

Environmental Assessment

for

**Ultra Resources Condensate Pipeline for the Pinedale Anticline
Project Area**

Prepared by

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Pinedale Field Office

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1 **1.0 INTRODUCTION**

2 Ultra Resources, Inc. (ULTRA) has notified the Bureau of Land Management (BLM) Pinedale
3 Field Office (PFO) and the BLM Rock Springs Field Office (RSFO) regarding a proposal to
4 construct a liquid condensate pipeline for the Pinedale Anticline Project Area (PAPA) in Sublette
5 and Lincoln counties, Wyoming. The 54.5-mile-long liquid condensate pipeline would begin
6 approximately 6 miles southwest of Boulder, Wyoming, and end at a proposed terminal facility
7 approximately 1.5 miles west-southwest of La Barge, Wyoming. A majority of the pipeline
8 (approximately 91%) would cross land administered by the BLM PFO and RSFO. The
9 remainder of the pipeline (approximately 9%) would be located on state and privately owned
10 lands.

11 ULTRA is requesting federal right-of-ways (ROWs) for the pipeline for a period of 30 years with
12 options to renew for as long as marketable quantities of condensate are available (case files
13 WYW-176979 for the ROW and WYW-178574 for the Temporary Use Permit). Construction is
14 expected to begin in June 2010. Completion and full utilization of the pipeline is expected to
15 occur in the fall of 2010. The BLM has prepared this Environmental Assessment (EA) to
16 evaluate the impacts associated with construction, use, reclamation, and maintenance of the
17 condensate pipeline.

18 **1.1 BACKGROUND**

19 In the *Pinedale Anticline Oil and Gas Explorations and Development Project Supplemental*
20 *Environmental Impact Statement (SEIS)* (BLM 2008a), Section 2.7, the BLM states that ULTRA,
21 along with other operators in the PAPA, would install a liquid gathering system (LGS) within two
22 years after the signing of the Record of Decision (ROD). Completion of the gathering system
23 would significantly reduce the amount of truck traffic and related impacts to wildlife, air quality,
24 traffic, dust, noise, and other resources within the PAPA by transporting condensate off-site by
25 pipeline for sale and disposal. As part of the LGS, the proposed pipeline would be used to
26 gather and transport condensate from four central gathering facilities (CGFs) to a terminal
27 facility for processing and sales. By constructing a 6-inch condensate pipeline and terminal
28 facility, ULTRA would be able to transport between 12,000 to 18,000 barrels of condensate per
29 day from the PAPA to La Barge. This would eliminate approximately 6,600 tanker truck trips
30 annually from condensate produced on ULTRA’s leases.

31 **1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION**

32 The purpose of the Proposed Action is to allow the opportunity to transport condensate across
33 federally held land managed by the BLM. The need is established by the BLM’s responsibility
34 under the 43 CFR 2880 regulations to respond to a request for ROW and temporary use permits
35 for oil and gas production.

36 **Decision to be Made:** The decision to be made by the BLM, based on the analysis contained in
37 this EA, is whether or not to authorize the Proposed Action or the selection of the No Action
38 Alternative. If the Proposed Action is chosen, the BLM would also decide if the Proposed Action
39 would include any of the Route Options at the head of Figure Four Canyon, Federal 1-12 well,
40 and Green River West locations. The decision associated with this EA will not constitute final
41 approval for either the ROW grant or temporary use permit associated with ULTRA’s Proposed
42 Action. The EA does, however, provide the BLM with analysis from which the final decisions will
43 be made.

1.3 RELATIONSHIP TO STATUTES, REGULATIONS, PLANS, OR OTHER ENVIRONMENTAL ANALYSES

The proposed project would comply with all applicable federal, state, and local laws, plans, and permits required for this type of activity. The Proposed Action is subject to both the BLM Pinedale and Green River resource management plans (RMPs). The RMPs have been reviewed (see pages 2-15 and 2-16 for the Pinedale RMP and pages 9-10 for the Green River RMP) and the Proposed Action, as mitigated, conforms to the land use plans terms and conditions as required by 43 CFR 1610.5. The BLM is not the only agency required to issue approvals for ULTRA’s proposed pipeline route and associated facilities. A list of permits, approvals, and authorizing actions necessary to construct, operate, maintain, and abandon the proposed pipeline and ancillary facilities is provided in Table 1-1.

Table 1-1. Federal, State, and Local Permits, Approvals, and Authorizing Actions Necessary for Construction, Operation, Maintenance, and Abandonment of ULTRA’s Proposed Action

Issuing Agency	Nature of Permit/Approval	Authority
U.S. Department of the Interior Bureau of Land Management (BLM)	ROW grants and temporary use clearances on federal lands	Mineral Leasing Act of 1920, as amended (30 United States Code [USC] 185); Federal Land Policy and Management Act (43 USC 1761–1771); Title 43 Code of Federal Regulations (CFR) 2800
	Antiquities and cultural resource clearances on BLM-managed land	Antiquities Act of 1906 (16 USC Section 431433); Archaeological Resources Public Protection Act of 1979 (16 USC Sections 470aa–470ll); 43 CFR 3; National Historic Preservation Act (NHPA) of 1966 and Advisory Council Regulations (36 CFR 800)
	Approval to dispose of produced water from BLM-managed land	Mineral Leasing Act of 1920 (30 USC 181 et seq.); Onshore Oil and Gas Order No. 7
	Management of noxious weed species on federal lands	Federal Noxious Weed Act of 1974 (7 USC 2801–2814, January 3, 1975, as amended 1988 and 1994)
U.S. Army Corps of Engineers	Section 404 permits regarding placement of dredged or fill materials in waters and adjacent wetlands	Section 404 of the Clean Water Act of 1972 (40 CFR 122–123, 230)
U.S. Fish and Wildlife Service	Biological Assessment - coordination, consultation, and impact review on federally listed threatened and endangered species and other federally protected species	Fish and Wildlife Coordination Act (16 USC Sec. 661 et seq.); Section 7 of the Endangered Species Act of 1973, as amended (16 USC et seq.); Bald and Golden Eagle Protection Act, as amended (16 USC 668–668dd); Migratory Bird Treaty Act (16 USC 704)
U.S. Environmental Protection Agency	Spill prevention, control, and countermeasure plans	40 CFR 112
	Regulation of hazardous waste treatment, storage, and/or disposal	Resource Conservation and Recovery Act (42 USC 6901)
U.S. Department of Transportation	Control of pipeline maintenance and operation	49 CFR 191 and 192

Issuing Agency	Nature of Permit/Approval	Authority
Wyoming Department of Environmental Quality (WDEQ) - Water Quality Division	National Pollutant Discharge Elimination System (NPDES) permits for discharging waste water and storm water runoff	Wyoming Environmental Quality Act (Wyoming Statutes [W.S.] 35-11-301 through 35-11-311); WDEQ Rules and Regulations, Chapter 18; Wyoming Environmental Quality Act (W.S. 35-11-301 through 35-11-311); Section 405 of the Clean Water Act (40 CFR 122124)
	Administrative approval for discharge of hydrostatic test water	Wyoming Environmental Quality Act (W.S. 35-11-301 through 35-11-311)
Wyoming Department of Transportation	Permits for oversize, overlength, and overweight loads	Chapters 17 and 20 of the Wyoming Highway Department Rules and Regulations
	Utility and access permits for highway pipeline crossing and highway access construction	Title 12: Code of Civil Procedures; Chapter 26: Eminent Domain Rules and Regulations for Access Driveways as Approved by the Wyoming Highway Commission
Wyoming Oil and Gas Conservation Commission (WOGCC)	Authorization for flaring or venting of gas	WOGCC Regulations (Section III; Rule 326)
	Minimum safety standards for oil and gas activities	WOGCC Regulations (Rules 320-A, 327, and 328)
Wyoming State Engineer's Office - Water Quality Division	Permits to appropriate groundwater (use, storage, wells, dewatering)	W.S. 41-121 through 41-147 (Form U.W.5)
Wyoming State Engineer's Office - Air Quality Division	Notification of potential emissions from production equipment	Wyoming Air Quality Standards and Regulations WDEQ Rules and Regulations
Wyoming Department of Employment - Workers Safety and Compensation Division	Rules and regulations governing the health and safety of employees and employers of oil and gas drilling and servicing	W.S. 27-11-105
Wyoming State Historic Preservation Office	Cultural resource protection, programmatic agreements, consultation	Section 106 of the NHPA and Advisory Council Regulations (36 CFR 800)
Wyoming State Lands and Investments	ROWs and easements on state lands	W.S. 36-9-118
Sublette County Planning and Zoning Department	Pipeline and driveway permits	Zoning and Development Regulations of Sublette County Section 7. Wyoming State Statutes Section 18-5-207
Lincoln County Office of Planning and Development	Pipeline and driveway permits	Zoning and Development Regulations of Lincoln County Section 7. Wyoming State Statutes Section 18-5-207

1
2

1 The EA draws upon information compiled in the following RMPs and analyses completed for
2 specific projects that would be crossed or parallel the proposed pipeline ROW:

- 3 • Green River Resource Area RMP (BLM 1997)
- 4 • Pinedale Resource Area RMP and EIS (BLM 2008b)
- 5 • Questar Year-Round Drilling Proposal EA (BLM 2004a)
- 6 • Questar Year-Round Drilling Proposal – Condensate Pipeline Modifications EA (BLM
7 2005)

8 **1.4 SCOPING, PUBLIC INVOLVEMENT, AND ISSUES**

9 External scoping of the Proposed Action has involved the notification of other agencies,
10 organizations, tribes, local governments and the public via email, the BLM website
11 (www.blm.gov/wy/st/en.html), and notices in the local newspapers. The public has been
12 provided the opportunity to submit comments and recommendations by mail, over the
13 telephone, by email, or in person. Public scoping for the Proposed Action began on October 20,
14 2009. Comments were accepted up until December 22, 2009.

15 Issues raised during public scoping included comments from the Wyoming Game and Fish
16 Department (WGFD) on potential adverse impacts to terrestrial and aquatic wildlife and their
17 habitats. Route options, as discussed later in this EA, were developed in coordination with the
18 WGFD during three separate onsites: October 28, 2009, November 9, 2009, and January 13,
19 2010. The purpose for these route options is further discussed in Section 2.2.1. Also, Questar
20 Gas Management Company expressed concern about the intent of the SEIS ROD requirement
21 for a liquids gathering system, existing capacity in the Questar condensate pipeline, ULTRA
22 operating their pipeline as a private (rather than public) pipeline, and that ULTRA's pipeline
23 deviates from the corridors described in the SEIS ROD.

24 An internal planning and scoping meeting was held on October 7, 2009 at the PFO BLM with
25 attendees including PFO staff, RSFO staff, and ULTRA staff/contractors. No significant scoping
26 issues were raised during the meeting. The purpose of this meeting was primarily to discuss
27 resource assessment requirements (biological/cultural/paleontological), roles and
28 responsibilities of contractors, and the project timeline.

1 **2.0 PROPOSED ACTION AND ALTERNATIVES**

2 In accordance with Title 40 Code of Federal Regulations (CFR) 1502.14(a), the BLM is required
3 to define issues and evaluate all reasonable alternatives. The BLM evaluates two alternatives in
4 this EA: the No Action Alternative (Section 2.1) and the Proposed Action (Section 2.2). The No
5 Action and Proposed Action alternatives developed by the BLM are based on ULTRA's
6 submission of a revised Plan of Development (POD).

7 **2.1 ALTERNATIVE I – NO ACTION ALTERNATIVE**

8 The No Action Alternative is required to be analyzed by the CEQ, 40 CFR 1502.14(d), and
9 applicable BLM implementing regulations. CEQ regulations require the consideration of a No
10 Action Alternative in all EAs. The No Action Alternative provides a benchmark, enabling
11 decision-makers to compare the magnitude of environmental effects of the action alternative(s).
12 Under the No Action Alternative, the BLM would reject the proposal as submitted by ULTRA in
13 the Proposed Action. If the No Action Alternative is chosen, the BLM would deny ULTRA
14 authorization to construct the 54.5-mile pipeline and terminal facility located in Sublette and
15 Lincoln counties. Existing land uses and management within the project area would continue as
16 they currently occur.

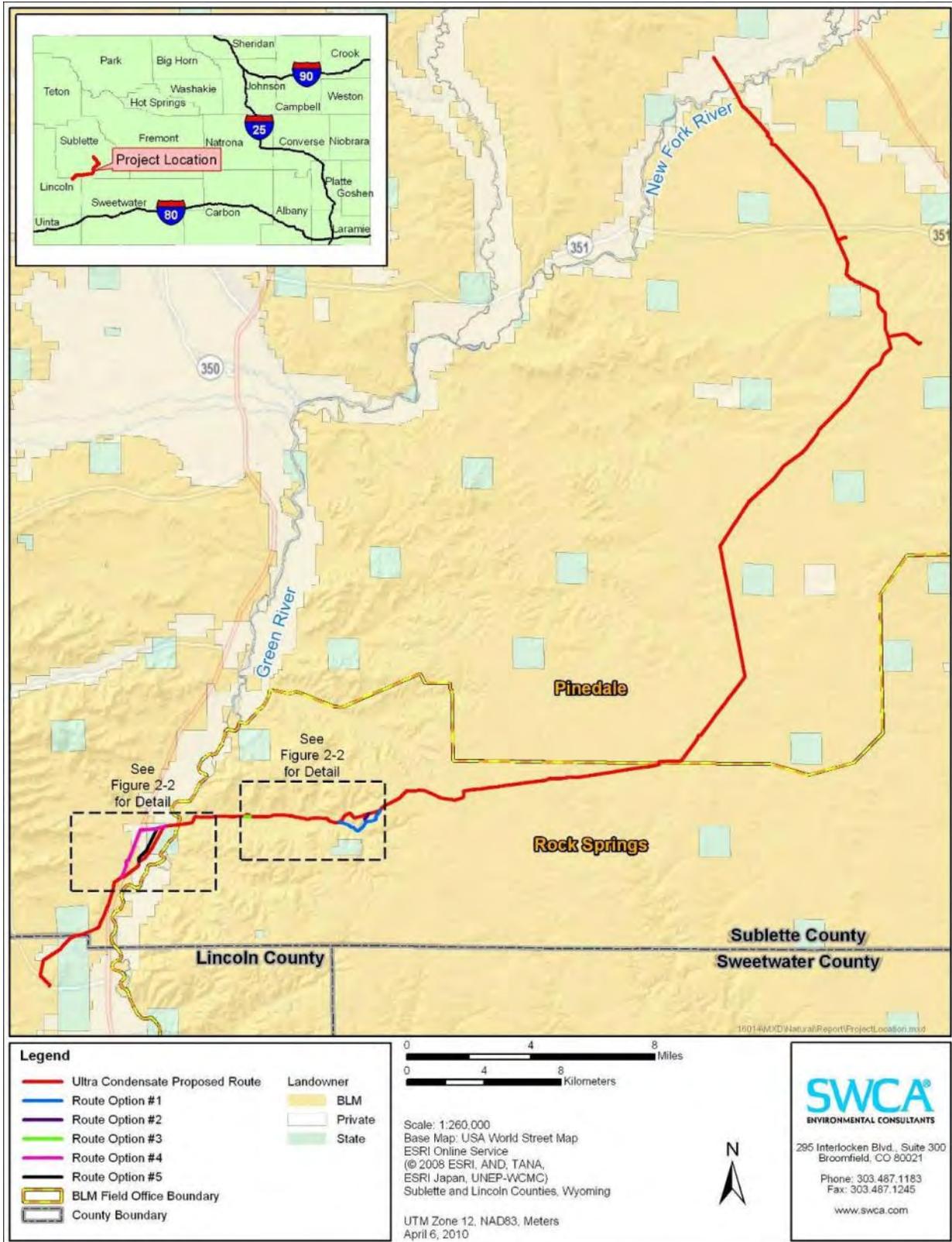
17 **2.2 ALTERNATIVE II – PROPOSED ACTION**

18 *2.2.1 ULTRA's Liquid Condensate Pipeline (Proposed Action)*

19 **Introduction**

20 The Proposed Action includes a 54.5-mile-long, 6-inch-diameter liquid condensate pipeline, a
21 5.9-acre terminal facility (Plains Terminal), and related facilities (including filters, screens,
22 valves, pigging equipment, side taps, and metering equipment) on approximately 360 acres, as
23 described in ULTRA's POD. Development activities would also include connector lines to four
24 central gathering facilities (CGFs), temporary use areas (TUAs), and ancillary activities. ULTRA
25 would use as much of the existing infrastructure (e.g., access roads and pipelines) as possible
26 to reduce impacts to resources. The proposed pipeline would be buried to a minimum depth of
27 60 inches and would be installed adjacent to existing pipelines for approximately 28.7 miles
28 (53% of total length), located on undisturbed land or successfully reclaimed ROWs for 23.7
29 miles (43% of total length), and bored under rivers, wetlands, or roads for approximately 2.1
30 miles (4% of total length). Pre-existing pipelines would be used to gather condensate at four CGF
31 sites. The proposed pipeline would transport this condensate from the CGFs to the proposed
32 terminal facility where it would be processed and sold. The proposed condensate pipeline would
33 be offset 25 feet from the adjacent pipeline when placed in the main pipeline corridor.

34 The pipeline would generally head in a southwesterly direction beginning at CGF no. 1 on the
35 Nerd Farm near Gobblers Knob Compressor Station in the NE¼SW¼ of Section 2, Township
36 (T) 31 North (N), Range (R) 109 West (W) (Sublette County) and ending at the terminal
37 processing facility in the SW¼NE¼ of Section 11, T26N, R113W (Lincoln County) (see Figure
38 2-1). Access into the project area would be provided primarily by Wyoming State Highway 235
39 (WY 235) and U.S. Highway 189 (U.S. 189) near La Barge and the junction of Paradise Road
40 and U.S. 191 near Boulder. In addition, BLM and county roads would be used for rural access
41 and cross-country travel. Initial disturbance for pipeline construction includes a 50-foot ROW.
42 Additional temporary construction areas will be needed for bores, side hill cuts, and other TUAs.
43 Reclamation would be completed immediately for the entire ROW and all TUAs; however,
44 surface disturbance for the terminal facility would persist for the life of the project.



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Figure 2-1. General project location.

1 The total length of the condensate pipeline would be approximately 54.5 miles, of which
2 approximately 91% would be located on federal lands administered by the BLM PFO and RSFO
3 (Table 2-1). The remainder of the pipeline would be located on state and private lands.

4 **Table 2-1. Land Ownership for the Proposed Condensate Pipeline**

Land Ownership	Length (miles)	Percent
Federal	49.5	91
State	2.7	5
Private	2.2	4
TOTAL	54.4¹	100

5 ¹plus 0.1 mile other (open water)

6 The condensate pipeline would consist of 6-inch nominal pipe (6 5/8-inch outside diameter ×
7 0.188-inch minimum wall thickness, Grade AP15L/X52 PSL2 ERW Line Pipe, P.E., Bev., with
8 14–16 mils fusion bond epoxy coating) with a maximum operating pressure of approximately
9 2,120 pounds per square inch gauge (psig). ULTRA estimates the condensate pipeline would
10 transport between 12,000 to 18,000 barrels per day. Operating pressure would be generated by
11 electric pumps installed at CGF no. 1 located on private land in the NE¼SW¼ of Section 2,
12 T31N, R109W. In the event of an equipment failure or power loss at the expanded facility, gas
13 would be flared. Additionally, a backup generator capable of powering one pump would be
14 installed in an attempt to keep total power failure and subsequent flaring from occurring.

15 See the ROW application and ULTRA's POD located in the case file for more detailed
16 information on pipeline specifications and locations and the temporary use permit. The POD and
17 ROW application are to be considered part of the Proposed Action.

18 Rights-of-Way and Permits

19 ULTRA would secure all ROWs and permits necessary for construction of the 54.5-mile pipeline
20 prior to commencing construction. ULTRA is requesting federal ROWs for a period of 30 years
21 with options to renew for as long as marketable quantities of condensate are available. ULTRA
22 would conduct all activities associated with construction, operation, maintenance, and
23 abandonment of the pipeline within the authorized limits of the ROWs.

24 UTLRA has proposed a 50-foot-wide construction ROW on BLM administered lands. In addition,
25 a terminal facility (5.9 acres) would be constructed on federal land. Additional and related
26 appurtenances would include pipeline markers, meter stations, block valves, pig launchers and
27 receivers, and cathodic protection equipment. Extra workspace would also be required at deep
28 draws or sidehill cuts for the storage of topsoil and subsoil. Fences may be installed
29 immediately around appurtenances, where approved by the BLM Authorized Officer (AO), to
30 provide barricades to human trespassing. Any aboveground facilities or appurtenances would
31 be within the permitted ROW. Additional workspace beyond the 50-foot width would be
32 necessary for TUAs at truck turn-arounds and at each road, river, and pipeline crossing.
33 Locations and acreage of TUAs are provided in ULTRA's POD. In the event that any additional
34 areas are required due to engineering constraints, applications would be submitted as required
35 by the BLM and any additional impacts would be analyzed at that time. Necessary TUAs should
36 be staked and approved prior to the commencement of construction except in extreme
37 emergency conditions.

1 The proposed pipeline ROW, including the terminal facility and all TUAs, contains approximately
 2 359.5 acres of which 337.2 acres are federally owned, 15.7 acres are state owned, and 6.6
 3 acres are privately owned (Table 2-2). Approximately 33% of the proposed pipeline ROW would
 4 completely overlap existing ROWs. Approximately 20% of the proposed pipeline ROW would
 5 overlap existing ROWs by 35 feet (i.e., 14% would occur in existing ROWs and 6% would occur
 6 on undisturbed ground). Approximately 34% of the proposed pipeline construction would take
 7 place on undisturbed land. Additionally, a small portion (9%) of the proposed pipeline between
 8 the SE¼SW¼ of Section 9, T27N, R111W and the NE¼NW¼ of Section 15, T27N, R112W
 9 would overlap a ROW that has been successfully reclaimed for more than five years, and
 10 disturbance within this ROW would be considered as occurring on undisturbed land. Therefore,
 11 approximately 47% (170.1 acres) of the total surface disturbance would take place in areas
 12 previously disturbed during the construction of other existing pipelines and/or facilities, and 49%
 13 (176.2 acres) would take place on previously undisturbed land and would be considered new.
 14 The remaining 4% of the proposed pipeline would be bored under the New Fork and Green
 15 rivers and adjacent wetlands, and surface disturbance would be limited to TUAs for boring
 16 equipment.

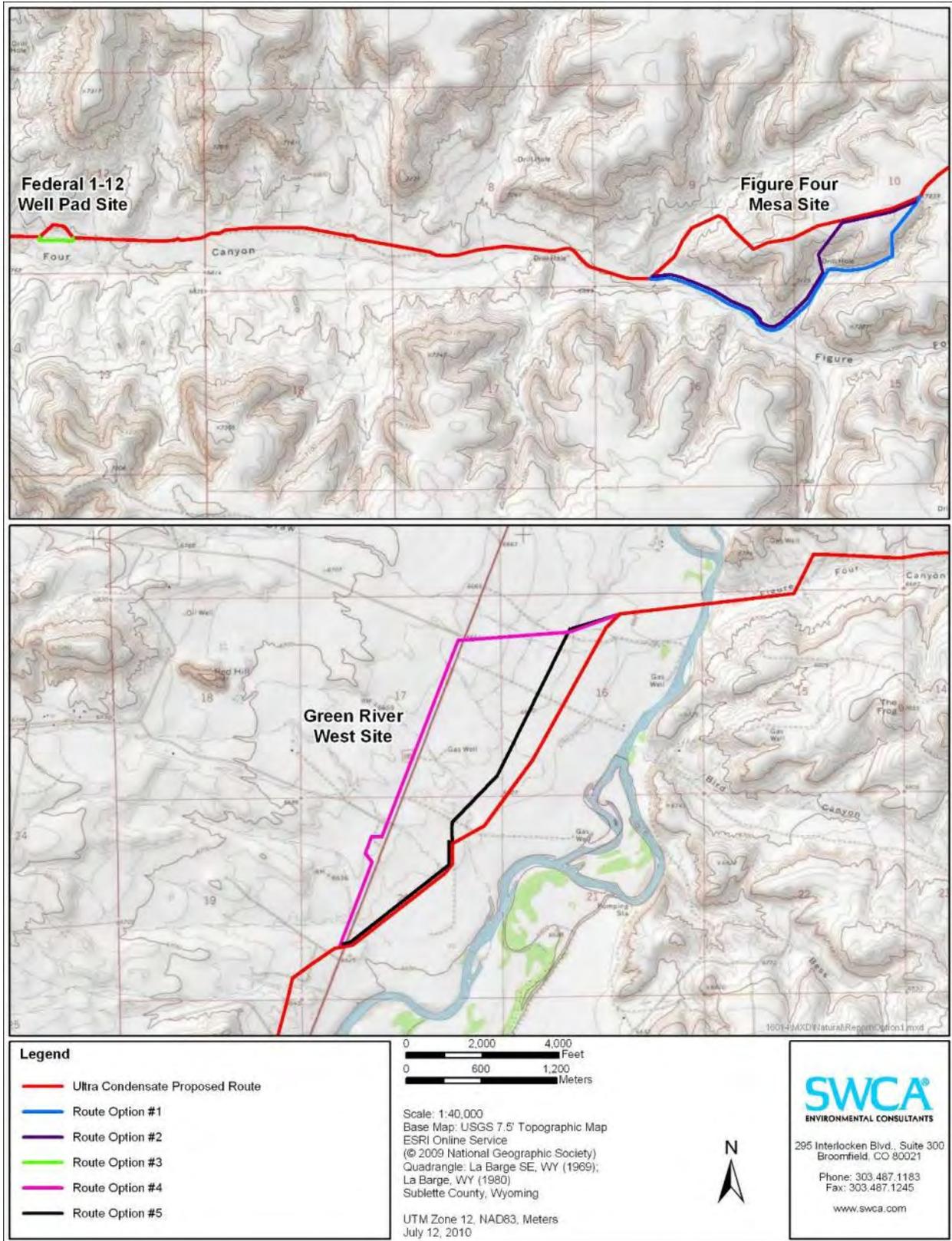
17 **Table 2-2. Proposed Condensate Pipeline Surface Disturbance Summary**

ROW	Off ROW	Surface	Miles	Acres	TUA	Acres	Total	
Pipeline	Main	BLM	47.5	288.9	139	27.0	315.9	
	Connector CGF #3	BLM	0.3	1.9	-	-	1.9	
	Connector CGF #4	BLM	1.2	7.3	-	-	7.3	
	Plains Terminal	BLM	-	5.9	-	-	5.9	
	SUBTOTAL			49.0	304.0	139	27.0	331.0
	Main	State		2.4	8.4	4	6.6	15.0
Main	Private		0.7	5.1	4	0.1	5.2	
PIPELINE TOTAL			52.1	317.5	147	33.7	351.3	
Bore	New Fork	BLM	0.0	-	1	0.6	0.6	
		Private	1.5	-	3	1.4	1.4	
SUBTOTAL			1.5	-	4	2.0	2.0	
Bore	Green River	BLM	0.4	-	1	5.6	5.6	
		State	0.5	-	1	0.7	0.7	
SUBTOTAL			0.9	-	2	6.3	6.3	
BORE TOTAL			2.4	-	6	8.2	8.2	
TOTAL			54.5	317.5	153	42.0	359.5	

18 Note: Totals may not sum exactly due to rounding.

19 *BLM-revised Route Options*

20 In addition to ULTRA's pipeline alignment, the BLM has proposed five additional route options at
 21 three locations: Figure Four Mesa, the Federal 1-12 (#49-035-21150) well pad, and Green River
 22 West (Figure 2-2). The additional BLM-revised routes were proposed during on-site meetings to
 23 address concerns of all participating agencies. Route Option 1 was developed at the Figure
 24 Four Mesa site in order to avoid important mule deer habitat and provide options for co-locating
 25 with existing ROWs along the Figure Four Canyon Road to reduce overall surface



1

2

Figure 2-2. Route options for the Proposed Action

1 disturbance and resource impacts. Route Option 2 was developed for the same reasons as
 2 Route Option 1, but was also an attempt to compromise between Route Option 1 and the
 3 Proposed Action. Route Option 2 would still consolidate disturbance along the roadway but
 4 would allow for the pipeline to enter the canyon in an area that provides enough space and the
 5 proper topography for any future lines to follow the same route.

6 Route Option 3 was developed in order to detour the ROW around the existing Federal 1-12
 7 well location and to confine impacts to a previously disturbed ROW.

8 At the Green River West site, Route Option 4 was developed in an attempt to keep disturbance
 9 out of a highly used sagebrush flat within mule deer crucial winter range along the west side of
 10 the Green River while consolidating disturbance along U.S. 189. Route Option 5 also attempts
 11 to minimize impacts to the important mule deer winter habitat along the west side of the river
 12 and is shorter in length than Route Option 4. Route Options 5 and the proposed route both
 13 consolidate disturbance along an existing pipeline at their southern ends.

14 The BLM-revised routes would be constructed in undisturbed land and/or reclaimed ROWs and
 15 would not overlap existing disturbed ROWs. Table 2-3 shows the surface disturbance, including
 16 the ROW and TUAs, at the Route Options and the comparable segments of the proposed route.

17 **Table 2-3. Surface Disturbance for the BLM-revised Route Options**

Site	Route	ROW Length (miles)	# of TUAs	Total Surface Disturbance (acres)
Figure Four Mesa	Proposed Route	1.59	4	9.9
	Route Option 1	1.78	10	12.1
	Route Option 2	1.79	6	11.7
Federal 1-12 Well Pad	Proposed Route	0.22	2	1.4
	Route Option 3	0.20	7	1.6
Green River West	Proposed Route	2.25	5	13.9
	Route Option 4	2.52	9	16.8
	Route Option 5	2.31	16	15.0

18

19 *Reporting and Construction Compliance Requirements*

20 ULTRA would be responsible for hiring BLM-authorized third-party environmental inspectors,
 21 whose responsibility would be oversight of the construction contractor(s). Due to multiple
 22 spreads, there would be a need for at least two environmental inspectors. Inspectors would
 23 monitor compliance and report to the BLM AO's designated compliance specialist. The
 24 inspectors would oversee construction of the pipeline and provide status reports to the BLM AO
 25 on a schedule to be determined by the BLM AO. Responsibilities would also include notifying
 26 the BLM AO prior to commencement of construction and contacting cultural/paleontological
 27 resource inspectors when required. The inspectors would continue through the completion of
 28 construction and reclamation of the proposed pipeline ROW.

29 *Construction Schedule and Workforce Requirements*

30 Construction would begin in summer 2010 and would proceed in multiple spreads based on
 31 timing restrictions. ULTRA would notify the BLM AO five days prior to commencing construction

1 activities. ULTRA would comply with all timing stipulations for wildlife. Easements would be
2 obtained from private landowners. Construction would be complete and the entire condensate
3 pipeline operational by fall 2010.

4 ULTRA expects the peak construction workforce to reach approximately 100 workers. The
5 construction workforce would commute daily from surrounding communities in the Rock Springs
6 and Pinedale areas.

7 Design and Construction

8 The design and engineering of the condensate pipeline would be completed by ULTRA
9 personnel and/or its contractors in accordance with safe and proven engineering practices.
10 Pipeline plans and specifications, alignment sheets, road profiles, cross sections, site-specific
11 details, and design drawings associated with the project would be provided to the BLM PFO and
12 RSFO prior to issuance of the ROW grant. Construction sites would be maintained in a clean
13 and safe condition at all times and construction waste materials would be disposed of promptly
14 at an approved waste disposal site. Construction activities would not inhibit public use of
15 existing roads and trails or prevent wildlife or livestock movement. Equipment used during
16 construction of the proposed pipeline may include trenchers, trackhoes, backhoes, tractor-
17 trailers, two-ton trucks, pick-up trucks, ditch-patching machines, seed drillers, tractors, side-
18 boom dozers, and welding trucks.

19 Clearing and Grading. Prior to the start of construction, the limits of the construction ROW would
20 be clearly staked with inside, outside, and centerline marking. After staking, the ROW would be
21 cleared of vegetation. Heavy equipment would be used to remove vegetation within as much of
22 the 50-foot ROW as is needed to provide a safe and level working area. After vegetation
23 clearing, a minimum of 6 inches of topsoil would be stripped from the ditch line and any other
24 area that needs to be graded. Topsoil would be stockpiled on the non-working side of the
25 construction ROW. Topsoil would not be mixed with ditch spoil or other excavated material.

26 Grading would be conducted as necessary to allow the safe movement of equipment and
27 personnel along the ROW. Grading would also be conducted where necessary to reduce the
28 need to bend pipe. Grading usually requires cutting or filling and may include ripping rock close
29 to the surface.

30 Equipment traffic would not cross drainage channels with cut banks greater than 2 feet in
31 height. To the extent practicable, drainage crossings would be aligned perpendicular to the
32 stream channel.

33 Trenching. After grading is complete, a wheel trencher would be used to dig a 2-foot-wide
34 trench, stockpiling the dirt on the non-working side of the ditch. In rocky areas or areas where
35 the pipeline changes direction, an excavator (trackhoe) would be used. The ditch would be
36 excavated to a minimum depth to allow for 60 inches of cover over the pipeline. No trench would
37 remain open for more than 10 days (with the exception of tie-in locations) unless authorized by
38 the BLM AO. Open trenches would be inspected each day for trapped wildlife or livestock.
39 Measures would be taken to ensure that access is provided for vehicles, equipment, livestock,
40 and wildlife across the trenching areas as necessary.

41 Hauling and Stringing. Once grading is complete, all construction materials would be hauled to
42 construction sites by truck. Pipe would be strung along the ROW in a manner to cause the least
43 interference with the normal use of the land crossed by the ROW.

1 Bending, Welding, and Coating. A bending machine would be used to bend the pipe to fit the
2 ditch alignment and contour of the land. All welding would be conducted in compliance with
3 American Petroleum Institute Standard 1104, *Welding of Pipelines and Related Facilities*. All
4 welds would be X-rayed to ensure the effectiveness and quality of the weld. The welded pipe
5 string would be temporarily stored on skids until lowered into the ditch.

6 Although the pipe would arrive at the ROW with a corrosion-resistant coating, additional coating
7 would be applied to the welds and any areas with damaged coating. Cathodic test stations
8 would be installed at all other pipeline crossings, at road bores, and approximately every 1 mile
9 along the pipeline. These stations would be used to test and monitor corrosion during
10 operations.

11 Lowering In, Padding, and Backfilling. Side booms would be used to lower the pipe into the
12 trench. In rocky areas, the trench would be padded with sand or soil using a padding machine,
13 which separates rocks from satisfactory padding materials. After the pipe is placed in the trench,
14 a motor grader or dozer would be used to backfill the trench. The fill in the trench would then be
15 compacted with the grader wheels. Excavated material that cannot be placed in the trench
16 would be disposed of in compliance with landowner and agency requirements. In steeply
17 sloping areas, trench breakers would be installed within the trench to prevent subsurface
18 erosion along the pipeline.

19 Public Road Crossings. At all public road crossings, the pipeline would be buried to a minimum
20 of 60 inches below the bottom of the borrow trench. Public road crossing techniques would be
21 determined by the agency responsible for maintaining the road (i.e., BLM, state, county). Roads
22 that are not heavily used would be open cut, backfilled, and compacted. Heavily traveled roads
23 would be bored to avoid disrupting traffic. All boring permits would be completed according to
24 federal, state, or county standards. Shoe-flies (detour roads) would be constructed at road
25 crossings to prevent disruption of use. Legal descriptions and methods of road crossings are
26 provided in Attachment A.

27 Boring. Horizontal directional drilling (HDD) would be used in areas where it is environmentally
28 undesirable and logistically unfeasible to use open-cut construction techniques, such as at river
29 crossings, wetlands, and roads. ULTRA specifically proposes to HDD beneath the New Fork
30 and Green rivers, adjacent wetlands, and significant ephemeral drainages to prevent erosion
31 and minimize any increase in sediment load to the watershed. The HDD of the New Fork and
32 Green rivers would be completed outside waters of the U.S. and non-isolated wetlands in
33 compliance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors
34 Act. In addition, all state highways, county roads, and BLM roads would be bored under. All
35 borings would be performed to the specifications, plans, and procedures described in each
36 exhibit of the ULTRA Boring Plan. Highways, roads, and drainages requiring boring are (from
37 north to south): Anticline Road, Paradise Road, Boulder South Road, Middle Crest Road, WY
38 351, Burma Road, Luman/Yellow Point Road, Figure Four Drainage (SE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 10,
39 T27N R112W), U.S. 189, and WY 235 (Calpet Road).

