Final Environmental Impact Statement

Wyoming Interstate Company, Ltd. Docket No. CP05-54-000

FERC/EIS-0181

PICEANCE BASIN EXPANSION PROJECT

Federal Energy Regulatory Commission
Washington, DC

Cooperating Agency:
Bureau of Land Management

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FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
OEP/DG2E/Gas 1
Wyoming Interstate Company,Ltd.
Docket No. CP05-54-000
BLM Reference No. WYW-160264

TO THE PARTY ADDRESSED:

The environmental staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared this final Environmental Impact Statement (EIS) on the interstate natural gas pipeline transmission facilities proposed by Wyoming Interstate Company, Ltd. (WIC) in the above-referenced docket.

This final EIS was prepared to satisfy the requirements of the National Environmental Policy Act. Its purpose is to inform the Commission, the public, and other permitting agencies about the potential adverse and beneficial environmental impacts associated with the proposed Piceance Basin Expansion Project (Piceance Project) and its alternatives, and to recommend practical, reasonable, and appropriate mitigation measures which would avoid or reduce any significant adverse impacts to the maximum extent practicable and, where feasible, to less than significant levels. The final EIS concludes that the proposed project, with appropriate mitigating measures as recommended, would have limited adverse environmental impact.

The U.S. Department of Interior, Bureau of Land Management (BLM) is participating as a cooperating agency in the preparation of this final EIS because the project would cross federal lands under BLM administration in Wyoming and Colorado. The final EIS will be used by the BLM to consider the issuance of a right-of-way (ROW) grant for the portion of the project on federal lands. While the conclusions and recommendations presented in this final EIS were developed with input from the BLM as a cooperating agency, the BLM will present its own conclusions and recommendations in its Record of Decision for the project.

The Piceance Project involves the construction and operation of a new interstate natural gas pipeline system that would extend between the existing Colorado Interstate Gas Company (CIG) Greasewood Compressor Station in Rio Blanco County, Colorado, and the existing CIG Wamsutter Compressor Station in Sweetwater County, Wyoming.[1] The final EIS assesses the potential environmental effects of the construction and operation of the following facilities in Colorado and Wyoming:

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[1] Both WIC and CIG are affiliates owned by El Paso Corporation.

- about 141.8 miles of 24-inch-diameter new pipeline with 89.9 miles located in Colorado (Rio Blanco and Moffat Counties) and 51.9 miles located in Wyoming (Sweetwater County);
- additional compression to be installed at the existing CIG Greasewood Compressor Station in Colorado;
- four metering stations at interconnections with other pipeline systems (two associated with the CIG Greasewood Compressor Station, two at the CIG Wamsutter Compressor Station);
- three pigging facilities (one associated with each compressor station and a new facility at milepost 54.0 near County Road 4 in Moffat County, Colorado);
- nine mainline valves (one valve at each of the two existing compressor stations and seven valves along the pipeline ROW); and
- other associated facilities, such as access roads and communication towers.

The proposed project would be capable of transporting up to 350,000 dekatherms of natural gas per day (Dthd) from the CIG Greasewood Compressor Station to interconnections at Wamsutter, Wyoming with the CIG and WIC interstate transmission pipeline systems that serve markets east and west of Wamsutter.

The final EIS has been placed in the public files of the FERC and is available for public inspection at:

Federal Energy Regulatory Commission
Public Reference Room
888 First Street, NE, Room 2A
Washington, D.C. 20426
(202) 502-8371

Copies also are available for reading at the following locations:

