinta Basin emissions as well as the incremental impact of this project's alternatives. The Proposed Action comprises a small percentage of the Uinta Basin emissions summary.

[1]The surface disturbance acreage includes past, present, and reasonably foreseeable future projects in the GDBR, including surface disturbance of the selected alternative in the GDBR ROD (BLM 2008c), which incorporates disturbance from the Proposed Action in this EA. Refer to Table 5.1 and 5.2 in the GDBR Final EIS (BLM 2008a) for a description of the past, present, and reasonably foreseeable future projects included in the surface disturbance acreage estimates.

Table 5.1. 2006 Uinta Basin Oil and Gas Operations Emissions Summary

County	NO_X (tpy)	CO (tpy)	SO_X (tpy)	PM (tpy)	VOC (tpy)
Uintah	6,096	4,133	247	344	45,646
Carbon	995	814	22	40	2,747
Duchesne	3,053	2,448	96	173	19,019
Grand	337	207	16	22	2,360
Emery	273	199	9	14	453
Uinta Basin Total	**10,754**	**7,800**	**391**	**592**	**70,226**
Proposed Action	171.1	247.0	0.3	2.5	214.8
No Action	0	0	0	0	0

Source: BLM 2012a, Table 5.3-1 (BLM 2012a).
tpy tons per year

The GNB model predicted the following impacts to air quality and air quality related values for the GNB Proposed Action, which encompassed 3,675 new wells:

- Cumulative impacts from criteria pollutants to ambient air quality are well below the NAAQS at Class I airsheds and selected Class II areas.
- The incremental impacts to visibility would be virtually impossible to discern and would not contribute to regional haze at the Class I areas.
- The 2018 projected baseline emissions would result in impacts of 1.0 deciview for at least 201 days per year at the Class II areas.
- Discernible impacts at Flaming Gorge National Recreation Area and Dinosaur National Monument were anticipated.
- The GNB Final EIS proposed action would contribute less than one percent to the acid deposition in Class I areas, and 4.3 percent at the Flaming Gorge Class II area.
- Project-related acid deposition impacts to sensitive lakes were below the USFWS screening threshold.
- Ozone levels would be below the current ozone standard of 75 parts per billion (ppb) for the fourth highest annual level in the Uinta Basin for the 2018 projected baseline, and the Proposed Action would be approximately 3.2 percent of the cumulative ozone impact within the Uinta Basin.

Based on the GNB model results, it is anticipated that the impact to ambient air quality and air quality related values associated with the Proposed Action would be indistinguishable from, and dwarfed by, the margin of uncertainty associated with the model and Uinta Basin emission inventory. The No Action Alternative would not result in an accumulation of impacts.

Greenhouse Gases

Inconsistent results based on scientific models used to predict global climate change prohibit the BLM from quantifying cumulative impacts. Drilling and development activities from the Proposed Action are anticipated to release a negligible amount of greenhouse gases, into the local airshed, resulting in a negligible cumulative impact. The No Action Alternative would not result in an accumulation of impacts.

5.2.2. Invasive Plants/Noxious Weeds, Soils, and Vegetation

The CIAA for soils, vegetation, and invasive plants/noxious weeds is the Vernal Planning Area (BLM 2008a). The Vernal RMP analysis indicates surface disturbance and removal of vegetation

from cumulative activities would be 187,363 acres between 2008 and 2018, with approximately 30,938 acres of surface disturbance resulting from oil and gas development in the CIAA.

Surface disturbance would reduce soil productivity, disturb vegetation communities, and accelerate erosion for the lifetime of oil and gas production until such time that final reclamation is deemed successful in terms of soil stability and soil productivity as measured by amounts and types of vegetative cover and forage. Each acre of disturbance also destroys native vegetation and vegetative cover and introduces or spreads undesired plant species, which may reduce species biodiversity. Noxious weeds and invasive species already exist throughout the CIAA. In general, soils in the Uinta Basin are very thin, slow to develop, and difficult to reclaim because of the arid climate and lack of organic material. Refer to Section 5.3.4 (pages 5-17 through 5-18) of the GDBR Final EIS (BLM 2008a) for additional information on cumulative impacts to soils. Refer to Section 5.3.5 (page 5-18) of the GDBR Final EIS (BLM 2008a) for additional information on cumulative impacts to vegetation, including weeds. The No Action Alternative would not contribute to cumulative impacts.

5.2.3. Livestock Grazing and Rangeland Health Standards

The CIAA for livestock grazing and Rangeland Health Standards is the full extent of the Ouray Valley and Twelve Mile allotments (BLM 2008a). The Proposed Action would result in 17.5 acres of surface disturbance in the Ouray Valley allotment (2.4 percent of the total allotment acreage) resulting in a projected loss of 1.0 AUM in the allotment. When combined with other existing and reasonably foreseeable surface disturbance and loss of AUMs, the Proposed Action would result in cumulative impacts similar to those described in Section 4.1.3, though to a greater degree due to the additional disturbance and loss of AUMs from other ongoing and reasonably foreseeable projects.

The Proposed Action would result in 192.8 acres of surface disturbance (151.3 acres of BLM-administered land and 41.5 acres of State land) in the Twelve Mile allotment (0.4 percent of the total allotment acreage) resulting in a projected loss of 11.2 AUMs in the allotment. When combined with other existing and reasonably foreseeable surface disturbance and loss of AUMs, the Proposed Action would result in cumulative impacts similar to those described in Section 4.1.3, though to a greater degree due to the additional disturbance and loss of AUMs from other ongoing and reasonably foreseeable projects.