40 Fabrication/Tie-ins. Valve assemblies, pig receivers, pig launchers, filters, strainers, side taps,
41 and meter stations would be prefabricated off-site. Tie-in crews would be used to complete the
42 final installation of fabricated assemblies, road crossings, and other congested areas.

43 Hydrostatic Testing. After the trench is backfilled, the pipeline would be pressure tested with
44 water. The pipeline would be filled with water and pressurized to a minimum of 1.25 times the
45 designated operating pressure for eight hours to verify integrity. Water used for testing would be

1 from sources previously identified in the PAPA SEIS (BLM 2008a) and trucked to the pipeline
2 for testing. Upon test completion, the pipeline would be drained and transported back to the
3 PAPA by truck for use in well fracturing operations. Water used for hydrostatic testing would be
4 analyzed to ensure compliance with all applicable water quality standards before being used for
5 any secondary purposes. A permit would also be obtained from the Wyoming Department of
6 Environmental Quality (WDEQ) - Water Quality Division prior to release of the hydrostatic test
7 water.

8 In total, 160,000 gallons (0.49 acre-feet) of water would be necessary for hydrostatic testing.
9 Testing would be performed in three pipeline segments. After testing the first segment, the
10 water would be moved into the next segment until tests of all three segments are complete.
11 ULTRA's BMPs would be implemented during the test to prevent scouring and erosion resulting
12 from any inadvertent releases. By testing in three segments, 16 water trucks would be required
13 to transport the water back to the PAPA from La Barge.

14 Dust Control. Gravel and dirt roads would be sprayed frequently with water from truck-mounted
15 nozzles to reduce the formation and transport of fugitive dust. The volume of water will depend
16 on several conditions including soil type and moisture content, weather, and BLM/landowner
17 requirements. Water used for dust suppression would be from ULTRA-authorized water wells in
18 the PAPA field and part of ULTRA's previously approved allocation in the PAPA SEIS. The
19 proposed project would not require any additional water withdrawal other than what has already
20 been approved in the PAPA SEIS.

21 Hazardous Materials. ULTRA would comply with all applicable federal and state laws with
22 respect to hazardous substances. Hazardous waste would not be generated during construction
23 of the pipeline. A release of a hazardous substance, such as a leak or spill, in excess of the
24 reportable quantity as established by 40 CFR 117.3 would be reported as required by the
25 Comprehensive Environmental Response, Compensation, and Liability Act, Section 102 B. No
26 toxic substances are proposed for use in connection with construction; however, if toxic
27 substances are necessary, their usage would comply with provisions of the Toxic Substances
28 Control Act of 1976, as amended (40 CFR 702-799).

29 Hazardous and extremely hazardous materials are identified in the U.S. Environmental
30 Protection Agency's (EPA's) Consolidated List of Chemicals Subject to Reporting Under Title III
31 of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 355. Quantities
32 would be limited to only the amounts needed for construction. Fuels would not be stored on
33 location and would be provided by a vehicle that refuels and services construction equipment.
34 Material Safety Data Sheets would be maintained by ULTRA for all materials used.

35 Fire Control. ULTRA would notify the BLM AO of any fires during any portion of the project and
36 would comply with all rules and regulations administered by the BLM AO concerning the use,
37 prevention, and suppression of fires on federal lands. In the event of a fire, ULTRA or their
38 contractors would initiate fire suppression actions in the work area. Suppression would continue
39 until the fire is out or until the crew is relieved by an authorized representative of the agency on
40 whose land the fire occurred. Heavy equipment would not be used for fire suppression outside
41 the ROW without prior approval of the BLM AO unless there is imminent danger to life or
42 property. ULTRA or their contractors would be responsible for all costs associated with the
43 suppression of fires and the rehabilitation of fire damage resulting from their operations,
44 employees, or contractors.

1 ULTRA would designate a representative to be in charge of fire control during pipeline
2 construction. The fire representative would ensure that each construction crew has firefighting
3 tools and equipment (such as extinguishers, shovels, and axes) available at all times. ULTRA
4 would require that spark arresters be maintained on internal combustion engines at all times
5 during construction, maintenance, and operations.

6 Reclamation. Initial reclamation would begin following completion of hydrostatic testing. The
7 ROW would be restored in accordance with agency/landowner specifications. All disturbed
8 areas would be recontoured so that the disturbed area is visually consistent with the
9 surrounding terrain. Topsoil would be evenly spread across the ROW. Erosion would be
10 prevented through the use of erosion control measures, such as diversion terraces, riprap,
11 matting, and water bars. No berms or mounds would be created over the backfilled trench.

12 ULTRA proposes to restore BLM lands and waters of the U.S. (including stream and wetland
13 crossings) in accordance with the following stipulations.

- 14 • Surface disturbance would be minimized during pipeline construction.
- 15 • Native plant species would be used in reseeded.
- 16 • Certified weed-free seed would be used during reseeded of disturbed areas.
- 17 • Noxious weed control would be conducted for the life of the pipeline.
- 18 • Monitoring for noxious weeds and for the success of vegetation establishment following
19 initial and any subsequent plantings would be conducted.
- 20 • All compacted areas would be ripped to the necessary depth to reduce compaction prior
21 to seeding at the request of the BLM.
- 22 • Water breaks would be installed on slopes following BLM best management practices
23 (BMPs) and standards.
- 24 • Contour furrows, water bars, erosion control blankets, and/or other appropriate BMPs
25 would be installed to limit conditions favorable for accelerated erosion at the request of
26 the BLM.
- 27 • Channel cross sections of ephemeral stream channels would be restored to pre-
28 disturbance contours or to stable profile to minimize accelerated erosion and bank
29 sloughing. Appropriate BMPs would also be used as required to prevent accelerated
30 erosion or gully formation. Appropriate BMPs would be determined in consultation with
31 the BLM and ULTRA.
- 32 • Ephemeral stream crossings would be monitored to identify and mitigate conditions of
33 accelerated erosion within the pipeline ROW. Monitoring during construction would
34 ensure that appropriate BMPs are implemented, as necessary, to prevent accelerated
35 erosion or the potential hazard of gully erosion. Monitoring would continue until the BLM
36 determines disturbed areas have been stabilized and an adequate percent cover density
37 of native vegetation has been established.
- 38 • Reclamation must be completed within one growing season after recontouring and
39 backfilling and completion of surface disturbance. Successful reclamation would include
40 less than 2% weeds and at least 85% of original cover at a minimum.

41 All disturbed areas along the pipeline ROW would be seeded according to BLM specifications,
42 including components of the seed mixture, application rate, and application technique. Where

1 applicable, seed would be planted using a drill or Trax drill. Prior to seeding, an appropriate
2 seedbed would be prepared that would be rough enough to reduce runoff and promote
3 infiltration. In unsuitable areas, the seed would be broadcast and raked or chained to ensure
4 sufficient soil cover (broadcast seed rates would be double that of the drilled seed rate);
5 hydroseeding or other applicable methodologies would be used, per BLM specifications.

6 Weed Control. ULTRA would be responsible for control of all invasive/noxious weed species on
7 any and all disturbed sites, including areas outside the construction area where weeds have
8 established due to project installation and development. All vehicles and equipment used for
9 project construction and development would be power washed prior to entering the project area.
10 Guidelines in *Partners Against Weeds, an Action Plan for the Bureau of Land Management*
11 (BLM 1996) would to be followed as a prototype for weed prevention measures on federal
12 lands.

13 ULTRA would coordinate with the BLM AO or the appropriate regulatory authority or local
14 authorities to develop acceptable weed control methods for the disturbed areas within the ROW
15 limits. Before using pesticides, including use in emergency situations, ULTRA would obtain
16 written approval of its plan detailing the type and quantity of material to be used, pests to be
17 controlled, method of application, location of storage, disposal of containers, and any other
18 information deemed necessary by the regulatory agency. If pesticides are required, ULTRA
19 would comply with all applicable federal and state laws. Pesticides would be used in accordance
20 with registered uses and within limitations imposed by the appropriate regulatory authority.

21 Operation and Maintenance

22 ULTRA would conduct all activities associated with construction, operation, maintenance, and
23 abandonment of the ROWs within the authorized limits of each ROW. All permanent
24 aboveground facilities, piping, and valving would be painted a non-contrasting color harmonious
25 with the surrounding landscape (Shale Green or other visually suitable color specified by the
26 BLM on a case-by-case basis).

27 The pipeline would be routinely patrolled and inspected by foot, vehicle, and aircraft to check for
28 problems such as ROW conditions, encroachment on the ROW, and any other situation that
29 could cause a safety hazard or require preventive maintenance. If damage should occur to the
30 pipeline from external sources, repair or replacement of the portion of the pipeline may be
31 necessary.

32 Abandonment

33 Prior to abandonment, ULTRA would obtain authorization from the BLM, which would determine
34 the method for abandoning the pipeline and facilities. Pipeline abandonment would be
35 accomplished in accordance with the policies and standards employed by the BLM at the time
36 of abandonment. At this time, ULTRA proposes that the pipeline would be purged of all
37 combustible materials and retired in place. Operators would remove all aboveground facilities
38 and dispose of unsalvageable materials at authorized sites. Regrading and revegetation of
39 disturbed land areas would be completed where necessary.

40 **2.3 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL**

41 The alternatives listed below were identified and eliminated from detailed study based on
42 significant adverse impacts to resource values or inability to meet the project purpose and need.

1 Reardon Draw Alternative

2 Due to significant potential issues with known highly erodible soils in the area and the lack of
3 previous disturbance in Reardon Draw, this alternative was considered to have significant
4 potential impact to resource values and thus was not carried forward for further analysis.

5 Big Piney Alternative

6 The Big Piney alternative was eliminated from further analysis due to significant potential effects
7 to wetlands and riparian resources near the Green River and difficulty in securing private land
8 access and project approval for construction and operation of the proposed facilities.

1 **3.0 AFFECTED ENVIRONMENT**

2 **3.1 INTRODUCTION**

3 The project area lies between U.S. 189 and U.S. 191, and the northern portion is bisected by
4 WY 235. U.S. 189 and U.S. 191 are primary routes for tourist travel to Yellowstone and Teton
5 National Parks and Jackson Hole. Other communities/settlements in the vicinity of the proposed
6 condensate pipeline include Pinedale, New Fork, Marbleton, and Big Piney. The project area is
7 dominated by sagebrush steppe and high desert vegetation blending with riparian areas and
8 wetlands associated with the New Fork and Green River floodplains.

9 This chapter provides a description of the human and natural environmental resources that
10 could be affected by the Proposed Action of ULTRA's proposal. The Proposed Action
11 represents a source of additional impact beyond what occurred during construction of the gas
12 sales pipeline analyzed in the PAPA SEIS (BLM 2008a), and all resources potentially impacted
13 by construction and operation of the proposed condensate pipeline are included in this chapter.

14 The following resources are not present and will not be further analyzed:

- 15 • Areas of Critical Environmental Concern
- 16 • Prime or Unique Farmlands
- 17 • Hazardous or Solid Wastes
- 18 • Public Health and Safety
- 19 • Wild and Scenic Rivers
- 20 • Wilderness Values

21 **3.2 GEOLOGY, GEOLOGIC HAZARDS, AND MINERALS**

22 *3.2.1 Geology*

23 The 54.5-mile-long proposed pipeline ROW lies within the Green River Basin, a large structural
24 depression dissected by the Green River and its tributaries that have exposed Tertiary-aged
25 sedimentary rock and Quaternary-aged deposits across a landscape dominated by glacial
26 features, mesas, buttes, and upland plateaus (BLM 2008b). Geological formations trend
27 overwhelmingly from northwest to southeast, while slopes along the proposed pipeline route
28 generally remain below 10% with limited areas of slopes greater than 15%. Elevations range
29 from 6,600 feet above mean sea level (amsl) near the Green River crossing to greater than
30 7,400 feet amsl above Figure Four Canyon. The majority of the proposed pipeline ROW is
31 underlain by Tertiary-aged sedimentary strata of the Green River and Wasatch formations,
32 overlain by Quaternary-aged alluvial and colluvial deposits following the courses of the Green
33 and New Fork rivers and eolian deposits throughout the upland topography (Green and
34 Drouillard 1994).

35 The Wasatch Formation developed from a series of late Paleocene to middle Eocene terrestrial-
36 fluvial, floodplain, and lacustrine deposits, approximately 33.9 to 65.5 million years ago (Ma)
37 (Green and Drouillard 1994). Exposed members of the Wasatch Formation along the proposed
38 pipeline ROW include the LaBarge and Chappo members and the New Fork Tongue. Rocks of
39 the La Barge and Chappo members consist of interbedded red, gray, and brown mudstone and
40 conglomerate and yellow sandstone, while the New Fork Tongue consists of mixed

1 carbonate/clastic dull-red and green mudstone, brown sandstone, and thin limestone beds.
2 Surface exposure of the Wasatch Formation includes residuum, slope wash and alluvium,
3 eolian deposits, terraces and benches, and exposed bedrock of the Tertiary-aged sedimentary
4 formation (Case et al. 1998).

5 The Green River Formation developed from a series of early to middle Eocene lacustrine and
6 deltaic expansion episodes of Lake Gosiute, approximately 33.9 to 55.8 Ma (Green and
7 Drouillard 1994). Exposed members of the Green River Formation along the proposed pipeline
8 ROW include the Fontenelle Tongue and the Wilkins Peak and Laney members. Rocks of the
9 Fontenelle Tongue consist of fine-grained mixed clastic/carbonate limestone, sandstone,
10 marlstone, and oil-shale. Rocks of the Wilkins Peak Member consist of mixed clastic/carbonate
11 green, brown, and gray tuffaceous sandstone, shale, and marlstone with evaporites in
12 subsurface sections, while the Laney Member consists of oil-shale and mixed clastic carbonate
13 mudstone and marlstone. Surface exposure of the Green River Formation includes residuum,
14 slope wash and alluvium, eolian deposits, and exposed bedrock of the Tertiary-aged
15 sedimentary formation (Case et al. 1998).

16 Other dominant surface units crossed by the proposed pipeline ROW include Quaternary-aged
17 alluvial and colluvial deposits along floodplains and gravel, pediment, and fan deposits of the
18 Green and New Fork rivers. Rocks of the Wasatch and Green River formations are overlain by
19 more recent unconsolidated alluvial and glacial sediments of Quaternary age, approximately
20 1.81 Ma to recent age (Green and Drouillard 1994). Alluvium and colluvium and gravel,
21 pediment, and fan deposits are more prominent along the proposed pipeline crossings of the
22 Green and New Fork rivers. Gravel, pediment, and fan deposits are unconsolidated and consist
23 mostly of locally derived clasts that may include Tertiary gravels, while alluvium and colluvium
24 deposits consist of clay, silt, sand, and gravel deposited along floodplains, fans, terraces, and
25 slopes (Green and Drouillard 1994; Case et al. 1998).

26 *3.2.2 Geologic Hazards*

27 Geologic hazards within the vicinity of the proposed pipeline ROW are analyzed in the Questar
28 Year-round Drilling EA (BLM 2004a) and the Condensate Pipeline Modifications EA (BLM 2005)
29 and show that there are no geologic hazards surrounding the proposed pipeline. Slopes within
30 the proposed pipeline ROW rarely exceed 10%, and the ROW crosses lands that show no
31 major evidence of landslides or have any underlying active faults (Wyoming State Geological
32 Survey 2010). The U.S. Geological Survey (USGS) estimated that a 4.2- to 4.5-magnitude
33 earthquake might occur somewhere in the Green River Basin every 62 years, and on February
34 3, 1995, recorded a magnitude 5.4 earthquake near Rock Springs, Wyoming, approximately 61
35 miles southeast of the proposed pipeline (BLM 2008b). However, it was later determined that this
36 earthquake was caused by a nearby roof collapse of a trona mine.

37 *3.2.3 Minerals*

38 Major gas and oil producing geologic structures and drilling activity within the vicinity of the
39 proposed pipeline alignment include the LaBarge Platform (Greater Big Piney – La Barge), the
40 Pinedale Anticline, and the fault system that controls the Jonah Oil and Gas Development fields
41 (BLM 2008b). In 2002, the USGS estimated that an average 84.6 trillion cubic feet of gas, 131
42 million barrels (MMBBLs) of oil, and 2.6 MMBBLs of natural gas liquids remain in the reservoirs
43 of the Southwestern Wyoming Province (USGS 2005), including the three structural fields within
44 the vicinity of the proposed pipeline.

1 The LaBarge Platform is overlain by a number of oil and gas producing fields discovered as
2 early as the 1920s, which are generally located between T26N and T29N, R113W with a
3 cumulative completion of 717 wells (Wyoming Oil and Gas Conservation Commission [WOGCC]
4 2010). Historical production of these fields includes 40 MMBBLS of oil and 840 billion cubic feet
5 (Bcf) of gas. Oil and gas wells of the LaBarge Platform are accessing reservoirs in the Almy,
6 Baxter, Bear River, Fort Union, Frontier, Mesaverde, Muddy, Nugget, P Said, Stray, T-5,
7 Transition, and Wasatch formations.

8 The Pinedale Anticline was discovered in 1955 and is generally located between T30N and
9 T32N and R108W and R109W with a cumulative completion of 1,403 wells (WOGCC 2010).
10 Historical production of this field includes 16 MMBBLS of oil and 2,162 Bcf of gas from the Blair,
11 Fort Union, Hilliard, Lance, Lance-Mesaverde, and Mesaverde formations. The Jonah Oil and
12 Gas Development field, discovered in 1977, is generally located in T28N and R108W with a
13 cumulative completion of 1,464 wells (WOGCC 2010). Historical production of this field includes
14 27 MMBBLS of oil and 2,872 Bcf of gas from the Big George, Fort Union, Jonah, Lance, Lewis,
15 Mesaverde, and Wardell formations.

16 The development of potential solid minerals in the vicinity of the proposed pipeline is limited by
17 the unfavorable geologic environment for the occurrence of many minerals (BLM 2008b).
18 Salable minerals include sand, gravel, topsoil, boulders, riprap, sandstone, shale, limestone,
19 and borrow material. Sand, gravel, and fill material are used by the Wyoming Department of
20 Transportation (WYDOT), other agencies, and local contractors. Gravel deposits occur near the
21 Green and New Fork rivers; however, there is no current active exploitation of salable minerals
22 within the proposed pipeline alignment. The most extensive production of decorative building
23 stone near the vicinity of the proposed pipeline is approximately 7 miles to the west of the
24 southern terminus from platy sandstone of the Nugget Formation in the Miller Mountain/La
25 Barge Creek area (BLM 2008b). Although mining claims exist throughout the basin, there are no
26 claims and no significant deposits of locatable minerals present along the proposed pipeline
27 alignment (BLM 2004a, 2005). The last known coal production was from the Cottonwood Mine
28 (Section 4, T33N, R115W) in 1963, and there are currently no federal coal leases within the
29 vicinity of the Proposed Action (BLM 2008b). Although sodium, phosphate, and oil shale bearing
30 strata occur near the proposed pipeline, the production of these minerals is not currently
31 economically feasible and development is not likely to occur in the foreseeable future.

32 **3.3 PALEONTOLOGICAL RESOURCES**

33 According to published geologic mapping (Love and Christiansen 1985), the area of potential
34 effect (APE) is immediately underlain by six geologic units: 1) the early Eocene-age LaBarge
35 and Chappo members of the Wasatch Formation, 2) the early Eocene-age undifferentiated New
36 Fork Tongue of the Wasatch Formation and Fontenelle Tongue of the Green River Formation,
37 3) the early and middle Eocene-age Wilkins Peak Member of the Green River Formation, 4) the
38 early and middle Eocene-age Laney Member of the Green River Formation, 5) Quaternary-age
39 alluvium and colluviums, and 6) Holocene-age gravel, pediment, and sand deposits.

40 According to Roehler's (1991a) proposed nomenclature revisions, the type area of the
41 Fontenelle Tongue of the Green River Formation as mapped by Donovan (1950) includes the
42 previously unrecognized Tipton Shale Member at its base, the Farson Sandstone Member of
43 the Green River Formation in the middle, and the Alkali Creek Member of the Wasatch
44 Formation near its top. Overlying this sequence is the Wilkins Peak Member of the Green River
45 Formation (Roehler 1991a). In addition, the New Fork Tongue of Donovan (1950) and Love and

1 Christiansen (1985) is equivalent to Roehler's (1991a) Cathedral Bluffs Tongue of the Wasatch
 2 Formation.

3 Although Roehler's revisions are the currently accepted nomenclature and are utilized by
 4 Winterfeld (2010) for the paleontological field survey for this project, no updated geologic
 5 mapping has employed this terminology. Therefore, a discussion of these geologic units as
 6 mapped by Love and Christiansen (1985) is presented below. Table 3-1 summarizes the
 7 acreage of each geologic unit underlying the APE for the Proposed Action, including the
 8 proposed alignment as well as TUAs.

9 **Table 3-1. Geologic Units Underlying the Project Area**

Geologic Unit	Fossil Types	PFYC System	# of Acres within Proposed Alignment
Gravel, pediment, and fan deposits	Holocene deposits are too young to contain fossils.	Class 2	18.33
Alluvium and colluvium	Pleistocene deposits may contain mineralized or partially mineralized remains; Holocene deposits are too young to contain fossils.	Class 2	20.27
Laney Member of the Green River Formation	Plants (leaves, wood, pollen, spores), invertebrates (gastropods, bivalves, ostracods), and vertebrates (garpike, turtle, crocodile, lizard, mammal).	Class 4/5	111.57
Wilkins Peak Member of the Green River Formation	Plants, invertebrates (insects), and vertebrates (marsupials, insectivores, primates, rodents, carnivores, condylarths).	Class 5	19.45
Undifferentiated Fontenelle Tongue of the Green River Formation and New Fork Tongue of the Wasatch Formation (equivalent to Roehler's [1991a] Tipton Shale and Farson Sandstone members of the Green River Formation, Alkali Creek Tongue of the Wasatch Formation, Wilkins Peak Member of the Green River Formation, Cathedral Bluffs Tongue of the Wasatch Formation)	Plants and locally abundant and diverse vertebrate fauna (fish, reptiles, and mammals).	Class 5	158.87
LaBarge and Chappo members of the Wasatch Formation	Plants, invertebrates (gastropods), and diverse vertebrate fauna (perissodactyls, condylarths, primates, carnivores, rodents).	Class 5	31.02

10 Source: Love and Christiansen (1985).

11 **3.3.1 Paleontological Sensitivity**

12 The following section includes a discussion of the geology and paleontology of the units
 13 underlying the APE as mapped by Love and Christiansen (1985). Each geologic unit is
 14 classified according to the Potential Fossil Yield Classification (PFYC) system, originally
 15 developed by the U.S. Forest Service and recently revised and adopted as policy by the BLM

1 (BLM 2007). This system generally ranks the paleontological sensitivity of geologic formations
2 and their subunits from low (Class 1) to high (Class 5). If potentially fossiliferous bedrock or
3 surficial sediments are disturbed, the disturbance could result in the destruction of
4 paleontological resources and subsequent loss of information. The loss of any identifiable fossil
5 that could yield information important to prehistory, or that embodies the distinctive
6 characteristics of a type of organism, environment, period of time, or geographic region, would
7 be a significant adverse environmental impact.

8 *LaBarge and Chappo Members of the Wasatch Formation*

9 The Chappo Member is dominated by brightly colored red, maroon, reddish brown, orange,
10 ochre, tan, and gray mudstones with abundant white, tan, brown, gray, and red sandstone and
11 conglomerate (Oriell 1962). In contrast to the LaBarge Member, the Chappo Member also
12 contains some to abundant beds of pisolitic limestone (Oriell 1962). The lower contact is also an
13 angular unconformity, resting on Paleozoic rocks to the west and Cretaceous rocks to the east.
14 Surface exposures of the Chappo Member are restricted by the overlying LaBarge Member, but
15 exposed thicknesses range from 490 to 680 feet while well logs indicate thickness of 1,200 feet
16 (Oriell 1962). Extensive vertebrate fossil collections indicate middle to late Tiffanian age (late
17 Paleocene) (Gunnell 1994). Thirty-three genera and 39 species have been identified from the
18 Chappo type locality (Gunnell 1994). Taxa include multituberculates, marsupials, insectivores,
19 pleisadapids and other early primates, phenacodontids, arctocyonids, hyopsodontids,
20 mesonychids, vivveravids, and creodonts. This fauna has been interpreted as representing an
21 open woodland, relatively seasonally dry paleoenvironment (Gunnell 1994).

22 The LaBarge Member is also dominated by brightly colored mudstone with small lenses of sheet
23 sandstone and locally present conglomeratic beds. The unit is overlain by the limestone beds of
24 the Fontenelle Tongue of the Green River Formation. Due to the underlying erosional contact,
25 thicknesses vary but are around 400 feet in the west increasing to as much as 1,500 feet
26 subsurface to the east (Oriell 1962). Gazin (1962, 1965) reports 40 species in 31 genera
27 characterize the LaBarge fauna. The majority of the fauna is represented by perissodactyls and
28 condylarths, but also includes a high diversity of primates, carnivores, and rodents (Breithaupt
29 1990). Due to the high paleontological sensitivity of these members of the Wasatch Formation,
30 they have been designated PFYC Class 5.

31 *Undifferentiated Fontenelle Tongue of the Green River Formation and New Fork Tongue* 32 *of the Wasatch Formation*

33 The early Eocene-age fluvial Wasatch Formation interfingers with and underlies the early and
34 middle Eocene-age lacustrine Green River Formation (Roehler 1991a). Both of these formations
35 exhibit rapid lateral facies changes, abrupt thickness changes, intraformational unconformities,
36 and gradational contacts (Roehler 1991b).

37 The Fontenelle Tongue (Love and Christiansen 1985) of the Green River Formation, equivalent
38 to Roehler's (1991a) Tipton Shale and Farson Sandstone members of the Green River
39 Formation, the Alkali Creek Member of the Wasatch Formation, and the Wilkins Peak Member
40 of the Green River Formation, is composed of well-laminated buff to gray fine-grained
41 calcareous sandstone, fine-grained gray muddy limestone, poorly indurated fine-grained yellow
42 sand, and calcareous gray blocky mudstone and shale. Some sandy ostracodal limestone is
43 also present, and some strata contain fossil plant remains and impressions. Few vertebrate
44 fossils have been discovered from this subunit of the Green River Formation. In general, the
45 Wasatch Formation consists of predominantly grayish and red variegated mudstone with local
46 coal, sandstone, and conglomerate lenses (Roehler 1991a). The New Fork Tongue (Love and

1 Christiansen 1985) of the Wasatch Formation, equivalent to Roehler's (1991a) Cathedral Bluffs
2 Tongue of the Wasatch Formation, consists of a sequence of variegated clay, shale, arkosic
3 conglomerate, and cross-laminated sandstone. Fossils known from the New Fork Tongue
4 include fish, reptiles, and mammals. Perissodactyl and condylarth fossils indicative of the
5 "Lostcabinian" North American Land Mammal sub-age are the most abundant mammalian
6 remains (West 1978). Because the Wasatch Formation contains locally diverse and abundant
7 vertebrate fossils, the undifferentiated Fontenelle and New Fork tongues are designated PFYC
8 Class 5 in this study.

9 Wilkins Peak Member of the Green River Formation

10 The Wilkins Peak Member is composed of green, brown, and gray tuffaceous sandstone, shale
11 and marlstone, and evaporites in the subsurface (Love and Christiansen 1985). Fossil plants
12 (Wilf 2000), fruit (Herendeen and Dilcher 1991), insects (Pietras et al. 2003), and mammalian
13 fauna consisting of marsupials, insectivores, primates, rodents, carnivores, and condylarths
14 (Grande 1984) have been documented in the Wilkins Peak Member. Because of the diversity
15 and locally abundant fossils known from the Green River Formation, the Wilkins Peak Member
16 is considered highly sensitive and designated PFYC Class 5.

17 Laney Member of the Green River Formation

18 The Laney Member of the Green River Formation is composed of black to gray-white, brown,
19 and buff shale and fine shaley sand. Beds of "paper shales" are present, as well as gray, gray-
20 brown, brown, buff, and yellow fine-grained marly to siliceous sandstones and poorly indurated
21 sands. Numerous fossils have been collected from this unit in the greater Green River Basin.
22 These include plant leaves, wood, pollen, and spores; invertebrate gastropods, bivalves, and
23 ostracods; and vertebrate garpikes, crocodiles, turtles, lizards, and mammals (West 1978).
24 Because of its diverse and locally abundant fossils, the Laney Member of the Green River
25 Formation is highly sensitive and is designated as PFYC Class 4/5.

26 Alluvium and Colluvium

27 Surficial deposits of Pleistocene- and Holocene-age alluvium and colluvium occur locally within
28 the project area. The alluvium consists of gravel, sand, silt, mud, and clay that forms alluvial
29 remnants on dissected benches along stream drainages, and accumulates within modern
30 stream drainages and on adjacent floodplains. The colluvium consists of earthflow, mudflow,
31 landslide, and talus deposits (Love and Christiansen 1985).

32 Surficial deposits of Holocene age contain the unfossilized remains of modern taxa and are too
33 young to contain in situ fossils; therefore, they have no paleontological sensitivity. Pleistocene-
34 age surficial deposits, particularly alluvium, may contain mineralized or partially mineralized
35 animal bones, invertebrates, and plant remains of paleontological significance. However, few
36 occurrences of Pleistocene-age fossils from southwestern Wyoming have been recorded.
37 Pleistocene- and Holocene-age alluvium and colluvium within the project area have low
38 paleontological sensitivity, and are designated as PFYC Class 2.

39 Holocene-age Gravel, Pediment, and Fan Deposits

40 Holocene-age alluvium and gravel, pediment, and fan deposits are exposed within the project
41 area. The alluvium consists of gravel, sand, silt mud, and clay that forms alluvial remnants on
42 dissected benches along stream drainages, and accumulates within modern stream drainages
43 and on adjacent floodplains (Love and Christiansen 1985). The gravel, pediment, and fan
44 deposits may also contain some glacial deposits and Tertiary gravels.

1 Surficial deposits of Holocene age contain the unfossilized remains of modern taxa and are too
2 young to contain in situ fossils; therefore, they have no paleontological sensitivity. Pleistocene-
3 age surficial deposits may contain mineralized or partially mineralized animal bones,
4 invertebrates, and plant remains of paleontological significance. Pleistocene- and Holocene-age
5 gravel, pediment, and fan deposits within the project area have low paleontological sensitivity
6 (PFYC Class 2).

7 *3.3.2 Results of Paleontological Field Survey*

8 Two fossil localities were documented during the paleontological survey for the project
9 (Winterfeld 2010). Unidentifiable bone fragments were observed at the previously recorded
10 fossil locality in the undifferentiated Fontenelle Tongue of the Green River Formation and New
11 Fork Tongue of the Wasatch Formation along Blue Rim. A new fossil locality was documented
12 in the Laney Member of the Green River Formation near the head of Figure Four Canyon. A
13 mammal jaw with a premolar, crocodile scutes, and turtle shell and bones were observed and
14 collected at this locality (Winterfeld 2010). It is probable that the few fossils previously
15 discovered in this area are the result of limited bedrock exposures.

16 **3.4 SOILS**

17 Soils in Wyoming are a function of climate, vegetation communities, topography, geologic
18 parent materials, and time (Jenny 1994; Munn and Arneson 1998). The proposed pipeline ROW
19 crosses soils that have developed in a flat to steeply sloped (0%–32%), arid environment
20 characterized by sagebrush steppe and desert shrub communities. Bedrock is composed of
21 several different Tertiary-aged sedimentary formations, including the Laney and Wilson Peak
22 members and Fontenelle Tongue of the Green River Formation, and the New Fork Tongue and
23 LaBarge and Chappo members of the Wasatch Formation. More recent Quaternary-aged
24 alluvial, colluvial, and eolian deposits have developed over time along the New Fork and the
25 Green rivers and in areas of more diverse relief. Soils along the proposed pipeline ROW are
26 predominantly upland soils with soils of piedmonts and alluvial fans. Floodplain and bottomland
27 soils occur near the Green and New Fork rivers or along intermittent stream beds. Each of these
28 soils developed in a variety of parent materials with different vegetation communities, which
29 often limits reclamation opportunities and presents unique challenges in controlling soil erosion
30 and degradation (BLM 2008b). Additional emphasis would be placed on mitigation measures
31 aimed at reducing soil erosion and the subsequent sediment input into the Green River
32 watershed.

33 Upland soils have developed primarily from residuum, slope wash, alluvium of flat-lying shales,
34 and dune-like eolian deposits (BLM 2008a). Upland soils include Sublette County (SU) map
35 units SU03, SU05, and SU07, and Lincoln County (LN) map units LN12 and LN13 (Munn and
36 Arneson 1998). Approximately 46.27 miles of the proposed pipeline ROW (87.4% of the total
37 pipeline) cross upland soils. These soils range in depth from very shallow to moderately deep to
38 deep and are forming on rolling upland plains dissected by rock ravines, short escarpments, and
39 draws (BLM 2008a). Upland soils generally developed over sedimentary formations typically
40 high in clay content, which often results in poor infiltration, high runoff, and high potential for
41 slumping. Eolian deposits are characterized by sandy and loamy soils that are often high in
42 salinity and excessively drained, which limits mitigation opportunities when coupled with the
43 harsh, arid climate (BLM 2008b). More sensitive soils are found on steeper slopes (greater than
44 25%) and areas of exposed bedrock, often associated with badlands, although less sensitive
45 upland soils occur more frequently along the proposed pipeline ROW. However, the proposed
46 pipeline ROW would cross sensitive upland soils including soils of the Blue Rim Area, which are

1 shallow soils occupying steeper slopes and areas of rock outcrop (BLM 2008a). Additionally,
2 sand dunes and saline and sodic soils typical of those found in the Little Colorado Desert east of
3 the Green River crossing would further limit reclamation potential in some areas. Sand dunes
4 have low reclamation potential due to their poor water holding capacity, while saline and/or
5 sodic soils have low reclamation potential because of their increased likelihood to cause water
6 quality impacts from increased sediment loads and total dissolved solids (TDS).

7 Soils of piedmonts and alluvial fans have developed from alluvial parent material on terraces,
8 fans, and piedmonts dissected by the Green and New Fork rivers and other perennial streams
9 (BLM 2008b). These soils include SU map units SU02 and SU06 and LN map unit LN11, which
10 the proposed pipeline route crosses for approximately 3.69 miles (7.0% of the total pipeline).
11 These gravelly and cobbly sandy loams are typically well drained due to their coarse texture but
12 are highly susceptible to erosive forces such as gulying when disturbed. Most of these soils are
13 characterized as non-sensitive with moderate to high reclamation potential (BLM 2008a);
14 however, reclamation potential may be limited in saline or sodic soils.

15 Floodplain and bottomland soils have developed primarily in alluvial deposits alongside the
16 Green and New Fork rivers and in alluvium of the uplands along intermittent spring bottoms.
17 The proposed pipeline would be bored into these soils to cross beneath the New Fork and
18 Green rivers and any other major perennial and intermittent stream crossing. Floodplain and
19 bottomland soils include SU map unit SU01 and LN map unit LN08, which the proposed pipeline
20 alignment crosses for approximately 2.98 miles (5.6% of total pipeline). Sensitive soils include
21 wetland areas that are intermittently flooded and/or have high water tables and saline or sodic
22 soils of the intermittent drainages that interlace the uplands (BLM 2008a). However, floodplain
23 and bottomland soils generally have high reclamation potential.

24 **3.5 WATER RESOURCES**

25 *3.5.1 Surface Water*

26 The proposed pipeline is located within the New Fork Sub-basin (Hydrologic Unit Code [HUC]
27 14040102), the Upper Green-Slate Sub-basin (HUC 14040103), and the southern portion of the
28 Upper Green Sub-basin (HUC 14040101) of the Green River Basin. Land uses within these
29 sub-basins include recreation, forestry, grazing, irrigated hay production, and natural resource
30 development (WDEQ 2008). The sub-basins include two major tributaries that feed the Upper
31 Colorado River, the New Fork River and the Green River. The proposed pipeline would be
32 bored under the New Fork River approximately 6.0 miles southwest of Boulder. Additionally, the
33 proposed pipeline would be bored under the Green River approximately 5.1 miles northeast of
34 LaBarge. A large portion of the Green River Basin crossed by the proposed pipeline is drained
35 primarily by intermittent and ephemeral streams, and the proposed pipeline would be bored
36 under any major intermittent or ephemeral stream crossing. Other surface water resources in
37 the vicinity of the proposed pipeline include Fontenelle Reservoir, livestock ponds, seeps,
38 springs, and wetlands (BLM 2005).