BLM Field Office	Address	City/State	Zip Code
Colorado State Office	2850 Youngfield Street	Lakewood, CO	80215
Little Snake Field Office	455 Emerson Street	Craig, CO	81625
Rawlins Field Office	1300 N. Third	Rawlins, WY	82301
White River Field Office	73544 Hwy 64	Meeker, CO	81641
Wyoming State Office	P.O. Box 1828	Cheyenne, WY	82003
Library	**Address**	**City/State**	**Zip Code**
BLM Library	RS 150A, Bldg. 50 DFC	Denver, CO	80225-0047
Craig Library	570 Green Street	Craig, CO	81625
DeBeque Library	730 Minter Avenue	DeBeque, CO	81630
Glenwood Springs Branch Library	413 9th Street	Glenwood Springs, CO	81601-3607
Hay Library	Western Wyoming Community College, 2500 College Drive	Rock Springs, WY	82902
Meeker Library	200 Main Street	Meeker, CO	81641
Merrill Library	Utah State University	Logan, UT	84322-3000
Morgan Library	Colorado State University	Fort Collins, CO	80526
Parachute Branch Library	244 Grand Valley Way	Parachute, CO	81635
Rangely Library	109 East Main Street	Rangely, CO	81641
Rifle Branch Library	107 East 2nd	Rifle, CO	81650
Rock Springs Library	400 C Street	Rock Springs, WY	82901
Saratoga Branch Library	P.O. Box 27	Saratoga, WY	82331
Sweetwater County Library	300 N. 1st East Street	Green River, WY	82935
University of Wyoming	1000 East University Avenue	Laramie, WY	82071
Wamsutter Library	230 Tierney	Wamsutter, WY	82336
White Mountain Library	2935 Sweetwater Drive	Rock Springs, WY	82901

A limited number of copies are available from the FERC's Public Reference Room identified above. In addition, copies of the final EIS have been mailed to federal, state, and local agencies; public interest groups; individuals and affected landowners; libraries; newspapers; and parties to this proceeding.

In accordance with the Council on Environmental Quality's (CEQ) regulations implementing the National Environmental Policy Act, no agency decision on a proposed action may be made until 30 days after the U.S. Environmental Protection Agency publishes a notice of availability of a final EIS. However, the CEQ regulations provide an exception to this rule when an agency decision is subject to a formal internal appeal process which allows other agencies or the public to make their views known. In such cases, the agency decision may be made at the same time the notice of the final EIS is published, allowing both periods to run concurrently. The Commission decision for this proposed action is subject to a 30-day rehearing period.

Additional information about the proposed project is available from the Commission's Office of External Affairs, at **1-866-208-FERC** or on the FERC Internet website (www.ferc.gov) using the "eLibrary" link. Click on the eLibrary link, click on "General Search" and enter the docket number excluding the last three digits (CP05-54) in the Docket Number field. Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at FERCOnlineSupport@ferc.gov or toll free at 1-866-208-3676, or for TTY, contact (202) 502-8659. The eLibrary link on the FERC internet website also provides access to the texts of formal documents issued by the Commission, such as orders, notices, and rulemakings.

Information concerning the involvement of the BLM is available from Tom Hurshman, BLM Project Manager, at (970) 240-5345.

Magalie R. Salas,
Secretary

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ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
ACEC	Areas of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
APE	area of potential effects
AQCC	Air Quality Control Commission
AQRV	air quality related values
BA	Biological Assessment
BLM	Bureau of Land Management
BMP	best management practices
CAA	Clean Air Act
CALPUFF	air quality dispersion model
CDOW	Colorado Division of Wildlife
CDPHE	Colorado Department of Public Health and Environment
CEQ	Council on Environmental Quality
Certificate	Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
CIG	Colorado Interstate Gas Company
CO	carbon monoxide
CO_2	carbon dioxide
COE	U.S. Army Corps of Engineers
Commission	Federal Energy Regulatory Commission
CR	County Road
CSLB	Colorado State Land Board
CWA	Clean Water Act of 1972
dBA	decibels on the A-weighted scale
dbh	diameter at breast height
DOT	U.S. Department of Transportation
Dthd	dekatherms per day
EA	Environmental Assessment
ECRM Program	Environmental Compliance Monitoring and Reporting Program
EFH	essential fish habitat
EI	environmental inspector
EIS	Environmental Impact Statement
EnCana	EnCana Oil and Gas USA
EnCana Meeker Gas Plant	EnCana's Meeker Pipeline and Gas Plant Project
Entrega	Entrega Gas Pipeline Inc.
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ERP	Emergency Response Plan
ESA	Endangered Species Act of 1973, as amended
FERC	Federal Energy Regulatory Commission