In addition to cumulative loss of AUMs, the development of access roads have had, and would continue to have, both adverse and beneficial impacts on the livestock grazing activities and resources. Re-routing of access roads and increased vehicle activity and human presence associated with the GDBR selected alternative, combined with other past, present, and future projects would provide additional access to portions of the allotments that currently do not have access. Roads could also increase livestock distribution in some areas, but also could disrupt distribution patterns. Increased livestock distribution would occur in some areas that have previously been inaccessible due to terrain limitations, distance from water, or a combination of both. Roads may also increase vehicular traffic, contributing to potentially adverse disturbance and increases in mortality to livestock from off-highway vehicle (OHV) users and those seeking dispersed recreational opportunities. Roads also would result in an increase in the spread of weeds. The No Action Alternative would not result in an accumulation of impacts.

Rangeland Health Standards

Past, present, and reasonably foreseeable future actions in the allotments include oil and gas and other infrastructure development that has resulted in cumulative surface disturbance in the CIAA resulting in cumulative impacts to the productivity of soils and the amount and quality of desired vegetation for foraging animals. If interim and/or final reclamation for past, present, and reasonably foreseeable future development is not successful, or is delayed due to drought conditions, livestock grazing and Rangeland Health Standards will continue to be negatively affected. If future quantitative monitoring data substantiates a downward trend in range conditions in this allotment, changes in management including reduction in AUMs, may be implemented to meet or continue to meet objectives. The No Action Alternative would not contribute to cumulative impacts.

5.2.4. Paleontology

The CIAA for paleontology resources is the Vernal Planning Area (BLM 2008a). Cumulative impacts on paleontology resources would result from surface-disturbing activities to fossiliferous rock from either oil and gas development, recreational use/OHV travel, or fire management (BLM 2008a).

Oil and gas activities could have short- and long-term adverse cumulative effects on paleontological resources in the CIAA. Surface disturbance could affect paleontological resources by damaging or destroying fossils. Adverse effects include physical damage or destruction of fossils, as well as increased potential for vandalism and theft that result from improved access to fossil localities (BLM 2008a). Preconstruction surveys and other required mitigation measures required by the BLM would result in recovery of important fossils and reduce potential accumulation of cumulative impacts. Refer to Section 5.3.8 (page 5-20 through 5-22) of the GDBR Final EIS (BLM 2008a) for additional information on cumulative impacts to paleontology resources. The No Action Alternative would not contribute to cumulative effects.

5.2.5. Wildlife

Non-USFWS Designated Wildlife

Big Game Species

The CIAA for non-USFWS designated big game species is the GDBR, a 98,785-acre area (BLM 2008b). Cumulative impacts associated with surface-disturbing activities, including ongoing and planned oil and gas activities, in combination with the Proposed Action would cumulatively contribute to habitat fragmentation, habitat loss, loss of foraging opportunities, and animal displacement until successful final reclamation. Cumulative impacts could also lead to mortality of small or slow-moving wildlife due to construction equipment and vehicle collisions. Impacts to non-USFWS designated wildlife species would be relative to the amount of cumulative habitat loss and disturbance from incremental development, especially in sensitive habitat (e.g., year-long crucial habitat) (BLM 2008a).

The past, present, and reasonably foreseeable future total area of disturbance due to oil and gas activity in the CIAA is estimated at 31,175 acres (BLM 2008a), which includes the estimated disturbance from the selected alternative in the GDBR ROD (BLM 2008c). The Proposed Action would contribute 210.2 acres (168.7 acres on BLM-administered land and 41.5 acres on state land) to the disturbance estimated in the GDBR ROD (BLM 2008c).

Refer to Section 5.3.6 (page 5-18 through 5-19) in the GDBR Final EIS (BLM 2008a) for more information on cumulative impacts to non-USFWS designated wildlife and big game species and their habitat. The No Action Alternative would not contribute to cumulative impacts.

White-tailed Prairie Dog

The CIAA for white-tailed prairie dog is the Greater Uinta Basin as described in the BLM Vernal Field Office Cumulative Impact Technical Support Document (BLM 2012c). The past, present, and reasonably foreseeable future total area of disturbance due to oil and gas activity in the CIAA is estimated at 67,436 acres (Table 13) (BLM 2012a).

The Proposed Action would result in 210.2 acres (168.7 acres on BLM-administered land and 41.5 acres on State land) of surface disturbance occurring in white-tailed prairie dog habitat. Surface disturbances associated with oil and gas projects in the CIAA would have direct and indirect cumulative effects on white-tailed prairie dog populations through loss of habitat, introduction of invasive and noxious plant species, reduced cover and forage quality, reduction in existing population size, changes in species composition, and increased potential for direct mortality from predation and increased vehicular traffic. Refer to Section 5.3.6 (pages 5-18 through 5-19) in the GDBR Final EIS (BLM 2008a) for more information about cumulative impacts to white-tailed prairie dogs. The No Action Alternative would not contribute to cumulative impacts.

Fish Species and Fisheries

The CIAA for potential impacts to non-USFWS designated fish species and fisheries is the entire BLM VFO management area. Cumulative effects to fisheries resources would primarily be associated with increased potential for erosion and sedimentation in the Colorado River Basin, and water depletions associated with existing and continued oil and gas developments. Deteriorated waterways due to erosion and sedimentation increases in the CIAA waterways would affect fish spawning, fish rearing, and feeding behaviors (BLM 2008a). Water depletions associated with the Proposed Action, in combination with depletions from other activities in the CIAA, would reduce the ability of the Upper Colorado River Basin to create and maintain the physical habitat (areas inhabited or potentially habitable to special status fish for use of spawning, development of fish larvae, feeding, or serving as corridors between these areas) and the biological environment for fish species and fisheries.