39 Headwaters within the Green River Basin originate in granitic or metamorphic rock, which
40 results in excellent water quality; however, arid climates and erodible geology coupled with
41 agricultural practices and increases in natural resource development compromise water quality
42 and increase sediment loads and TDS (WDEQ 2008). The Upper Green Sub-basin and the
43 Slate Creek Sub-basin include the Green River, which has a designated use classification of
44 Class 2AB by the WDEQ that is protected for drinking water, game and non-game fish, fish
45 consumption, other aquatic life, recreation, wildlife, agriculture, industry, and scenic value

1 (WDEQ 2008). The New Fork Sub-basin contains the New Fork River, which has also been
2 designated Class 2AB. The portions of rivers and all perennial streams within the vicinity of the
3 proposed pipeline are not included on Wyoming's Section 303(d) 2008 list of impaired waters
4 (WDEQ 2008). Water quality is rated as good within these watersheds (BLM 2008b); however,
5 lower elevations of each sub-basin drain areas of fine to coarse-grained sedimentary rocks,
6 which subsequently increase fine sediment and TDS in surface waters (WDEQ 2008).

7 *3.5.2 Groundwater*

8 Groundwater resources within the vicinity of the proposed pipeline are described in the Questar
9 Year-round Drilling EA (BLM 2004a) and the Condensate Pipeline Modifications EA (BLM
10 2005). Several water wells have been drilled in the vicinity of the proposed pipeline (Hamerlinck
11 and Arneson 2002), primarily for municipal and industrial purposes (BLM 2008b). Groundwater
12 under the proposed pipeline ROW varies in depth; however, the majority is found in upland
13 formations of Cretaceous- and Tertiary-aged sandstones and shales ranging in depth from 50 to
14 300 feet below the surface and not generally vulnerable to environmental contaminants because
15 of little recharge in the area. Groundwater is found closer to the surface (10–50 feet below the
16 surface) in alluvium surrounding the Green and New Fork rivers. These shallower groundwater
17 sources in proximity to major river drainages are typically found in Quaternary alluvial deposits,
18 which are generally more susceptible to environmental contaminants due to the high water
19 table, sandy textures, and high hydraulic conductivity associated with these soils developed
20 from alluvial substrate (Hamerlinck and Arneson 2002).

21 Groundwater quality within the vicinity of the proposed pipeline varies based on location, depth
22 of well, and geologic unit, and problems with groundwater quality are directly associated with
23 elevated TDS (BLM 2008b). Groundwater is monitored annually in the PAPA field (Sublette
24 County Conservation District 2009). Based on lab analysis in 2009, 14 domestic wells exceeded
25 the TDS drinking water standard (500 mg/L), 1 domestic/stock well exceeded the TDS drinking
26 water standard; and 0 stock wells exceeded the TDS livestock standard (5,000 mg/L). There
27 were no domestic, domestic/stock, or livestock water wells that exceeded the drinking water
28 standard (250 mg/L) or livestock water standard (2,000 mg/L) for chlorine. Fluoride levels
29 exceeded the drinking water standard (4 mg/L) at 6 domestic wells; 1 domestic/stock well
30 exceeded the drinking water standard; and there were 0 stock wells that exceeded the livestock
31 standard. Sulfate levels exceeded the drinking water standard (250 mg/L) at 7 domestic wells; 1
32 domestic/stock well exceeded the drinking water standard; and there were 0 stock wells that
33 exceeded the livestock standard (3,000 mg/L). When dealing with Total Petroleum Hydrocarbon
34 (TPH) in water wells, WYDEQ has a set of ground water cleanup levels to help guide them in
35 determining a point of contamination. In 2009, wells with detections that were over the cleanup
36 level included: two wells for Diesel Range Organics (DRO); one well for Gasoline Range
37 Organics (GRO); and six wells for benzene. More information on water quality in the area is
38 available on the PAWG Water Task Group website
39 (http://www.blm.gov/wy/st/en/field_offices/Pinedale/pawg.html).

40 **3.6 VEGETATION AND NOXIOUS WEEDS**

41 *3.6.1 Vegetation*

42 The Proposed Action is located within the Wyoming Basin ecoregion, which is dominated by
43 arid grasslands and shrublands and interrupted by high hills and low mountains (Chapman et al.
44 2004). The region is somewhat drier than the northwestern Great Plains to the northeast and
45 does not have the extensive cover of pinyon-juniper woodland found in the Colorado Plateau to
46 the southwest. The area can be further defined as sagebrush steppe where Wyoming big

1 sagebrush (*Artemisia tridentata* ssp. *wyomingensis*), black greasewood (*Sarcobatus*
 2 *vermiculatus*), and saltbush (*Atriplex* spp.) are common components (Chapman et al. 2004).
 3 High elevations and low annual precipitation are prime determinants of plant species
 4 composition, abundance, and distribution in the vicinity of the proposed pipeline ROW. The
 5 sagebrush steppe provides habitat and forage for various wildlife species, including the greater
 6 sage-grouse (*Centrocercus urophasianus*), which was recently given candidate status under the
 7 Endangered Species Act (ESA) (16 United States Code [USC] 1531–1544), as amended, and
 8 other sagebrush-obligate species.

9 LANDFIRE (USGS 2006) spatial vegetation data and field observations were used to determine
 10 the vegetation classifications that are found along the proposed pipeline ROW. A portion of the
 11 vegetation along the proposed pipeline ROW is either within or adjacent to existing pipeline
 12 ROWs. The vegetation in these previously disturbed areas consists of perennial grasses and
 13 forbs planted for reclamation purposes. Invasive species such as halogeton (*Halogeton*
 14 *glomeratus*) and Russian thistle (*Salsola tragus*) were also observed in these areas. Big
 15 sagebrush shrubland comprises the majority of the vegetation along the undisturbed portions of
 16 the proposed pipeline ROW. Plant species observed along the undisturbed portion of the ROW
 17 include Wyoming big sagebrush, rabbitbrush (*Chrysothamnus* spp. and *Ericameria* spp.), and
 18 greasewood, and perennial grasses and forbs such as Indian ricegrass (*Achnatherum*
 19 *hymenoides*), crested wheatgrass (*Agropyron cristatum*), and alyssum (*Alyssum* spp.).

20 **3.6.2 Noxious Weeds**

21 Noxious weeds are officially designated non-native plant species that are invasive and/or have
 22 the potential to become monocultures and can cause harm to land value, native ecology,
 23 agricultural interests, wildlife habitat, livestock forage, riparian resources, and aesthetic and
 24 visual values of land. The U.S. Department of Agriculture maintains an official list of weed
 25 species that are designated noxious species in the state of Wyoming, while each county
 26 maintains its own list of declared weeds. Table 3-2 lists the 25 noxious weeds present, or
 27 potentially present, in the vicinity of the proposed pipeline.

28 **Table 3-2. Noxious Weeds Designated by the Wyoming Weed and Pest Control Act**

Common Name	Scientific Name
Canada thistle	<i>Cirsium arvense</i>
Common burdock	<i>Arctium minus</i>
Common St. Johns wort	<i>Hypericum perforatum</i>
Common tansy	<i>Tanacetum vulgare</i>
Dalmatian toadflax	<i>Linaria dalmatica</i>
Diffuse knapweed	<i>Centaurea diffusa</i>
Dyer’s woad	<i>Isatis tinctoria</i>
Field bindweed	<i>Convolvulus arvensis</i>
Hoary cress	<i>Cardaria draba, C. pubescens</i>
Houndstongue	<i>Cynoglossum officinale</i>
Leafy spurge	<i>Euphorbia esula</i>
Musk thistle	<i>Carduus nutans</i>
Ox-eye daisy	<i>Chrysanthemum leucanthemum</i>
Perennial pepperweed	<i>Lepidium latifolium</i>
Perennial sowthistle	<i>Sonchus arvensis</i>
Plumeless thistle	<i>Carduus acanthoides</i>

Common Name	Scientific Name
Purple loosestrife	<i>Lythrum salicaria</i>
Quackgrass	<i>Agropyron repens</i>
Russian knapweed	<i>Centaurea repens</i>
Russian olive	<i>Elaeagnus angustifolia</i>
Saltcedar	<i>Tamarix</i> spp.
Scotch thistle	<i>Onopordum acanthium</i>
Skeletonleaf bursage	<i>Franseria discolor</i> Nutt.
Spotted knapweed	<i>Centaurea maculosa</i>
Yellow toadflax	<i>Linaria vulgaris</i>

Source: Wyoming Weed and Pest Council (2008).

1
2 In addition to the Wyoming state list of noxious weeds, each county may designate a weed
3 species as noxious. In Sublette County, scentless chamomile (*Anthemis arvensis*), black
4 henbane (*Hyoscyamus niger*), field scabiosa (*Knautia arvensis*), and western water hemlock
5 (*Cicuta douglasii*) are designated as noxious; and black henbane, wild oat (*Avena fatua*), and
6 bull thistle (*Cirsium vulgare*) are designated as noxious in Lincoln County (Wyoming Weed and
7 Pest Council 2008).

8 Of the species listed in Table 3-2, perennial pepperweed (*Lepidium latifolium*), leafy spurge
9 (*Euphorbia esula*), spotted knapweed (*Centaurea maculosa*), Russian knapweed (*C. repens*),
10 diffuse knapweed (*C. diffusa*), Canada thistle (*Cirsium arvense*), black henbane, and dyer's
11 woad (*Isatis tinctoria*) are considered to have the highest management priority within the PFO
12 planning area. Cheatgrass (*Bromus tectorum*), halogeton, and Russian thistle are other weed
13 species known to be present within the planning area and along the proposed pipeline ROW.
14 Although not officially designated noxious, these plants can be disruptive to native plant
15 communities. Of these, halogeton is the most problematic in the planning area. Halogeton, an
16 annual plant, is an aggressive invader of newly disturbed sites with alkaline to saline soils that
17 are common in the proposed pipeline ROW. Plant tissues accumulate salts from lower soil
18 horizons. The salts leach from dead plant material, increasing topsoil salinity and favoring
19 halogeton seed germination and establishment. Some salt in the foliage consists of soluble
20 oxalates toxic to livestock, especially sheep. Soil surface disturbances associated with energy
21 development and production (seismic exploration, pipelines, drill pads, staging areas, etc.) are
22 especially vulnerable to halogeton invasion. Other non-energy activities, such as state and
23 federal road construction, installation of fiber-optic cables, buried electric lines, etc., are equally
24 susceptible to halogeton invasion (BLM 2008b).

25 Weeds within the proposed pipeline ROW are present primarily in locations of disturbance,
26 including along roads, in areas of oil and gas development, and in heavily grazed areas.
27 Occurrence of these weed species has a much higher probability in areas of past disturbance
28 and varies according to basic vegetative cover type. Weeds observed by an SWCA
29 Environmental Consultants (SWCA) biologist in and adjacent to the proposed pipeline ROW
30 include halogeton and Russian thistle.

31 **3.7 WETLAND AND RIPARIAN RESOURCES**

32 Riparian and wetland communities represent the transitional zone between aquatic and
33 terrestrial ecosystems and are dependent on periodic hydrological influxes. They are often
34 associated with perennial and intermittent streams and occur around springs and seeps. These
35 communities are highly productive providing important resources for wildlife and livestock.

1 Supporting lush vegetation, soils in these riparian and wetland areas are usually deep loams
2 with a high percentage of organic matter. Wetland and riparian areas serve a wide variety of
3 purposes including aquifer recharge, flood attenuation, flow moderation, water filtration, wildlife
4 and stock forage, and stream bank stabilization (EPA 2001).

5 Wetlands, floodplains, and riparian areas within the proposed pipeline ROW are mainly
6 associated with the New Fork and Green rivers. The U.S. Fish and Wildlife Service's (USFWS's)
7 National Wetlands Inventory (NWI), mapped according to the classification system of Cowardin
8 et al. (1979), has identified a series of freshwater emergent wetlands adjacent to the Green
9 River just east of U.S. 189 in the proposed pipeline ROW. Additional freshwater emergent and
10 forested/shrub wetlands are present on either side of the New Fork River within the proposed
11 ROW.

12 An SWCA biologist identified several wetlands adjacent to the Green and New Fork rivers within
13 the proposed pipeline ROW during surveys conducted on January 12, 2010. Four distinct
14 wetlands were identified north of the New Fork River in addition to the riparian areas on either
15 side of the river. The two northernmost of these wetlands are irrigated meadows characterized
16 by sedges (*Carex* spp.), rushes (*Juncus* spp.), and dispersed willows (*Salix* spp.). The
17 vegetation observed in the wetland north of Paradise Road is predominantly cattail (*Typha* spp.)
18 transitioning to sedges in the upland areas. The wetland south of Paradise Road is
19 characterized by sedges, rushes, cattail, and bulrush (*Scirpus* spp.). The riparian areas adjacent
20 to the New Fork River are characterized by cottonwood (*Populus* spp.) with an understory of
21 willows (*Salix* spp.). The New Fork River floodplain consists of braided wetland channels with
22 oxbows interspersed with upland areas. A mosaic of flood-irrigated wet meadows characterized
23 by meadow foxtail (*Alopecurus pratensis*) is adjacent to the Green River in the proposed
24 pipeline ROW. The riparian area along the Green River contains braided channels and is
25 characterized by cottonwood, willow, wild rose (*Rosa* spp.), sedges, and rushes. The NWI has
26 also identified a small freshwater emergent wetland just west of Yellow Point Ridge in the
27 proposed ROW. Recent aerial imagery suggests that this wetland no longer exists or was
28 falsely identified by NWI models, but field verification would be required to make a definitive
29 determination. It is possible that this feature is part of a retired stock pond. In either case, this
30 potential wetland feature appears to be of low quality and is isolated by upland sagebrush and
31 grassland habitats.

32 **3.8 SPECIAL STATUS SPECIES**

33 Special status animal and plant species evaluated within the project area include those listed by
34 the USFWS under the ESA, the Wyoming BLM State Office (BLM 2010), and BLM PFO and
35 RSFO in their respective RMPs (BLM 1997, 2008b).

36 *3.8.1 Endangered Species Act Animal Species*

37 Threatened and endangered species lists for Lincoln and Sublette counties (USFWS 2009)
38 have been reviewed to determine species status within the proposed pipeline ROW (

1 Table 3-3). Consultation with USFWS has been completed for the PAPA and Jonah Infill
2 projects and is included in the ROD for those documents (BLM 2008b, 2006a). Potential
3 impacts to these species are analyzed in the Biological Assessment (BA) (SWCA 2010a) and
4 are summarized below.

5

6

1 **Table 3-3. Endangered Species Act Animal Species Evaluated for the Proposed Action**

Common Name	Scientific Name	Status	Listed County	Habitat Association ¹	Status in Project Area with 3-mile buffer
Mammals					
Black-footed ferret	<i>Mustela nigripes</i>	Endangered	Lincoln, Sublette	Prairie dog towns	Within historic range. Potential habitat in prairie dog towns. Not expected to occur.
Birds					
Yellow-billed cuckoo WDPS ²	<i>Coccyzus americanus</i>	Candidate	Lincoln, Sublette	Riparian areas west of the Continental Divide	Not known to occur in project area. Potentially suitable habitat along New Fork and Green rivers.
Greater sage-grouse	<i>Centrocercus urophasianus</i>	Candidate	Lincoln, Sublette	Basin-prairie shrub, mountain-foothill shrub	Known.
Fish					
Colorado River fish Bonytail, Colorado pikeminnow, humpback chub, razorback sucker	<i>Gila elegans</i> , <i>Ptychocheilus lucius</i> , <i>Gila cypha</i> , <i>Xyrauchen texanus</i>	Endangered, Endangered, Endangered, Endangered	Lincoln, Sublette	Downstream riverine habitat in the Yampa, Green, and Colorado River systems ³	Not present. Lack of suitable habitat. Occur downstream.
Colorado River fish critical habitat			Lincoln, Sublette	Designated for Colorado River fish in Colorado and Utah in downstream riverine habitat in the Yampa, Green, and Colorado River systems	Outside project area.

2 ¹ Habitat associations taken from USFWS (2009).

3 ² WDPS = Western Distinct Population Segment.

4 ³ If the Proposed Action may lead to consumptive use of water or have the potential to affect water quality
5 in the Colorado River system, there may be impacts to threatened and endangered species inhabiting the
6 downstream reaches and formal consultation with USFWS would be required.

7 Some listed animal species are not known to occur in the vicinity of the proposed pipeline and
8 are not discussed further. Canada lynx (*Lynx canadensis*), grizzly bear (*Ursus arctos horribilis*),
9 and Kendall Warm Springs dace (*Rhinichthys osculus thermalis*) are not expected to occur
10 within the proposed pipeline ROW due to a lack of suitable habitat. Individual dispersing gray
11 wolves (*Canis lupus*) may pass through the area, but no suitable habitat exists and no
12 occurrences have been recorded in the vicinity. Whooping crane (*Grus americana*), piping
13 plover (*Charadrius melodus*), interior least tern (*Sterna antillarum*), and pallid sturgeon

1 (*Scaphirhynchus albus*) are found in the Platte River system, which is not connected to the
2 proposed pipeline ROW and would not be impacted by project activities. Furthermore,
3 designated critical habitats for Canada lynx, Colorado River fish, and Platte River system
4 species are outside the proposed pipeline ROW.

5 *Black-footed Ferret*

6 The black-footed ferret is listed as endangered by the USFWS, with non-essential experimental
7 status given to re-introduced populations (USFWS 2008). Black-footed ferrets are obligate
8 predators of prairie dogs (*Cynomys* spp.) and inhabit large prairie dog complexes. White-tailed
9 prairie dogs occur within the proposed pipeline ROW and vicinity (see discussion in Section
10 3.8.3, BLM Sensitive Animal Species). Within T31N, R109W at the proposed pipeline's
11 northernmost segment, several prairie dog colonies in the vicinity of the New Fork River are
12 large and close to one another, providing conditions that may be more suitable for black-footed
13 ferrets. The *Black-footed Ferret Survey Guidelines for Compliance with the Endangered*
14 *Species Act* states that ferrets require white-tailed prairie dog (*Cynomys leucurus*) towns or
15 complexes greater than 200 acres, and towns of this size may be important for ferret recovery
16 (USFWS 1989). However, the proposed pipeline ROW has been block cleared from further
17 need to conduct ferret surveys (USFWS 2004, Woolwine 2010).

18 Black-footed ferrets were historically known to exist within the proposed pipeline ROW and
19 evidence has been found in the recent past to suggest ferrets were once present. Wyoming
20 Natural Diversity Database (WYNDD) records indicate only one modern observation of this
21 species from a reliable source near the proposed pipeline ROW. One ferret was observed in
22 1979 approximately 4 miles east of the proposed pipeline's northern terminus along U.S. 191
23 (WYNDD 2010). In 2007, Wyoming Wildlife Consultants found a black-footed ferret skull on a
24 prairie dog mound while performing sage-grouse nest surveys on the Riverside 1-23 location.
25 The Riverside 1-23 is located just south of the New Fork River in the prairie dog town mentioned
26 above and is less than 1 mile from the proposed pipeline. The time frame in which the individual
27 ferret was alive is unknown. No observations of ferrets have been made during numerous
28 surveys within and around the project area and ferrets are likely extirpated from the region.

29 *Greater Sage-grouse*

30 Greater sage-grouse is a game bird managed by the WYGFD through the use of Small and
31 Upland Game Management Areas (SUGMA). The proposed pipeline is within SUGMAs 3 and 7.
32 The SUGMAs are divided by the Green and New Fork rivers, with SUGMA 3 west and SUGMA
33 7 east of the rivers. In 2008, estimated harvests for greater sage-grouse in SUGMAs 3 and 7
34 were 1,109 and 1,586, respectively (Leonard and Sheridan 2009).

35 Greater sage-grouse depend on a variety of sagebrush-steppe habitats throughout their life
36 cycle and are considered obligate users of several species of sagebrush. Thus, greater sage-
37 grouse distribution is strongly correlated with the distribution of sagebrush habitats. In February
38 2008, USFWS initiated a status review for greater sage-grouse due to concerns about declines
39 in greater sage-grouse populations throughout the West (73 FR 10218). After a thorough
40 analysis of the best available scientific information, the USFWS concluded that the greater
41 sage-grouse warrants protection under the ESA; however, proposing the species for protection
42 is precluded by the need to take action on other species facing more immediate and severe
43 extinction threats (75 FR 13909). Therefore, the sage-grouse is currently listed as a candidate
44 species and will be reviewed annually by USFWS.

1 In 2008, Wyoming's Governor issued an Executive Order (#2008-2) directing state agencies to
 2 focus on maintenance and enhancement of greater sage-grouse habitats and populations in
 3 'core areas'. The proposed pipeline ROW is located near the Daniel and South Pass greater
 4 sage-grouse core areas but does not cross through these core areas (Figure 3-1) (State of
 5 Wyoming 2008a).

6 In December 2009, BLM Wyoming adopted the Instruction Memorandum (IM) No. WY-2010-012
 7 which provides timing, distance, and density restrictions for projects occurring on public lands
 8 both inside and outside sage-grouse core areas. The IM also defines project effects analysis
 9 boundaries for sage-grouse habitat evaluations of 4 miles for small projects (such as this
 10 project) and 11 miles for large projects. See Table 3-4 for greater sage-grouse habitats within
 11 the analysis area.

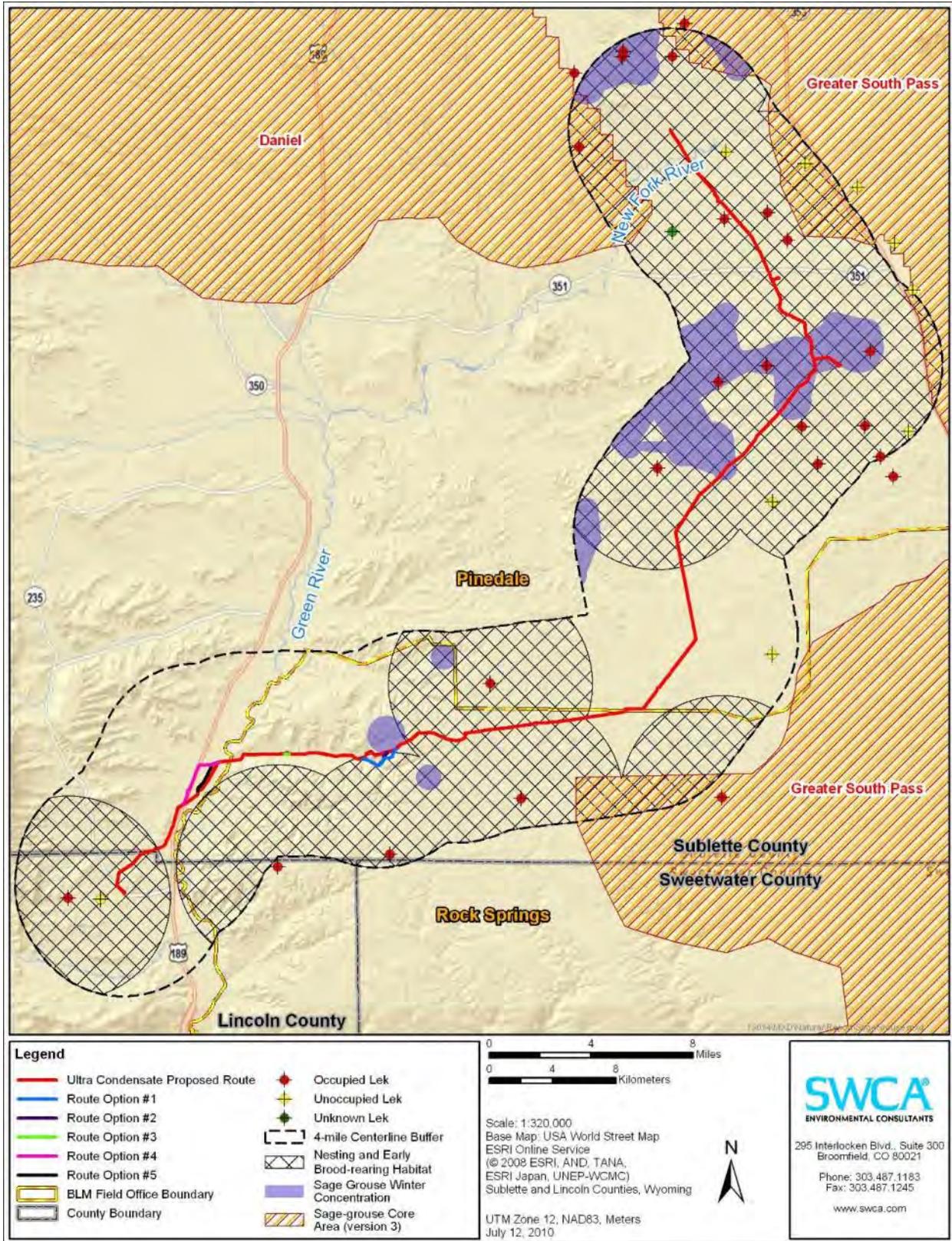
12 **Table 3-4. Sage-grouse habitats within ROW analysis area.**

Resource	Occurrence within 4 miles of ROW
Occupied leks	1 within core area, 18 outside core area
Unoccupied leks	1 within core area, 5 outside core area
Unknown status leks	0 within core area, 1 outside core area
Daniel Core Area	5,578 acres
South Pass Core Area	14,045 acres
Nesting/early brood-rearing habitat ¹	224,295 acres
Winter concentration habitat	26,288 acres

13 ¹ the area within a 4-mile buffer around active and unknown status leks.

14 Nineteen occupied leks are found within 4 miles of the proposed pipeline ROW and 9 of these
 15 are within 2 miles of the ROW (WGFD 2010) (see Figure 3-1). No disturbance is permitted
 16 within 0.25 mile of leks (0.6 mile for core area leks); however, there are no leks within 0.25 mile
 17 of the proposed pipeline ROW and none of the core area leks are within 0.6 mile. The nearest
 18 leks, Sali Mine 1 and Big Fred, both outside any sage-grouse core area, are approximately 0.85
 19 and 0.30 mile, respectively, from the proposed pipeline. East Buckhorn Canyon lek is the
 20 nearest lek within the South Pass Core Area to the proposed pipeline, approximately 4.5 miles
 21 to the southeast. The nearest lek, Duke's Triangle New, in the Daniel Core Area is about 2.8
 22 miles west of the pipeline's northern terminus. Lek searches (both aerial and ground) have
 23 revealed new leks in the area as recently as the spring of 2010. The area has not been
 24 thoroughly surveyed however, and any future searches would likely reveal additional leks.

25 The majority of nesting greater sage-grouse are found within 4 miles of an occupied lek
 26 (Holloran and Anderson 2005, Holloran et al. 2007). In an effort to encompass the majority of
 27 nesting sage-grouse, a 4 mile buffer around occupied and unknown leks was used to evaluate
 28 nesting and early brood-rearing habitat in the project area. Approximately 224,295 acres of
 29 nesting/early brood rearing habitat is within 4 miles of the ROW (Figure 3-1).



1
2

Figure 3-1. Sage-grouse habitat in the vicinity of the proposed pipeline.

1 Approximately 26,288 acres of winter habitat is mapped within 4 miles of the ROW. Aerial
2 surveys performed in 2009/2010 revealed greater winter use in the area than is currently
3 depicted in the winter concentration data set. Delineated winter concentration polygons will
4 likely expand to encompass this new information in the future.

5 Yellow-billed Cuckoo Western Distinct Population Segment

6 For listing purposes, the USFWS designated the yellow-billed cuckoo (*Coccyzus americanus*) in
7 the western United States as a Distinct Population Segment (DPS) (USFWS 2007). In
8 Wyoming, the western DPS corresponds to that portion of the state west of the Continental
9 Divide and the western and southern boundaries of the Great Divide Basin. The western yellow-
10 billed cuckoo occurs in relatively large, unfragmented stands of riparian habitat that are
11 dominated by cottonwoods with a well-developed understory and occur below approximately
12 7,000 feet of elevation (WYNDD 2008a). The western yellow-billed cuckoo has potential to
13 occur within the proposed pipeline ROW in riparian woodland along the New Fork and Green
14 rivers. This species migrates through and breeds in small numbers south of the project area
15 along the Green River at Seedskafee National Wildlife Refuge (USFWS 2002).

16 Colorado River Fish

17 The endangered Colorado pikeminnow (*Ptychocheilus lucius*), bonytail (*Gila elegans*),
18 humpback chub (*Gila cypha*), and razorback sucker (*Xyrauchen texanus*) are not present within
19 the proposed pipeline ROW, but do occur downstream in the Colorado River system. Prior to
20 construction of the Flaming Gorge Reservoir, populations of Colorado pikeminnow and bonytail
21 may have persisted in the Green River (Baxter and Stone 1995).

22 *3.8.2 BLM Sensitive Animal Species*

23 In addition to those species listed under the ESA, the BLM has a Sensitive Species Policy and
24 List (BLM 2010) to focus species management efforts towards maintaining habitats under a
25 multiple-use mandate. This list was reviewed along with BLM biological occurrence data,
26 WYNDD database records, and literature references to determine status of each animal species
27 along the proposed pipeline ROW and a 3-mile buffer. Species with potential to occur in the
28 ROW and buffer are listed in Table 3-5.

29 The known ranges or protected populations of several sensitive species listed for the PFO
30 and/or RSFO do not overlap the proposed pipeline ROW and are not analyzed for impacts in
31 this EA. These species are Wyoming pocket gopher (*Thomomys clusius*), swift fox (*Vulpes*
32 *velox*), roundtail chub (*Gila robusta*), leatherside chub (*G. copei*), Yellowstone cutthroat trout
33 (*Oncorhynchus clarki bouvieri*), fine-spotted Snake River cutthroat trout (*Oncorhynchus clarki*
34 *pleuriticus*), midget faded rattlesnake (*Crotalus viridis concolor*), and spotted frog (*Ranus*
35 *pretiosa [lutiventris]*). Sensitive bat species, including long-eared myotis (*Myotis evotis*),
36 fringed myotis (*Myotis thysanodes*), spotted bat (*Euderma maculatum*), and Townsend's big-
37 eared bat (*Corynorhinus townsendii*) are not known to occur within the project vicinity. There are
38 no known occurrences of Idaho pocket gopher (*Thomomys idahoensis*) in the project vicinity.
39 The project is outside of the known range of Great Basin spadefoot (*Spea intermontana*) and
40 boreal toad (*Bufo boreas boreas*), and northern leopard frog (*Lithobates pipiens*) are not known
41 to occur, however evidence suggests that these species could occur in or around the project
42 area (Dale Woolwine, BLM PFO, pers. comm. with SWCA).

Table 3-5. BLM Sensitive Animal Species Evaluated for the Proposed Action

Common Name	Scientific Name	BLM Field Office	Habitat Association ¹	Status in Project Area and 3-mile Buffer
Mammals				
Pygmy rabbit	<i>Brachylagus idahoensis</i>	PFO, RSFO	Basin-prairie and riparian shrub	Known
White-tailed prairie dog	<i>Cynomys leucurus</i>	PFO, RSFO	Basin-prairie shrub, grasslands	Known
Birds				
Trumpeter swan	<i>Cygnus buccinator</i>	PFO, RSFO	Lakes, ponds, rivers	Known
White-faced ibis	<i>Plegadis chihi</i>	PFO, RSFO	Marshes, wet meadows	Known
Bald eagle	<i>Haliaeetus leucocephalus</i>	PFO, RSFO	Areas (including conifer and deciduous forests) with open water and near concentrations of winter ungulates, waterfowl, and/or fish	Known
Northern goshawk	<i>Accipiter gentilis</i>	PFO, RSFO	Conifer and deciduous forests	Known
Ferruginous hawk	<i>Buteo regalis</i>	PFO, RSFO	Basin-prairie shrub, grassland, rock outcrops	Known
Peregrine falcon	<i>Falco peregrinus</i>	PFO, RSFO	Tall cliffs	Known
Mountain plover	<i>Charadrius montanus</i>	PFO, RSFO	Grasslands, basin-prairie shrub	Known
Long-billed curlew	<i>Numenius americanus</i>	PFO, RSFO	Grasslands, plains, foothills, wet meadows	Known
Burrowing owl	<i>Athene cunicularia</i>	PFO, RSFO	Grasslands, basin-prairie shrub	Known
Sage thrasher	<i>Oreoscoptes montanus</i>	PFO, RSFO	Basin-prairie shrub, mountain-foothill shrub	Known
Loggerhead shrike	<i>Lanius ludovicianus</i>	PFO, RSFO	Basin-prairie shrub, mountain-foothill shrub	Known
Brewer's sparrow	<i>Spizella breweri</i>	PFO, RSFO	Basin-prairie shrub	Known
Sage sparrow	<i>Amphispiza belli</i>	PFO, RSFO	Basin-prairie shrub, mountain-foothill shrub	Known
Fish				
Bluehead sucker	<i>Catostomus discobolus</i>	PFO, RSFO	Bear, Snake, and Green river drainages, all waters	Known

Common Name	Scientific Name	BLM Field Office	Habitat Association ¹	Status in Project Area and 3-mile Buffer
Flannelmouth sucker	<i>Catostomus latipinnis</i>	PFO, RSFO	Colorado River drainage, large rivers, streams, and lakes	Known
Colorado River cutthroat trout	<i>Oncorhynchus clarki pleuriticus</i>	PFO, RSFO	Colorado River drainage, clear mountain streams	Known
Reptiles/Amphibians				
Northern leopard frog	<i>Lithobates (Rana) pipiens</i>	PFO, RSFO	Beaver ponds, permanent water in plains and foothills	No known occurrence ²
Great Basin spadefoot	<i>Spea intermontana</i>	RSFO	Spring seeps, permanent and temporary waters	Outside known range ²
Boreal toad	<i>Bufo boreas boreas</i>	PFO, RSFO	Pond margins, wet meadows, riparian areas	Outside known range ²

¹ Habitat associations are taken from the BLM Wyoming Sensitive Species Policy and List (BLM 2010)

² Not known to occur, but may be present within the vicinity.

Pygmy rabbit (*Brachylagus idahoensis*) and white-tailed prairie dog are the only BLM sensitive mammal species known to occur in the vicinity of the proposed pipeline. According to WYNDD data, all of the listed BLM sensitive bird species have been recorded within a 3-mile buffer of the proposed pipeline ROW (WYNDD 2010).

Bluehead (*Catostomus discobolus*) and flannelmouth (*C. latipinnis*) suckers have been recorded in the Green River near the town of LaBarge. The WGFD has categorized these suckers as Status 1, meaning they are physically isolated and/or exist at extremely low densities throughout their range, and habitat conditions are declining or vulnerable.

Mountain plovers (*Charadrius montanus*) nest in shortgrass prairies grazed by prairie dogs and fields grazed by livestock. The BLM has modeled habitat within the RSFO for its value to mountain plover. In general, high value plover habitat is along much of the eastern half of the proposed ROW, while the western half is low value plover habitat. No nests are known within the ROW.

3.8.3 Special Status Plant Species

Threatened and endangered species lists for Lincoln and Sublette counties (USFWS 2009) have been reviewed to determine if special status plants are potentially located within the proposed pipeline ROW. Also, the BLM Wyoming State Office list of sensitive species (BLM 2010) was evaluated for plants with potential to occur within the vicinity of the proposed pipeline ROW. BLM sensitive species are species that could easily become endangered or extinct in the state. Based on habitat preferences and known geographic locations, the majority of BLM sensitive plant species are not likely to occur in the vicinity of the proposed pipeline ROW. Table 3-6 lists the federally listed and BLM sensitive plant species that have potential to occur in the project area due to presence of potential habitat.