FERC Plan	FERC's Upland Erosion Control, Revegetation, and Maintenance Plan
FERC Procedures	FERC's Wetland and Waterbody Construction and Mitigation Procedures
FO	Field Office
FR	Federal Register
FWS	U.S. Fish and Wildlife Service
H_2S	hydrogen sulfide
HAP	hazardous air pollutant
HCA	high consequence area
HDD	horizontal directional drill
HDD Plan	Horizontal Directional Drilling Inadvertent Release Control Plan
I-80	Interstate 80
ISO	International Organization for Standardization
km	kilometer
L_{dn}	day-night equivalent sound level
L_{eq}	equivalent sound level
MACT	Maximum Achievable Control Technology
MAOP	maximum allowable operating pressure
MBTA	Migratory Bird Treaty Act of 1918, as amended
Memorandum	Memorandum of Understanding on Natural Gas Transportation Facilities
MLA	Mineral Leasing Act of 1920
MLV	mainline valve
MMBtu/hr	million British thermal units per hour
MMcfd	million cubic feet per day
MP	milepost
msl	mean sea level
MUID	Mapping Unit Identification
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NGA	Natural Gas Act
NHPA	National Historic Preservation Act of 1966, as amended
NO_2	nitrogen dioxide
NOI	Notice of Intent
Northwest Pipeline	Williams' Northwest Pipeline Corporation
NO_X	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSA	noise-sensitive area
NSPS	New Source Performance Standards
OEP	Office of Energy Projects
OPS	Office of Pipeline Safety
OTI	open trench inspection
Piceance Project	WIC's proposed Piceance Basin Expansion Project
PM_{10}	particulate matter with an aerodynamic diameter of 10 microns or less

$PM_{2.5}$	particulate matter with an aerodynamic diameter of 2.5 microns or less
POD	Plan of Development
Policy 6840	BLM's Special Status Species Management Policy 6840
PSCo	Public Service Company of Colorado
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
RMP	Resource Management Plan
ROD	Record of Decision
ROW	right-of-way
RSPA	Research and Special Programs Administration
RV	recreational vehicle
SCADA	Supervisory Control and Data Acquisition
Secretary	Secretary of the Commission
SHPO	State Historic Preservation Office
SO_2	sulfur dioxide
SO_x	sulfur oxides
SPCC Plan	Spill Prevention, Control, and Countermeasure Plan
STATSGO	State Soil Geographic database
SWA	State Wildlife Area
SWPPP	Storm Water Pollution Prevention Plan
Tcfy	trillion cubic feet per year
tpy	tons per year
TransColorado	TransColorado Gas Transmission Company
TTMP	Traffic and Transportation Management Plan
U.S.	United States
USC	United States Code
USGS	U.S. Geological Survey
VOC	volatile organic compound
VRM	Visual Resource Management
WAQS&R	Wyoming Air Quality Standards and Regulations
WDEQ	Wyoming Department of Environmental Quality
Weed Plan	Noxious and Invasive Weed Plan
WGFD	Wyoming Game and Fish Department
WIC	Wyoming Interstate Company, Ltd.
WIC's Plan	WIC's Upland Erosion Control, Revegetation, and Maintenance Plan (FERC's Plan with WIC's requested variances)
WIC's Procedures	WIC's Wetland and Waterbody Construction and Mitigation Procedures (FERC's Procedures with WIC's requested variances)
Williams	Williams Power Company, Inc.

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The Piceance Basin Expansion Project (Piceance Project) Environmental Impact Statement (EIS) has been prepared by the staff of the Federal Energy Regulatory Commission (FERC or Commission) with the cooperation and assistance of the Bureau of Land Management (BLM) under FERC Docket No. CP05-54-000. The EIS was prepared to fulfill the requirements of the National Environmental Policy Act (NEPA); the Council on Environmental Quality regulations for implementing NEPA (Title 40 of the Code of Federal Regulations [CFR], Parts 1500 -1508); the FERC's implementing regulations (18 CFR 380); and the BLM's right-of-way (ROW) grant regulations (43 CFR 2800 and 2880).

Wyoming Interstate Company, Ltd. (WIC) proposes to construct, own, and operate a new natural gas transmission system in Colorado and Wyoming. The proposed Piceance Project would be capable of transporting 350,000 dekatherms per day (Dthd) (equivalent to 341 million cubic feet per day [MMcfd]) of natural gas from supply basins in the central Rocky Mountains to the Colorado Interstate Gas Company (CIG) Wamsutter Compressor Station (Sweetwater County, Wyoming). From there, other interstate transporters would be able to ship the gas to markets in the western and central United States (U.S.).