The Proposed Action would result in 72.2 estimated acre-feet of water depletions and combined with other past, present, and reasonably foreseeable future projects would reduce the volume of flow in the Colorado River Basin. As a result, implementation of the Proposed Action or alternatives, in combination with other activities in the CIAA, would degrade USFWS-designated critical habitat for the fish species and fisheries in the Colorado River Basin. Refer to Section 5.3.6 (pages 5-18 through 5-19) in the GDBR Final EIS (BLM 2008a) for more information on cumulative impacts to fisheries and surface water resources. The No Action Alternative would not contribute to cumulative impacts.

Migratory Birds (including raptors)

The CIAA for migratory birds, including raptors, is the GDBR, a 98,785 acre area (BLM 2008b). Surface disturbance associated with past, present, and reasonably foreseeable actions, including ongoing and planned oil and gas activities, would cumulatively reduce the amount of available cover, foraging opportunities, habitat productivity, and breeding/nesting areas for migratory birds until successful final reclamation. Human activities would result in short-term or long-term

site avoidance, or would preclude migratory birds from using areas of more intensive human activity and could increase the potential for collisions between raptors and vehicles. In general, the severity of the cumulative effects would depend on factors such as the sensitivity of the species affected, seasonal intensity of use, type of project activity, and physical parameters (e.g., topography, forage, and cover availability).

Direct surface disturbance and removal of vegetation from cumulative activities in the Vernal RMP area are estimated to occur on 187,363 acres between 2008 and 2018. Oil and gas activities would account for 16.5 percent of the total vegetation impact, and the GDBR project would specifically account for approximately 2.5 percent (BLM 20008a). The Proposed Action would contribute 210.2 acres (168.7 acres on BLM-administered land and 41.5 acres on State land) to the surface disturbance estimated in the GDBR ROD (BLM 2008c). The No Action Alternative would not contribute to cumulative impacts.

Wildlife – Threatened, Endangered, Proposed, or Candidate

Greater Sage-Grouse

The CIAA for greater sage-grouse is the Greater Uinta Basin, as described in the BLM Vernal Field Office Cumulative Impact Technical Support Document (BLM 2012c). The Proposed Action would result in an estimated 121.7 acres of total surface disturbance (80.2 acres in BLM-administered land; 41.5 acres in state land) within greater sage-grouse PPH. Direct cumulative impacts would include increases in accidental mortality due to increased human activity, traffic, and equipment; and degradation in the quantity or quality of sage-grouse habitat in sage-grouse PPH , which could decrease available cover, carrying capacity, foraging opportunities, breeding/nesting/lek habitat, and habitat productivity. Indirect cumulative impacts may include displacement of sage-grouse from preferred habitats due to habitat fragmentation, increased noise, vehicle traffic, and human presence following development and establishment of invasive plants and noxious plant species, and increased predation of sage-grouse from raptors and corvids resulting from an increase in roosting and hunting locations (e.g., powerlines). The severity of the cumulative impacts would depend on seasonal intensity of oil and gas use in the area, type of project activity, and physical parameters (e.g., topography, forage quality, cover availability, visibility, and noise presence).

The past, present, and reasonably foreseeable future total area of disturbance due to oil and gas activity in the CIAA is estimated at 67,436 acres (BLM 2012a). The Proposed Action would contribute 210.2 acres (168.7 acres on BLM-administered land and 41.5 acres on State land) to the surface disturbance estimated in the GDBR ROD (BLM 2008c). The No Action Alternative would not contribute to cumulative impacts.

Colorado River Fish Species

The CIAA for potential impacts to Colorado River Fish Species is the entire BLM VFO management area. Cumulative effects to Colorado River fish species would be similar to those described for non-USFWS designated fish species and fisheries above.

The Proposed Action would result in 72.2 estimated acre-feet of water depletions and when combined with other past, present, and reasonably foreseeable future projects, would reduce the volume of flow in the Colorado River Basin. As a result, implementation of the Proposed Action or alternatives, in combination with other activities in the CIAA, would degrade

USFWS-designated critical habitat for the Colorado River Endangered Fish Species in the Colorado River Basin. The No Action Alternative would not contribute to cumulative impacts.

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Chapter 6. Persons, Groups, and Agencies Consulted

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6.1. Agency and Tribal Consultation

US Fish and Wildlife Service: The BLM conducted programmatic consultation with the USFWS under Section 7 of the ESA as part of the GDBR EIS process. BLM initiated formal consultation on January 23, 2007 by submitting the Biological Assessment to the USFWS. The USFWS concluded consultation by signing a Biological Opinion on May 15, 2007. This project falls within the scope of the programmatic consultation; therefore, consultation is considered complete. For documentation of this process and additional information, refer to the Final Biological Opinion (Attachment 3) of the GDBR ROD (BLM 2008c).

Utah Division of Wildlife Resources: The BLM coordinated with UDWR for greater sage-grouse on May 13, 2014. Brian Maxfield, Wildlife Conservation Biologist for UDWR, stated that there was no recent documentation of sage-grouse within the Project Area (Maxfield 2014). The BLM attempted coordination with the Public Lands Policy Coordination Office (PLPCO), and no response was received.

Utah State Historic Preservation Officer: In a letter dated January 8, 2004, the BLM initiated consultation with the Utah State Historic Preservation Officer (SHPO) under Section 106 of the National Historic Preservation Action as part of the GDBR EIS process (BLM 2008a). The SHPO replied in a letter dated January 26, 2004 that consultation concerning the undertaking would occur as the undertaking was developed. Consultation with SHPO for the site-specific development proposed in this EA was initiated by the BLM. SHPO concurrences with the BLM's determinations of eligibility and effects of the undertaking were received between 2013 and 2014 (UT SHPO 2014, UT SHPO 2013a, UT SHPO 2013b, UT SHPO 2013c, UT SHPO 2013d, UT SHPO 2013e, UT SHPO 2013f, UT SHPO 2013g).