Table 3-6. Endangered Species Act and BLM Sensitive Plant Species Evaluated for the Proposed Action

Common Name	Scientific Name	Status ¹	BLM Field Office ²	Habitat
Trelease's racemose milkvetch	<i>Astragalus racemosus</i> var. <i>treleasei</i>	S	PFO	Shale or barren clay slopes, sparsely vegetated sage; 6,500–8,200 feet
Cedar Rim thistle	<i>Cirsium aridum</i>	S	RSFO, PFO	Barren, gravelly slopes, sandy-shaley draws; 6,700–7,200 feet
Large-fruited bladderpod	<i>Lesquerella macrocarpa</i>	S	RSFO, PFO	Gypsum-clay or barren hills, clay flats; 7,200–7,700 feet
Beaver Rim phlox	<i>Phlox pungens</i>	S	RSFO, PFO	Sparsely vegetated slopes; 6,000–7,000 feet
Tufted twinpod	<i>Physaria condensata</i>	S	RSFO, PFO	Sparsely vegetated shale slopes, ridges; 6,500–7,000 feet
Ute ladies'-tresses	<i>Spiranthes diluvialis</i>	T	RSFO, PFO	Moist stream banks, wet meadows, abandoned stream channels, 4,500–6,800 feet

¹ S = BLM Sensitive, T = Federally Threatened.

² Refers to the BLM field office jurisdiction in which the sensitive plant species is known to occur.

Locations of sensitive plant populations in the vicinity of the proposed pipeline ROW were obtained from the BLM and the WYNDD. There are no recorded populations of federally listed or BLM sensitive plants within the proposed pipeline ROW (Glennon 2010). Three occurrences of Beaver Rim phlox (*Phlox pungens*) are located less than 1 mile from the proposed pipeline ROW, and three occurrences of large-fruited bladderpod (*Lesquerella macrocarpa*) are located less than 1 mile from the proposed pipeline ROW (WYNDD 2008b).

The habitat requirements for Trelease's racemose milkvetch (*Astragalus racemosus* var. *treleasei*), Cedar Rim thistle (*Cirsium aridum*), Beaver Rim phlox, tufted twinpod (*Physaria condensata*), large-fruited bladderpod, and Ute ladies'-tresses (*Spiranthes diluvialis*) exist within the proposed pipeline ROW (Glennon 2010). A model to determine potential habitat along the proposed ROW for these species was prepared by SWCA based on known habitat requirements and occurrence records. This model will be used to target specific areas along the proposed pipeline ROW for preconstruction surveys (SWCA 2010b).

3.9 WILDLIFE AND AQUATIC RESOURCES

The proposed pipeline ROW includes upland and riparian habitats used by wildlife. The Wyoming Game and Fish Commission (1998) defines important wildlife habitats as "irreplaceable," "vital," or "high value." Habitats relevant to this EA include those defined as "vital," such as crucial winter ranges, and "high value," including parturition and winter/yearlong ranges and Class 2 streams.

3.9.1 Big Game

The proposed pipeline ROW is within vital seasonal use areas (i.e. crucial winter ranges) for pronghorn (*Antilocapra americana*), mule deer (*Odocoileus hemionus*), and moose (*Alces alces shirazi*) (Figure 3-2 to Figure 3-4). The Sublette Antelope Herd Unit (401) encompasses the

1 entire length of the proposed pipeline. Two mule deer herd units, Sublette (104) in the north and
2 Wyoming Range (131) in the south, overlap the proposed pipeline route. The ROW crosses
3 pronghorn and mule deer seasonal migration routes. The proposed pipeline ROW also contains
4 the Sublette Moose Herd Unit (105).

5 *3.9.2 Upland Game Birds/Small Game*

6 As noted in Section 3.8.3 BLM Special-status Species, the proposed pipeline is within SUGMAs
7 3 and 7. In addition to greater sage-grouse, the following small and upland game species were
8 harvested in 2008 (Leonard and Sheridan 2009) from either or both of those management
9 areas: chukar (*Alectoris chukar*), dusky [blue] grouse (*Dendragapus obscurus*), ruffed grouse
10 (*Bonasa umbellus*), mourning dove (*Zenaida macroura*), cottontail sp. (*Sylvilagus* sp.),
11 snowshoe hare (*Lepus americanus*), and one or more squirrel species (*Sciurus* sp. and/or
12 *Tamiasciurus* sp.). Of these, only chukar, mourning dove, and cottontails are expected to occur
13 within the proposed pipeline ROW.

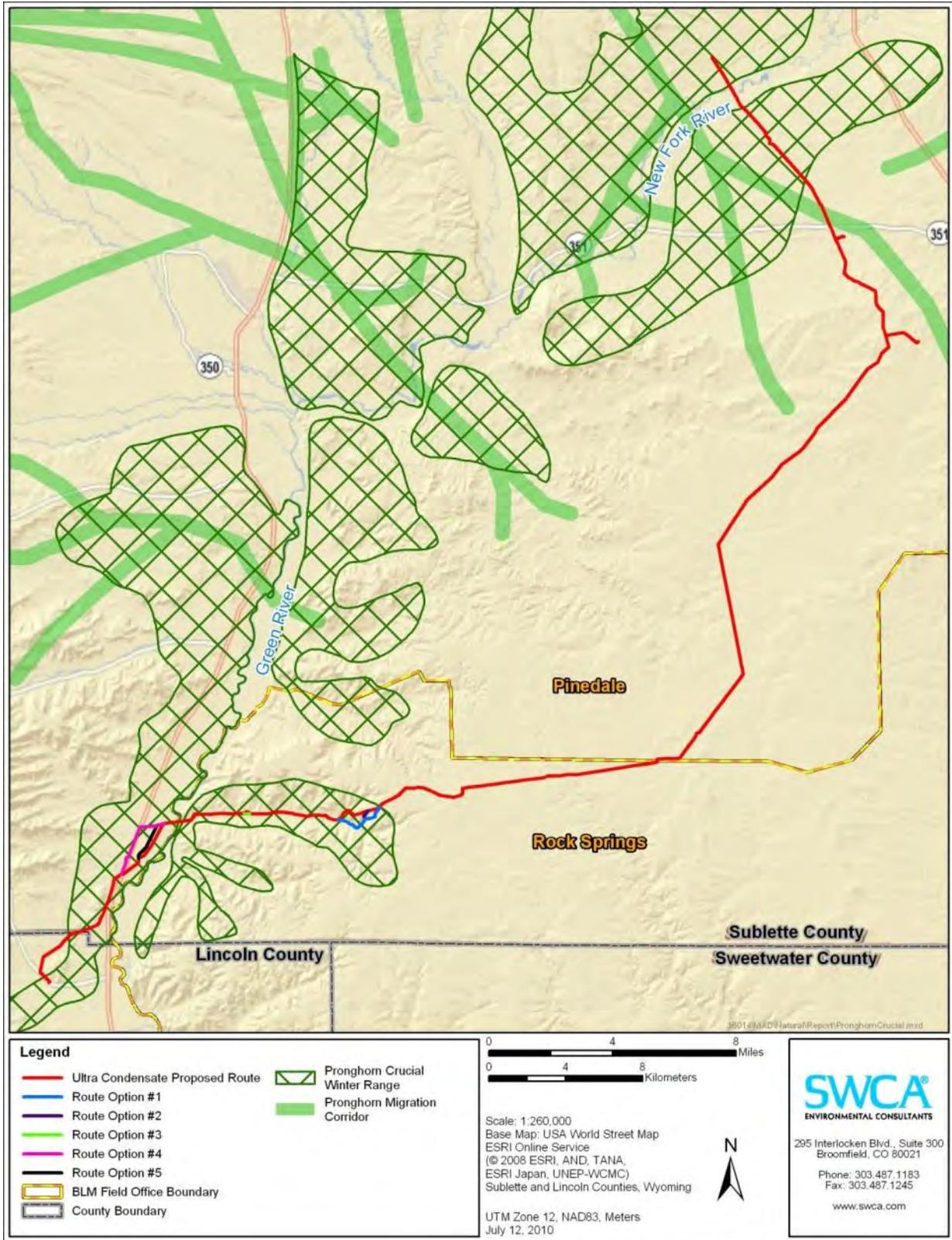
14 *3.9.3 Migratory Birds*

15 Bird species include sagebrush-obligate species such as sage thrasher (*Oreoscoptes*
16 *montanus*) and sage sparrow (*Amphispiza belli*), as well as several other common breeding
17 species found in shrubsteppe in central Wyoming like horned lark (*Eremophila alpestris*),
18 Brewer's sparrow (*Spizella breweri*), vesper sparrow (*Pooecetes gramineus*), and Brewer's
19 blackbird (*Euphagus cyanocephalus*). Breeding raptor species, in addition to those listed in the
20 Sensitive Species section, may include osprey (*Pandion haliaetus*), northern harrier (*Circus*
21 *cyaneus*), red-tailed hawk (*Buteo jamaicensis*), ferruginous hawk (*B. regalis*), Swainson's hawk
22 (*B. swainsoni*), golden eagle (*Aquila chrysaetos*), American kestrel (*Falco sparverius*), Cooper's
23 hawk (*Accipiter cooperii*), Sharp-shinned hawk (*Accipiter striatus*), short-eared owl (*Asio*
24 *flammeus*), great-horned owl (*Bubo virginianus*), and prairie falcon (*Falco mexicanus*). Rough-
25 legged hawk (*B. lagopus*) and merlin (*F. columbarius*) may be resident during winter.

26 *3.9.4 Other Wildlife*

27 Other wildlife species not previously addressed also occur within the proposed pipeline ROW
28 and may be affected by the Proposed Action. Mammals found in the uplands include coyote
29 (*Canis latrans*), red fox (*Vulpes vulpes*), Wyoming ground squirrel (*Spermophilus elegans*) and
30 badger (*Taxidea taxus*), while beaver (*Castor canadensis*) and muskrat (*Ondatra zebethicus*)
31 inhabit perennial riparian corridors. Weasels and various mice, voles, shrews are also present.
32 Ten species of reptiles and amphibians occur within the PFO (BLM 2008b), but not all likely
33 inhabit the proposed pipeline ROW. Species commonly occurring in the region are listed in the
34 PAPA SEIS (BLM 2008a).

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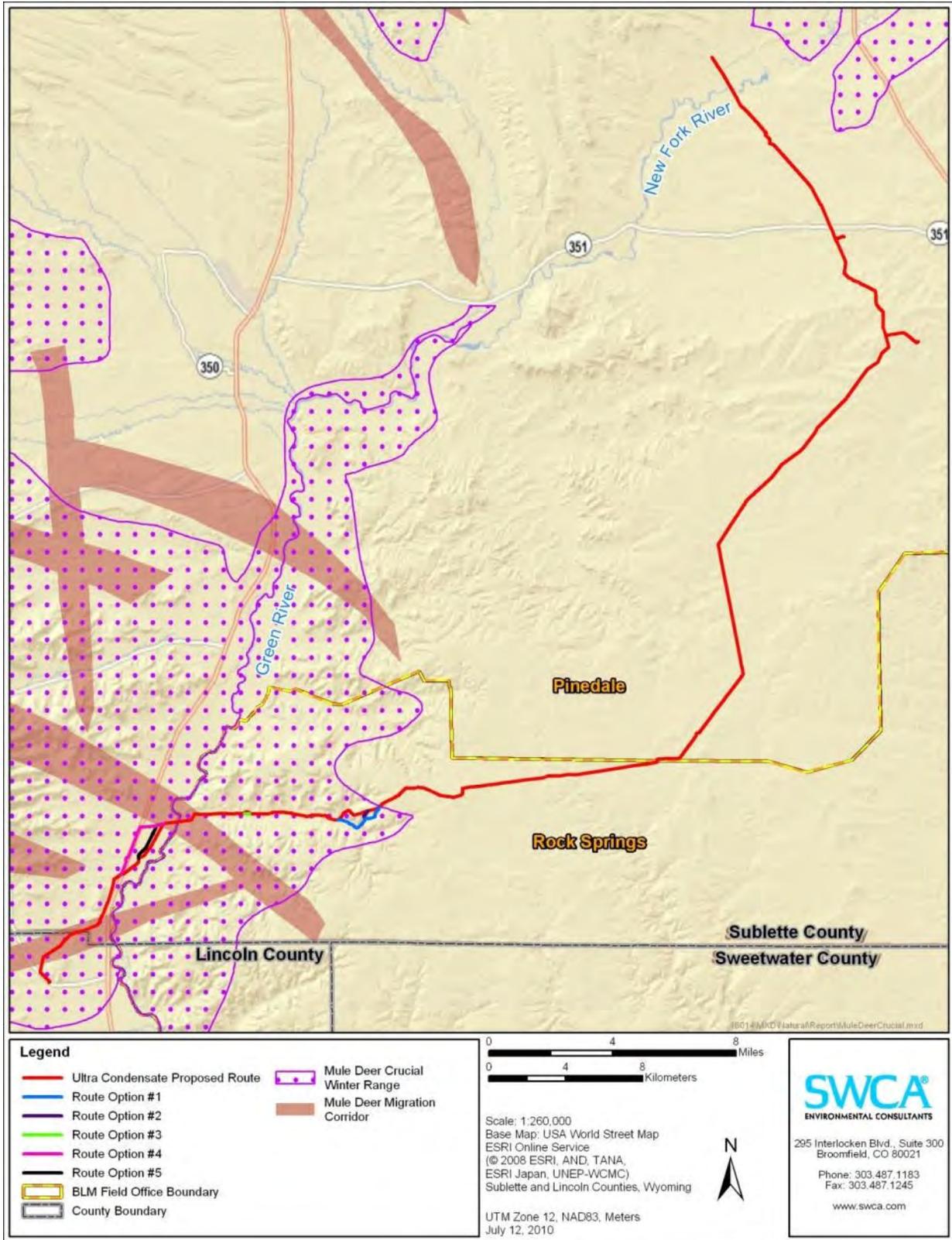


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Figure 3-2. Pronghorn crucial winter range and migration corridors in the vicinity of the proposed pipeline.

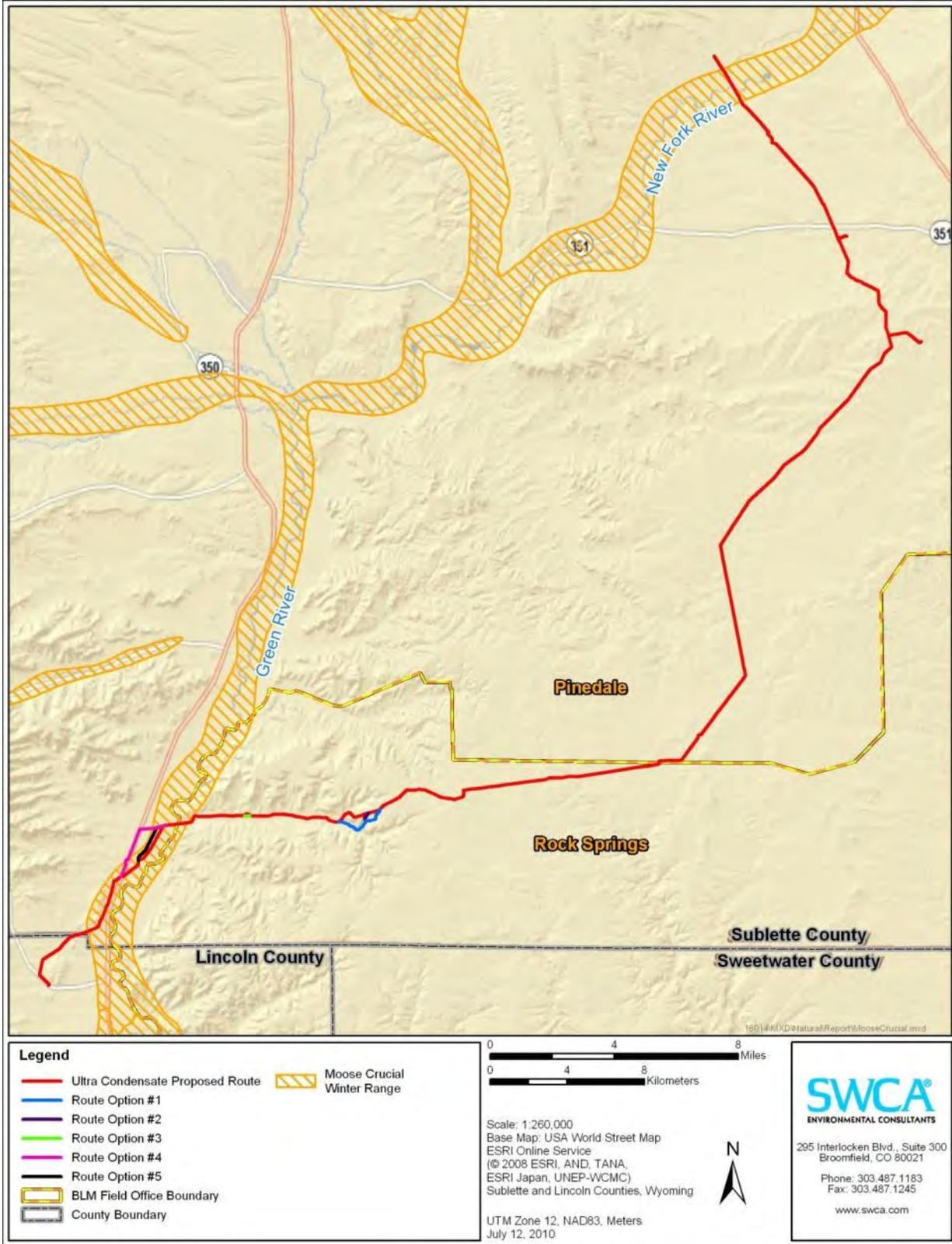


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Figure 3-3. Mule deer crucial winter range and migration corridors in the vicinity of the proposed pipeline.



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Figure 3-4. Moose crucial winter range in the vicinity of the proposed pipeline.

1 **3.9.5 Wild Horses**

2 The proposed pipeline would cross the Little Colorado Desert Wild Horse Herd Management
3 Area (HMA) east of the Green River. The RSFO manages the Little Colorado Desert HMA
4 through the Green River RMP (BLM 1997) with a herd goal of 69 to 100 horses. Two HMAs,
5 Desert Herd and LaBarge Herd, occur in the PFO, but are not currently managed for wild horses
6 (BLM 2008b).

7 **3.9.6 Aquatic Resources**

8 The New Fork and Green rivers have a Wyoming Trout Stream Category of “blue” meaning they
9 are of nationwide importance to anglers and produce greater than 600 pounds of trout per mile
10 (WGFD 2009). The Green and New Fork rivers are managed primarily as wild brown trout
11 (*Salmo trutta*) fisheries. Cutthroat trout are stocked in the lower portion of the Green River to
12 provide additional diversity to the fisheries. Other fish found in this section of the rivers include
13 brook trout (*Salvelinus fontinalis*), rainbow trout (*Oncorhynchus mykiss*), longnose dace
14 (*Rhinichthys cataractae*), mottled sculpin (*Cottus bairdii*), mountain sucker (*Catostomus*
15 *platyrhynchus*), mountain whitefish (*Prosopium williamsoni*), burbot (*Lota lota*), common carp
16 (*Cyprinus carpio*), fathead minnow (*Pimephales promelas*), speckled dace (*Rhinichthys*
17 *osculus*), and Utah chub (*Gila atraria*).

18 **3.10 LAND USE AND GRAZING**

19 The majority of the proposed pipeline ROW crosses public lands managed by the BLM, with
20 smaller portions of the route crossing lands owned and managed by the State of Wyoming and
21 privately owned parcels (see Figure 2-1). Approximately 49.5 miles (90.8%) of the proposed
22 ROW cross BLM lands, 2.7 miles (5.0%) cross state lands, 2.2 miles (4.0%) cross private lands,
23 and 0.1 mile (0.2%) crosses water. Sublette and Lincoln counties are predominantly rural with a
24 large percentage of land use practices dedicated to traditional natural resource-based
25 industries. Although mineral extraction industries, specifically oil and natural gas development,
26 dominate land use, agriculture becomes more prominent with closer proximity to water
27 resources. The proposed pipeline ROW through Sublette County is zoned as either resource
28 conservation (48.68 miles) or agricultural (5.82 miles); in addition, the ROW is adjacent to areas
29 zoned as rural residential and light industrial. Resource conservation zoning districts protect and
30 conserve environmentally sensitive areas where development must be limited to prevent
31 degradation of the areas, while agricultural zoning districts maintain and continue the existing
32 agricultural land use in the county (Sublette County 2010). The proposed pipeline ROW through
33 Lincoln County (2.32 miles) is zoned as industrial (Lincoln County 2008).

34 Urban developments within proximity of the proposed 54.5 mile pipeline are LaBarge in Lincoln
35 County and Boulder in Sublette County (see Figure 2-1). LaBarge is approximately 2.0 miles
36 east of the southern terminus of the proposed pipeline, while Boulder is approximately 6.0 miles
37 northeast of the northern terminus.

38 As stated above, the majority of the proposed pipeline ROW (90.8%) crosses public lands
39 managed by the BLM, which is primarily leased for mineral extraction activities and livestock
40 grazing. Livestock grazing is authorized on BLM-managed lands under Section 3 of the Taylor
41 Grazing Act of 1934 and regulated by the BLM (BLM 2004b). The proposed pipeline ROW
42 would cross approximately 50 miles (92.3% of the proposed pipeline) of eight grazing allotments
43 in Sublette and Lincoln counties: the North LaBarge Common allotment for 5.03 miles, the Bird
44 Individual allotment for 1.15 miles, the Figure Four allotment for 16.6 miles, the South Desert
45 allotment for 7.98 miles, the Sand Draw allotment for 3.16 miles, the Blue Rim Desert allotment

1 for 3.25 miles, the Blue Rim individual allotment for 11.22 miles, and the New Fork Individual
 2 allotment for 1.62 miles. Yearly grazing uses (animal unit months [AUMs] and season of use) of
 3 each allotment are based on BAs and biological evaluations, and therefore are subject to
 4 change. Current livestock use and the number of active AUMs within each allotment are
 5 summarized in Table 3-7 (BLM 2006b).

6 **Table 3-7. Grazing Allotments and Livestock Use Potentially Affected by the Proposed**
 7 **Pipeline**

Allotment	BLM FO	Acres	Livestock Type	Season of Use	AUMs
North LaBarge Common	Pinedale	154,800	Cattle	05/15 – 10/15	2,337
				05/15 – 10/15	1,858
				05/15 – 10/15	6,722
				05/16 – 09/02	690
				05/17 – 10/14	449
				05/18 – 10/31	24
				05/15 – 10/15	2,420
Bird Individual	Pinedale	230	Cattle	05/20 – 06/19	14
Figure Four	Rock Springs	117,693	Cattle	05/10 – 09/01	5,525
				07/10 – 08/10	1,119
				11/01 – 01/10	
South Desert	Pinedale	128,778	Cattle	05/01 – 06/15	768
				05/01 – 06/21	423
				05/01 – 06/21	850
				05/01 – 06/20	249
				05/01 – 06/21	388
Sand Draw	Pinedale	30,047	Cattle	05/01 – 06/21	2,324
Blue Rim Desert	Pinedale	39,609	Cattle	05/01 – 06/21	1,179
					598
					649
					400
Blue Rim Individual	Pinedale	36,585	Cattle	05/10 – 06/23	3,258
New Fork Individual	Pinedale	1,850	Cattle	05/10 – 06/20	302

8 Source: BLM (2006b).

9 **3.11 TRANSPORTATION**

10 The regional transportation system serving the proposed pipeline includes an established
 11 system of highways and county roads. Local traffic on federal land is also served by BLM roads
 12 and operator-maintained gas field roads.

13 The southern terminus of the proposed pipeline ROW would be accessed from WY 235 and
 14 U.S. 189 near LaBarge, Wyoming. The proposed pipeline ROW would cross WY 235 at the
 15 LaBarge Tank Farm approximately 2.0 miles west of the junction with U.S. 189. In addition, the
 16 proposed pipeline ROW would cross U.S. 189 approximately 3.4 miles north of the junction with
 17 WY 235. The southern portion of the proposed pipeline ROW east of the Green River would be
 18 accessed from BLM Road 4203, which intersects U.S. 189 approximately 1.2 miles north of the
 19 intersection with WY 235. Figure Four Canyon Road, BLM Road 4202, BLM Road 4205, Yellow
 20 Point Road, BLM Road 5409, and BLM Road 5404 would all be used to access to the central
 21 portion of the pipeline.

1 The northern portion of the proposed pipeline ROW would lie adjacent to BLM Road 5410 and
 2 Wild Horse Ranch Road to its northern terminus, which would be accessed from WY 351
 3 approximately 4.7 miles west of the junction with U.S. 191 and approximately 19.5 miles east of
 4 the junction with U.S. 189. The proposed pipeline ROW would cross WY 351 approximately 5.0
 5 miles west of the junction with U.S. 191. In addition, the proposed pipeline ROW would cross
 6 Paradise Road (Road 136 N) approximately 6.3 miles southwest of the junction with U.S. 191.
 7 The northern terminus of the proposed pipeline ROW would be accessed from the junction of
 8 Paradise Road and U.S. 191, approximately 11.3 miles southeast of Pinedale. Additionally,
 9 Paradise Road may be accessed from WY 351 approximately 13.5 miles east of the junction
 10 with U.S. 189.

11 Recent traffic volumes on Wyoming federal and state highways are listed in Table 3-8. Traffic on
 12 U.S. 189 near the southern terminus of the proposed pipeline ROW had slight decreases in
 13 average annual daily traffic (AADT) between 2007 and 2008; AADT increased on WY 235 at the
 14 junction of U.S. 189. Traffic approaching the northern terminus of the of the proposed pipeline
 15 ROW, including U.S. 189 at the junction of WY 351, WY 351, and U.S. 191, had slight increases
 16 in AADT between 2007 and 2008.

17 **Table 3-8. Traffic and Level of Service Providing Access to the Project Area**

Route/Intersection	2008 AADT	2007 AADT	1998 AADT
WY 235 @ Jct. U.S. 189	1,020 (210 trucks)	1,010 (210 trucks)	550 (150 trucks)
U.S. 189 @ Jct. WY 235	2,570 (420 trucks)	2,590 (410 trucks)	1,750 (200 trucks)
U.S. 189 @ Lincoln – Sublette County Line	1,620 (300 trucks)	1,640 (290 trucks)	900 (160 trucks)
U.S. 189 @ Jct. WY 351	1,710 (210 trucks)	1,660 (200 trucks)	980 (100 trucks)
WY 351 @ Jct. U.S. 189	2,780 (900 trucks)	2,480 (840 trucks)	600 (100 trucks)
WY 351 @ Jct. Rd. 136 N (Paradise Rd.)	2,150 (610 trucks)	1,850 (540 trucks)	300 (40 trucks)
U.S. 191 @ Jct. WY 351	2,530 (280 trucks)	2,370 (240 trucks)	1,250 (150 trucks)
U.S. 191 @ Jct. WY 353	2,890 (320 trucks)	2,700 (280 trucks)	1,600 (170 trucks)

18 Source: WYDOT (2008).

19 Roads in rural areas crossed by the proposed pipeline ROW are characterized by low traffic
 20 volumes, infrequent congestion, low travel speeds, and rugged terrain. BLM and county roads
 21 crossed by the proposed pipeline ROW include Mesa Road, Paradise Road, Wild Horse Ranch
 22 Road, Boulder South Road, Burma Road, BLM Road 5404, BLM Road 5409, and BLM Road
 23 4205. Common attributes of rural roads include a mix of rural and urban travelers, secondary
 24 roads with less frequent maintenance, large variances in travel speeds and frequent passing,
 25 adverse road surface conditions, light usage, and large geographical areas that impede rapid
 26 emergency detection and response (Goehring and Sundeen 1999). However, all roads in the
 27 vicinity have experienced increased traffic volumes and speeds due to increased oil and natural
 28 gas development (BLM 2004a).

1 **3.12 SOCIOECONOMIC RESOURCES AND ENVIRONMENTAL JUSTICE**

2 *3.12.1 Socioeconomic Resources*

3 The proposed pipeline ROW is located in Lincoln and Sublette counties. Of the 54.5-mile
4 proposed pipeline, approximately 2.3 miles are in Lincoln County and the remainder is in
5 Sublette County. As such, this section discusses characteristics of these counties including
6 population, employment, income, and economic trends taking place. Also included are data
7 relating to the State of Wyoming and the United States, which provide for a comparative
8 discussion when analyzed against the proposed pipeline ROW.

9 The Proposed Action is located in a rural area of southwest Wyoming. The closest residential
10 towns are Boulder (in Sublette County), approximately 6 miles northeast of the northern portion
11 of the proposed pipeline ROW, and the town of LaBarge (in Lincoln County), approximately 1.3
12 miles south of the southern portion of the proposed pipeline ROW. The largest nearby town is
13 Pinedale, located approximately 13 miles north of the northern portion of the proposed pipeline
14 ROW.

15 The two counties are primarily rural and their economies are historically tied to traditional natural
16 resource-based industries such as agriculture and extractive industries. Agriculture has
17 provided the historical basis for community development for much of the nineteenth century,
18 and ranching and grazing are viewed as a viable economic activity. However, agricultural
19 activities have become less significant economically in recent years due to the emergence of
20 mineral extraction and population increases. The mineral extraction industry, particularly the oil
21 and gas industry, now provide for much of the area’s economic revenue.

22 Population

23 Historic, current, and projected population counts in the vicinity of the proposed pipeline,
24 compared to the state, are provided in Table 3-9. Between 1980 and 2007, the combined
25 population of Lincoln and Sublette counties grew by approximately 44.0%, bringing the total
26 population to approximately 24,096 (State of Wyoming 2008b). During this time, Sublette
27 County’s population grew by 74.2% (4.4% annually) and Lincoln County grew by approximately
28 32.8% (1.9% annually), compared with 11.3% growth for the state of Wyoming (State of
29 Wyoming 2008b).

30 **Table 3-9. Historic, Current, and Projected Population Forecasts for the Project Area,**
31 **Wyoming and United States, 1980–2020**

Location	1980 ¹	1990	2000	2007	2010	2015	2020
Lincoln County	12,177	12,625	14,573	16,171	17,240	18,710	20,100
LaBarge	302	493	431	446	N/A	N/A	N/A
Sublette County	4,548	4,843	5,920	7,925	9,170	11,200	13,370
Pinedale	1,066	1,181	1,412	2,056	N/A	N/A	N/A
<i>County Totals</i>	<i>16,725</i>	<i>17,468</i>	<i>20,493</i>	<i>24,096</i>	<i>26,410</i>	<i>29,910</i>	<i>33,470</i>
State of Wyoming	469,557	453,588	493,782	522,830	539,740	560,000	578,730
U.S. (thousands)	226,545	248,709	281,421	301,139	308,935	322,365	335,804

Source: State of Wyoming (2008b, 2008c).

¹ State of Wyoming (2002).

32 In 2007, Lincoln County’s population was approximately 16,171, an increase of 10.9% from
33 2000. The towns of Kemmerer and Afton have the highest population with approximately 2,427

1 and 1,988 residents, respectively, comprising approximately 27.3% of the county in 2007. The
2 remaining 72.7% of the county's 2007 population live in smaller communities such as Alpine,
3 Cokeville, LaBarge, Opal, and Thayne.

4 In 2007, Sublette County's population was approximately 7,925, an increase of 33.8% from
5 2000. The towns of Pinedale, Marbleton, and Big Piney have the highest population with
6 approximately 2,056, 919, and 476 residents, respectively, comprising approximately 43.3% of
7 the county in 2007. The remaining 56.7% of the county's 2007 population live in smaller
8 communities such as Bondurant, Boulder, Cora, and Daniel.

9 The populations of Lincoln and Sublette counties are primarily Caucasian comprising
10 approximately 97.7% and 97.6% of the 2007 population, respectively. Other ethnicities include
11 American Indian and Native American, African American, Asian, and Native Hawaiian or Pacific
12 Islander (U.S. Census Bureau 2008).

13 Housing

14 Housing unit supply estimates in the two-county study area are shown in Table 3-10. As of
15 2007, a total of 12,598 housing units were in Lincoln and Sublette counties.

16 **Table 3-10. Housing Unit Estimates by County, 2000–2007**

Year	Lincoln County		Sublette County		Wyoming	
	Housing Units	% Change from 2000	Housing Units	% Change	Housing Units	% Change
2000	6,831	–	3,552	–	223,854	–
2007	8,253	20.8	4,345	22.3	242,332	8.2

Source: Wyoming Housing Database Partnership (2008).

17 Between 2000 and 2007, housing unit supply increased approximately 20.8% in Lincoln County
18 and 22.3% in Sublette County, compared to 8.2% for the state of Wyoming (Wyoming Housing
19 Database Partnership 2008).

20 Employment

21 Employment in the vicinity of the proposed pipeline is typical of western rural communities
22 relying on agriculture, mineral extraction, construction, and retail services to employ a large part
23 of the workforce.

24 According to the North American Industrial Classification System (NAICS), approximately
25 11,154 people comprised Lincoln County's total 2007 full- and part-time workforce. Of this,
26 construction employed the largest number of people, comprising approximately 22.4% (2,503
27 people) of the workforce. Other dominant industries include government and government
28 enterprises at 16.0% (1,786 people) and retail trade at 8.8% (990 people) (U.S. Bureau of
29 Economic Analysis 2009a).

30 In Sublette County, approximately 7,663 people comprised the county's total 2007 full- and part-
31 time workforce. Of this, mining employed the largest number of people, comprising
32 approximately 24.8% (1,907 people). Other dominant industries include construction at 13.4%
33 (1,028 people) and government and government enterprises at 12.0% (925 people) (U.S.
34 Bureau of Economic Analysis 2009a).

1 As of July 2008, the unemployment rate in Lincoln and Sublette counties were approximately
2 3.1% and 1.4% respectively. This compares to the state rate of 3.0% national average of 6.0%
3 for the same time.

4 Income

5 According to NAICS standards, per capita personal income for Lincoln County was \$23,097 in
6 2000 and \$40,373 in 2007, representing an increase of approximately 74.7%. Per capita
7 personal income for Sublette County was \$27,706 in 2000 and \$61,411 in 2007, representing
8 an increase of approximately 121.6%. This compares with a state of Wyoming per capital
9 personal income of \$47,047 in 2007, which is an increase of approximately 65.2% from the
10 2000 level of \$28,470 (U.S. Bureau of Economic Analysis 2009b).

11 Economic Activity

12 The major economic industries in Lincoln and Sublette counties are mineral extraction,
13 government, and manufacturing. Wyoming's economy is largely driven by the demand for
14 natural resources, and mineral extraction is the largest revenue-producing industry (Table 3-11).
15 The following table breaks down contributions to state and local governments in the fiscal year
16 2007 from oil and gas industries.

17 **Table 3-11. Taxes from Oil and Gas Industries in Wyoming, FY 2007**

Tax Source	Revenue (in millions)
Property Taxes	\$712.6
Severance Taxes	\$666.3
Federal Royalties	491.2
Federal Lease Revenues	24.5
State Royalties	\$145.5
Sales and Use Taxes	\$201.0
Conservation Mill Levy	\$1.1
Total for State	2,242.2 billion

18 Source: Petroleum Association of Wyoming Oil and Gas Facts and Figures (2009).

19 In 2009, the total mineral taxable value for Sublette County was over \$5.98 billion representing
20 approximately 29% of the statewide total mineral taxable value of \$20.3 billion. In the same
21 year, locally assessed valuation for oil and gas extraction was over \$239 million, or 26.6% of the
22 statewide total for oil and gas extraction (State of Wyoming 2009).

23 Total mineral taxable value for Lincoln County was over \$753 million in 2009, representing 3.7%
24 of the statewide total mineral taxable value of \$20.3 billion. In the same year, locally assessed
25 valuation for oil and gas extraction was over \$166 million, or 14.3% of the statewide total for oil
26 and gas extraction (State of Wyoming 2009).

27 *3.12.2 Environmental Justice*

28 Federal agencies are required to conduct their programs, policies, and activities that may
29 substantially affect human health or the environment in a way that ensures that no person is
30 excluded from participation therein, denied the benefit of, or subjected to discrimination due to
31 race, color, or national origin. Executive Order 12898 (February 11, 1994) and its accompanying
32 memorandum have the primary purpose of ensuring that "each federal agency shall make
33 achieving environmental justice part of its mission by identifying and addressing, as appropriate,
34 disproportionately high and adverse human health or environmental effects of its programs,

1 policies, and activities on minority populations and low-income populations.” To meet this goal,
2 Executive Order 12898 requires that each agency develop an agency-wide environmental
3 justice strategy.