In accordance with NEPA, this document's purpose is to inform the FERC decision-makers, the public, and other permitting agencies about the potential adverse and beneficial environmental impacts associated with the proposed project and its alternatives, and to recommend practical, reasonable, and appropriate mitigation measures that would reduce adverse impacts to the extent possible. Most of the environmental impacts would occur during the construction period. We[1] considered and/or evaluated a range of system and route alternatives.

The vertical line in the margin identifies text that has been modified in this final EIS and differs from the corresponding text in the draft EIS.

Proposed Action

The proposed Piceance Project would primarily consist of construction and operation of 141.8 miles of 24-inch-diameter interstate natural gas pipeline. The pipeline would extend between the existing CIG Wamsutter Compressor Station in Sweetwater County, Wyoming, and the existing CIG Greasewood Compressor Station in Rio Blanco County, Colorado. The flow of natural gas would be northward, from Greasewood to Wamsutter. In Wamsutter, interconnections with two existing interstate shippers would be constructed. In addition to the proposed pipeline, WIC's new transportation system would include installing a new compressor (1,650 horsepower) within the CIG Greasewood Compressor Station, and constructing four metering stations, nine mainline valves, and three pigging facilities.

[1] "We," "us," and "our" refer to the environmental staff of the Commission's Office of Energy Projects. Unless specifically identified otherwise, the recommendations and conclusions presented in the EIS are those of the FERC staff.

Public Involvement

On July 14, 2004, the FERC issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Piceance Basin Expansion Project, Request For Comments On Environmental Issues, and Notice of Public Scoping Meetings and Route Inspection* (NOI). The NOI briefly described the project components, invited written comments from the public on the proposal, and listed the date and location of two public scoping meetings to be held in communities along the route. The NOI was sent to about 1,180 entities on a mailing list that included the landowners crossed and/or adjacent to the proposed ROW; federal and state agencies; Native American tribes; non-governmental and environmental organizations; libraries; the media; and other potentially interested citizens.

We held public scoping meetings in Craig, Colorado (August 3, 2004) and Meeker, Colorado (August 4, 2004). An additional scoping meeting was held in Rawlins, Wyoming, on June 8, 2004, for a related project proposed by Entrega Gas Pipeline Inc. (Entrega) (Entrega Project, FERC Docket No. CP04-413-000), which shares the same pipeline route in Wyoming as the Piceance Project. Comments received at the Rawlins scoping meeting were considered relevant to both the Entrega and Piceance Projects. During the same time period, we organized and conducted a separate "agency" scoping meeting with federal and state agency representatives, and local officials to solicit input and coordinate our review of the proposed project. This meeting was held in Rifle, Colorado, on August 5, 2004.

In addition to oral and written comments received during agency and public scoping meetings, the Commission received written comments during and after the close of the public scoping period (August 16, 2004). In total, 43 written correspondences[2] containing project comments were received. Each letter was evaluated and comments were divided into issue groups. When written comments were combined with oral meeting comments, 307 individual comments were received.[3]

The draft EIS was filed with the U.S. Environmental Protection Agency (EPA) and mailed to 511 federal, state, and local agencies; elected officials; Native American tribes; newspapers; public libraries; intervenors to the FERC's proceeding; affected landowners; and other interested parties. Three public meetings were held in the project area to receive comments on the draft EIS. These meetings were conducted in Craig, Colorado (June 7, 2005); Wamsutter, Wyoming (June 8, 2005); and Meeker, Colorado (June 9, 2005). Oral comments were received from only one local individual who was in support of the project. Written comments were received from two federal agencies, two state agencies, two local agencies, one organization, and the project applicant. The final EIS was mailed to approximately 535 federal, state, and local agencies; elected officials; Native American tribes; newspapers; public libraries; intervenors to the FERC's proceeding; affected landowners; and other interested parties who provided scoping comments, commented on the draft EIS, or wrote to the FERC asking to receive a copy of the document.

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2 Written correspondences included letters, return mailers (attached to our NOI), and electronic mail.