Tribal Consultation: During the scoping period for the GDBR EIS, and in a letter dated January 8, 2004, BLM initiated consultation with the following Native American Tribes: Southern Ute Tribe, Navajo Nation, Paiute Indian Tribe of Utah, Pueblo of Zuni and Ute Mountain Ute, Hopi Tribe, Northern Ute Tribe, Shoshone-Bannock Tribe, and the Ute Indian Tribe. Scoping letters were received from the Hopi, Paiute, and the Southern Ute Tribes. The Southern Ute Tribe stated that no known impacts to sites sensitive to the tribe were expected to occur, but that new discoveries should be reported immediately. The Paiute Tribe expressed interest in the project and its impacts, and asked for future copies of the document. No specific concerns were identified. The Hopi Tribe expressed support for the identification and avoidance of prehistoric archaeological sites and expressed interest in the need to identify and avoid those sites. Additional consultation occurred with the tribes during the public comment period. No responses were received. Consultation is therefore considered to be closed.

6.2. Summary of Public Participation

On October 8, 2014, the BLM posted notification of this EA on the BLM's Land Use Planning and NEPA register (e-planning) website at: https://www.blm.gov/epl-front-office/eplanning/nepa/nepa_register.do. To date, the BLM has not received any public comments or input.

6.3. List of Preparers

Table 6.1. List of Preparers

Name	Title	Responsible for the Following Section(s) of this Document
BLM Preparers		
Kevin Sadlier	Natural Resource Specialist	Project manager and quality control
BLM Interdisciplinary Team	-	Refer to Appendix A, *Interdisciplinary Team Checklist* (p. 81) for the BLM Interdisciplinary Team Checklist that identifies BLM roles.
NEPA Contractor – ICF International		
John Priecko	Project Director	Senior level review of all content
Tanya Copeland	Project Manager	Chapters 1, 2 QA review of Chapters 3, 4, and 5
Kristin Salamack	Project Coordinator/Biologist	Chapters 3, 4, 5 and appendices QA review of all content
Lissa Johnson	Geographic Information Systems Lead	All maps and GIS calculations

Chapter 7. References Cited

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7.1. References

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Appendix A. Interdisciplinary Team Checklist

Project Title: QEP INC. Proposal to Vertically Drill Twenty-Two Oil Wells in the Ouray Park Field within theGreater Deadman Bench Project Area, Uintah County, Utah

NEPA Log Number: DOI-BLM-UT-G010-2014–0251–EA

File/Serial Number:

Project Leader: Kevin Sadlier

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

NP = not present in the area impacted by the proposed or alternative actions

NI = present, but not affected to a degree that detailed analysis is required

PI = present with potential for relevant impact that need to be analyzed in detail in the EA

NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

Table A.1. Interdisciplinary Team Checklist

Determination	Resource/Issues	Rationale for Determination	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
PI	Air Quality & Greenhouse Gas Emissions	Emissions from earth-moving equipment, vehicle traffic, drilling and completion activities, production operations, daily tailpipe and fugitive dust emissions, and other sources could adversely affect air quality and contribute to Greenhouse Gas Emissions (GHGs).	Kevin Sadlier	8/25/2014
NP	BLM Natural Areas	None present per 2008 Vernal RMP and ROD/GIS layer review.	Kevin Sadlier	8/25/2014
NI	Cultural: Archaeological Resources	The cultural resource inventories identified one previously documented prehistoric site in the survey area, which was evaluated as eligible for the National Register of Historic Places (NRHP) in the site-specific cultural inventory report (MOAC 2014). This site is located approximately 120 feet from proposed development and QEP has committed to avoid this site. A new historic site (a livestock loading chute) documented at CPF 12 was identified during the surveys but was evaluated as ineligible for the NRHP in the site-specific cultural inventory report (MOAC 2014). Based on project-specific Section 106 consultation, the SHPO and BLM have made a determination of no historic properties affected (36CFR800.4(d)(1)) for the proposed undertaking. Additionally, if a cultural site is uncovered during construction, activities in the vicinity would immediately cease and the Authorized Officer would be notified.	Erin Goslin	8/25/2014
NI	Cultural: Native American Religious Concerns	Tribal consultation was conducted as part of the GDBR EIS (BLM 2008a). Tribal consultation did not identify any adverse effects to previously recorded historic properties or cultural resources important to tribes and the consultation was closed with publication of the Final GDBR EIS and ROD (BLM 2008a; BLM 2008c).	Erin Goslin	8/25/2014
NP	Designated Areas: Areas of Critical Environmental Concern	None present per 2008 Vernal RMP and ROD/GIS layer review.	Kevin Sadlier	8/25/2014
NP	Designated Areas: Wild and Scenic Rivers	None present per 2008 Vernal RMP/ROD and GIS layer review.	Kevin Sadlier	8/25/2014
NP	Designated Areas: Wilderness Study Areas	None present per 2008 Vernal RMP/ROD and GIS layer review.	Kevin Sadlier	8/25/2014

Determination	Resource/Issues	Rationale for Determination	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
NP	Environmental Justice	No minority or economically disadvantaged communities or populations would be disproportionately adversely affected by the Proposed Action or alternatives.	Kevin Sadlier	8/25/2014
NI	Farmlands (prime/unique)	Proposed development overlaps areas that are considered "prime farmlands if irrigated", as designated by the NRCS (2013). Areas proposed for development are not irrigated and are not in agricultural production.	Kevin Sadlier	8/25/2014
NP	Fuels/Fire Management	No fire or fuel management activities are planned for the Project Area. The Proposed Action would not conflict with fire management activities due to the use of existing and proposed well pad operations.	Kevin Sadlier	8/25/2014
NI	Geology/Minerals/ Energy Production	No known gilsonite veins occur in the area; however, encounters with gilsonite during any surface or drilling operation must be reported to the BLM and should include location, depth, and thickness of the vein encountered. Natural gas, oil, gilsonite, oil shale and tar sand are the only mineral resources that could be impacted by the project. Production of natural gas or oil would deplete reserves, but the proposed project allows for the recovery of natural gas and oil per 43 CFR 3162.1(a), under the existing Federal lease. Compliance with "Onshore Oil and Gas Order No. 2, Drilling Operations" would assure that the project would not adversely affect Gilsonite, oil shale, or tar sand deposits. Due to the state-of-the-art drilling and wells completion techniques, the possibility of adverse degradation of tar sand or oil shale deposits by the proposed action would be negligible. Well completion must be accomplished in compliance with "Onshore Oil and Gas Order No. 2, Drilling Operations." These guidelines specify the following: … proposed casing and cementing programs shall be conducted as approved to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. Any isolating medium other than cement shall receive approval prior to use.	Betty Gamber	8/27/2014