4 Ethnic diversity is limited in Lincoln and Sublette Counties with White, Non-Hispanic residents
5 comprising more than 97% of the 2007 population in each county. Other ethnicities, including
6 American Indian and Native American, African American, Asian, and Native Hawaiian or Pacific
7 Islander constitute a very small percentage of the overall population (U.S. Census Bureau
8 2008).

9 **3.13 RECREATION RESOURCES**

10 The management goal for recreation resources under the Pinedale RMP is to “provide
11 substantial personal, community, economic, and environmental benefits to local residents and
12 visitors through recreational uses of the public lands” (BLM 2008a). Recreation resources on
13 BLM-administered land within the vicinity of the proposed condensate line are characterized by
14 vast open spaces along the Green and New Fork rivers with dispersed primitive recreation
15 opportunities such as camping, fishing, hunting, and off-road vehicle use. The BLM issues
16 commercial permits within the PFO to approximately 40 operators serving clients associated
17 with big game hunting, fishing, and competitive group activities on public lands.

18 Although portions of BLM lands crossed by the proposed 54.5-mile pipeline ROW are located
19 within or adjacent to the existing Pinedale Anticline and Jonah Oil and Gas Development fields,
20 other lands do support many of these dispersed activities, especially in the middle and western
21 portions of the proposed pipeline.

22 In addition to dispersed primitive recreation activities, the BLM also manages these lands for
23 developed recreation resources, such as camp sites and public land access fishing spots. The
24 closest developed camp site to the proposed pipeline is the New Fork River camp site located
25 approximately 5 miles to the west from the northern portion of the proposed pipeline ROW
26 adjacent to Paradise Road. This popular camp site provides the recreating public with a boat
27 launch site, restrooms, several primitive camp sites, and pedestrian access to the New Fork
28 River for swimming and fishing activities.

29 The Green and New Fork rivers are also located in the vicinity of the proposed pipeline and offer
30 the public easy access to fishing. The two closest public access river points are the LaBarge
31 Bridge Green River Access, located 0.6 mile southeast of the pipeline, and North LaBarge
32 Green River Access, located 0.4 mile west of the pipeline. These points are located near the
33 southern portion of the proposed condensate line and offer the public camping, a boat launch,
34 and pedestrian access to the river.

35 BLM lands in the vicinity are also managed for hunting. Hunting is an important part of the
36 regional infrastructure, as it is one of the most popular recreational activities in the region. As
37 such, the WGFD administers hunting permits and monitors use within the hunt areas that are
38 fully and partially located on BLM lands. The presence and variety of wildlife, especially big
39 game, is the primary draw for hunters to the area. Big game hunting permits are issued for
40 pronghorn antelope, mule deer, moose, elk (*Cervus elaphus*), black bear (*Ursus americanus*),
41 and mountain lion (*Felis concolor*). Table 3-12 provides big and trophy game species, hunt area,
42 and hunting season for each species.

1 **Table 3-12. Recreation User Days for Big and Trophy Game Hunting by Hunt Area for**
 2 **the Project Area – 2008**

Species	Hunt Area	Hunter Days	Active/License Hunters	Total Harvest	Season
Antelope	90 (Yellow Point)	2,851	832	857	Sept. 1 – Oct. 31
Antelope	89 (Piney)	1,855	632	632	Sept. 1 – Oct. 31
Antelope	88 (Pinedale)	2,609	778	786	Sept. 1 – Oct. 31
Mule deer	138 (Boulder)	1,766	419	130	Sept. 15 – Nov. 15
Mule deer	139 (Pinedale)	2,169	437	102	Sept. 15 – Nov. 15
Mule deer	143 (South Piney)	4,911	943	282	Sept. 15 – Nov. 15
White-tailed deer	138 (Boulder)	193	58	4	Sept. 15 – Nov. 15
White-tailed deer	139 (Pinedale)	257	93	18	Sept. 15 – Nov. 15
White-tailed deer	143 (South Piney)	48	37	8	Sept. 15 – Nov. 15
Elk	94 (South Piney)	12,533	1,752	467	Sept. 20 – Dec. 31
Elk	97 (Pinedale)	3,703	493	128	Sept. 20 – Dec. 31
Elk	98 (Boulder)	3,532	655	198	Sept. 20 – Dec. 31
Moose	4 (Pinedale)	140	20	15	Oct. 1 – Oct. 31
Moose	25 (Big Piney)	333	67	62	Oct. 1 – Oct. 31
Black bear	11 (Smith's Fork)	1331	-	1	May 1-June 15; Sept. 1-Oct. 31
Black bear	14 (South Piney)	740	-	15	May 1-June 15; Sept. 1-Oct. 31
Black bear	15 (Piney-Horse Creek)	572	-	5	May 1-June 15; Sept. 1-Oct. 31
Mountain lion	17 (Piney)	387	26	1	Sept 1.–March 31

3 Source: WGFD 2009

4 **3.14 VISUAL RESOURCES**

5 The BLM is responsible for managing public lands for multiple uses while ensuring that the
 6 scenic values and open space character of the public lands are considered before authorizing
 7 actions on public lands. The BLM accomplishes this through the Visual Resource Management
 8 (VRM) system. The VRM system classifies land based on visual appeal, public concern for
 9 scenic quality, and visibility from travel routes or observation points. VRM classes are used to
 10 identify the degree of acceptable visual change within a landscape based on the physical and
 11 sociological characteristics: Classes I and II are the most valued, Class III represents a
 12 moderate value, and Class IV is of least value.

13 The proposed pipeline ROW would cross three VRM classes: Class II, Class III and Class IV. The
 14 disturbance for the condensate pipeline in all VRM classes would primarily be adjacent to or within
 15 existing pipeline corridors/ROWs.

16 The BLM Manual 8431, Visual Resource Contrast Rating, provides the following management
 17 objectives for these VRM classes (BLM 1986):

18 Class II Objective: The objective to this class is to retain the existing character of
 19 the landscape. The level of change to the characteristic landscape should be low.
 20 Management activities may be seen, but should not attract the attention of the
 21 casual observer. Any changes must repeat the basic elements of form, line,
 22 color, and texture found in the predominant natural features of the characteristic
 23 landscape.

1 Class III Objective: The objective of this class is to partially retain the existing
2 character of the landscape. The level of change to the characteristic landscape
3 should be moderate. Management activities may attract attention but should not
4 dominate the view of the casual observer. Changes should repeat the basic
5 elements found in the predominant natural features of the characteristic
6 landscape.

7 Class IV Objective: The objective of this class is to provide for management
8 activities that require major modification of the existing character of the
9 landscape. The level of change to the characteristic landscape can be high.
10 These management activities may dominate the view and be the major focus of
11 viewer attention. However, every attempt should be made to minimize the
12 impacts of these activities through careful location, minimal disturbance, and
13 repeating the basic elements.

14 VRM Class II lands would be crossed at the northern tip and southern portion of the pipeline
15 ROW, adjacent to the New Fork and Green rivers. These lands are classified as such because
16 of their riparian characteristics, such as floodplains and adjacent uplands on either side of each
17 river that can be considered relatively unique to the area.

18 VRM Class III lands would be crossed near the northern portion of the proposed pipeline ROW
19 and near the southern portion of the line, just west of U.S. 189.

20 VRM Class IV lands would be crossed by the remainder of the proposed pipeline ROW, with the
21 exception of the state lands adjacent to the New Fork and Green rivers. Also located on VRM
22 Class IV lands would be the proposed condensate storage tank located at the southern point of
23 the proposed pipeline ROW.

24 **3.15 CLIMATE AND AIR QUALITY**

25 *3.15.1 Climate*

26 The climate in the Pinedale planning area is semiarid and continental, with short, dry summers
27 and long, cold winters. July and August are the hottest months of the year, while December and
28 January are the coldest. Average annual temperatures range from 35 to 45 degrees Fahrenheit
29 (°F) in most of the region, but reaching 50°F in the lower valleys (BLM 2009). The mean annual
30 temperature in Pinedale is 52°F. The mean maximum summer temperature is 75°, and the
31 mean minimum winter temperature is 0°F. The mean annual precipitation is 11 inches in
32 Pinedale and ranges from 5 inches in dry years to 19 inches in wet years. The mean total
33 snowfall is 2 feet in Pinedale, with most snow occurring from November through April (Western
34 Regional Climate Center 2010).

35 Air quality is important to human health as well as natural resources, such as wildlife,
36 vegetation, soils, and water bodies. Air pollution can adversely impact these resources and also
37 decrease visibility. Air quality is affected by both local and regional sources of pollution. The
38 tendency for air pollutants to accumulate in one area or to disperse depends on geographical
39 location, topography, temperature, wind, and other climatic variables.

40 Air pollutants can travel a long distance and affect areas far from the original source of the
41 pollutant. Therefore, air resources and pollutant sources both within the vicinity of the proposed
42 pipeline and farther away must be considered. Sources of air pollutants include ground

1 disturbance, vehicle emissions, residential and industrial emissions, and fire. In addition to
2 pollutants that originate from a source (termed primary pollutants), secondary pollutants, which
3 are formed by chemical reactions taking place in the atmosphere, also influence air quality.

4 Air pollution impacts are limited by state and federal regulations, standards, and implementation
5 plans established under the Clean Air Act and administered by the applicable air quality
6 regulatory agency, specifically the Wyoming Department of Environmental Quality – Air Quality
7 Division (WDEQ-AQD) and the EPA. The states of Utah, Colorado, and Idaho have similar
8 jurisdiction over potential air pollutant emissions sources, which can have a cumulative impact
9 when combined with WDEQ-AQD-regulated sources. Any proposed emissions source is
10 required to undergo a permit review by applicable air quality regulatory agencies (including
11 state, tribal, and/or EPA) before construction can begin. The agencies review the specific air
12 pollutant emission sources proposed and, depending on the magnitude of emissions and other
13 factors, may require additional site-specific air quality analysis and/or additional emission control
14 measures.

15 The BLM also has responsibility in regard to air quality. Under the Federal Land Policy and
16 Management Act (FLPMA) and the Clean Air Act, the BLM cannot authorize any activity that
17 does not conform to all applicable local, state, tribal, and federal air quality laws, statutes,
18 regulations, standards, and implementation plans.

19 Southwest Wyoming is an area of intense energy and mineral development, and associated
20 effects on air quality are an increasing concern. Monitoring in the area is increasing as these
21 development activities have become more numerous. Several indicators of air quality are
22 monitored, including concentration, visibility, and atmospheric deposition. Each of these
23 indicators of air quality is discussed below.

24 *3.15.2 Air Pollutant Concentrations*

25 The federal government established the Nation Ambient Air Quality Standards (NAAQS) under
26 the federal Clean Air Act and its amendments for six criteria pollutants: carbon monoxide (CO),
27 ozone (O₃), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), lead, and particulate matter (PM₁₀ and
28 PM_{2.5}; particles less than or equal to 10 and 2.5 microns in size, respectively). The federal
29 government also authorizes local, state, and tribal air quality regulatory agencies to establish
30 regulations that are more stringent than federal requirements. The State of Wyoming has
31 adopted the NAAQS. Lead is not considered in this EA, because no proposed actions are
32 expected to emit lead.

33 To ensure that the ambient air quality in Wyoming is maintained in accordance with the NAAQS
34 and Wyoming Air Quality Standards and Regulations (WAQS&R), the WDEQ-AQD operates
35 and maintains a network of ambient air quality monitors and requires industrial pollution sources
36 to conduct source-specific ambient air monitoring. The closest monitoring site to the proposed
37 pipeline ROW is the Jonah Special Purpose Monitoring (SPM) site, located in the Jonah Infill
38 Drilling Project Area (JIDPA) adjacent to the proposed pipeline ROW; however, this SPM site
39 shut down in 2008. The nearby Boulder and South Daniel SPM sites also indicate conditions in
40 the vicinity of the proposed pipeline. These sites monitor for PM₁₀, NO₂, and O₃. Available data
41 obtained from the WDEQ-AQD for the Boulder, Jonah, and South Daniel SPM sites are
42 provided in Table 3-13 through Table 3-16 (WDEQ-AQD 2009a, 2009b, 2009c). Currently, none
43 of the stations are exceeding NAAQS for PM₁₀ or NO₂. This area has experienced elevated
44 levels of O₃ during the months of January, February, and March since monitoring began in 2005

1 and recently exceeded the standard in 2008 at the Boulder, Jonah, and South Daniel SPM sites.
 2 Design values (three-year averages) for these ozone monitor sites are provided in Table 3-17.

3 **Table 3-13. PM₁₀ Compliance with NAAQS of 50 µg/m³ – Annual Arithmetic Mean**
 4 **(µg/m³)**

Site Name	2006	2007	2008	Average
Boulder	10	11*	11	10
Jonah	16*	15	17*	16
South Daniel	8*	11*	8*	9

5 Source: WDEQ-AQD (2009a). Compliance is determined by the three-year average of the
 6 annual mean. The three-year average must be below 50 µg/m³.

7 * Site has one or more quarterly reports that did not meet data completeness

8 **Table 3-14. PM₁₀ Compliance with NAAQS of 150 µg/m³ – Highest 24-hour Average**
 9 **(µg/m³)**

Site Name	Day	2005	2006	2007	2008 ¹	2009 ²
Boulder	1st Highest	39.5	31.9	35.6	99.0	61.0
	2nd Highest	33.0	31.7	34.9	77.0	32.1
Jonah	1st Highest	61.3	87.0	65.6	21.6	–
	2nd Highest	51.6	79.2	64.9	19.3	–
South Daniel	1st Highest	37.8	34.4	44.5	27.0	57.5
	2nd Highest	23.1	30.6	43.6	26.2	21.1

10 Source: WDEQ-AQD (2009b). An exceedance of the standard occurs when the daily
 11 average is greater than or equal to 150 µg/m³, and a violation of the standard occurs
 12 when the standard is exceeded more than once per year on average over three years.

13 ¹ Jonah 2008 data through 3/31/2008

14 ² Boulder 2009 data through 6/30/2009; Jonah 2009 not available; South Daniel 2009
 15 data through 3/31/2009

16 **Table 3-15. NO₂ Compliance with NAAQS of 0.053 ppm – Annual Arithmetic Mean (ppm)**

Site Name	2005	2006	2007	2008
Boulder	0.004	0.004	0.004*	0.003*
Jonah	0.01	0.01	0.012	0.017*
South Daniel	0.003	0.003	0.003	0.003

17 Source: WDEQ-AQD (2009a).

18 Note: ppm = parts per million.

19 * Site has one or more quarterly reports that did not meet data
 20 completeness

Table 3-16. O₃ Compliance with NAAQS of 0.075 ppm – Highest Daily Maximum 8-hour Averages (ppm) for Ozone Monitoring Sites

Site Name	Rank ¹	2005	2006	2007	2008	2009 ²
Boulder	1st	0.089	0.081	0.072	0.122	0.070
	2nd	0.082	0.079	0.068	0.104	0.070
	3rd	0.081	0.076	0.068	0.102	0.067
	4th	0.080	0.073	0.067	0.101	0.066
Jonah	1st	0.098	0.093	0.071	0.102	–
	2nd	0.089	0.081	0.070	0.098	–
	3rd	0.078	0.072	0.069	0.084	–
	4th	0.076	0.070	0.069	0.082	–
South Daniel	1st	0.071	0.083	0.068	0.076	0.067
	2nd	0.067	0.076	0.068	0.076	0.064
	3rd	0.067	0.075	0.067	0.074	0.061
	4th	0.067	0.075	0.067	0.074	0.060

Source: WDEQ-AQD (2009c).

¹ 4th highest 8-hour average (ppm) determines NAAQS compliance.

² Year-to-date preliminary data.

Note: ppm = parts per million.

Table 3-17. O₃ Compliance with NAAQS of 0.075 ppm – Design Values for Ozone Monitor Sites

Site Name	AQS ID	2005	2006	2007	2008	3-year Average 2005–2007 (ppm) ¹	3-year Average 2006–2008 (ppm) ¹
Boulder	56-035-0099	0.080	0.073	0.067	0.101	0.073	0.080
Jonah	56-035-0098	0.076	0.070	0.069	0.082	0.072	0.074
South Daniel	56-035-0100	0.067	0.075	0.067	0.074	0.070	0.072

¹ Attainment of the ozone standard is reached if the annual fourth highest daily maximum 8-hour concentration averaged over three years does not exceed 0.075 ppm.

Note: ppm = parts per million.

The EPA published a final rule in the Federal Register on March 27, 2008, that stated the NAAQS for O₃ has been lowered to 0.075 parts per million (ppm) (40 CFR Parts 50 and 58). The EPA has proposed to revise the O₃ monitoring requirements necessary to implement the new standards (Federal Register proposed rule July 16, 2009). The WDEQ has recommended to the EPA Region 8 that Sublette County and some areas to the south be declared nonattainment for O₃. The EPA is expected to announce its decision in the spring of 2010. If Sublette County is declared a nonattainment area for O₃, then the State of Wyoming will have three years to create a State Implementation Plan to bring the area back into attainment.

The Clean Air Act and its amendments also established the mandatory federal Prevention of Significant Deterioration (PSD) Class I and Class II designations. Mandatory federal PSD Class

1 I areas include existing wilderness areas larger than 5,000 acres and national parks larger than
 2 6,000 acres. All other locations in the country where ambient air quality is within the NAAQS
 3 (including attainment and unclassified areas) are designated as PSD Class II areas. Both
 4 classes are protected under the PSD regulations, which limit the incremental amount by which
 5 pollution levels are allowed to increase above historical levels. Class I areas are identified for
 6 somewhat more stringent protection from air pollution damage than Class II areas, except in
 7 specified cases.

8 Regional air quality data were compiled for the Jonah Infill Drilling Project Environmental Impact
 9 Statement (EIS) (BLM 2006a). The JIDPA is located immediately east of the proposed pipeline
 10 ROW and is in the same airshed. This generally means that the two locations share common
 11 meteorological conditions and sources of air pollution that affect the interaction and diffusion of air
 12 pollutants. Regional data of background concentrations for pollutants that were deemed to
 13 represent the JIDPA are summarized in the Jonah Infill Drilling Project EIS (BLM 2006a). As
 14 stated above, due to the proximity of the proposed pipeline ROW to the JIDPA and the common
 15 airshed, these data also represent the proposed pipeline ROW. These data are summarized and
 16 compared to the WAQS&R, NAAQS, and PSD Class I and II increments in. The air pollutant data
 17 shown in Table 3-18 indicate that regional background values are below established air quality
 18 standards and are therefore designated as attainment areas for all criteria pollutants.

19 **Table 3-18. Air Pollutant Background Concentrations, WAQS&R, NAAQS, and PSD**
 20 **Increments**

Pollutant/Averaging Time	Measured Background Concentration	WAQS&R	NAAQS	Incremental Increase Above Legal Baseline ¹	
				PSD Class I	PSD Class II
Carbon monoxide (CO) ²					
1-hour	3,336 µg/m ³	40,000 µg/m ³	40,000 µg/m ³	n/a	n/a
8-hour	1,381 µg/m ³	10,000 µg/m ³	10,000 µg/m ³	n/a	n/a
Nitrogen dioxide (NO ₂) ³					
Annual	3.4 µg/m ³	100 µg/m ³	100	2.5 µg/m ³	25 µg/m ³
Ozone (O ₃) ⁴					
8-hour	147 µg/m ³	157µg/m ³	147 µg/m ³	n/a	n/a
Particulate matter (PM ₁₀) ⁵					
24-hour	33 µg/m ³	150 µg/m ³	150 µg/m ³	8 µg/m ³	30 µg/m ³
Annual	16 µg/m ³	50 µg/m ³	50 µg/m ³	4 µg/m ³	17 µg/m ³
Particulate matter (PM _{2.5}) ⁵					
24-hour	13 µg/m ³	65 µg/m ³	35 µg/m ³	n/a	n/a
Annual	5 µg/m ³	15 µg/m ³	15 µg/m ³	n/a	n/a
Sulfur dioxide (SO ₂) ⁶					
3-hour (National)	132 µg/m ³	1,300 µg/m ³	1,300 µg/m ³	25 µg/m ³	512 µg/m ³
24-hour	43 µg/m ³	260 µg/m ³	365 µg/m ³	5 µg/m ³	91 µg/m ³
Annual	9 µg/m ³	60 µg/m ³	80 µg/m ³	2 µg/m ³	20 µg/m ³

21 Sources: BLM (2006a), WDEQ-AQD (2009a).

- 1 ¹ N/A = not applicable.
- 2 ² Background data collected by Amoco at Ryckman Creek for an eight-month period from 1978 to 1979,
3 summarized for the Riley Ridge project (BLM 2006a).
- 4 ³ Background data collected at Green River Basin Visibility Study site, Green River, Wyoming, from
5 January to December 2001 (BLM 2006a).
- 6 ⁴ Background data collected at Green River Basin Visibility Study site, Green River, Wyoming, from June
7 10, 1998, to December 31, 2001 (BLM 2006a).
- 8 ⁵ Background data collected by WDEQ-AQD at the Emerson Building, Cheyenne, Wyoming, in 2001.
9 These data have been determined by WDEQ-AQD to most represent co-located PM₁₀ and PM_{2.5} data
10 available.
- 11 ⁶ Background data collected at the LaBarge Study Area/Northwest Pipeline Craven Creek site from 1982
12 to 1983.

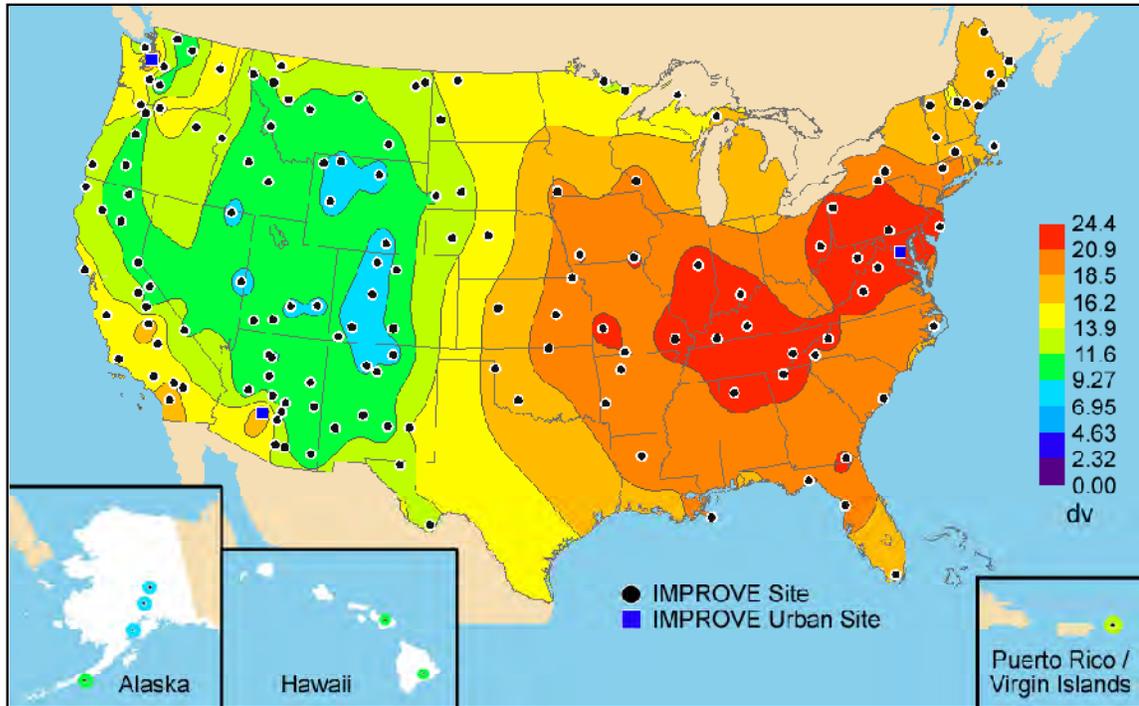
13 *3.15.3 Visibility*

14 In addition to technical metrics that involve aspects such as measured sight distance,
15 illumination, and threshold contrast, evaluating visibility also involves subjective judgments,
16 such as whether an observer's ability to clearly perceive and appreciate a scenic view is
17 affected by air quality.

18 Visibility is characterized as an air quality related value (AQRV). Under the Clean Air Act,
19 federal land managers have the responsibility to protect AQRVs, but have no legal authority to
20 regulate this protection. Subsequently, AQRVs are not typically included in standard monitoring
21 programs. Regulations have since been established by the EPA to protect visibility within Class
22 I areas under the Regional Haze Rule (EPA 1999). The Regional Haze Rule requires visibility
23 monitoring that represents each of the federal PSD Class I areas.

24 To comply with the Regional Haze Rule, the Interagency Monitoring of Protected Visual
25 Environments (IMPROVE) monitoring network was developed, and monitoring was initiated in
26 2000. Because regional haze is defined as being distributed over a broad geographic region,
27 monitoring sites do not have to be within the PSD Class I area to be representative of the
28 protected area (DeBell 2006). These regional haze stations represent regional conditions, and
29 the applicability of monitoring results are not limited to just the immediate vicinity of the actual
30 monitoring station.

31 The Bridger Wilderness Area IMPROVE monitoring station is nearby the proposed pipeline ROW.
32 There are also IMPROVE monitoring stations in Yellowstone National Park and North Absaroka.
33 Approximately every three years an IMPROVE report is produced analyzing the measured data in
34 support of the IMPROVE objectives. The most recent monitoring assessment (DeBell 2006)
35 reports measurements of visibility in deciview (dv) units. An incremental change of 1 dv is typically
36 perceived as a small change in haziness, regardless of the initial haze level (DeBell 2006).
37 Smaller dv values indicate better visibility, and larger dv values indicate reduced visibility.
38 Measurements of visibility (in units of dv) and geographic trends of visibility in the United States,
39 based on measurements of haziness at IMPROVE monitoring sites, are shown in Figure 3-5.
40 These monitoring results indicate that from 2000 to 2004, visibility in the vicinity of the proposed
41 pipeline was very good and that visibility conditions are better than much of the nation.



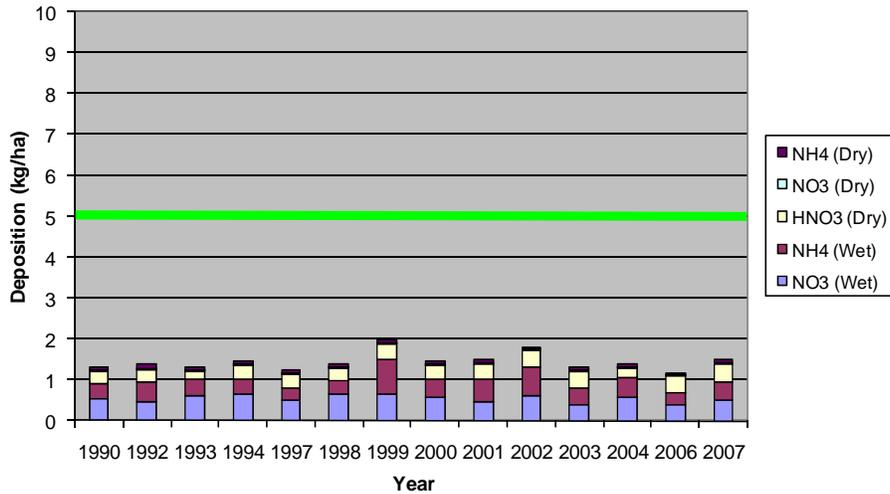
1
2 **Figure 3-5. Five-year average (2000–2004) dv values based on IMPROVE monitoring**
3 **stations (DeBell 2006).**

4 *3.15.4 Atmospheric Deposition*

5 Air pollutants are removed from the atmosphere and deposited on the surface environment via
6 processes collectively known as deposition. Deposition occurs through both precipitation (wet
7 deposition) and the gravitational settling of pollutants (dry deposition).

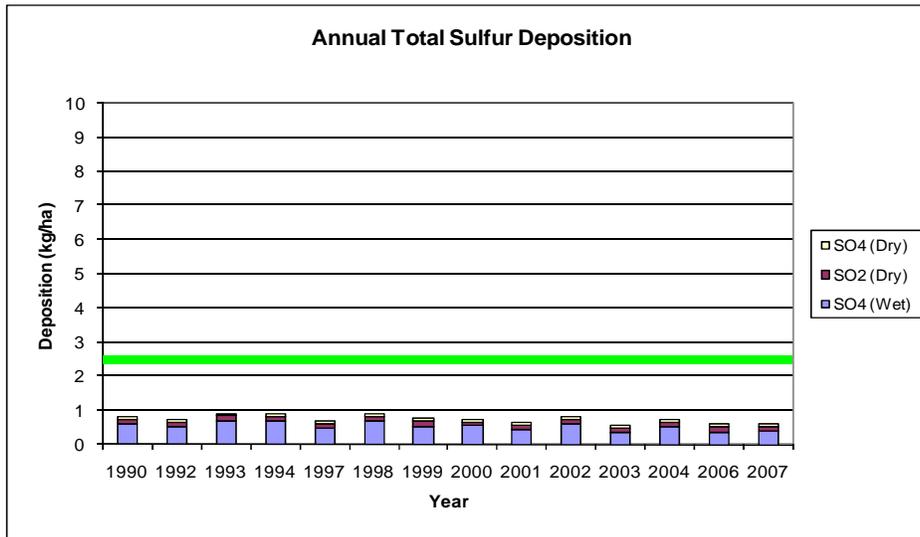
8 Total annual nitrogen (N) and sulfur (S) deposition data for a monitoring site near Pinedale are
9 shown in Figure 3-6 and Figure 3-7. The data were obtained from the Clean Air Status and
10 Trends Network (CASTNET) for the site PND165. The total deposition (wet plus dry) for N and
11 S at the Pinedale site are compared to two Levels of Concern (LOCs; green line in figures)
12 established for the Bridger Wilderness Area. These LOC values are pollutant load thresholds
13 developed by the U.S. Forest Service (1989) that guide management decisions related to new
14 sources of pollutants. Total annual deposition for both N and S is currently below LOC (green
15 line).

Total Annual Nitrogen Deposition



Note: Only years with complete data are shown.

Figure 3-6. Total annual nitrogen deposition for CASTNET site PND165.



Note: Only years with complete data are shown.

Figure 3-7. Total annual sulfur deposition for CASTNET site PND165.

8 The Wind River Bulk Deposition Program at Bridger-Teton National Forest was initiated in 1985
 9 and monitors wet deposition from two sites in the Bridger Wilderness (Hobbs Lake and Black
 10 Joe Lake) to determine the chemical deposition of particles in the air that are washed out with
 11 precipitation (Svalberg and Porwoll 2007). Annual deposition of S (as sulfate [SO₄²⁻]) and total N
 12 at the two lake sites are shown in Figure 3-8 through Figure 3-11.

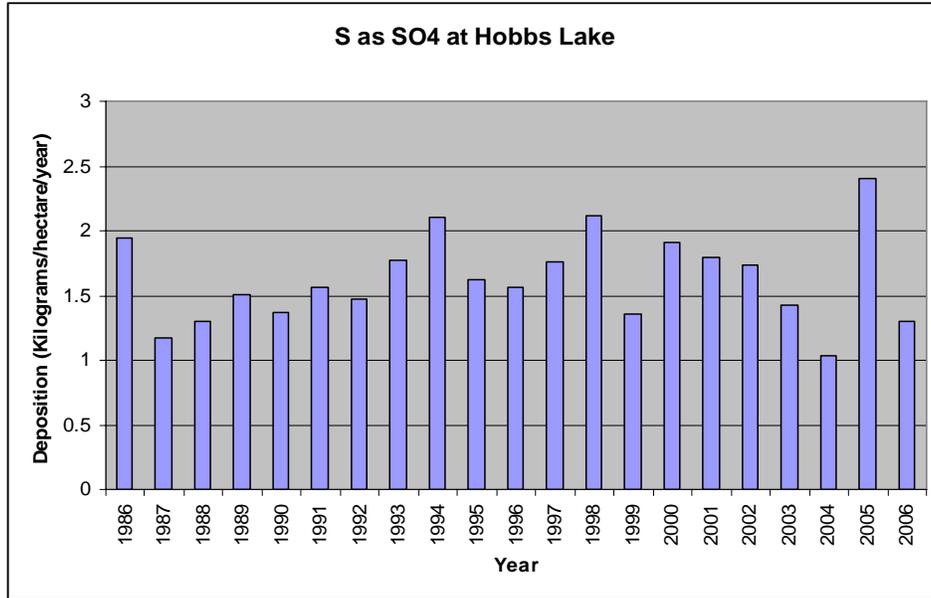


Figure 3-8. Sulfur deposition at Hobbs Lake.

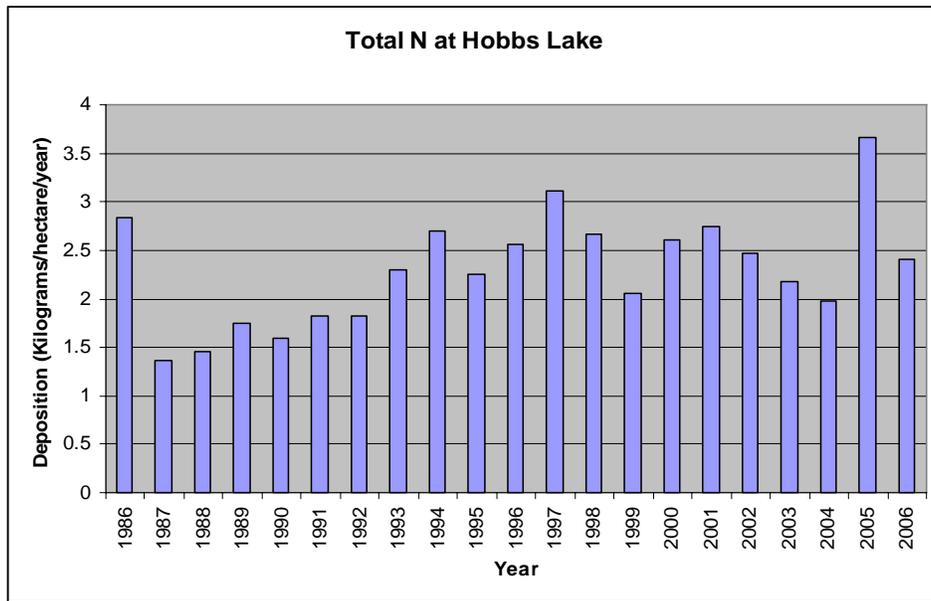
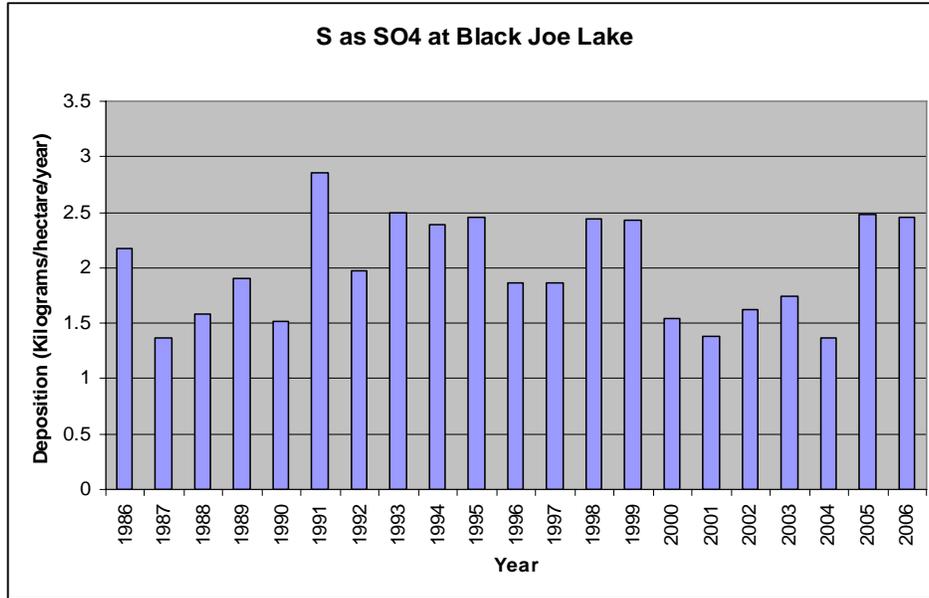


Figure 3-9. Total nitrogen deposition at Hobbs Lake.