3 Due to the similarity of project location and timing between the Piceance Project and the Entrega Project, comments received during the Entrega Project scoping process were considered relevant and included as part of the NEPA scoping process for the Piceance Project. The total reflects the sum of all individual comments, even if the same comment was received from the same person multiple times and in different formats (oral or written).

Areas of Concern Raised by Commentors

Issues raised during scoping and during the comment period on the draft EIS included project purpose and need; scope of the analysis; alternatives; construction procedures; land use issues; effects on soils, water, vegetation, wildlife, threatened and endangered species; cultural resources; air quality; weed management; socioeconomic effects; noise impacts; public safety; cumulative impacts; and compensation and easement agreements. These concerns and others have been addressed in this EIS.

Project Impacts

Construction of the proposed Piceance Project would disturb approximately 1,884 acres of land, including the pipeline construction ROW, additional temporary workspace areas, aboveground facility sites, pipe storage and contractor yards, and upgrades to existing roads to be used for construction access. Approximately 860 acres of the 1,884 acres used for construction would be required for operation of the project. The remaining 1,024 acres of land would be restored and allowed to revert to former uses.

Approximately 54 percent of the land affected by construction and operation of the Piceance Project would be public lands. Of the total land affected by construction, the BLM manages 46 percent; the State of Colorado manages 8 percent (consisting of Colorado Division of Wildlife [CDOW] and Colorado State Land Board properties). The remaining 46 percent of the lands crossed by the pipeline would be private lands.

If the Piceance Project is approved, WIC proposes to begin construction in October 2005, with construction completed and the pipeline in-service by February 2006. Since winter construction can be complicated by weather conditions and can result in environmental impacts that differ from construction during other seasons, we have recommended that WIC prepare a Winter Construction Plan to address construction and reclamation procedures, as well as specific mitigation measures.

Geology (Minerals, Geologic Hazards, Paleontology)

Project construction and operation would not substantially alter existing topography because the construction ROW would be recontoured to match the adjacent terrain. The Piceance Project would not interfere with oil and gas drilling or any current active mining operations. Because the proposed pipeline would be located adjacent to existing pipelines where they cross oil and gas strata or shallow coal beds, construction of the Piceance Project would not further reduce access to underlying resources. Potential for earthquake damage from ground shaking and subsidence is low. Based on the operating experience of CIG's Uinta Basin Lateral and other existing pipelines, the proposed Piceance Project route would avoid or reduce the area of difficult construction (steep slopes, congested utility corridors, rock outcrops, steep ravines), soil instability, and known geological hazards (flooding and sinkholes hazards). The Piceance Project would cross about 115 miles of geologic formations that contain vertebrate fossils and noteworthy occurrences of invertebrate and plant fossils. WIC has conducted pre-construction surveys and would monitor pipeline construction to protect or recover important fossils.

Soils and Invasive Plant Species

The majority of the Piceance Project would cross arid to semi-arid native rangelands that are underlain by relatively shallow, droughty soils that are susceptible to wind and water erosion. Other constraints include rocky and saline/alkaline soils. The pipeline also would cross about 19 acres of hydric soils, an indicator of areas that may contain drain tiles for crop production. WIC has committed to replace or repair any drain tiles damaged by construction activities; maintain water flow to irrigation systems throughout construction; and restore or repair the damage to irrigation systems. WIC would preserve topsoil by limiting soil stripping to the area over the pipeline trench; implementing best available erosion control practices included in its project-specific *Upland Erosion Control, Revegetation, and Maintenance Plan* (WIC's Plan) and the BLM's Plan of Development (POD); and applying revegetation seed mixtures appropriate for the climate and land uses. We have supplemented WIC's proposed mitigation with additional recommendations to minimize potential winter construction impacts on soil resources and restoration efforts, and control the spread of weeds along the ROW, including continuing weed control along the ROW for the life of the project.