Determination	Resource/Issues	Rationale for Determination	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
PI	Invasive Plants/ Noxious Weeds, Soils & Vegetation	Under the Proposed Action, development of wells, CPFs, pipelines, access roads, and power lines would result in an estimated 210.2 acres of surface disturbance until interim reclamation is successful. The surface disturbance would result in clearing of vegetation and resulting impacts to soils and vegetation. For all surface disturbance, QEP would recontour and reseed the soil after abandonment and during reclamation. QEP would control invasive species along roads, pipeline corridors, and on well pads as required in the COAs of the GDBR ROD (BLM 2008c) and as described in QEP's Reclamation Plan for the Uinta Basin (QEP 2009). Even with application of COAs and other measures to monitor and control invasive plants and noxious weeds, establishment and spread could occur.	Kevin Sadlier	8/25/2014
NI	Lands/Access	The Project Area is located within the Vernal Field Office Resource Management Plan planning area which allows for oil and gas development with associated road pipeline and power line rights-of-way.	Cindy Bowen	8-27-2014
NP	Lands with Wilderness Characteristics (LWC)	None Present per 2008 Vernal RMP/ROD and GIS layer review.	Kevin Sadlier	8/25/2014
PI	Livestock Grazing & Rangeland Health Standards	The Proposed Action would be located in the Ouray Valley allotment and Twelve Mile allotment. The Ouray Valley allotment is a continuous use cattle allotment from October 15 through November 26. This allotment is in a "Custodial" management category. The Twelve Mile allotment is a deferred cattle allotment from February 9 through February 21. This allotment is in a "Management" management category. Rangeland Improvements in the Project Area include a fence in Sections 13, 14, and 11 which marks the boundary between the Ouray Valley and Twelve Mile allotments. The fence intersects with proposed power lines in Sections 13 and 11 and proposed pipelines in Section 11. The Proposed Action would result in an estimated 168.7 acres of initial surface disturbance and 41.8 acres of long-term disturbance on BLM-administered land that could reduce the quantity and quality of forage, fragment the allotments, increase potential for vehicle/livestock collisions, increase potential for damage to range improvements, and result in other potential impacts to livestock operators.	Craig Newman	9/25/2014

Determination	Resource/Issues	Rationale for Determination	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
		The Proposed Action is not expected to affect livestock movement patterns, access to water or to largely affect the allotment with the loss of AUMS. The Proposed Action would result in an estimated 168.7 acres of surface disturbance on BLM-administered land. The Proposed Action would result in approximately 17.5 acres of surface disturbance in the Ouray Valley allotment and 192.8 total acres (151.3 acres of BLM-administered lands and 41.5 acres of State land) of surface disturbance in the Twelve Mile allotment which would reduce forage and AUMs. While surface disturbance associated with the Proposed Action would not individually affect the ability to achieve Rangeland Health Standards in the allotments, the Proposed Action, combined with other ongoing and foreseeable development, could contribute to declines in Rangeland Health Standards.		
PI	Paleontology	Class III paleontological surveys were conducted by Intermountain Paleo Consulting between 2012 and 2014 (IPC 2013, 2014). The paleontological surveys identified scientifically important fossil locations in the survey areas for the following wells: OP 1G-1-7-20- monitor construction process for well pad access road and pipeline (IPC#13-61). OP 1G-10-7-20- monitor construction process for well pad access road and pipeline (IPC#13-30). OP 2G-1-7-20- monitor construction process for well pad access road and pipeline (IPC# 13-61). OP 6G-1-7-20- monitor construction process for well pad access road and pipeline (IPC#13-55). OP 10G-1-7-20- monitor construction process for well pad access road and pipeline (IPC# 13-55). OP 13G-11-7-20 – monitor construction process for access road and pipeline(IPC#14-44). OP 16G-1-7-20 – monitor beginning of the construction process and thereafter spot monitor (IPC #13-55).	Betty Gamber	8/27/2014

Determination	Resource/Issues	Rationale for Determination	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
PI	Paleontology	The rest of the well locations were clear for paleo resources. Intermountain Paleo Consulting also identified scientifically important fossils in the survey areas for CPFs 1, 2, 11 and pipelines that would be constructed in Section 14 (IPC 2014). IPC recommended monitoring during the construction process for pads, access roads, power lines, and pipelines for CPF 1 and 2. In Section 14, the construction process for just power lines and pipelines should be monitored (IPC#14-07). CPF-12 was clear for paleo resources. QEP has committed to provide a certified paleontological monitor to monitor construction of proposed development at the above locations where scientifically important fossils were identified during surveys. Per the COAs in the GDBR ROD (BLM 2008c), if paleontological resources are uncovered during ground-disturbing activities, QEP would suspend all operation that would further disturb such materials and would immediately contact BLM's Authorized Officer, who would arrange for a determination of significance and, if necessary, recommend a recovery or avoidance plan (BLM 2008c). Use of a paleontological monitor at locations where scientifically important fossils were identified and QEP's commitment to suspend activities if fossils are uncovered would reduce the potential for impacts.	Betty Gamber	8/27/2014
NI	Plants: BLM Sensitive	The following Utah BLM sensitive plant species are present or expected within the same or an adjacent subwatershed: *Astragalus equisolensis.* However, no populations or potential habitat is present in areas to be developed under the Proposed Action. Suitable habitat for the following Utah BLM sensitive plant species is present in the Project Area: *Cryptantha grahamii* and *Astragalus hamiltonii*. However, no populations or individuals of these species have been previously documented in the Project Area per BLM GIS review, and these species are not anticipated to be impacted as a result of the Proposed Action.	Christine Cimiluca	8/25/14