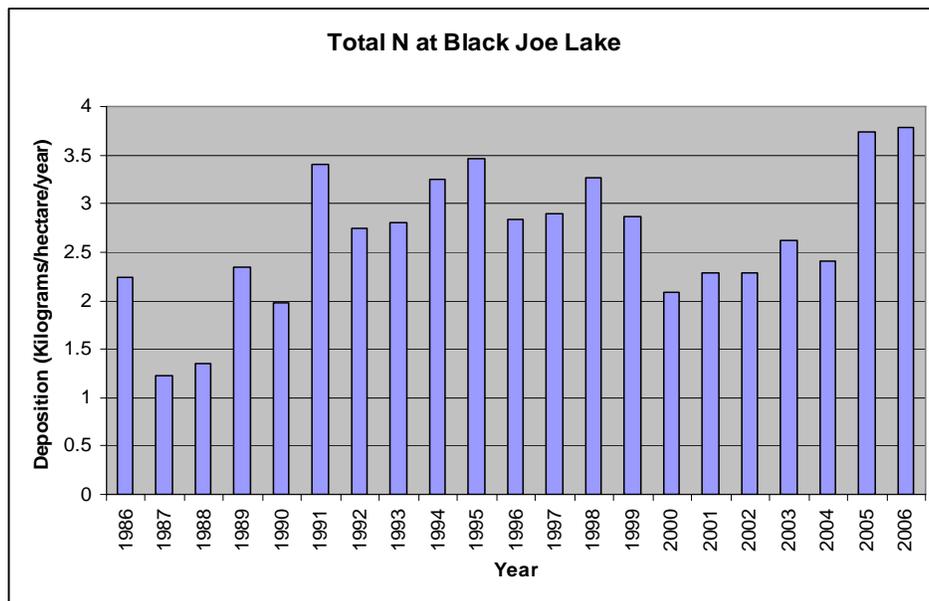
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Figure 3-10. Sulfur deposition at Black Joe Lake.



4
5

Figure 3-11. Total nitrogen deposition at Black Joe Lake.

6 *3.15.5 Global Climate Change*

7 The assessment of greenhouse gas (GHG) emissions (including carbon dioxide [CO₂], methane
 8 [CH₄], nitrous oxide [N₂O], water vapor, and several trace gases) and climate change is an
 9 ongoing scientific endeavor. Through complex interactions at the regional and global scales,
 10 GHG emissions cause a net warming effect of the atmosphere, primarily by decreasing the
 11 amount of heat energy radiated back by the Earth back into space. Although GHG levels and
 12 climactic conditions have varied throughout time, the recent burning of fossil fuels has caused

1 an increase in atmospheric CO₂ concentrations, which is likely to contribute to overall climactic
2 changes, typically referred to as global warming. According to the USGS (2008), “It is currently
3 beyond the scope of existing science to identify a specific source of CO₂ emissions and
4 designate it as the cause of specific climate impacts.” Several activities occur within the PFO
5 planning area that may generate GHG emissions, including oil and gas development, fires, and
6 recreation using combustion engines.

7 **3.16 CULTURAL AND HISTORIC RESOURCES**

8 Data on cultural resources for evaluating cultural environment were obtained by searching the
9 Wyoming Cultural Resources Information System (WYCRIS) database. Specific cultural
10 resources or cultural resource concerns were also identified by the BLM RSFO and PFO (i.e.,
11 the Opal Wagon Road, the Lander Trail and Wagner Variant of the Lander Trail, and 48SU261)
12 (personal communication, B. Wadsworth, PFO, with C. Baker, SWCA, March 19, 2010). When
13 accessed in February 2010, the WYCRIS database indicated that numerous cultural resources
14 inventories have crossed or intersected the proposed pipeline ROW at various points along its
15 length over the past 30 years. These previous cultural resources inventories, which largely
16 proceeded for oil and gas development in the vicinity (including geophysical exploration project
17 grids, pipelines, well pads, and access roads in the 1990s and 2000s), provide a broad
18 sampling of the range of cultural resources known for current project area and the surrounding
19 region. The history and prehistory of the area, including culture-area contexts, historic period
20 themes, and notable local historic and prehistoric sites, are further described at length in the
21 Cultural Resource Overview drafted for the Pinedale RMP (McNees et al. 2006). Most cultural
22 resources identified within the proposed pipeline ROW in the WYCRIS database are prehistoric
23 sites, fitting the distribution patterns described in culture history contexts for the cultural
24 subregions that the project crosses. These are the Anticline South, Jonah, South Desert, River,
25 and LaBarge Uplift cultural subregions, as defined by McNees et al. (2006). The locations within
26 RSFO-administered areas are consistent with the qualities of the adjacent PFO South Desert
27 and River cultural subregions and, for the purposes of this analysis, are considered to be
28 continuations of those subregions.

29 Numerous previous cultural resource inventories have been conducted within and adjacent to
30 the proposed pipeline ROW and all route options. Due to the length but narrow width of a long
31 linear ROW, many areas previously inventoried for cultural resources are intersected; however,
32 the overlap of previous projects does not provide complete coverage of the proposed pipeline
33 ROW and route options. Regardless, previous inventories do provide a representative subset of
34 cultural resources known to occur in the cultural subregions. Previous cultural resources
35 inventories identified 603 previously recorded archaeological and historic sites in or at least
36 partially overlap the Public Land Survey System sections (usually 1 square mile each) that
37 encompass all lands intersected by the proposed pipeline ROW and route options. BLM will
38 consult with appropriate tribes, where necessary, to determine if potential traditional cultural
39 properties or other sites considered sacred, sensitive, or of interest to modern-day Native
40 Americans have been identified within the proposed pipeline ROW or any route option.

41 Of the total sites previously identified directly in the vicinity of the overall proposed pipeline
42 ROW and Route Options 1 and 2, 89 are previously recommended eligible for National Register
43 of Historic Places (NRHP) nomination, 363 are previously recommended not eligible for NRHP
44 nomination (including sites that are noted as destroyed), and 151 are of unevaluated status. Of
45 these sites, 550 are within the PFO jurisdiction, 51 are within the RSFO, and an additional 2 fall
46 in both field office areas (Table 3-19). Route Option 3 has one fewer site, with a total of 602,
47 missing NRHP not eligible one site that occurs along Route Options 1 and 2 in the RSFO area.

1 Route Options 4 and 5 also have one fewer site than Route Options 1 and 2, missing one
2 NRHP not eligible site that occurs in the PFO area.

3 **Table 3-19. Previously Recorded Sites in the Proposed Pipeline ROW and NRHP**
4 **Eligibility**

Field Office	Recommended Eligible	Unevaluated	Recommended Not Eligible	Total
PFO	80	140	330	550
RSFO	8	11	32	51
In Both	1	0	1	2
Total	89	151	363	603

5
6 Known or probable prehistoric site types across all route option areas include open campsites,
7 lithic scatters, cairns, hearths, and lithic procurement sites or quarries. Historic sites across all
8 route options include trash and debris scatters, historic cairns, transportation routes and
9 bridges, habitation sites, water control features (e.g., canals), and energy exploration sites.

10 All cultural resource sites encountered along any route option that might be selected for project
11 development are part of the cultural resource inventory being conducted by a third-party
12 consultant, Current Archaeological Research, so that the project will conform to Section 106 of
13 the National Historic Preservation Act. The report for this intensive (or Class III) cultural
14 resources inventory will be produced concurrent with this EA and will meet the standards of the
15 BLM and State Historic Preservation Officer (SHPO) and be acceptable to the BLM, and give
16 the SHPO opportunity to concur, prior to the BLM approving project actions in relation to cultural
17 resources. Impacts to NRHP-eligible sites will be mitigated. Site significance is considered
18 based on evaluation of each cultural resource for its eligibility to be nominated to the NRHP.
19 Significant cultural resources are those evaluated as eligible for nomination to the NRHP in
20 consideration of the criteria under 36 CFR 60.4. For the purposes of this assessment, previously
21 unevaluated sites are considered in the same manner as eligible resources until an eligibility
22 recommendation has been determined. Sites that have been determined to be not eligible for
23 the NRHP are generally recommended to need no further work.

24 Historic properties or cultural resources significant for preservation, representation, and
25 interpretation of important aspects of history, prehistory, or other qualities of cultural heritage,
26 may require different treatment approaches than sites significant for their archaeological
27 research value. These sites may include historic roads and trails, such as the Lander Trail and
28 the Opal wagon road. In addition to avoidance of direct project impacts, the quality of the
29 physical setting for these resources is considered, both in and outside the direct path of project
30 construction. Visual intrusion on the integral setting of these sites by features out of character
31 with the original historic landscapes may be considered to diminish or destroy their historical
32 qualities. In fact, several routes of two historic trails that are eligible for nomination to the NRHP
33 are located in the APE for project impacts. Even though the historic linear feature may be
34 eligible for the NRHP, various routes may or may not contribute to that significance depending
35 on the integrity of specific segments (see RMP ROD Appendix 1 page 2 [BLM 2008b]). Only
36 segments that are sufficiently intact to contribute to the overall eligibility of the historic linear site
37 for nomination to the NRHP are considered to retain significance. Impacts to significant routes
38 of historic linear sites can occur from direct disturbance of the route itself or from disturbance of
39 the setting if that setting is of importance to the overall eligibility of the linear site. Impacts to the

1 setting, if they cannot be avoided through project redesign, are frequently mitigated through off-
2 site efforts, such as but not limited to the establishment of interpretive signage for the public.

3 The Lander Trail and its Wagner Variant would be directly crossed by the proposed pipeline
4 ROW, to the south of the New Fork River, based on sesquicentennial trail mapping by the
5 Lander Trail Foundation (2008). The southwestern end of the proposed pipeline ROW would
6 directly cross and parallel the historic Opal Wagon Road route along the Green River, as well as
7 Bird's Old House (48SU5918), which is associated with the historic development of the Opal
8 wagon road and stage stations at Midway.

9 Finally, due to the potential of some sediments in the area to contain buried cultural deposits not
10 manifest on the surface, unexpected subsurface discoveries could occur during ground
11 disturbance from project construction activities. San Arcacio and San Arcacio-like soils, dune
12 deposits, and aggraded alluvial terrace deposits have the potential to produce buried cultural
13 materials from the Paleoindian through Historic periods. An approved discovery plan for
14 inspection or monitoring by a qualified professional archaeologist will need to be in place for
15 unexpected discoveries in areas where blading, trenching, and similarly extensive ground
16 disturbance is proposed in these soil situations.

17

1 **4.0 ENVIRONMENTAL EFFECTS**

2 **4.1 DIRECT AND INDIRECT EFFECTS**

3 An environmental impact is defined as a change in the quality or quantity of a given resource as
4 a result of a modification in the existing environment resulting from project-related activities.
5 Beneficial or adverse impacts may be a primary result (direct) or secondary result (indirect) of
6 an action and may be permanent and long term or temporary. In addition to ULTRA's proposed
7 pipeline alignment, the BLM has proposed supplementary revised route options at three
8 locations: Figure Four Mesa, Federal 1-12 Well, and Green River West. Narrative descriptions
9 of potential impacts resulting from the Proposed Action and route options, as well as the No
10 Action Alternative, are discussed for each environmental resource in Sections 4.1.1 through
11 4.1.16. Additional mitigation (Section 4.3) is recommended for environmental resources with
12 impact concerns, based on guidance provided in the Pinedale RMP (BLM 2008b) and the PAPA
13 SEIS (BLM 2008a).

14 *4.1.1 Geology, Geologic Hazards, and Minerals*

15 Proposed Action

16 Construction of the proposed condensate pipeline would have no adverse impacts to geologic
17 or mineral resources. Implementation of the Proposed Action would result in 359.5 acres of
18 surface disturbance activity, and due to the shallow nature of the soils within the proposed
19 ROW, construction would likely disturb underlying and/or exposed bedrock. No active faults are
20 found within the vicinity of the proposed ROW and disturbance of the bedrock would be minimal,
21 which reduces the likelihood that any surface disturbing activity would generate any significant
22 seismic activity. Excavation and boring activities would likely take place in bedrock below soil
23 and alluvial surfaces; however, the fractured nature of the bedrock would minimize drilling
24 pressure and would preclude any need for blasting. Disturbance of unconsolidated bedrock
25 during trenching would potentially damage or unearth undiscovered and scientifically significant
26 fossils, and direct impacts to paleontological resources are fully analyzed under Paleontological
27 Resources (see Section 4.1.2).

28 Slopes along the proposed ROW generally remain below 10% with limited areas of slopes
29 greater than 15%, with very little topographic variation. Of the 359.5 acres of total surface
30 disturbance, approximately 76.7 acres (21%) may be more susceptible to mass wasting due to
31 slope and the underlying surface geology. Although soils in the surrounding area that have
32 developed from sedimentary sources may potentially have high clay content, the preponderance
33 of flat terrain and lack of precipitation reduces the risk of mass wasting, including landslides and
34 slumping.

35 There would be no impacts to the availability of locatable or salable minerals from the Proposed
36 Action because there are no known occurrences along the proposed ROW. The proposed
37 condensate pipeline would not be allowed to encroach on other mineral leases, infrastructure, or
38 ROWs without prior approval, and access to potentially available oil and gas resources would
39 not be obstructed by construction and operation of the proposed pipeline.

40 Route Options

41 Impacts to geologic resources for the additional route options would be similar to those
42 described in the Proposed Action and any differences that would take place include changes in

1 total surface disturbances and/or bedrock and surface geology. Impacts from the different route
2 options on paleontological resources are further detailed in Section 4.1.2.

3 At the Figure Four Mesa location, three separate routes have been proposed, the first by
4 ULTRA (proposed route) and two additional BLM-revised route options (Route Options 1 and 2).
5 Route Option 1 would parallel the Figure Four Canyon Road and account for approximately 6.5
6 acres of the Laney Member of the Green River Formation and approximately 5.5 acres of the
7 Fontenelle Tongue of the Wasatch and Green River formations, while the proposed route would
8 travel cross country over Figure Four Mesa, disturbing approximately 6.4 acres and 3.4 acres of
9 each respective formation. Route Option 2 would adjoin the two previously described routes,
10 which would result in 3.8 acres of disturbance of the Laney Member of the Green River
11 Formation and approximately 5.5 acres of the Fontenelle Tongue of the Wasatch and Green
12 River Formations; in comparison, the proposed route would result in less disturbance with
13 approximately 3.9 acres and 3.4 acres of total surface disturbance of each respective formation.

14 At the Federal 1-12 Well location, Route Option 3 would result in approximately 1.6 acres of
15 total surface disturbance of the Fontenelle Tongue of the Wasatch and Green River Formations,
16 while the proposed route would result in approximately 1.4 acres of total surface disturbance of
17 the same formation.

18 The Green River West location has two separate proposed route options that would traverse
19 federal, state, and private land. Route Option 4 would cross significantly less state land and
20 parallel a substantial portion of developed land along U.S. 189, disturbing approximately 8.9
21 acres Quaternary gravel, pediment, and fan deposits and approximately 7.9 acres of Quaternary
22 alluvium and colluvium. The proposed route would cross a greater distance of state land and
23 would disturb approximately 13.9 acres of Quaternary alluvium and colluvium. Route Option 5
24 would be a slight route modification to the proposed route, disturbing approximately 9.7 acres of
25 Quaternary alluvium and colluvium. The proposed route would follow a similar alignment and
26 would disturb approximately 8.6 acres of Quaternary alluvium and colluvium.

27 No Action Alternative

28 Under the No Action Alternative, the Proposed Action would not be implemented and no new
29 construction would be authorized. Impacts to geologic resources from disturbing 359.5 acres
30 during construction of the proposed condensate pipeline would not occur. However, existing
31 land uses would continue within the surrounding area.

32 *4.1.2 Paleontological Resources*

33 The loss of any identifiable fossil that could yield information important to prehistory or that
34 embodies the distinctive characteristics of a type of organism, environment, period of time, or
35 geographic region would be a significant adverse environmental impact. Adverse impacts to
36 paleontological resources primarily concern the potential destruction of non-renewable
37 paleontological resources and the loss of information associated with these resources. This
38 includes the unlawful or unauthorized collection of fossil remains. If potentially fossiliferous
39 bedrock or surficial sediments are disturbed, the disturbance could result in the destruction of
40 paleontological resources and subsequent loss of information (adverse impact). Direct adverse
41 impacts can typically be reduced to below a level of significance through the implementation of
42 paleontological mitigation.

43 In general, the potential for adverse impacts to paleontological resources increases with
44 increasing amounts of ground disturbance in paleontologically sensitive geographic areas and

1 geologic units. For project areas that are directly underlain by geologic units with no
2 paleontological sensitivity, there is no potential for impacts to paleontological resources unless
3 sensitive geologic units that underlie the non-sensitive unit are also impacted.

4 Direct impacts result from construction activities and occur at the same time and place as the
5 surface-disturbing action. The potential for direct impacts to scientifically significant surface and
6 subsurface fossils in fossiliferous sedimentary deposits is controlled by two factors: 1) the depth
7 and lateral extent of disturbance of fossiliferous bedrock and/or surficial sediments and 2) the
8 depth and lateral extent of occurrence of fossiliferous bedrock and/or surficial sediments
9 beneath the surface. Ground disturbance has the potential to adversely impact an unknown
10 quantity of fossils that may occur on or underneath the surface in areas containing
11 paleontologically sensitive geologic units. Without mitigation, these fossils, as well as the
12 paleontological data they could provide if properly salvaged and documented, could be
13 adversely impacted (destroyed), rendering them permanently unavailable for future scientific
14 research and education.

15 Proposed Action

16 The proposed construction and drilling activities have the potential to result in direct adverse
17 impacts to significant paleontological resources in the LaBarge and Chappo Members of the
18 Wasatch Formation (PFYC Class 5), the undifferentiated New Fork Tongue of the Wasatch
19 Formation and Fontenelle Tongue of the Green River Formation (PFYC Class 5), the Wilkins
20 Peak Member of the Green River Formation (PFYC Class 5), and the Laney Member of the
21 Green River Formation (PFYC Class 4/5). The undifferentiated New Fork Tongue of the
22 Wasatch Formation and Fontenelle Tongue of the Green River Formation are equivalent to
23 Roehler's (1991a) Tipton Shale and Farson Sandstone members of the Green River Formation,
24 Alkali Creek Member of the Wasatch Formation, Wilkins Peak Member of the Green River
25 Formation, and Cathedral Bluffs Tongue of the Wasatch Formation.

26 Construction and drilling activities in surficial deposits of Pleistocene- and Holocene-age
27 alluvium and colluvium (PFYC Class 2), and Holocene-age gravel, pediment and fan deposits
28 (PFYC Class 2) have a low potential to result in direct adverse impacts to paleontological
29 resources. Although Holocene-age deposits are too young to contain in situ fossils, Pleistocene-
30 age deposits may contain mineralized or partially mineralized animal bones, invertebrates, and
31 plant remains of paleontological significance. The 2006 discovery of bones tentatively identified
32 as Pleistocene-age horse bones within the adjacent Jonah Oil and Gas Development fields
33 (BLM 2006a) was significant since Pleistocene-age fossils are rare in southwestern Wyoming.

34 In addition to the direct impacts to paleontological resources resulting from surface disturbance,
35 there is potential for indirect adverse impacts to these resources as well. Like direct impacts,
36 indirect impacts are also a result of construction or other surface-disturbing actions but occur
37 later in time or further away in distance than direct impacts and are still reasonably foreseeable.
38 An example of an indirect adverse impact to paleontological resources would be the
39 construction of a new road, which increases public access to a previously inaccessible area and
40 results in unauthorized long-term fossil collecting and vandalism. This would result in the loss of
41 scientific data as well as interpretive and educational utilization of these resources.

42 Route Options

43 At the Figure Four Mesa location, Route Option 1 has the potential to result in direct adverse
44 impacts to significant paleontological resources in the undifferentiated New Fork Tongue of the
45 Wasatch Formation and Fontenelle Tongue of the Green River Formation (PFYC Class 5) and

1 the Laney Member of the Green River Formation (PFYC Class 5). Route Option 1 would impact
2 approximately 12.02 total acres of these Class 5 units (alignment and TUAs combined),
3 whereas the correlating segment of the proposed alignment would impact 9.83 acres of the
4 same Class 5 units. Route Option 2 has the potential to result in direct adverse impacts to
5 significant paleontological resources in the undifferentiated New Fork Tongue of the Wasatch
6 Formation and Fontenelle Tongue of the Green River Formation (PFYC Class 5) and the Laney
7 Member of the Green River Formation (PFYC Class 5). Route Option 2 would impact
8 approximately 9.28 total acres of these Class 5 units (alignment and temporary use areas
9 combined), whereas the correlating segment of the proposed alignment would impact 7.31
10 acres of the same Class 5 units.

11 At the Federal 1-12 Well location, Route Option 3 has the potential to result in direct adverse
12 impacts to significant paleontological resources in the undifferentiated New Fork Tongue of the
13 Wasatch Formation and Fontenelle Tongue of the Green River Formation (PFYC Class 5).
14 Option 3 would impact approximately 1.59 total acres of this Class 5 unit (alignment and
15 temporary use areas combined), whereas the correlating segment of the proposed alignment
16 would impact 1.41 acres of the same Class 5 unit.

17 At the Green River West location, Route Option 4 has a low potential to result in direct adverse
18 impacts to significant paleontological resources in surficial deposits of Pleistocene- and
19 Holocene-age alluvium and colluvium (PFYC Class 2), gravel, pediment, and fan deposits
20 (PFYC Class 2). Route Option 4 would impact approximately 16.78 total acres of these Class 2
21 units (alignment and temporary use areas combined), whereas the correlating segment of the
22 proposed alignment would impact 13.93 acres of the same Class 2 units. Route Option 5 has a
23 low potential to result in direct adverse impacts to significant paleontological resources in
24 surficial deposits of Pleistocene- and Holocene-age alluvium and colluvium (PFYC Class 2).
25 Route Option 5 would impact approximately 9.68 total acres of this Class 2 unit (alignment and
26 TUAs combined), whereas the correlating segment of the proposed alignment would impact
27 8.58 acres of the same Class 2 unit.

28 No Action Alternative

29 Under the No Action Alternative, there would be no new impacts to paleontological resources
30 apart from the current conditions of the project area.

31 *4.1.3 Soils*

32 Proposed Action

33 Soils along the proposed condensate pipeline are predominantly flat upland soils that are
34 typically less susceptible to surface disturbances (see Section 3.4), but also include soils of
35 piedmonts and alluvial fans and/or floodplain and bottomland soils occurring near the Green and
36 New Fork rivers and along intermittent stream beds. Direct impacts would include the removal of
37 vegetation, compaction of soil surfaces, and surface-disturbing activities, including blading,
38 grading, trenching, and stockpiling of the soil resource.

39 Potential impacts to soils from construction also include surface runoff, soil contamination,
40 streambank and channel instability, and stream sedimentation. Stockpiled soils and exposed
41 subsoils would be subject to accelerated water and wind erosion due to loss of protective
42 vegetative cover, increased runoff, low infiltration, and more direct wind exposure. Vehicular
43 traffic increases soil compaction, which results in reduced soil productivity from loss of soil
44 structure, increased erodibility, reduced infiltration, and decreased water storage capacity.

1 Travel and construction through ephemeral streams break down streambanks, increase
 2 sediment load, accelerate erosion, and compromise slope stability. Sensitive soils within the
 3 proposed ROW occur less frequently; however, sensitive soils are more susceptible to surface
 4 disturbances and erosive forces, and these soils are typically a function of increased slope,
 5 shallow depth, texture, and exposure.

6 Construction of the proposed condensate pipeline would result in approximately 359.5 acres of
 7 total surface disturbance (Table 4-1). All soil impacts are expected to be short term and non-
 8 significant; however, some soil loss could occur due to the physical alteration of the existing soil
 9 resource.

10 **Table 4-1. Soil Disturbance Acres within the Pipeline ROW and TUAs**

Soil Map Unit	Disturbance Acres	%
<i>Upland Soils</i>		
SU03	111.6	31.0
SU05	174.4	48.5
SU07	19.5	5.4
LN12	11.6	3.2
SUBTOTAL	317.1	88.2
<i>Soils of Piedmonts and Alluvial Fans</i>		
SU02	9.0	2.5
SU06	11.9	3.3
LN11	9.8	2.7
SUBTOTAL	30.7	8.6
<i>Floodplain and Bottomland Soils</i>		
SU01	11.7	3.2
SUBTOTAL	11.7	3.2
TOTAL	359.5	100.0

11 Note: Percentage totals may not sum exactly due to rounding.

12 Approximately 88.2% (317.1 acres) of surface-disturbing activities would occur in upland soils.
 13 Upland soils surrounding the proposed pipeline ROW developed over sedimentary formations
 14 typically high in clay content, which often results in poor infiltration, high runoff, and high
 15 slumping potential. In general, there are no large extents of steep slopes (greater than 25%)
 16 along the route where increased surface-disturbing activities would likely result in slumping
 17 and/or landslides. Upland soils that have developed from lacustrine parent material often have
 18 elevated saline and sodic properties, which often have low reclamation potential due to water
 19 quality impacts and poor vegetation establishment.

20 Construction in the proposed pipeline ROW would disturb approximately 8.6% (30.8 acres) of
 21 soils developed from piedmonts and alluvial fans. These soils may be highly susceptible to
 22 gulying when disturbed; however, most of these soils are considered non-sensitive with
 23 moderate reclamation potential. The remaining surface-disturbing activities would occur in
 24 approximately 3.2% (11.7 acres) of floodplain and bottomland soils. Sensitive soils in these
 25 areas would include wetland soils and saline and sodic soils in the bottom of intermittent
 26 streams. However, these soils generally have high reclamation potential.

1 Route Options

2 Impacts to soils for the additional route options would be similar to those described in the
3 Proposed Action and are dependent on the associated susceptibilities to the erosive forces of
4 each soil type. Differences that would occur include changes in total surface disturbances
5 and/or soil type.

6 At the Figure Four Mesa location, three separate routes have been proposed, the first by
7 ULTRA (proposed route) and two additional BLM-revised route options (Route Options 1 and 2).
8 Route Option 1 would parallel the Figure Four Canyon Road and account for approximately 12.0
9 acres of disturbance in upland soils (SU03 and SU05). Route Option 2 would result in
10 approximately 11.8 acres of disturbance in uplands soils (SU03 and SU05). In comparison, the
11 proposed route would travel cross country over Figure Four Mesa, disturbing approximately 9.9
12 acres of upland soils (also SU03 and SU05).

13 At the Federal 1-12 Well location, Route Option 3 would result in approximately 1.6 acres of
14 upland soil disturbance (SU05), while the proposed route would result in approximately 1.5
15 acres of disturbance in upland soils (SU05).

16 The Green River West location has three separate proposed routes that would traverse federal,
17 state, and private land. Route Option 4 would cross significantly less state land and parallel a
18 substantial portion of developed land along U.S. 189, disturbing approximately 2.8 acres of
19 floodplain and bottomland soils (SU01) and approximately 14.0 acres of piedmont and alluvial
20 fan soils (SU02 and SU06). The proposed route would cross a greater distance of state land
21 and would disturb approximately 6.9 acres of floodplain and bottomland soils (SU01) and
22 approximately 7.0 acres of soils of piedmonts and alluvial fans (SU02 and SU06). Route Option
23 5 would be a slight route modification to the proposed route, disturbing approximately 7.1 acres
24 of floodplain and bottomland soils (SU01) and approximately 8.0 acres of soils of piedmonts and
25 alluvial fans (SU02 and SU06).

26 No Action Alternative

27 Under the No Action Alternative, the Proposed Action would not be implemented and no new
28 construction would be authorized. Soil impacts from disturbing 359.5 acres during construction
29 of the proposed condensate pipeline would not occur. However, existing land uses would
30 continue within the surrounding area.

31 *4.1.4 Water Resources*

32 Proposed Action

33 Surface Water

34 Potential impacts to surface waters from construction would include surface runoff, streambank
35 and channel instability, stream sedimentation, and contamination. Construction of the proposed
36 condensate pipeline would result in approximately 359.5 acres of total surface disturbance.
37 Vegetation removal, surface soil compaction, and surface-disturbing activities (i.e., blading,
38 grading, and trenching) would indirectly impact surface waters through increasing turbidity,
39 salinity, and sedimentation from runoff and erosion of disturbed upland areas. The proposed
40 condensate pipeline would cross or lie adjacent to approximately 40 ephemeral and intermittent
41 streams along the proposed alignment. Construction activities and travel through intermittent
42 and ephemeral stream channel crossings would destabilize channels and accelerate sediment
43 loading, surface erosion, and cutbanks during intermittent flow events. To limit project
44 sedimentation impacts from bank erosion and streambed excavations, the Green and New Fork

1 rivers and adjacent wetlands would be bored using HDD, subsequently avoiding negative
2 impacts to the floodplains of the Green and New Fork rivers. As currently designed, TUAs and
3 HDD equipment would be positioned outside of the U.S. Federal Emergency Management
4 Agency (FEMA) mapped 100-year floodplain at the New Fork and Green river crossings and no
5 impacts to the riparian floodplain or channel are anticipated. Following hydrostatic testing, water
6 would be drained from the pipeline and transported back to the PAPA by tanker truck for use in
7 well fracturing operations. Thus, no additional depletion of Green River tributary waters beyond
8 those previously approved under the PAPA SEIS would take place for construction and
9 hydrostatic testing.

10 Water quality could be affected in the unlikely case that drilling mud used for boring should
11 escape from the bore hole (i.e., a “frac out”). Operation of the proposed pipeline could impact
12 surface water quality in the event of an accidental leak caused by excessive pipeline pressure
13 and/or physical damage from flooding and/or soil erosion, or corrosion. Condensate from leaks
14 could contaminate surface water and potentially be washed into downstream watersheds. In
15 addition, incidental spills of fuels, oils, and solvents during construction could potentially
16 contaminate surface waters.

17 Groundwater

18 Construction of the proposed condensate pipeline may potentially impact groundwater
19 resources; however, impacts would be considered non-significant due to the substantial depth
20 to groundwater along the proposed ROW. Direct impacts to groundwater resources would take
21 place following an accidental release of condensate or spill of fuels, oils, and solvents, and the
22 subsequent downward flow of non-volatile contaminants from the condensate into groundwater
23 aquifers.

24 Route Options

25 Impacts to water resources will be similar to those analyzed in the Proposed Action regardless
26 of the final route options selected for this project. Although each route option may include
27 additional or alternate road boring locations or crossings, these changes would not significantly
28 add or reduce impacts to water resources.

29 No Action Alternative

30 Under the No Action Alternative, the Proposed Action would not be implemented and no new
31 construction would be authorized. Impacts to water resources from disturbing 359.5 acres
32 during construction of the proposed condensate pipeline would not occur. However, existing
33 land uses would continue within the surrounding area.

34 *4.1.5 Vegetation and Noxious Weeds*

35 Proposed Action

36 Impacts to vegetation would primarily occur during the construction phase of the proposed
37 project. Direct impacts would include the removal of vegetation from blading, grading, and
38 trenching, or damage from vehicles and heavy equipment on the ROW and TUAs. The
39 Proposed Action would remove a total of approximately 360 acres of vegetation, all of which
40 would be reclaimed following construction. For purposes of this analysis it is assumed that
41 surface disturbance associated with the Proposed Action would occur in undisturbed areas.
42 However, a portion of the proposed ROW follows an existing pipeline ROW; therefore, the new
43 surface disturbance would be less than what is disclosed in this analysis. Table 4-2 shows
44 temporary disturbance to native vegetation communities due to implementation of the Proposed

1 Action. LANDFIRE (USGS 2006) spatial vegetation data has been used to determine the
2 vegetation classifications that are impacted along the proposed 50-foot ROW.

3 **Table 4-2. Impacts to Vegetation Classes from the Proposed Action**

Vegetation Classification	Acres Impacted	Percent of Total Disturbance
Big sagebrush shrubland	252	70%
Sagebrush steppe	46	13%
Mountain big sagebrush	11	3%
Riparian and floodplains	15	4%
Introduced upland vegetation	7	2%
Grassland	7	2%
Mat saltbush shrubland	6	2%
Greasewood flat	5	1%
Developed	5	1%
Sparsely vegetated	2	<1%
Agriculture	1	<1%
Salt desert scrub	1	<1%
Juniper woodland	1	<1%
Total	359	100%

4
5 Approximately 83% of the total disturbance would take place in the big sagebrush shrubland or
6 sagebrush steppe vegetation type. Disturbance to these vegetation types would not be
7 significant because of their abundance and wide area of distribution in southwestern Wyoming.
8 Of the 15 acres of proposed disturbance in the riparian and floodplains vegetation class,
9 approximately 14.5 acres would occur in intermittent or ephemeral drainages; the remainder
10 would occur in the Green River floodplain and would result from a TUA used for boring under
11 the river. Despite the difficulty of establishing vegetation in upland sites with <10 inches average
12 annual precipitation, current technology exists to stabilize these areas and minimize soil erosion
13 as natural succession returns the site to pre-existing conditions.

14 All disturbed areas would be reclaimed and revegetated after cessation of surface-disturbing
15 activities and when the original contour and grade are achieved. Reclamation would occur in
16 accordance with agency requirements and the Reclamation Plan developed for this project, as
17 part of ULTRA's POD. Following successful reclamation, there would be no long-term impacts
18 to vegetation productivity or permanent changes in species composition. Appropriate seed
19 mixtures would be used to promote establishment of grasses in the short-term while the shrubs
20 would become established over a longer period of time. Grasses could require 2 to 3 years for
21 successful re-establishment in the area's arid environment. The shrub component may require
22 more than 20 years for recovery to pre-disturbance levels after reseeding and reclamation.
23 Long-term productivity of grasses would not be affected.

24 Noxious Weeds

25 Invasive and noxious weed species can be introduced and become established in areas
26 disturbed by construction, vehicle traffic, road maintenance, and topsoil removal and are
27 commonly found on newly disturbed and reclaimed sites throughout Wyoming. The Proposed
28 Action would increase the potential for introduction of noxious/invasive plants. Establishment of
29 noxious weeds leads to displacement of native species and shifts in plant community

1 composition and ecosystem functioning. The resulting changes in the plant community can alter
2 wildlife habitat, wildlife and livestock forage, and the fire regime. Additionally, sites dominated by
3 weeds often have a different visual character that may contrast with the surrounding native
4 vegetation. Indirect impacts resulting from weed infestations on the ROW would include
5 changes in the fire cycle and increased economic costs from weed management efforts. The
6 establishment of some invasive and noxious weed species can result in long-term reclamation
7 problems. Cultural (i.e., mechanical or grazing methods) and chemical controls are generally
8 required to eliminate or control these species.

9 Although some weed infestation may be anticipated on the proposed pipeline ROW, the
10 application of weed preventative and control measures would minimize impacts from weed
11 species. These measures include careful handling of vegetation and soils stripped from
12 identified weed infestations, cleaning of equipment to prevent the transport of weed seeds to
13 other locations, the use of weed-free mulch and straw bales to control erosion, and subsequent
14 monitoring and treatment methods that would be implemented following construction.

15 Route Options

16 At the Figure Four Mesa location, Route Option 1 would directly impact approximately 5 acres of
17 big sagebrush shrubland, 3 acres of sagebrush steppe, 1 acre of barren, and less than 1 acre of
18 greasewood flat, mat saltbush shrubland, grassland, and sparsely vegetated vegetation classes.
19 Route Option 2 would directly impact approximately 6 acres of big sagebrush shrubland, 3 acres
20 of sagebrush steppe, and less than 1 acre of mat saltbush shrubland and greasewood flat
21 vegetation classes. The comparable segment of the Proposed Action would impact
22 approximately 9 acres of big sagebrush shrubland and 0.2 acre of sagebrush steppe.

23 At the Federal 1-12 Well location, Route Option 3 would directly impact 0.4 acre of big
24 sagebrush shrubland and 0.6 acre of sagebrush steppe vegetation. The comparable segment of
25 the Proposed Action would impact approximately 0.4 acre of big sagebrush shrubland and 0.1
26 acre of sagebrush steppe.

27 At the Green River West location, Route Option 4 would directly impact approximately 11 acres
28 of developed land (where it follows U.S. 189), 2 acres of big sagebrush shrubland, 1 acre of
29 sagebrush steppe, 1 acre of agriculture, and less than 1 acre of barren and greasewood flat
30 vegetation classes. Route Option 5 would directly impact 3 acres of agriculture, 8 acres of big
31 sagebrush shrubland, 1 acre of riparian, 1 acre of sagebrush steppe, and 1 acre of greasewood
32 flat vegetation classes. The comparable segment of the Proposed Action would impact
33 approximately 6 acre of big sagebrush shrubland, 5 acres of riparian, and less than 1 acre of
34 sagebrush steppe.