Water Resources

WIC would not use groundwater during construction or operation. To protect surface and groundwater resources, parking and refueling activities would be set back 100 feet from waterbodies. The Piceance Project would cross 4 perennial and 178 intermittent waterbodies. A horizontal directional drill (HDD) crossing would be completed at three perennial rivers (Little Snake, White, and Yampa Rivers) to avoid adverse effects on aquatic life and fisheries. WIC would implement a dry crossing technique for the remaining perennial cold water stream (Dry Fork of Piceance Creek), in accordance with WIC's project-specific *Wetland and Waterbody Construction and Mitigation Procedures* (WIC's Procedures). The remaining streams are intermittent and would be crossed using open-cut crossing techniques. Where WIC and Entrega share the same general crossing location at the Yampa and Little Snake Rivers, we have recommended that WIC coordinate its crossing of these rivers with Entrega to minimize in-stream and bank disturbances. In order to hydrostatically test the proposed pipeline, WIC would use 52.6 acre-feet (approximately 17.2 million gallons) of water from three different rivers; just over half of the water would be obtained from the Little Snake River and the rest would be obtained from the White and Yampa Rivers. Withdrawals from these rivers may affect designated surface water uses, including aquatic life and fisheries. WIC has modified its draft Hydrostatic Test Plan to include information that identifies withdrawal and discharge locations and techniques that would be used to reduce impacts to native fish species. To further minimize potential impacts on surface water flows and related resources, we have recommended that WIC consult the appropriate state and federal fisheries agencies to determine suitable flow conditions and locations for hydrostatic test water withdrawals and discharge locations. The pipeline would cross about 0.9 mile of emergent wet meadows and shrubland wetlands. To minimize wetland impacts, measures from WIC's Procedures would be implemented, which would provide an adequate level of environmental protection.

Vegetation

The Piceance Project would disturb approximately 77 acres of grassland, 1,519 acres of shrublands, 100 acres of agricultural land (including some wetlands), and 188 acres of woodland. WIC's Plan would be followed in order to stabilize and re-seed disturbed areas to restore wildlife habitat and livestock grazing use. WIC would implement site-specific measures to avoid or reduce the loss of larger trees in riparian woodland areas at stream and river crossings. We also have recommended additional mitigation to avoid removal of potential bald eagle roosting trees. Revegetation success along the ROW would be monitored for several years by the FERC and BLM staffs. Because of limited rainfall and high evaporation rates, native vegetation community recovery would be long-term, ranging from a minimum of 5 to 7 years in grasslands, up to 20 to 30 years in shrublands, and more than 50 years in woodland communities.

Fish and Wildlife

WIC would construct across four different waterbodies in Colorado that support fish species, consisting of one that supports warmwater species and three that support coldwater species. WIC would avoid bank and channel disturbance to the Little Snake, White, and Yampa Rivers by using the HDD crossing method. The remaining stream (Dry Fork of Piceance Creek) would be crossed using a dry crossing technique in accordance with WIC's Procedures. WIC would avoid construction of crossings during cold and warmwater fisheries spawning periods as designated by state agencies. Open-cut crossings would cause short-term (usually 3 days or less) suspended sediment increases in intermittent stream and river channels.

The Piceance Project would disturb wildlife habitat, displace individual animals, and contribute to habitat fragmentation by expanding existing pipeline corridors. The proposed route would cross approximately 33 miles of critical elk, mule deer, and pronghorn winter habitat in Colorado; and about 3 and 8 miles of mule deer and pronghorn crucial winter habitat in Wyoming, respectively. Construction activities would not be allowed by BLM and/or state agencies in critical big game winter habitat from November 15 to April 30 in Wyoming and from December 1 to April 30 in Colorado with one exception. The BLM Little Snake Field Office and CDOW have agreed to allow construction activities between December 1 and December 31 from MP 88.9 to MP 99.0 (big game winter habitat). Based on WIC's proposed schedule, they would need to complete construction activities in the designated big game wintering areas before the seasonal closure period begins. In addition, the pipeline would cross two State Wildlife Areas in Colorado. No Wildlife Habitat Management Areas would be crossed in Wyoming. To minimize impacts to wildlife, horses, and livestock, WIC has committed to installing ditch plugs with ramps within the construction trench and cap uncovered pipe at the end of each workday. Disturbed winter habitat areas would be re-seeded with mixtures approved by state wildlife agencies and the BLM.