Determination	Resource/Issues	Rationale for Determination	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
NP	Plants: Threatened, Endangered, Proposed, or Candidate	The following threatened, endangered, proposed, or candidate plant species could occur within the same or an adjacent subwatershed: Uinta Basin hookless cactus (*Sclerocactus wetlandicus*). ● This species occurs primarily along the Green River, the White River, and their tributaries. The Project Area is located adjacent to the Green River; however, it lacks the course soils derived from cobble and gravel river terrace deposits in which this species is generally found (USFWS 2012). ● No populations or potential habitat is present in areas to be developed under the Proposed Action.	Christine Cimiluca	8/25/14
NI	Plants: Wetland/Riparian	According to NWI and GAP data, Sections 3, 11, 14, and 13 have the potential to contain riparian\wetland vegetation. However, based on additional site visits by the BLM, the proposed development is not anticipated to impact Riparian/wetland areas.	Kevin Sadlier	9/22/2014
NI	Recreation	No developed recreation sites/trails or Special Recreation Management Areas (SRMAs) exist within the Project Area. The Proposed Action is located in an area with previous oil and gas development. Recreational access would not be restricted by the Proposed Action. Based on the lack of existing developed recreation sites and use, impacts from implementation of proposed activities would be minimal.	Kevin Sadlier	9/22/2014
NI	Socio-Economics	No impact to the social or economic status of the county or nearby communities would occur from this project due to its small size in relation to ongoing development throughout the basin. Cumulative effects on socio-economic conditions resulting from past, present, and future development (including the Proposed Action) are described in the GDBR Final EIS (BLM 2008a)	Kevin Sadlier	8/25/2014

Determination	Resource/Issues	Rationale for Determination	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
NI	Visual Resources	All proposed development would be on VRM Class III and be consistent with management objectives for this VRM Class. The Project Area is managed for VRM Class III objectives. Class III objectives state: "The objective for this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. These management activities may dominate the view and be the major focus of view attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements (BLM 1986)." Visual resources relevant to the Project Area can generally be characterized as a high desert look consisting of natural browns and reds, rock outcrops, horizontal and vertical broken lines with sparse, low lying vegetation. QEP would adhere to the Conditions of Approval in the GDBR ROD (BLM 2008c) to limit the potential for visual impacts resulting from the Proposed Action. As requested at the onsite for this development, facilities would be painted Covert Green.	Kevin Sadlier	8/25/2014
NI	Wastes (hazardous/solid)	No chemicals subject to reporting under SARA Title Ill (hazardous materials) in an amount greater than 10,000 pounds would be used, produced, stored, transported, or disposed of annually in association with the drilling, testing, or completing of wells. Furthermore, extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities, would not be used, produced, stored, transported, or disposed of in association with the drilling, testing, or completing of the proposed wells. Hazardous Waste: QEP would develop drilling and operational plans that cover potential emergencies including fire, employee injuries, chemical releases, and spill prevention. QEP and its contractors would comply with all applicable Federal laws and regulations governing the location, handling and storage of hazardous substances. QEP has evaluated its overall field operations within the GDBR and has prepared and implemented Spill Prevention, Control and Countermeasure (SPCC) Plans. The plans include accidental discharge reporting procedures, spill response and cleanup measures, and maintenance of dikes.	Kevin Sadlier	8/25/2014

Determination	Resource/Issues	Rationale for Determination	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
		Solid Waste: Trash would be confined in a trash cage and hauled to the Uintah County Landfill. Burning of waste or oil would not be done. Human waste would be contained and be disposed of at an approved sewage treatment facility. Produced Water: Where necessary produced water would be confined to an approved pit or storage tank for a period not to exceed 90 days as per Onshore Order No. 7 (OSO 7). After the 90 day period, the produced water will be contained in tanks on location and then hauled by truck to a pre-approved disposal site. Implementation of the measures described above, and consistency with all applicable laws, ordinances, regulations, and standards for hazardous materials and wastes would reduce the potential for impacts to a negligible level.		
NI	Water: Floodplains	All proposed wells would be drilled from proposed well pad sites and would avoid HUD and FEMA inventoried floodplains. Onsite notes for OP-9G-14-7-20, OP 2G-10-7-20, and OP 13G-11-7-20 identify access roads that cross floodplains. Road drainage crossings would be a typical dry creek drainage crossing. Crossings would be designed so they would not cause excess siltation or accumulation of debris in the drainage, nor would the drainage be blocked by the roadbed. Two 18-inch and one 36-inch culvert would be installed along the access road to direct storm water through the drainage crossing(s). Culverts would be kept clear and free-flowing to prevent flooding. With implementation of these applicant-committed measures, construction of a drainage crossing are anticipated to have a negligible effect on floodplains. The BLM has determined that an exception to the surface use stipulation prohibiting surface-disturbing activities within an active floodplain would apply because there are no practical alternatives.	Kevin Sadlier	9/22/2014
NI	Water: Groundwater Quality	Ground Water: Compliance with "Onshore Oil and Gas Order No. 1 will assure that the project will not adversely affect groundwater quality. Due to the state-of-the-art drilling and wells completion techniques, the possibility of adverse degradation of groundwater quality or prospectively valuable mineral deposits by the Proposed Action would be negligible."	Betty Gamber	8/27/2014