35 No Action Alternative

36 Under the No Action Alternative, there would be no additional impacts to vegetation along the
37 ROW. However, the No Action Alternative may allow present populations of weeds to persist or
38 increase, as no additional weed monitoring or management efforts would occur.

39 *4.1.6 Wetland and Riparian Resources*

40 Proposed Action

41 Direct impacts to wetlands and riparian resources would include the potential disturbance and
42 displacement of wetland and floodplain vegetation in the construction ROW from equipment

1 operation in wetland areas. The crushing or removal of riparian and wetlands vegetation and
2 soil complexes would result in adverse direct impact to wetlands and riparian resources.

3 Indirect impacts may also include damage to wetland substrate and impacts to water quality and
4 hydrology from heavy equipment traffic during installation of the pipeline along the proposed
5 condensate ROW. Indirect impacts to wetland and riparian resources would occur from
6 construction-related erosion and sediment movement, which are covered by applicable Storm
7 Water Pollution Prevention Plans included in the ULTRA POD. Any impacts not compliant with
8 Section 404 of the Clean Water Act would be considered significant.

9 Impacts that would result from the Proposed Action would be both direct and indirect in nature
10 and would take place primarily during construction and potentially during maintenance activities.
11 The proposed condensate pipeline ROW would cross valleys, depressions, stream channels,
12 floodplains, and wetlands. However, no significant impacts are anticipated from the Proposed
13 Action or any of the route alternatives due to the avoidance of wetlands and riparian resources
14 through HDD techniques at both the New Fork and Green river riparian corridors. In both areas,
15 the entire floodplain will be avoided, and no surface impacts to these resources are anticipated
16 from the Proposed Action. Some minor surface disturbance may occur at wetlands or
17 ephemeral drainages, and approximately 0.07 acre of NWI-mapped wetlands would be
18 potentially disturbed by the proposed condensate pipeline ROW, but these impacts will be minor
19 and temporary in nature and would not constitute significant impacts to either wetland or riparian
20 resources.

21 The Wyoming BLM's Standard Mitigation Guidelines for Surface-Disturbing Activities require
22 that projects should avoid surface disturbances within 500 feet of surface water, riparian areas,
23 wetlands, and 100-year floodplains unless it is determined through site-specific analysis and
24 approved in writing by the BLM. The BLM also requires construction to be restricted within 100
25 feet of the edge of the inner gorge of intermittent and large ephemeral drainages (BLM 1997,
26 2008b). During the design phase of the project and to the extent practical, all segments along
27 the proposed condensate pipeline corridor that cross drainages and/or riparian areas would
28 avoid those areas, thus reducing impacts to the resource. Consequently, there would be
29 minimal direct or indirect impacts to wetlands, floodplains, and riparian areas as a result of the
30 Proposed Action.

31 Potential impacts to wetlands from the proposed project would be coordinated and permitted
32 under Section 404 of the Clean Water Act under guidance of the U.S. Army Corps of Engineers
33 (USACE) Wyoming regulatory office in Cheyenne and would meet water quality standards
34 required by the WDEQ. The portions of the New Fork and Green rivers crossed by the proposed
35 condensate pipeline ROW are not regulated navigable waters of the U.S., and therefore no
36 permitting requirement exists for this project under Section 10 of the Rivers and Harbors Act
37 (personal communication, Mike Bergin, USACE Cheyenne Office, with C. Baker, SWCA,
38 January 22, 2010).

39 Due diligence by the project proponent would be performed prior to project implementation to
40 comply with all local and federal regulations pertaining to the wetland habitats and the Clean
41 Water Act. If jurisdictional wetlands or waters of the U.S. are identified within the project area
42 through on-site wetland delineations, the appropriate permits and authorization (e.g.,
43 Nationwide Permit 12) would be obtained through the USACE prior to construction activities.
44 Special and general conditions of all applicable authorizations would be adhered to, and BMPs
45 for erosion, sedimentation, and stormwater management would be followed. With the proper

1 implementation of BMPs and adherence to federal and state laws, no significant impacts to
2 nearby wetlands, floodplains, and riparian areas would be expected.

3 According to the USFWS NWI database, approximately 39.92 acres of wetlands are contained
4 within the 50-foot construction corridor of the proposed project. Wetlands and riparian areas
5 within the construction ROW would be identified and avoided by construction and maintenance
6 traffic to the extent possible.

7 Route Options

8 At the Figure Four Mesa and the Federal 1-12 Well areas, there are no mapped wetlands within
9 the ROWs for Route Options 1, 2, 3, or within the ROW for the Proposed Action adjacent to
10 these route options; therefore, impacts to wetlands and riparian resources would be the same
11 regardless of which route option was chosen in the both the Figure Four Mesa and Federal 1-12
12 Well areas.

13 In the Green River West area, Route Option 4 would impact approximately 0.06 acre of an NWI-
14 mapped wetland in the proposed ROW, and Route Option 5 would impact approximately 0.13
15 acre of the same NWI-mapped wetland. Both of these alternatives would impact the same
16 potential wetland area near the irrigation canal on the west side of the Green River. This area is
17 categorized as a palustrine emergent wetland by the NWI database. Aerial imagery and field
18 reconnaissance of the area indicate that this wetland complex is associated with a larger flood-
19 irrigated livestock pasture. The ROW for the Proposed Action would not impact mapped NWI
20 wetlands in the Green River route option area.

21 No Action Alternative

22 Under the No Action Alternative, there would be no additional impacts to wetlands, floodplains,
23 or riparian areas other than those previously approved for the project area.

24 *4.1.7 Special-status Animal Species*

25 Proposed Action

26 Potential impacts of the project to special-status species are primarily related to direct and
27 indirect effects resulting in the loss of individuals or populations, loss of suitable or occupied
28 habitat, or decreased habitat quality for species. The degree of impact differs for each species.
29 The Proposed Action would increase the impacts related to traffic noise and dust in the project
30 area due to the construction activities and the traffic related to workers commuting to the
31 pipeline. The project location is remote and sees little traffic, so increased traffic could increase
32 vehicle/wildlife collisions and stress on wildlife that are not accustomed to the amount of activity
33 related with construction of a pipeline. The Proposed Action would assist the effort to reduce
34 truck traffic within the PAPA in the long term, which would result in a reduction of traffic related
35 impacts to terrestrial wildlife within that project area and along roadways outside of the PAPA
36 that are currently used to transport condensate. The degree of impacts would vary for each
37 species.

38 Endangered Species Act Species

39 Consultation with USFWS was completed for the PAPA and included in the ROD for that
40 project. A Draft BA specific to this project has been prepared for the USFWS (SWCA 2010a).
41 Potential impacts to ESA-listed species are summarized below.

1 *Black-footed Ferret*

2 Impacts to prairie dogs and their burrows may indirectly affect black-footed ferret due to loss of
3 habitat and prey. The project would cross prairie dog towns; however, most of these areas are
4 not expected to support black-footed ferret and have been block cleared from the need to
5 conduct ferret surveys. The proposed pipeline passes through the Big Piney Prairie Dog
6 Complex, which has the potential to support ferrets. USFWS concurred with the BLM's
7 determination that PAPA project activities were not likely to adversely affect black-footed ferrets
8 if mitigation measures provided in the PAPA EIS ROD (BLM 2008a) were implemented. These
9 measures include surveying for black-footed ferrets in prairie dog colonies that meet the criteria
10 as suitable habitat. If future surveys within the Big Piney Prairie Dog Complex find black-footed
11 ferret, then all actions that may affect the ferret would be stopped immediately, status
12 information should be forwarded to the USFWS, and appropriate avoidance protocol would be
13 implemented. The BA determined that the Proposed Action may affect, but is not likely to
14 adversely affect, the black-footed ferret.

15 *Greater Sage-grouse*

16 Construction activities and permanent facilities located near leks could negatively affect greater
17 sage-grouse. The degree of impact on greater sage-grouse would depend on the proximity of
18 construction activities to leks and winter habitat and the amount of habitat that would be affected
19 by the project. Potential direct impacts could include nest abandonment, dispersion of
20 individuals from preferred habitat, and mortality due to vehicle collisions. Long-term impacts
21 could be associated with habitat fragmentation, loss, or degradation. Greater sage-grouse
22 would be able to move into adjacent habitats during construction.

23 Approximately 226 acres of nesting and brood-rearing habitat (land within 4 miles of leks) and
24 46 acres of winter habitat would be affected during construction. Sagebrush cover may take up
25 to 100 years to return to previous conditions in areas that are currently undisturbed. Once shrub
26 cover begins to reestablish on the ROW, the ROW would not present a permanent physical
27 barrier to greater sage-grouse movement (Connelly 2009).

28 Since the ROW is not within 0.25 mile of any known leks, direct impacts to leks are not
29 expected. If any leks are found within 0.25 mile of the ROW, seasonal stipulations would apply
30 to protect these leks. There are 9 occupied leks and 2 leks with unknown status currently
31 mapped within 2 miles of the pipeline ROW. Construction would not occur between March 15
32 and July 15 within a 2-mile buffer around leks in order to avoid disturbance of sage-grouse leks,
33 nesting habitat, and brood-rearing habitat during critical seasons. The BA determined that the
34 Proposed Action would not jeopardize the continued existence of the greater sage-grouse due
35 to distance from leks and seasonal stipulations.

36 *Yellow-billed Cuckoo Western Distinct Population Segment*

37 The pipeline would be located in potential yellow-billed cuckoo habitat (shrub and forest-
38 dominated riparian) at the Green and New Fork river crossing. Approximately 15 acres of
39 potential habitat are located within the construction ROW; however, most impacts to this habitat
40 would be avoided by boring under the river crossings. Boring would prevent erosion and
41 minimize any increase in sediment load to the waterbodies. Direct impacts to habitat would be
42 limited to TUAs for boring equipment. This minimal loss of riparian habitat would not cause
43 significant impacts to the yellow-billed cuckoo. Temporary impacts to water quality could impact
44 individual birds in the unlikely case that drilling mud used for boring should escape from the
45 bore hole (i.e., a "frac out"). However, these impacts would not impact yellow-billed cuckoo

1 populations. The BA determined that the Proposed Action would not jeopardize the continued
2 existence of the yellow-billed cuckoo (SWCA 2010a).

3 *Colorado River Fish*

4 Water depletions from tributary waters within the Colorado River Basin are considered to
5 jeopardize the continued existence of these fish species. Water for hydrostatic testing would be
6 obtained from sources previously identified in and consulted on for the PAPA SEIS (BLM
7 2008a) and trucked to the pipeline for testing. A total of 160,000 gallons (0.49 acre-feet) of
8 water would be necessary for hydrostatic testing. After testing, the pipeline would be drained
9 and transported back to the PAPA by truck to reuse in well fracturing operations. Water used for
10 dust suppression would be from authorized water wells in the PAPA field. No additional water
11 depletions from the New Fork or Green rivers would take place for construction and hydrostatic
12 testing; however, all depletions, even those previously consulted on, are considered as potential
13 adverse effects to endangered Colorado River fish species.

14 Impacts to water quality would not be expected if mitigation measures designed to protect water
15 resources are followed. Boring under river crossings would prevent erosion and minimize any
16 increase in sediment load to the watershed. Water quality would be affected in the unlikely case
17 that drilling mud used for boring should escape from the bore hole. Since impacts from a frac
18 out would be localized, downstream endangered fish species would not be affected. No impacts
19 to Colorado pikeminnow, razorback sucker, humpback chub, and bonytail chub downstream
20 from the project area are expected. The BA determined that the Proposed Action may affect, but
21 is not likely to adversely affect, Colorado River fishes (SWCA 2010a).

22 BLM Sensitive Species

23 Most impacts to BLM sensitive wildlife would be short-term and would involve, but not be limited
24 to, removal (loss of or fragmentation of habitat) or crushing (reduction in quality of habitat) of
25 existing vegetation, compaction of soils, and disturbance from construction noise and human
26 activity. Impacts to vegetation can reduce nesting and foraging habitat from direct disturbance
27 as well as indirectly from proliferation of noxious weeds and other invasive species. Weeds
28 would decrease the quality of habitat within the project area and could spread to areas that
29 support sensitive species outside of the ROW. Therefore, impacts to sensitive species would
30 increase with increasing surface disturbance within suitable habitat for each species. Impacts to
31 sensitive species due to habitat fragmentation would be minimal since most of the pipeline
32 would be within or adjacent to existing ROWs. Construction is not expected to create significant
33 new edge features in sagebrush habitat that would inhibit movement of sagebrush species
34 through otherwise continuous habitat. Following successful reclamation, there would be no long-
35 term impacts to vegetation productivity or permanent changes in species composition. In
36 addition, increased traffic and ground disturbance could lead to direct mortality of species such
37 as prairie dogs, pygmy rabbits, and mountain plovers, but is not anticipated to affect the local
38 population of these species.

39 Temporary impacts resulting from construction activities would be moderate for white-tailed
40 prairie dog. Loss of prairie dog habitat could occur in the short term but prairie dogs in the
41 surrounding areas have been known to return to reclamation sights in a relatively short time
42 frame. In addition, mountain plovers that may use prairie dog towns or other grazed habitat
43 along the ROW would be temporarily displaced during construction.

44 Short-term loss of sagebrush habitat (approximately 309 acres) would temporarily impact sage
45 sparrow, sage thrasher, loggerhead shrike (*Lanius ludovicianus*), and Brewer's sparrow. The

1 loss of sagebrush habitat would also impact pygmy rabbit. Pygmy rabbits need stands of
2 relatively taller and denser sagebrush than the surrounding habitat. Once removed, tall sage
3 habitat could take 100 years to return to previous conditions. Pygmy rabbits may not use
4 sagebrush that begins to reestablish in a pipeline that has been reclaimed for approximately 30
5 years, resulting in a long-term loss of habitat.

6 As with other riparian species, impacts to potential trumpeter swan (*Cygnus buccinators*) and
7 white-faced ibis (*Plegadis chihi*) habitat along the Green and New Fork river crossings would be
8 minimal since the pipeline would be bored under these rivers. Boring would also minimize
9 potential impacts to sensitive fish species. Bluehead and flannelmouth suckers have been
10 recorded in the Green River near the town of LaBarge. Boring under river crossings would
11 prevent erosion and minimize any increase in sediment load to the watershed. Water quality
12 could be affected in the unlikely case that drilling mud used for boring should escape from the
13 bore hole. Impacts to fish would be localized and limited to individuals in the vicinity of the leak.

14 No direct impacts to sensitive raptors are expected. No surface-disturbing activities would be
15 permitted within 0.5 mile of active raptor nests (and 1 mile of active ferruginous hawk nests)
16 during the period from February 1 through July 31. No permanent structures requiring repeated
17 human presence would be permitted within 1,000 feet (1,400 feet for ferruginous hawks; 2,600
18 feet for bald eagles) of active raptor nests. Although these measures would protect nesting
19 habitat, impacts to foraging habitats in the form of loss of prey species and prey species
20 habitats could still occur near nests that are not active and could occur near active nests but
21 outside of the restricted period. Loss of foraging habitat and prey species could also affect
22 raptor species such as the rough-legged hawk which only reside in the project area during
23 winter months.

24 Route Options

25 The route options would have approximately the same potential impacts to threatened,
26 endangered, and BLM sensitive wildlife as the Proposed Action. The segments with Route
27 Options are not located in sage-grouse core areas. Impacts to prairie dog towns, sage-grouse
28 habitats, riparian habitat, and sagebrush habitat would be approximately the same regardless of
29 the route option. Impacts to sage-grouse winter habitats would be 1.2 acres along Route Option
30 1 or 3.2 along Route Option 2, compared to 3.8 acres for the proposed segment at the Figure
31 Four Mesa site. Impacts to sage-grouse nesting/brood-rearing habitats would be 10.8 acres
32 along Route Option 1 or 9.0 along Route Option 2, compared to only 3.5 acres for the proposed
33 segment at the Figure Four Mesa site.

34 Route Options 1, 2, and 3 would reduce impacts to undisturbed big sagebrush shrubland by co-
35 locating the pipeline with existing ROWs. For all route options, impacts to riparian and aquatic
36 habitat are minimized by boring under river crossings. Water depletions, as they relate to listed
37 Colorado River fish impacts, would be the same for the route options and water would be
38 obtained from the same sources previously approved in the PAPA SEIS (BLM 2008a). Thus,
39 impacts to threatened, endangered, and BLM sensitive wildlife species would be the same for
40 each of the route options.

41 The following BLM seasonal wildlife stipulations would be applied to all route options to
42 minimize impacts to federally listed and sensitive wildlife:

- 43 • Surface disturbance or occupancy will be prohibited within 0.25 mile of occupied or
44 undetermined sage-grouse leks (0.6 mile for leks in core areas).

- 1 • Surface disturbing and disruptive activity between the hours of 8:00 p.m. and 8:00 a.m.
2 will not be allowed within 0.25 mile of occupied or undetermined leks (0.6 mile for leks in
3 core areas) from March 1 to May 15.
- 4 • Surface disturbing and disruptive activities are prohibited in suitable sage-grouse nesting
5 and early brood-rearing habitat within two miles of an occupied or undetermined lek, or
6 in identified sage-grouse nesting and early brood-rearing habitat outside the 2-mile
7 buffer, from March 15 to July 15.
- 8 • Disturbance and disruptive activities are prohibited in sage-grouse winter concentration
9 areas from November 15 to March 14.
- 10 • If surface disturbing activity is requested to take place in mountain plover habitat
11 between April 10 and July 10, presence / absence surveys are required. Survey results
12 will determine when activities will be permitted.
- 13 • Surface disturbing and disruptive activity will be prohibited within 0.5 mile of burrowing
14 owl nesting habitat from April 1 through August 15.
- 15 • Areas containing open, streamside deciduous woodlands with low, scrub vegetation;
16 deciduous riparian woodlands; cotton wood stands or willow thickets must be surveyed
17 for the yellow-billed cuckoo for a minimum of three and a maximum of five censuses
18 should be carried out from 15 June to 10 August, with at least 12 days between
19 successive census attempts.

20 No Action Alternative

21 Under the No Action Alternative, the Proposed Action would not be implemented and no new
22 construction would be authorized. However, existing land uses and projected well development
23 would continue as they are currently occurring within the surrounding area. All condensate
24 would have to be removed from surrounding oil and gas fields via tanker trucks. The traffic
25 volume and the associated impacts to wildlife would be greater within the gas fields that
26 produce the condensate and along the roadways used to transport that condensate than they
27 would be if the proposed action were approved. No further impacts would result within the Ultra
28 condensate pipeline project area or the PAPA than are currently occurring if the no action
29 alternative is chosen.

30 *4.1.8 Special-status Plant Species*

31 Proposed Action

32 Habitat requirements for Trelease's racemose milkvetch, Cedar Rim thistle, Beaver Rim phlox,
33 tufted twinpod, large-fruited bladderpod, and Ute ladies'-tresses exist within the proposed ROW
34 (Glennon 2010). A model to determine potential habitat along the proposed ROW for these
35 species was prepared by SWCA based on known habitat requirements and occurrence records.
36 This model will be used to target specific areas along the proposed pipeline ROW for
37 preconstruction surveys (SWCA 2010b). Pre-construction surveys would identify the presence
38 of these species, and populations that are found would be avoided. Areas containing moist soils
39 in mesic or wet meadows, subirrigated or seasonally flooded soils in valley bottoms, gravel bars,
40 old oxbows, or floodplains bordering springs, lakes, rivers or perennial streams between 1,780
41 and 6,800 feet in elevation must be avoided for Ute ladies'-tresses. Therefore, the Proposed
42 Action would have no direct effect on any ESA listed or BLM sensitive species and is not likely
43 to cause a trend to federal listing or a loss of viability of any sensitive plant species.

44

1 Route Options

2 The route options would have the same potential impacts to threatened, endangered, and BLM
3 Sensitive plant species as the Proposed Action. Pre-construction surveys along the chosen
4 route would identify the presence of these species, and any found populations would be
5 avoided.

6 No Action Alternative

7 Under the No Action Alternative, no additional impacts to threatened, endangered, candidate, or
8 sensitive plant species would occur.

9 *4.1.9 Wildlife and Aquatic Resources*

10 Proposed Action

11 Most impacts to wildlife and aquatic resources would result from loss of seasonal forage habitat,
12 degraded habitat quality, and fragmentation. These changes in wildlife and fisheries habitat
13 and/or habitat quality can be caused directly or indirectly by project activities such as crushing
14 or removal of existing vegetation, compaction of soils from construction and maintenance traffic,
15 disturbance from noise and human activity, and increased erosion and sedimentation of streams
16 and water resources. The Proposed Action would increase the impacts related to traffic noise
17 and dust in the project area due to the construction activities and the traffic related to workers
18 commuting to the pipeline. The project location is remote and sees little traffic, so increased
19 traffic could increase vehicle/wildlife collisions and stress on wildlife that are not accustomed to the
20 amount of activity related with construction of a pipeline. However, in the long-term, the
21 Proposed Action would reduce tanker truck trips for transporting condensate off-site in the
22 PAPA field, thereby reducing traffic-related impacts to wildlife within the PAPA field and access
23 roads. The pipeline may also alter predator-prey interactions (e.g., increase in coyotes travelling
24 along the disturbed ROW) leading to changes in species population levels.

25 Big Game

26 During construction activities when noise and human presence are high within the area, big
27 game would be displaced into adjacent habitat. Once construction and reclamation are
28 complete, species are expected to return to their historic ranges and use patterns. Habitat loss
29 or conversion could cause shifts in big game use in the area. For example, wintering antelope
30 and mule deer may avoid the pipeline once it no longer provides suitable habitat or they may be
31 attracted to the reclamation because it provides easy access to forage. The pipeline would
32 cross crucial winter ranges for pronghorn, mule deer, and moose. The ROW would cross one
33 pronghorn migration corridor (Figure 3-2), two mule deer migration corridors (Figure 3-3), and
34 no moose migration corridors (Figure 3-4). Migration corridors for pronghorn and mule deer
35 would be temporarily affected, but the ROW would not create a barrier for big game seasonal
36 movement. The acres of habitat impacted within migration corridors and crucial range are given
37 in Table 4-3.

Table 4-3. Impacts within Big Game Ranges and Migration Corridors

Big Game Range	Proposed ROW (acres)	Proposed TUAs (acres)	Total Impact (acres)
Pronghorn Migration Corridors	4.5	0.5	5.0
Pronghorn Crucial Winter Range	90.0	23.5	113.5
Mule Deer Migration Corridors	16.4	13.2	29.6
Mule Deer Crucial Winter Range	78.4	25.4	103.8
Moose Crucial Winter Range	25.5	10.9	36.4

Disturbance during occupancy of crucial winter range may result in higher densities in other areas of crucial winter range and use of non-crucial range (i.e., suboptimal habitat), decreased foraging opportunities, and increased risk of mortality (Hayden-Wing 1980; Morgantini and Hudson 1980). No construction would occur in crucial winter ranges between November 15 and April 30 in order to avoid disturbing wintering big game.

Upland Game Birds

In addition to greater sage-grouse, chukar and mourning dove are expected to occur within the project area. These species may be temporarily displaced during construction activities due to loss of nesting and foraging habitat, but would be expected to re-establish quickly after construction is completed.

Migratory Birds

The Proposed Action would lead to temporary impacts to migratory bird nesting and foraging habitats. Loss of sagebrush steppe vegetation and increasing levels of fragmentation in Wyoming has been attributed to declines of sagebrush-dependent migratory birds (Knick and Rotenberry 1995; Knick et al. 2003). Nests not located during pre-construction surveys could be destroyed. The Proposed Action would locate much of the pipeline within existing ROWs in order to reduce impacts related to habitat loss and fragmentation. Migratory birds are not expected to be adversely affected by the pipeline area of disturbance.

The BLM requires seasonal buffers around active raptor nest sites (nests occupied within the past three years) to prevent disturbance during nesting season; therefore, no impacts to nesting raptors are anticipated. Biologists would survey the ROW prior to construction to record any active raptor nests that would need to be avoided. No surface-disturbing activities would be permitted within 1 mile of ferruginous hawk nests or 0.5 mile of other raptor nests between February 1 and July 31. Permanent structures requiring repeated human presence would not be permitted within 1,000 feet of active raptor nests.

Wild Horses

Approximately 111 acres within the Little Colorado Desert Wild Horse HMA would be impacted by the Proposed Action. Wild horses would be expected to avoid the ROW during construction due to noise and human presence. Forage would be temporarily impacted during construction, but revegetation would re-establish palatable grasses and forbs along the ROW. The Proposed Action is not expected to reduce the population below the herd goal.

1 Aquatic Resources

2 Removal of riparian habitat could increase erosion and impact water quality in the project area.
 3 However, most impacts to riparian and aquatic habitat would be avoided by boring under the
 4 river crossings. Boring would prevent erosion and minimize any increase in sediment load to the
 5 waterbodies. Aquatic resource could be impacted in the unlikely case that drilling mud used for
 6 boring should escape from the bore hole. Since these impacts would be localized, there would
 7 be minimal impact to fisheries and aquatic resources in the immediate area of the leak. Impacts
 8 to populations of game and non-game fishes in the New Fork and Green rivers are not
 9 expected.

10 Route Options

11 The route options would have the same potential impacts to upland game birds, migratory birds,
 12 wild horses, and aquatic resources as the Proposed Action. For all route options, impacts to
 13 riparian and aquatic habitat are minimized by boring under river crossings.

14 All Route Options are located entirely within pronghorn and mule deer critical habitat. Route
 15 Options 1 and 2 would provide options for co-locating with existing ROWs to reduce overall
 16 surface disturbance within crucial winter big game habitat. Route Option 3 would reduce
 17 impacts to undisturbed upland sagebrush habitat used by mule deer at the Federal 1-12 well
 18 site (See Vegetation Section for comparison of Route Options). Route Options 4 and 5 are still
 19 within mapped crucial winter range and a mule deer migration corridor, these segments, in
 20 general, move the proposed ROW away from highly used winter habitats surrounding the river
 21 and into already disturbed habitats. Route Option 5 would shift the pipeline segment west of the
 22 Green River so that it would be slightly further from habitat used by big game. Route Option 4
 23 would move the pipeline segment even further west so it would be located along U.S. 189,
 24 rather than following the river floodplain. Table 4-4 compares acres of impacts to big game
 25 crucial winter ranges and migration corridors from Route Options with the comparable segment
 26 of the proposed pipeline. When compared with the Proposed Action, these Route Options would
 27 impact more acres within big game crucial ranges (except moose crucial winter range at Route
 28 Option 4). However, habitat loss would be consolidated with other disturbances along the
 29 highway.

30 **Table 4-4. Acres of Impact from Route Options within Big Game Crucial Winter Ranges**
 31 **and Migration Corridors**

Site	Route	Moose Crucial Winter	Mule Deer Crucial Winter	Pronghorn Crucial Winter	Mule deer Migration Corridor	Pronghorn Migration Corridor
Figure Four Mesa	Proposed Route	0	9.9	9.9	0	0
	Route Option 1	0	12.0	12.0	0	0
	Route Option 2	0	11.8	11.8	0	0
Federal 1- 12 Well	Proposed Route	0	1.5	1.5	0	0
	Route Option 3	0	1.6	1.6	0	0
Green River West	Proposed Route	13.9	13.9	13.9	0.9	0
	Route Option 4	6.2	16.8	16.8	1.2	0
	Route Option 5	15.0	15.0	15.0	1.3	0

32

33

1 The following BLM seasonal wildlife stipulations would be applied to all route options to
2 minimize impacts to wildlife:

- 3 • Activities or surface use are not allowed from November 15 to April 30 for the protection
4 of big game crucial winter habitat.
- 5 • Activities or surface use are not allowed from February 1 to July 31 for the protection of
6 raptor nesting habitat within one-half mile, or within one mile of ferruginous hawk nesting
7 habitat.
- 8 • Permanent structures will not be constructed within 825 feet of active raptor nests,
9 except for ferruginous hawks which will have a buffer of 1000 feet, and 2600 feet for bald
10 eagles.
- 11 • Surface disturbing or human activities are not allowed between November 1 and April 1
12 within one mile of known bald eagle winter use areas.
- 13 • Surface disturbing and human activities within one mile of an active bald eagle nest will
14 be restricted from February 1 to August 15.
- 15 • Habitat alterations within 2.5 mile of a bald eagle nest, or ½ mile from the streambank of
16 all streams within 2.5 miles of the nest, will be restricted to protect bald eagle
17 foraging/concentration areas year-round.

18 No Action Alternative

19 Under the No Action Alternative, the Proposed Action would not be implemented and no new
20 construction would be authorized. However, existing land uses and projected well development
21 would continue as they are currently occurring within the surrounding area. All condensate
22 would have to be removed from surrounding oil and gas fields via tanker trucks. The traffic
23 volume and the associated impacts to wildlife would be greater within the gas fields that
24 produce the condensate and along the roadways used to transport that condensate than they
25 would be if the proposed action were approved. No further impacts would result within the Ultra
26 condensate pipeline project area or the PAPA than are currently occurring if the no action
27 alternative is chosen.

28 *4.1.10 Land Use and Grazing*

29 Proposed Action

30 Construction of the proposed condensate pipeline would not result in changes to surface
31 ownership or prevent any current land uses. The proposed ROW would be adjacent to existing
32 pipeline ROWs or follow existing roads for a large portion of the proposed route. Construction of
33 the proposed condensate pipeline would include the removal of vegetation, compaction of soil
34 surfaces, and other surface-disturbing activities, including blading, grading, trenching, and
35 stockpiling, which would temporarily decrease the quality and quantity of available grazing
36 resources. Implementation of the Proposed Action and subsequent construction activities would
37 result in the total disturbance of 342.0 acres within grazing allotments, which corresponds to
38 approximately 23.70 AUMs (Table 4-5). Disturbance would be temporary, and grasses and
39 forage would be re-established once reclamation is initiated following hydrostatic testing,
40 backfilling, and regrading. Maintenance of the proposed ROW would not have any negative
41 impacts to available forage following successful reclamation. ULTRA, the BLM, and the WGFD
42 could involve grazing permittees in developing mitigation strategies to address grazing concerns
43 raised during scoping. However, impacts to land use and grazing would be temporary and non-
44 significant and would not affect the long-term use of grazing allotments.

1 **Table 4-5. Grazing Allotments and AUMs Potentially Impacted by the Proposed Action**

Allotment	AUM/ Acres	Proposed ROW (acres)	AUMs Disturbed
North LaBarge Common	0.094	39.6	3.71
Bird Individual	0.061	7.4	0.45
Figure Four	0.072	110.6	7.96
South Desert	0.021	52.7	1.10
Sand Draw	0.077	21.1	1.63
Blue Rim Desert	0.071	21.6	1.54
Blue Rim Individual	0.089	76.7	6.83
New Fork Individual	0.163	12.4	2.02
TOTAL	0.648	342.1	25.24

2 Route Options

3 Impacts to land use and grazing would be similar to those analyzed in the Proposed Action
 4 regardless of the final route options selected for this project. Although each route option may
 5 include additional or alternate road boring locations, crossings, and TUAs, these changes would
 6 not significantly add or reduce impacts to land use and grazing.

7 No Action Alternative

8 Under the No Action Alternative, the Proposed Action would not be implemented and no new
 9 construction would be authorized. Impacts to land use and grazing from disturbing 359.5 acres
 10 during construction of the proposed condensate pipeline would not occur. However, existing
 11 land uses would continue within the surrounding area.

12 4.1.11 Transportation

13 Proposed Action

14 The purpose of the proposed project is to install a condensate pipeline to reduce the amount of
 15 truck traffic associated with oil and natural gas production in the PAPA for the benefit of wildlife,
 16 grazing, and air quality. The proposed condensate pipeline would eliminate approximately 6,570
 17 tanker truck trips annually during peak production in the PAPA. In addition, traffic in surrounding
 18 communities and on heavily travelled corridors would be significantly reduced (see Section
 19 3.11).

20 Construction of the proposed condensate pipeline is not expected to result in significant impacts
 21 to transportation resources and all impacts to local transportation and access roads are
 22 expected to be temporary. All federal (U.S. 189) and state (WY 351 and WY 235) highways and
 23 county roads (Paradise Road and Boulder South Road) would be bored so as to not impede
 24 traffic, and all permitted construction would comply with WYDOT and county regulatory
 25 agencies. Additional heavily travelled BLM roads, including Anticline Road, Middlecrest Road,
 26 Burma Road, and Luman Road would be bored. Other less-travelled roads would not be bored;
 27 however, detour roads would be constructed to prevent any disruption of use.

1 Route Options

2 Impacts to transportation resources will be similar to those analyzed in the Proposed Action
3 regardless of the final route options selected for this project. Although each route option may
4 include additional or alternate road boring locations, crossings, and TUAs, these changes would
5 not significantly add or reduce impacts to transportation resources.

6 No Action Alternative

7 Under the No Action Alternative, the Proposed Action would not be implemented and no new
8 construction would be authorized. However, existing land uses would continue within the
9 surrounding area. As a result, condensate from surrounding oil and gas fields would have to be
10 removed by tanker trucks, significantly increasing traffic levels during all times of year (BLM
11 2005).

12 *4.1.12 Socioeconomic Resources and Environmental Justice*

13 Proposed Action

14 In general, the direct socioeconomic effects of the Proposed Action on a countywide scale are
15 expected to be relatively small. There would be increased temporary employment opportunities
16 during construction of the proposed pipeline.

17 Population

18 ULTRA estimates the need for approximately 100 workers during peak construction. ULTRA
19 would hire from the resident labor pool in Lincoln and Sublette counties to the extent that
20 qualified local workers are available. A small workforce would be expected to temporarily
21 relocate to Sublette County during the construction phase (see Employment, Housing, and
22 Infrastructure discussion below). Once constructed, a relatively small number of workers would
23 be required to operate and maintain the pipeline. None of the counties affected by the pipeline
24 construction have a high proportion of minority or low income populations; therefore, there
25 would be no disproportionate socioeconomic impacts (i.e., environmental justice concerns).

26 Employment, Housing, and Infrastructure

27 As discussed above regarding direct impacts to population, increased employment from the
28 Proposed Action would be very small. The temporary, short-term construction workforce would
29 expectedly be relatively small over the construction period. Construction of the pipeline would
30 result in a long-term reduction in truck traffic to and from the PAPA. This would lead to a
31 reduction in trucking opportunities for local firms.

32 The temporary workforce would be expected to come from local and non-local communities,
33 and about half of the temporary workforce would be non-resident workers. The resident
34 workforce would remain in the county, while non-local workers would require temporary housing
35 in Sublette County. Non-resident workers would likely occupy non-traditional housing (i.e.,
36 hotels) during their stay and it is unlikely their families would accompany them. Given the
37 relatively small size of the construction workforce, it is expected that existing housing facilities
38 should be able to adequately provide for temporary accommodations. Therefore, no direct
39 impacts to housing would be expected.

40 Quality of Life/Cost of Living

41 As discussed previously, short-term employment from construction is expected to increase
42 demand for non-traditional units (i.e., motels) more than traditional housing; therefore, direct

1 impacts to the cost of living are not expected. The non-resident regional workforce has
2 increased since 1998; with this workforce expansion, the county has experienced significant
3 increases in traffic accidents and arrests (Jacquet 2007). Additionally, there is a reported
4 decrease in retail and entertainment businesses locally over the same time period because the
5 cost of living is so high and retail and entertainment jobs tend to pay below the median income
6 (Jacquet 2005). The result is that the quality of life for residents in the county has been
7 changing as the influx of non-local residents change the regional lifestyle. As with employment,
8 housing, and infrastructure, an influx of non-local workers could further, though indirectly,
9 increase the already high cost of living.

10 Taxes and Revenue

11 The Proposed Action would likely result in direct and indirect economic benefits associated with
12 increased industrial, commercial, and residential growth in the county. Direct benefits would
13 result from material procurement for construction and associated sales taxes on those
14 materials. Indirect benefits would include increased spending from increased oil and gas
15 production, as well as increased lodging taxes from non-resident workforce spending on hotels
16 and motels. Mineral severance and property taxes on production would also grow indirectly as a
17 result of increased industrial activity in the oil and gas industry. Communities such as Pinedale,
18 Marbleton, and Big Piney would benefit from the economic activity generated by the purchase of
19 services, manufactured goods, and equipment from local businesses. The majority of spending
20 would be expected to occur in Sublette County. Spending on materials purchased within
21 Sublette County would be subject to sales tax; a small percentage of these revenues would be
22 distributed back to the local economy. Other state and local tax payments and fees would be
23 incurred as a result of the pipeline construction. In addition to tax revenue generated for state
24 and local governments, the Proposed Action would also generate lease rental revenue for the
25 federal government through Payments in Lieu of Taxes made to the BLM.