WIC's proposed construction schedule would not overlap the breeding season for most migratory birds. Should construction be extended into the raptor nesting season, we recommend that WIC conduct pre-construction raptor nest surveys and abide by appropriate buffer zones and seasonal construction restrictions to prevent or minimize impacts to nesting raptors.

Special Status Species

We previously requested that the U.S. Fish and Wildlife Service (FWS) consider the draft EIS as the Biological Assessment for the proposed project. The resulting Endangered Species Act Section 7 consultation process has not yet been completed. Our recommended protection measures and effects determinations are discussed below.

Three federally listed plant species (Dudley Bluffs bladderpod, Dudley Bluffs twinpod [also known as the Piceance twinpod], and Ute ladies-tresses) could potentially occur within the pipeline construction ROW. WIC would conduct pre-construction surveys to determine the potential presence of these species prior to construction. If listed plant populations are found, we have recommended that WIC notify the BLM, FWS, and FERC to determine the most appropriate methods for avoiding or minimizing the loss of individual plants. Based on negative results from 2004 field surveys, WIC-committed protection measures, and our recommended protection measures, we have determined that the Piceance Project may affect, but is not likely to adversely affect these three plant species.

The proposed facilities would require construction across three perennial rivers (Little Snake, White, and Yampa Rivers). Based on recommendations from the FWS and CDOW, WIC has proposed to HDD the Little Snake, White, and Yampa Rivers. The federally listed Colorado pikeminnow may be present at the Yampa River crossing and its designated Critical Habitat occurs downstream of both the proposed White and Yampa River pipeline crossings. Based on WIC's HDD crossing plan, we have determined that the waterbody crossings associated with the Piceance Project may affect, but are not likely to adversely affect this fish species or adversely modify its Critical Habitat. In the event that WIC was unable to complete a successful HDD crossing of the Yampa or White Rivers, WIC has indicated that they would not proceed with a non-HDD crossing method until it has filed a site-specific alternative crossing plan with the Secretary of the Commission for review.

Populations of three other federally listed fish species (bonytail chub, humpback chub, and razorback sucker) were determined to be greater than 30 miles downstream in both the Yampa and White Rivers. Therefore, it is unlikely they would be affected by river crossing activities. We have concluded that the crossing of these waterbodies may affect, but is not likely to adversely affect these species or adversely modify their Critical Habitat.

WIC proposes to withdraw hydrostatic test water from the Little Snake, White, and Yampa Rivers; these withdrawals would be subject to seasonal restrictions. WIC proposes to discharge hydrostatic test waters to upland areas within the same drainage basin. We have determined that hydrostatic testing may affect, but is not likely to adversely affect federally listed fish species.

One federally listed bird (bald eagle) and one mammal (black-footed ferret) potentially occur in the project area. Based on known occurrence patterns, WIC-committed mitigation measures, and our recommended habitat and population protection measures, we have determined that the Piceance Project may affect, but is not likely to adversely affect the bald eagle and black-footed ferret.

The Piceance Project would cross within 2 miles of 26 historic leks (strutting grounds) for sage grouse (a BLM sensitive species). To prevent disruption of breeding activities, pre-construction surveys were completed in 2005 to determine the presence of active lek sites. WIC's proposed construction schedule would avoid seasonal timing constraint periods for those construction areas located within 2 miles of an active lek site. In addition, WIC would minimize habitat impacts on lek sites by reducing the width of the ROW within 0.25 mile of a lek to the extent practical, and would not construct aboveground facilities within 0.25 mile of a lek. Appropriate seed mixtures would be applied to restore sage grouse habitat and WIC has committed to coordinating with the appropriate agencies regarding reclamation efforts.

The Piceance Project could potentially affect BLM sensitive species, including 5 plants, 5 mammals, 12 birds, 2 amphibians, 1 reptile, and 4 fish. Based on WIC-committed protection measures and our analysis, we have concluded that while there may be effects on individuals, construction and operation of the Piceance Project would not cause a trend toward federal listing or loss of species viability.

Land Use, Recreation, and Visual Resources

The primary land use crossed by the Piceance Project would be rangeland that is used for livestock grazing. The proposed construction work area (i.e., the construction ROW and temporary additional workspaces) would not be located within 50 feet of any occupied residences or commercial buildings. A total of 860 acres would be newly dedicated to pipeline utility uses for the project life. The Piceance Project would conform to existing BLM land use plans and would acquire required permits and approvals to construct across state lands.