Determination	Resource/Issues	Rationale for Determination	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
NI	Water: Hydrologic Conditions (stormwater)	Proposed construction and leveling of well pads would alter the local topography and divert surface water around well pads until the area is reclaimed. Culverts would be used to maintain surface water flows where access roads cross drainages. Impacts to hydrologic conditions from stormwater management activities would be negligible.	Kevin Sadlier	8/27/2014
NI	Water: Surface Water Quality	The Proposed Action would result in approximately 210.2 acres of surface disturbance until interim reclamation is successful. COAs and applicant-committed measures from the GDBR ROD (BLM 2008c) pertaining to erosion control, stormwater management, reclamation, materials management, and spill control would reduce the potential for surface water impacts to a negligible level.	Kevin Sadlier	8/27/2014
NI	Water: Waters of the U.S.	Proposed development would not overlap or cross any identified waters of the U.S. Development and production at the well sites would not significantly impact waters of the U.S.	Kevin Sadlier	9/22/2014
NI	Wild Horses	The Project Area is not located in a wild horse Herd Area/Herd Management Area. Therefore, impacts to wild horses are not anticipated as a result of the Proposed Action.	Kevin Sadlier	8/27/2014
PI	Wildlife: Migratory Birds (including raptors)	Migratory birds and raptors are present in the Project Area and could be affected by surface disturbance and other project-related activity. Based on review of available GIS data the following proposed development features are within spatial buffers for identified nests. Bald eagle roosts are located approximately 0.75 mile east of the Project Area. Proposed development features in Section 1 including OP 16G-1-7-20 and associated proposed roads, pipelines, and power lines; and Section 12 including OP 1G-12-7-20 and associated proposed roads, pipelines, and power lines overlap the one-mile protective buffer. Burrowing owl habitat was identified during the onsite visit at eleven of the proposed well sites.	Dixie Sadlier	10/21/2014

Determination	Resource/Issues	Rationale for Determination	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
PI	Wildlife: Non-USFWS Designated	Activities associated with the Proposed Action may have adverse effects on general wildlife species and water depletions could affect fish species in the Colorado River Basin. Proposed development overlaps UDWR-designated pronghorn crucial yearlong habitat. Proposed development overlaps UDWR-designated yearlong substantial mule deer habitat and mule deer yearlong crucial habitat. Mule deer habitat overlaps all of Sections 10 and 14; half of Sections 3, 11, and 13; and small portions of Section 1, 2, and 12. Proposed development does not overlap any crucial habitat for elk. Active prairie dog colonies are present in areas proposed for development.	Dixie Sadlier	10/21/2014
PI	Wildlife: Threatened, Endangered, Proposed or Candidate	There is no designated habitat for threatened and endangered species within Project Area. Water depletions could affect threatened and endangered fish species in the Colorado River Basin. It was determined by the Fish and Wildlife Service that any water right number filed before 1988 is a historic depletion and not required to pay depletion fees *(Instruction Memorandum FWS/R6 FR-ES 2006, Programmatic Water Depletion Biological Opinion for Oil and Gas Development Administered or Permitted by the Bureau of Land Management)*. Water rights associated with water supply for the Proposed Action were issued prior to 1988. The Project Area is outside of the state of Utah's designated Sage-Grouse Management Areas (SGMAs) (UDWR 2013a). However, according to UDWR GIS Data layers for sage-grouse (UDWR 2013b), the following project features overlap greater sage-grouse brood rearing habitat and occupied which is identified as Preliminary Priority Habitat (PPH) in BLM IM 2012-043: Section 3: All six of the proposed well pads, proposed pipelines and power lines Section 2: CPF 2 and proposed pipelines and power lines	Dixie Sadlier	10/21/2014

Determination	Resource/Issues	Rationale for Determination	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
		Section 1: Four of seven proposed well pads, CPF 1 and proposed pipelines and power lines Section 10: Both proposed well pads and proposed pipelines and power lines Section 12: Proposed pipeline and power line Is the Proposed Action in sage grouse PPH or PGH? Yes(X) No If the answer is yes, the project must conform with WO IM 2012-043.		
NI	Woodlands/Forestry	Rocky Mountain Lower Montane Riparian Woodland and Shrubland occurs in Sections 13, 14, and 11; however, these communities are not utilized for forestry.	Kevin Sadlier	8/27/2014

Table A.2. Final Review

Reviewer Title	Signature	Date	Comments
Environmental Coordinator	/s/ Jessica Taylor	10/23/2014	
Authorized Officer	/s/ Jerry Kenczka	10/24/2014	

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Appendix B. Surface Disturbance on BLM-administered Land

Table B.1. Surface Disturbance on BLM-administered Land (acres)