26 Route Options

27 All Route Options would have the same impacts to socioeconomic resources and environmental
28 justice as the Proposed Action.

29 No Action Alternative

30 Under the No Action Alternative, the pipeline would not be constructed and the positive impacts
31 to employment and economics would not occur. However, trucking needs for condensate to and
32 from the PAPA would not be reduced.

33 *4.1.13 Recreation Resources*

34 Proposed Action

35 The Proposed Action is not expected to adversely affect recreation resources and is consistent
36 with the management objectives for recreation in the Pinedale RMP (BLM 2008b). Only
37 dispersed recreation resources occur along the pipeline ROW. There may be some temporary
38 displacement of recreation use on BLM-managed lands during construction. However, the
39 impact is expected to be insignificant. Boring under the Green and New Fork rivers using HDD
40 would eliminate adverse impacts to water quality from an open cut that could impair trout fishing
41 downriver (see Section 4.1.4 for a discussion of potential impacts to water resources). Some
42 increased sedimentation near the pipeline crossings may enter the Green and New Fork rivers,
43 but the impacts to fisheries and fishing is not anticipated.

1 Hunting seasons may overlap with pipeline construction. Hunting could be impacted if access to
2 two-track roads are blocked (e.g., by trenches, soil piles) and hunting quality (i.e. hunter
3 experience) could be reduced by activities from the pipeline. Potential shifts in use of habitats by
4 the big game species due to the Proposed Action could either reduce or increase the success of
5 hunting. For example, pronghorn may congregate on the pipeline corridor to forage on
6 reclamation thus making them more susceptible to hunting, or they could avoid the area
7 altogether.

8 Route Options

9 Impacts to recreation resources would be the same as those analyzed in the Proposed Action
10 regardless of the final route options selected. Although each route option may include additional
11 or alternate road boring locations, crossings, and TUAs, these changes would not significantly
12 add or reduce impacts to recreation resources.

13 No Action Alternative

14 There would be no additional impacts to recreation under the No Action Alternative. Recreation
15 impacts described in the Pinedale RMP (BLM 2008b) would continue.

16 *4.1.14 Visual Resources*

17 Proposed Action

18 The Proposed Action is consistent with the BLM's VRM objectives. VRM Class II lands would be
19 crossed at the northern and southern ends of the proposed pipeline, adjacent to the New Fork
20 and Green rivers. These lands are classified as such because of their riparian characteristics,
21 such as floodplains and adjacent uplands on either side of the rivers that can be considered
22 relatively unique to the area. The objectives of the VRM classification would be maintained at
23 both locations. Construction and operation would not significantly change the existing character
24 of the landscape and should not attract attention following re-establishment of vegetation. The
25 Green and New Fork rivers would be crossed using HDD, which would reduce visual impacts by
26 eliminating the need for extensive streambank grading and restoration. No significant surface
27 facilities or modifications of topography (i.e., extensive cuts and fills) are proposed that would
28 change the existing character of the crossing area.

29 VRM Class III lands would be crossed near the northern and southern portions of the proposed
30 pipeline, just west of U.S. 189. Pipeline construction and operation in this VRM class would be
31 consistent with the objective to partially retain the existing character of the landscape. The
32 activity may draw the attention of the casual observer, but should not dominate the landscape.
33 The existing character of the landscape would be retained following ROW restoration.

34 VRM Class IV lands would be crossed by the remainder of the proposed pipeline, with the
35 exception of the state lands adjacent to the New Fork and Green rivers. VRM Class IV allows
36 for major modifications of the existing character of the landscape. Construction and operation of
37 the proposed pipeline is consistent with VRM Class IV objectives. Also located on VRM Class IV
38 lands would be the proposed condensate storage tank located at the southern point of the
39 proposed condensate line.

40 Route Options

41 Impacts to visual resources would be the same as those analyzed for the Proposed Action
42 regardless of the final route options selected. Although each route option may include additional

1 or alternate road boring locations, crossings, and TUAs, these changes would not significantly
2 add or reduce impacts to visual resources.

3 No Action Alternative

4 There would be no impacts to visual resources associated with the No Action Alternative.

5 *4.1.15 Climate and Air Quality*

6 The resource indicators used to assess potential impacts to air quality address changes to
7 concentrations of pollutants, visibility, and deposition. As discussed in Section 3.15, legal
8 requirements include the NAAQS and WAQS&R, which set maximum limits for several air
9 pollutants, and PSD increments, which limit the incremental increase of certain air pollutants
10 above legally defined baseline concentration levels.

11 Proposed Action

12 Impacts to air quality would occur during construction in the form of emissions from vehicle and
13 equipment engines, as well as fugitive dust resulting from surface disturbance and vehicle
14 traffic. The pollutants of concern with regard to visibility impacts are NO_x, SO₂, and PM₁₀, as
15 well as nitrates and sulfates indirectly. NO_x and PM₁₀ emissions are primarily emitted by motor
16 vehicle traffic associated with these construction activities. Adverse impacts to air quality would
17 be greatest during construction and would decrease after construction is complete. Actual air
18 quality impacts would depend on the amount, duration, location, and emission characteristics of
19 potential emissions sources, as well as meteorological conditions (e.g., wind speed and
20 direction, precipitation, relative humidity).

21 Installation of the condensate pipeline would result in an estimated reduction in the elimination
22 of an estimated 6,570 tanker truck trips annually. This would result in a reduction of combustion-
23 related emissions from vehicle engines and a reduction in fugitive dust from tanker truck traffic.
24 The proposed pipeline would also eliminate the need for on-site condensate storage tanks in the
25 PAPA. Volatile organic compounds and hazardous air pollutants are emitted from condensate
26 storage tanks and are also released into the atmosphere when the tank is being emptied.
27 Therefore, there would be a net reduction in volatile organic compound and hazardous air
28 pollutant emissions as a result of the Proposed Action.

29 Global Climate Change

30 The EPA has evaluated the likely cumulative impacts from increased atmospheric CO₂ levels for
31 the Mountain West. This analysis indicates that climate change is projected to lead to
32 "significant changes in the Mountain West and the Great Plains" (EPA 2008). The EPA has also
33 evaluated a variety of potential national and global impacts from climate change (EPA 2007).
34 These impacts include an increase average temperature, shrinking of glaciers, thawing of
35 permafrost, later freezing and earlier break-up of ice on rivers and lakes, lengthening of growing
36 seasons, shifts in plant and animal ranges, and earlier flowering of trees. Human health,
37 agriculture, natural ecosystems, coastal areas, and heating and cooling requirements are
38 examples of systems that are sensitive to climate change. Implementation of the Proposed
39 Action would result in a long-term net decrease of GHG emissions due to the reduction in truck
40 traffic; therefore, this project would not contribute to global climate change.

1 Route Options

2 All Route Options would have the same impacts to air quality and global climate change
3 discussed for the Proposed Action.

4 No Action

5 Under the No Action Alternative, the Proposed Action would not be implemented, which would
6 result in increased emissions from truck traffic and condensate storage tanks and adverse
7 impacts to air quality.

8 *4.1.16 Cultural and Historic Resources*

9 Proposed Action

10 All route options could affect sites that are eligible for the NRHP; whereas, the No Action
11 Alternative would have no effect. An effect is defined as an alteration to the characteristics of an
12 historic property qualifying it for inclusion in or eligibility for the NRHP (43 CFR 800.16[i]). These
13 effects could be in the form of direct, indirect, or cumulative impacts. Direct impacts are physical
14 and can cause adverse effects to the historic property or its setting. Direct impacts could occur
15 from ground-disturbing activities that are expected for the project, such as:

- 16 • Clearing (grading and leveling ground using heavy equipment) the surface to create
17 staging areas for construction equipment and prepare the ROW for project development;
- 18 • Trenching (subsurface excavation) for installation of the pipeline; and
- 19 • Vehicle traffic through sites during pipeline construction and maintenance operations
20 that might directly damage cultural resources or create two-track roads through or
21 adjacent to the site or result in surface soil displacement or soil compaction.

22 Indirect effects to sites could occur through such ground-disturbing activities as those that
23 increase soil erosion on adjacent cultural resource sites and creation of vehicle trails in or
24 adjacent to the project ROW, which subsequently might be used for access by recreational
25 visitors and may increase erosion. Providing access into areas containing sites through the
26 creation of additional two-track trails could lead to increased looting, vandalism, and damage to
27 cultural resources.

28 Most prehistoric sites are considered to be significant under NRHP Criterion D, because they
29 may yield information important in prehistory or history (36 CFR 60.4[d]). These types of sites
30 are most sensitive to those direct and indirect impacts that may affect their ability to provide
31 information as a result of material damage and loss.

32 Cultural resource sites may also be eligible for NRHP listing under Criteria A, B, or C (36 CFR
33 60.4), because they are associated variously with important events, people, styles,
34 characteristics, and periods in American history. If one of these three criteria apply, then there
35 are seven aspects of integrity that must be must considered in order to support the eligibility
36 determination: setting, location, design, material, workmanship, association, and feeling. To
37 properly evaluate the cultural resource, one must take into account these aspects of integrity
38 and consider all potential effects, such as visual, auditory, or olfactory intrusions, which may
39 directly or indirectly cause alterations in the character or use of significant cultural resources.
40 Because there is potential to affect the various aspects of integrity of cultural resources that may
41 be NRHP eligible under Criteria A, B, or C, it is appropriate to define separate and different

1 APEs for each type of potential impact. For example, the APE for the setting of such historic
2 properties is larger than the APE for direct physical impacts and must be evaluated, both inside
3 and outside the direct path of project construction. Visual intrusions by features out of character
4 with the historic landscape can diminish or destroy the essential setting of such sites, alter their
5 integrity, and extinguish their eligibility for inclusion in the NRHP. In 2006, the BLM established
6 a protocol with the Wyoming SHPO for assessment of potential impacts to the historic setting of
7 historic properties and guidance for adequate mitigation of visual impacts (BLM and Wyoming
8 SHPO 2006).

9 Route Options

10 Under all route options, impacts and adverse effects to historic, archaeological, and culturally
11 sensitive resources, and the integral settings of these resources, could be avoided or mitigated
12 through the approaches described in Section 4.3.7. Avoidance is the preferred first
13 consideration for cultural resources in the PFO RMP ROD and consistent with the applicable
14 RMP for the RSFO. Avoidance allows for greater sustainability of non-renewable cultural
15 resources. Other forms of mitigation, such as data recovery at archaeological sites or off-site
16 mitigation at historic trails and roads may be acceptable in some circumstances if avoidance is
17 not possible.

18 Environmental consequences for all route options would be similar to each other in that all
19 would have the potential for impacts to cultural resources. However, each route option would be
20 of greater potential impact to cultural resources than the No Action Alternative. In every action
21 alternative, all off-highway vehicle traffic would be confined to a corridor, 50 feet wide (25 feet
22 on either side of the centerline) or narrower, that has been inventoried for cultural resources and
23 approved by the BLM prior to the start of the project.

24 In the absence of mitigation, direct adverse impacts would be anticipated to NRHP eligible
25 cultural resources from implementation of any route option. Specifically, 48SU261 is a
26 significant cultural resource that, if not mitigated, impacts are anticipated under the all route
27 options. A testing plan to assess impacts to 48SU261 was developed by Current Archaeological
28 Resources and submitted to the BLM PFO and Wyoming SHPO for approval. Implementation of
29 this testing plan is to occur spring 2010.

30 Along ROW paths tied to all route options, the northern end of the project crosses both the
31 Lander Trail and the Wagner Variant of the Lander Trail. These portions of the Lander Trail and
32 its Wagner Variant have previously been determined non-contributing portions of the NRHP-
33 eligible historic resources due to pre-existing impacts at the point of crossing. Temporary barrier
34 fencing is to be required by the BLM PFO along the western edge of the proposed ROW to
35 prevent unnecessary travel on these resources (Roufs 2010). Also, the ROW, common to all
36 route options, is within the Class II viewshed that extends within 3 miles of portions of the
37 Lander Trail where the visual setting contributes to the NRHP eligibility of the overall site. For
38 just over 6 miles, the ROW basically descends into the trail setting from the north to eventually
39 cross the historic trail corridor perpendicularly, south of the New Fork River. Potential for
40 impacts to the Lander Trail and the Wagner Variant of the Lander Trail are the same for all route
41 options.

42 The westerly end of the project corridor crosses and parallels portions of the historic Opal
43 Wagon Road route for a distance of approximately 3.16 miles. An evaluation of that entire
44 segment of the historic road is required to be conducted in spring or summer 2010 (Roufs
45 2010). Additionally, this western portion of the ROW would directly impact Bird's Old House

1 (48SU5918) on most route options (the exceptions being Route Options 4 and 5). Although
2 previously identified as a non-significant historic resource recommended not eligible for NRHP
3 nomination, this homestead played an important role in the development and operation of the
4 Opal Wagon Road and stage stations at the former Midway, Wyoming, and its significance is
5 being reconsidered.

6 Route Option 4 shifts a portion of the Green River alignment west to follow the west side of U.S.
7 189. With Route Option 4, the existing physical and visual disturbance corridor created by U.S.
8 189 would be between a portion of the Opal Wagon Road and the proposed project ROW,
9 thereby minimizing impacts to the setting of the NRHP-eligible resource if Route Option 4 were
10 implemented. Both Route Options 4 and 5 would realign the proposed pipeline away from Bird's
11 Old House (48SU5918), thereby avoiding that resource altogether. Regardless of route option,
12 impacts and adverse effects to historic, archaeological, and culturally sensitive resources and
13 the integral settings of these resources could be avoided or mitigated through the approaches
14 described in Section 4.3.7.

15 No Action Alternative

16 Under the No Action Alternative, no additional impacts to cultural resources would occur other
17 than those previously approved for other non-related actions in the area.

18 **4.2 CUMULATIVE EFFECTS**

19 Environmental impacts may accumulate either over time or in combination with similar events
20 within and surrounding the project area. A cumulative impact is defined as the impact to the
21 environment that results from the incremental impact of the action when added to other past,
22 present, and reasonably foreseeable future actions (RFFAs) regardless of what agency (federal
23 or non-federal) or person undertakes such actions (40 CFR 1508.7). Principal actions that are
24 considered in the evaluation of the cumulative impacts are those that have affected the same
25 resources and for which the effect is still residual in the environment.

26 In addition to the current disturbance and anticipated future of oil and natural gas development
27 in and surrounding the project area, RFFAs in the vicinity would include further mineral
28 development, electric power production, dispersed recreation use, grazing and ranching,
29 agriculture, and residential, commercial, and industrial development. Cumulative impacts as a
30 result of oil and natural gas development, as well as other non-land uses, have been fully
31 analyzed in the PAPA SEIS (BLM 2008a).

32 The cumulative impact analysis areas (CIAAs) for past and present actions, as well as RFFAs
33 that may generate cumulative impacts, vary depending on the resource under consideration.
34 For example, air quality is regional in nature; therefore, the CIAA and scope of activities
35 considered is necessarily broad. In contrast, the CIAA for geology is the footprint of the
36 proposed pipeline and related facilities; therefore, the scope of potential cumulative activities
37 considered is much narrower. The extent of individual CIAAs for each resource of this EA is
38 described in the following subsections.

39 *4.2.1 Geology, Geologic Hazards, and Minerals*

40 Construction of the proposed condensate pipeline would impact geologic resources; however,
41 the additional impacts from 359.5 acres of surface disturbance activities are expected to be
42 short-term and negligible to geologic resources and would not contribute to cumulative impacts
43 for this resource.

1 4.2.2 *Paleontological Resources*

2 Construction of the proposed condensate pipeline would potentially impact paleontological
3 resources; however, the additional impacts from 359.5 acres are expected to be limited to direct
4 and indirect impacts within the proposed pipeline ROW.

5 4.2.3 *Soils*

6 Construction of the proposed condensate pipeline would result in the disturbance of 359.5 acres
7 of soil, in addition to soil disturbances that would typically occur with other existing land use
8 practices, including oil and gas development, grazing, and recreational activities. However,
9 impacts to soils from construction of the proposed condensate pipeline are expected to be
10 temporary and non-significant based on the relatively flat topography of the surrounding area
11 and non-sensitive nature of the surrounding soils.

12 4.2.4 *Water Resources*

13 Implementation of the Proposed Action would increase surface-disturbing activities, and when
14 combined with other actions likely to occur in and near the project area in the future,
15 sedimentation and runoff rates would likely be increased. In addition, increased travel and
16 construction activities in the vicinity of intermittent and ephemeral streams may potentially
17 exacerbate stream channel erosion and impact downstream water resources. However, impacts
18 to water resources from construction of the proposed condensate pipeline are expected to be
19 short-term and non-significant, and BMPs would be agreed upon to guide construction and road
20 use activities in intermittent and ephemeral streams. In addition, the Green and New Fork rivers
21 would be bored, thus avoiding sedimentation and river bank impacts, including other unforeseen
22 impacts to tributaries of the Green River.

23 4.2.5 *Vegetation and Noxious Weeds*

24 Existing activities in this area include historical and ongoing oil and gas development, ranching
25 and grazing, and proposed or reasonably foreseeable future oil and natural gas development.
26 These activities have all contributed to the removal of native vegetation and an increase in
27 invasive and noxious weed species in the area. Significant impacts to vegetation from oil and
28 gas development have occurred as a result of past and ongoing development.

29 The big sagebrush shrubland is the dominant vegetation type along the ROW and in the
30 surrounding area and would experience the greatest amount of disturbance from the Proposed
31 Action. Disturbance from RFFAs in the area would cause further loss to this plant community.
32 Due to the widespread distribution of big sagebrush shrubland in southwest Wyoming, a
33 relatively small proportion of this plant community would be impacted by the Proposed Action.
34 Reclamation and revegetation efforts would be required for all oil and gas and pipeline projects
35 in the area. These efforts typically involve recontouring and planting of native grasses. This
36 often results in increased dominance of herbaceous vegetation and a general decrease in the
37 shrub stratum, at least temporarily.

38 4.2.6 *Wetland and Riparian Resources*

39 Wetlands, floodplains, waters of the U.S., and riparian areas would be avoided where possible
40 during implementation of this and other proposed projects in the area. No cumulative impacts
41 are anticipated from the Proposed Action or any of the route options due to the avoidance of
42 wetlands and riparian resources through HDD techniques at both the New Fork and Green
43 River riparian corridors. In both areas, the entire floodplain will be avoided and no surface

1 impacts to these resources are anticipated from the Proposed Action. Some minor surface
2 disturbance may occur at wetlands or drainages along the proposed condensate pipeline ROW,
3 but these impacts will be minor and temporary in nature and will not constitute significant
4 impacts to either wetland or riparian resources. No permanent cumulative impacts are
5 anticipated because all future development activities would comply with Section 404 of the
6 Clean Water Act and Executive Orders 11988 and 11990.

7 *4.2.7 Special Status Animal Species*

8 As with other wildlife species, the CIAA for threatened, endangered, and BLM sensitive animal
9 species varies according to their range within the PFO. Impacts from this project would add to
10 existing impacts from other disturbances in the CIAA and include direct loss of habitat, as well
11 as indirect impacts from potential weed proliferation, noise, human presence, vehicle traffic, oil
12 and gas development, grazing, and other activities resulting in direct mortality or loss of habitat
13 quality.

14 *4.2.8 Special Status Plant Species*

15 Cumulative impacts to threatened, endangered, candidate, or BLM sensitive plant species are
16 not anticipated because the species would not be affected as a result of the Proposed Action.

17 *4.2.9 Wildlife and Aquatic Resources*

18 Surface disturbance and habitat fragmentation have existed in varying degrees within and
19 surrounding the proposed pipeline ROW and have increased over time with continuing energy
20 exploration, development, and production activities. Some species have habituated to human
21 presence in the CIAA. Additional disturbance would likely cause new behavioral adaptations,
22 movement, and/or avoidance of activity areas. RFFAs in the CIAA that would impact wildlife
23 include oil and gas exploration and mineral resource extraction, road construction, residential
24 development, recreation, wildlife species management, and livestock grazing. Impacts to wildlife
25 from this project would add to existing impacts from other disturbances in the area.

26 *4.2.10 Land Use and Grazing*

27 Construction of the proposed condensate pipeline would add to the cumulative impacts of the
28 surrounding area (359.5 acres). The short-term loss of 23.70 AUMs (less than 0.1%) is only a
29 fraction of the available AUMs surrounding the proposed ROW. Pipeline corridors are linear,
30 which generally further reduce the severity of impacts to grazing. In addition, implementation of
31 the Proposed Action would result in less tanker truck traffic on county and BLM roads, which
32 would result in lower impacts to grazing by reducing the risk of vehicular collisions. The
33 proposed ROW would be adjacent to existing pipeline ROWs or follow existing roads for a large
34 portion of the proposed route, so cumulative impacts to land use are expected to be non-
35 significant.

36 *4.2.11 Transportation*

37 Construction of the proposed condensate pipeline would result in less tanker truck traffic on
38 surrounding highways and roads, which would result in safer roads for the traveling public. In
39 addition, less traffic volume reduces impacts to highway and road surfaces, subsequently
40 reducing the resources needed for road repair.

1 *4.2.12 Socioeconomics and Environmental Justice*

2 Socioeconomic conditions in the region could be cumulatively affected by past, present, and
3 future projects that contribute to the economy, increase employment (temporarily or
4 permanently), increase the demand for public services, and/or change tax revenue. Existing and
5 future oil and gas developments, such as the JIDPA and the PAPA, as well as associated
6 industrial, commercial, and residential development will cumulatively contribute to increased
7 population, supply and demand on housing and employment, and increased taxes and
8 revenues to governments. Local communities would experience the temporary economic
9 impacts of more consumption of local goods and services and increased sales tax revenues.
10 Actual impacts would depend on the number and size of future energy projects and the rate of
11 development. The project would not be expected to significantly add to the cumulative social
12 and economic impacts of energy development in the region.

13 *4.2.13 Recreation Resources*

14 Cumulative impacts to recreation resources would be the same as those described for the
15 Proposed Action. Construction of the proposed condensate pipeline would cause a temporary
16 loss of dispersed recreation on BLM-managed lands in the vicinity of construction activities.
17 However, it is anticipated that these impacts would be short term and negligible.

18 *4.2.14 Visual Resources*

19 The Proposed Action would not result in any permanent changes to the visual landscape;
20 therefore, no cumulative impacts are anticipated. The proposed pipeline ROW is within or
21 adjacent to existing pipelines; therefore, long-term the impacts are expected to blend with the
22 adjacent landscape.

23 *4.2.15 Air Quality*

24 Cumulative impacts to air quality from increasing development are a concern in southwest
25 Wyoming. This portion of the state is relatively highly industrialized with a group of five large
26 trona plants, several sweet and sour gas plants, two coal-fired power plants, a large number of
27 internal combustion compressor engines associated with gas production and transportation
28 activities, and the oil and gas production equipment from a large number of wells predominantly
29 located in the nearby JIDPA and PAPA. Emissions from southwest Wyoming have the potential
30 to be transported into the Bridger and Fitzpatrick Class I Wilderness Areas. Additional
31 cumulative air quality impacts could occur from the transport of emissions from southeastern
32 Idaho, northeastern Utah, and northwestern Colorado into southwestern Wyoming. The
33 Proposed Action would result in short-term construction-related impacts to air quality; however,
34 the project would result in long-term benefits to air quality due to the reduction in truck traffic
35 and the elimination of condensate storage tanks in the PAPA. Therefore, the project would not
36 contribute to cumulative adverse impacts to air quality in southwestern Wyoming.

37 *4.2.16 Cultural and Historic Resources*

38 Multiple oil and gas drilling and production projects contribute to the cumulative impacts to
39 cultural resources in the project area. Although the PFO RMP ROD upholds a policy favoring
40 avoidance of impacts and the preservation of cultural resources, as development becomes
41 denser cultural resources (and the integral visual setting of some) become increasingly more
42 difficult to avoid and more intrusive mitigation measures are necessary to avoid the destruction
43 of non-renewable material culture. Potential for disturbance of cultural materials and site
44 settings is proportionate to the surface area of ground disturbance and the scale of

1 aboveground development on the cultural landscape. Increased ground disturbance also
2 increases the potential for unanticipated discoveries, and the potential for the unmitigated loss
3 of cultural resource values and information if those discoveries go unrecognized or if there is
4 loss due to damage as a result of the disturbance during discovery.

5 **4.3 MITIGATION MEASURES CONSIDERED**

6 *4.3.1 Paleontological Resources*

7 Potential adverse impacts to paleontological resources can be mitigated to below the level of
8 significance by implementation of the following mitigation measures:

- 9 • Open trench and adjacent spoils piles will be inspected for bedrock and scientifically
10 significant fossil material after excavation and prior to the pipeline burial.
- 11 • If any subsurface bones or other potential fossils are unearthed during construction and
12 a paleontological monitor is not present, the BLM will be notified immediately. The
13 significance of the fossils will then be assessed and additional recommendations made
14 as appropriate

15 *4.3.2 Soils*

16 Surface-disturbing activities, including the removal of vegetation and topsoil, immediately
17 expose soils to erosive forces; however, BMPs and environmental protective measures will be
18 put in place to protect soil resources. Temporary placement of topsoil and excavated subsoil
19 into separate stockpiles for the duration of constructions helps prevent soil mixing, which will
20 allow for complete restoration of the soil profile and re-establish optimal productive topsoil
21 conditions for reclamation. Equipment and vehicular access will be limited to existing roads and
22 the proposed ROW, thereby avoiding soil compaction in undisturbed areas. BLM resource
23 specialists will be consulted to determine the appropriate measures for ephemeral stream
24 crossings. BMPs will be initiated to minimize accelerated erosion and gully formation, which
25 may include riprap, erosion control matting or fabric, and/or check dams. The Green and New
26 Fork rivers will be bored using HDD to prevent erosion and minimize any increase in sediment
27 load to the waters from construction activities. With the implementation of the appropriate BMPs
28 and environmental measures, impacts to soils along the pipeline route will be minimized.

29 *4.3.3 Water*

30 Surface-disturbing activities, including the removal of vegetation and topsoil, immediately
31 jeopardize water resource quality by increasing surface runoff, streambank and channel
32 instability, sediment loading, and contamination. To counteract these impacts, BMPs and
33 environmental protective measures will be put in place to protect water resources and ensure
34 the appropriate measures are taken during construction and travel through intermittent and
35 ephemeral streams. BLM resource specialists will be consulted to determine the appropriate
36 measures for ephemeral stream crossings. Erosion control measures will be used to reduce
37 impacts to soil surfaces and control runoff and sedimentation. In addition, the Green and New
38 Fork rivers will be bored using HDD to prevent erosion and minimize any increase in sediment
39 load from construction activities to the waters of the Green River. With the implementation of the
40 appropriate BMPs and environmental measures, impacts to water resources along the proposed
41 ROW will be minimized.

42 Upon completion of hydrostatic testing, water will be trucked back to the PAPA and not
43 discharged to avoid impacts to soil and water resources. In the unlikely event of a release or an

1 accidental spill during construction and operation, appropriate measures will be taken to monitor
2 groundwater to ensure that contaminants do not reach groundwater aquifers. Adherence to the
3 project Spill Prevention, Control, and Countermeasures Plan will minimize the occurrence and
4 impacts of accidental spills.

5 *4.3.4 Vegetation*

6 Off-road driving will be restricted to the ROW corridors and approved TUAs. Signs will be used
7 to identify approved and restricted (i.e., no access allowed) roads. Fire prevention and
8 suppression techniques will be implemented to reduce the potential for a construction-related
9 fire that could potentially impact vegetation.

10 If construction/development occurs between April 15 and November 15, ULTRA will be required
11 to water all surface access roads to reduce airborne dust and damage to roadside vegetation
12 communities.

13 Additional mitigation measures to be incorporated to reduce the invasion and spread of noxious
14 weeds include:

- 15 • Pre-construction surveys will be conducted in the spring for weed infestations within the
16 ROW.
- 17 • The BLM and Sublette County Weed and Pest Control will be consulted to determine
18 treatment for noxious weeds, if identified.
- 19 • Construction vehicles and equipment will be cleaned, power-washed, and free of soil
20 and vegetation debris prior to entry and use of access roads to prevent transporting
21 weed seeds.
- 22 • All seed mix, erosion control materials, and reclamation materials will be certified weed
23 free.
- 24 • Revegetated areas will be monitored for at least three years following seeding to
25 evaluate the need for supplemental seeding and noxious weed control.
- 26 • The ROW and other disturbed areas will be monitored for weed infestations, and new or
27 expanding populations will be controlled or eradicated for the duration of the
28 construction, operation, and reclamation phases.

29 *4.3.5 Special Status Plant Species*

30 The following measures are recommended to protect federally listed and BLM sensitive species:

- 31 • If any federally listed species or BLM sensitive species are observed during pre-
32 construction surveying or project operations, status information will be forwarded to the
33 BLM and appropriate avoidance protocol implemented. Operations that will adversely
34 affect the listed species must be discontinued until consultation with the BLM indicates
35 that impacts are not likely to adversely affect the species.

36 If federally listed or BLM sensitive plants are discovered during field surveys, these individuals
37 or populations will be avoided during final project design.

1 *4.3.6 Air Quality*

2 All activities will be required to comply with all applicable local, state, and federal air quality
3 laws, statutes, regulations, standards, and implementation plans. Documentation of this
4 compliance will be provided to the BLM. Further mitigation of air quality impacts will also be
5 required, including:

- 6 • The limitation of vehicle speeds on associated access roads to 15 miles per hour (mph)
7 or another appropriate limit that minimizes visible dust plumes.
- 8 • Application of a BLM-approved dust suppressant during dry periods when dust plumes
9 are visible at speeds less than or equal to 15 mph.
- 10 • Surfacing of access roads constructed on soils susceptible to wind erosion with gravel or
11 other appropriate material.
- 12 • Suspension of land clearing, grading, earth-moving, and excavation activities when wind
13 speed exceeds 20 mph.
- 14 • Maintenance of construction equipment in good operating condition to ensure engines
15 run efficiently.
- 16 • Maintenance of emission controls on vehicles and construction equipment to ensure
17 effective pollutant emission reductions.

18 *4.3.7 Cultural Resources*

19 Cultural resources determined to be eligible for NRHP nomination, and thereby determined
20 significant, will be protected. The PFO RMP states: “Potential effects on cultural resources will
21 be managed, to the extent possible, through avoidance and confidentiality of location... Where
22 avoidance is not feasible or prudent, mitigation through data recovery, monitoring, or other data
23 collection will be required” (BLM 2008b:[2]11).

24 For this project, archaeological sites that are determined to be eligible for nomination to the
25 NRHP, and that fall within the APE for physical impacts, may be avoided by rerouting pipeline
26 construction around site boundaries to ensure that no adverse effects occur to historic
27 properties as a result of pipeline construction activities. This avoidance may be further
28 supported by barrier fencing and archaeological monitoring or inspection during construction.
29 These stipulations will be determined as necessary by the BLM archaeologist. Residual impacts
30 may be avoided post-construction by reclamation/replanting of vegetation in disturbed areas
31 and placement of permanent barriers along the project line at intersections with existing roads
32 so that trails/roads will not become established down the reclaimed ROW.

33 Mitigation measures recommended below will further reduce adverse impacts to below the level
34 of adverse effect either through further resource treatment (if necessary), avoidance, or
35 mitigation.

- 36 • A discovery and mitigation plan will be developed to avert impacts should archaeological
37 materials or buried remains be unexpectedly discovered as a result of exposure during
38 ground disturbance from project development and to uphold avoidance and mitigation for
39 the significant sites that have been already identified. The plan is to include
40 requirements for an archaeological monitor at any sensitive areas where ground
41 disturbance may take place adjacent to known cultural resource sites or in areas with
42 potential for archaeologically sensitive soil deposition. Should any subsurface or

1 otherwise previously obscured archaeological materials be discovered by archaeological
2 monitors or construction personnel anywhere within the project APE, the BLM is to be
3 notified immediately and work in the area of the discovery must cease until the BLM or a
4 qualified and BLM-directed archaeologist can assess the discovery, determine its
5 significance, and make additional recommendations.

- 6 • In relation to the Lander Trail and Opal Wagon Road, an acceptable treatment plan is to
7 be established per the BLM/Wyoming SHPO Protocol Agreement and the PFO RMP
8 ROD. Because it is not feasible to reroute project alternatives without crossing the
9 Lander Trail corridor, even if a non-intact length of the historic trail is selected, potential
10 off-site mitigation then becomes necessary and typically will include return of historic
11 interpretive values to the public and/or preservation of similarly segments of these
12 resources in the region, as identified by stakeholders and interested parties in these
13 resources.
- 14 • No surface disturbance will be permitted in the paths of intact historic trail and wagon
15 road segments that contribute to the NRHP eligibility of an historic transportation site. No
16 project traffic will cross intact portions of significant historic trail or road sites. Project
17 traffic will be limited to areas of existing disturbance in crossing these historic
18 transportation routes.

19 No disturbance will be permitted on portions of NRHP-eligible archaeological sites that
20 contribute to site significance; pipeline trenching, project traffic, and blading will be routed or
21 placed away from or around them. Any portion of an NRHP-eligible site not contributing to site
22 significance and proposed for pipeline disturbance will require the appropriate level of testing,
23 review, and agency concurrence within a mitigation plan prior to project actions being decided
24 or approved at the site. Specifically at archaeological site 48SU261, a testing plan to assess
25 impacts to 48SU261 has been developed by Current Archaeological Resources and submitted
26 to the BLM PFO and SHPO for approval; implementation of this testing plan is to occur spring
27 2010 for site management and address of mitigation.

28 **5.0 TRIBES, INDIVIDUALS, ORGANIZATIONS, OR AGENCIES CONSULTED**

29 An EA must be prepared when a federal government agency considers approving an action
30 within its jurisdiction that may impact the human environment. An EA aids federal officials in
31 making decisions by disclosing information on the physical, biological, and social environment of
32 a proposed project. This EA has been prepared by the BLM PFO in Pinedale, Wyoming. A third-
33 party contractor has been used by the BLM to conduct studies, gather data, and prepare
34 documents. Tribes, individuals, organizations, and agencies consulted during the preparation of
35 this EA include:

- 36 • BLM PFO – lead agency
- 37 • BLM RSFO
- 38 • U.S. Fish and Wildlife Service (USFWS)
- 39 • Wyoming State Historic Preservation Office (SHPO)
- 40 • Wyoming Game and Fish Department (WGFD)

41 These agencies were actively involved in preparing, reviewing, and/or creating the draft EA, as
42 well as in developing mitigations and BMPs to reduce impacts from the proposed project.

1 **6.0 LIST OF PREPARERS**

2 The following tables identify the BLM Interdisciplinary Team (Table 6-1) and the consultant
 3 Interdisciplinary Team (Table 6-2) that were principally involved in preparing this EA.

4 **Table 6-1. List of BLM Interdisciplinary Team EA Preparers**

Name	Responsibility
Pinedale Field Office	
Bill Wadsworth	Project Lead, Lands and Realty
Sam Drucker	Archeologist & Paleontological Coordinator
Dale Woolwine	Wildlife Biologist
Amber Robbins	Range Management
Sheryl McCulloch	Realty Specialist
Dave McCulloch	Environmental Protection Specialist
Rock Springs Field Office	
Patricia Hamilton	Realty
Samantha Thurston	Natural Resource Specialist
Carrie Nelson	Wildlife Biologist
Jaci Wells	Archeologist
Kimberlee Foster	Planning & Environmental Coordinator
Cherette Mastny	Range Management
BLM High Desert District	
Jim Glennon	Botany
Dennis Doncaster	Water Resources
John Henderson	Fishery Biologist

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6 **Table 6-2. List of Consultant Interdisciplinary Team EA Preparers**

Name	Primary Role
SWCA Environmental Consultants	
Chad Baker	Project Manager
Scott Phillips	Archaeology Lead
Larry Semo	Biology Lead
Nate Wojcik	Resource Specialist
Doug Faulkner	Resource Specialist
Adrian Hogel	Resource Specialist
Kara Altvater	Resource Specialist
Mike Agena	GIS Specialist
Cynthia Manseau	Technical Editor

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1 **6.1 LIST OF REVIEWERS**

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