Well Pad/CPF	Acres of New Well Pad Construction	Acres of New Access Road Construction	Acres of Short-term Disturbance	Acres of Unreclaimed Well Pad	Acres of Permanent Access	Acres of Long-term Disturbance
OP 1G-1-7-20	3.30	1.87	**5.16**	0.79	1.12	**1.91**
OP 1G-10-7-20	3.31	0.84	**4.14**	0.79	0.92	**1.72**
OP 1G-12-7-20	3.79	0.58	**4.37**	0.85	0.35	**1.19**
OP 2G-1-7-20	2.94	1.42	**4.36**	0.83	0.85	**1.68**
OP 2G-3-7-20	3.37	0.03	**3.40**	0.79	0.02	**0.81**
OP 2G-10-7-20	3.31	0.94	**4.25**	0.80	0.56	**1.36**
OP 4G-1-7-20	4.15	0.38	**4.53**	0.82	0.23	**1.05**
OP 4G-3-7-20	2.59	0.29	**2.88**	0.57	0.17	**0.74**
OP 5G-3-7-20	3.24	1.97	**5.21**	0.80	1.18	**1.98**
OP 6G-1-7-20	2.73	1.65	**4.37**	0.79	0.99	**1.77**
OP 6G-3-7-20	3.53	0.11	**3.64**	0.65	0.07	**0.72**
OP 6G-11-7-20	3.41	0.73	**4.14**	0.79	0.44	**1.23**
OP 6G-12-7-20	3.40	0.22	**3.61**	0.80	0.13	**0.93**
OP 7G-3-7-20	3.24	1.39	**4.63**	0.78	0.83	**1.61**
OP 9G-14-7-20	3.46	2.46	**5.91**	0.79	1.48	**2.26**
OP 10G-1-7-20	3.28	1.83	**5.11**	0.83	1.10	**1.93**
OP 13G-1-7-20	3.19	0.40	**3.59**	0.79	0.24	**1.03**
OP 13G-11-7-20	3.24	2.85	**6.09**	0.80	1.71	**2.51**
OP 14G-12-7-20	3.27	0.98	**4.24**	0.80	0.59	**1.39**
OP 15G-3-7-20	3.49	0.77	**4.26**	0.79	0.46	**1.25**
OP 16G-1-7-20	3.43	1.11	**4.54**	0.79	0.66	**1.46**
OP 16G-11-7-20	2.56	2.52	**5.07**	0.63	1.51	**2.14**
CPF 1	3.05	-	**3.05**	3.05	-	**3.05**
CPF 11	3.04	-	**3.04**	3.04	-	**3.04**
CPF 12	3.08	-	**3.08**	3.08	-	**3.08**
Power Lines	-	-	**62.0**	-	-	**-**
Total Disturbance	**81.40**	**25.34**	**168.67**	**26.24**	**15.61**	**41.84**

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Appendix C. Proposed New Wells and Associated Well Pads and Central Processing Facilities on BLM-administered land

Table C.1. Proposed New Wells and Associated Well Pads

Well Pad Name	At Surface	At Proposed Production Zone	Well Location
OP 1G-1-7-20	1137 FNL, 748 FEL	1137 FNL, 748 FEL	T 7 S, R 20 E, Sec 1, Lot 1
OP 1G-10-7-20	473 FNL, 862 FEL	473 FNL, 862 FEL	T 7 S, R 20 E, Sec 10, NENE
OP 1G-12-7-20	1270 FNL, 636 FEL	1270 FNL, 636 FEL	T 7 S, R 20 E, Sec 12, NENE
OP 2G-1-7-20	256 FNL, 2300 FEL	256 FNL, 2300 FEL	T 7 S, R 20 E, Sec 1, Lot 2
OP 2G-3-7-20	641 FNL, 1829 FEL	641 FNL, 1829 FEL	T 7 S, R 20 E, Sec 3, Lot 2
OP 2G-10-7-20	600 FNL, 2194 FEL	600 FNL, 2194 FEL	T 7 S, R 20 E, Sec 10, NWNE
OP 4G-1-7-20	591 FNL, 540 FWL	591 FNL, 540 FWL	T 7 S, R 20 E, Sec 1, Lot 4
OP 4G-3-7-20	522 FNL, 517 FWL	522 FNL, 517 FWL	T 7 S, R 20 E, Sec 3, Lot 4
OP 5G-3-7-20	2054 FNL, 689 FWL	2054 FNL, 689 FWL	T 7 S, R 20 E, Sec 3, SWNW
OP 6G-1-7-20	1820 FNL, 1841 FWL	1820 FNL, 1841 FWL	T 7 S, R 20 E, Sec 1, SENW
OP 6G-3-7-20	2001 FNL, 1855 FWL	2001 FNL, 1855 FWL	T 7 S, R 20 E, Sec 3, SENW
OP 6G-11-7-20	2134 FNL, 2111 FWL	2134 FNL, 2111 FWL	T 7 S, R 20 E, Sec 11, SENW
OP 6G-12-7-20	2008 FNL, 2012 FWL	2008 FNL, 2012 FWL	T 7 S, R 20 E, Sec 12, SENW
OP 7G-3-7-20	2075 FNL, 1894 FEL	2075 FNL, 1894 FEL	T 7 S, R 20 E, Sec 3, SWNE
OP 9G-14-7-20	1817 FSL, 727 FEL	1817 FSL, 727 FEL	T 7 S, R 20 E, Sec 14, NESE
OP 10G-1-7-20	1797 FSL, 2034 FEL	1797 FSL, 2034 FEL	T 7 S, R 20 E, Sec 1, NWSE
OP 13G-1-7-20	531 FSL, 557 FWL	531 FSL, 557 FWL	T 7 S, R 20 E, Sec 1, SWSW
OP 13G-11-7-20	816 FSL, 579 FWL	816 FSL, 579 FWL	T 7 S, R 20 E, Sec 11, SWSW
OP 14G-12-7-20	635 FSL, 1890 FWL	635 FSL, 1890 FWL	T 7 S, R 20 E, Sec 12, SESW
OP 15G-3-7-20	853 FSL, 2098 FEL	853 FSL, 2098 FEL	T 7 S, R 20 E, Sec 3, SWSE
OP 16G-1-7-20	770 FSL, 861 FEL	770 FSL, 861 FEL	T 7 S, R 20 E, Sec 1, SESE
OP 16G-11-7-20	665 FSL, 675 FEL	665 FSL, 675 FEL	T 7 S, R 20 E, Sec 11, SESE
CPF 1	-	-	T 7 S, R 20 E, Sec 1, NWNW
CPF 11	-	-	T 7 S, R 20 E, Sec 11, SENE
CPF 12	-	-	T 7 S, R 20 E, Sec 12, NENW