The Piceance Project would not cross or affect any developed recreation areas. In Colorado, the project would cross two CDOW properties (State Wildlife Areas). No wildlife habitat management areas would be crossed in Wyoming. The proposed pipeline would cross three designated natural conservation areas, all in Colorado. Pipeline construction could overlap with use of these areas during the fall and winter big game hunting seasons. WIC would coordinate with the agency managers of these areas to minimize conflicts with recreational user access to these areas.

The Piceance Project would generally be located in remote rural areas of Wyoming and Colorado, and would be located in or immediately adjacent to existing utility corridors over the majority of its route, though about 25.6 miles of construction would not be collocated with an existing utility corridor. The Piceance Project would be consistent with BLM Class III and IV Visual Resource Management criteria. Most aboveground facilities would be located at pre-existing facilities or within the proposed permanent ROW along lightly traveled roads.

Cultural Resources

Cultural resource inventories have been conducted along the majority of the proposed route, with only two extra workspaces, two 10-acre staging areas, four reroutes, and 0.4 mile of access road remaining to be surveyed. As of June 2005, these areas are now inventoried and will be reported on separately in an addendum report. Additional access roads requiring survey may be identified. To date, the completed surveys have identified 123 cultural resource sites in Colorado and 60 sites in Wyoming within the surveyed

Special Status Species

We previously requested that the U.S. Fish and Wildlife Service (FWS) consider the draft EIS as the Biological Assessment for the proposed project. The resulting Endangered Species Act Section 7 consultation process has not yet been completed. Our recommended protection measures and effects determinations are discussed below.

Three federally listed plant species (Dudley Bluffs bladderpod, Dudley Bluffs twinpod [also known as the Piceance twinpod], and Ute ladies-tresses) could potentially occur within the pipeline construction ROW. WIC would conduct pre-construction surveys to determine the potential presence of these species prior to construction. If listed plant populations are found, we have recommended that WIC notify the BLM, FWS, and FERC to determine the most appropriate methods for avoiding or minimizing the loss of individual plants. Based on negative results from 2004 field surveys, WIC-committed protection measures, and our recommended protection measures, we have determined that the Piceance Project may affect, but is not likely to adversely affect these three plant species.

The proposed facilities would require construction across three perennial rivers (Little Snake, White, and Yampa Rivers). Based on recommendations from the FWS and CDOW, WIC has proposed to HDD the Little Snake, White, and Yampa Rivers. The federally listed Colorado pikeminnow may be present at the Yampa River crossing and its designated Critical Habitat occurs downstream of both the proposed White and Yampa River pipeline crossings. Based on WIC's HDD crossing plan, we have determined that the waterbody crossings associated with the Piceance Project may affect, but are not likely to adversely affect this fish species or adversely modify its Critical Habitat. In the event that WIC was unable to complete a successful HDD crossing of the Yampa or White Rivers, WIC has indicated that they would not proceed with a non-HDD crossing method until it has filed a site-specific alternative crossing plan with the Secretary of the Commission for review.

Populations of three other federally listed fish species (bonytail chub, humpback chub, and razorback sucker) were determined to be greater than 30 miles downstream in both the Yampa and White Rivers. Therefore, it is unlikely they would be affected by river crossing activities. We have concluded that the crossing of these waterbodies may affect, but is not likely to adversely affect these species or adversely modify their Critical Habitat.

WIC proposes to withdraw hydrostatic test water from the Little Snake, White, and Yampa Rivers; these withdrawals would be subject to seasonal restrictions. WIC proposes to discharge hydrostatic test waters to upland areas within the same drainage basin. We have determined that hydrostatic testing may affect, but is not likely to adversely affect federally listed fish species.

One federally listed bird (bald eagle) and one mammal (black-footed ferret) potentially occur in the project area. Based on known occurrence patterns, WIC-committed mitigation measures, and our recommended habitat and population protection measures, we have determined that the Piceance Project may affect, but is not likely to adversely affect the bald eagle and black-footed ferret.

The Piceance Project would cross within 2 miles of 26 historic leks (strutting grounds) for sage grouse (a BLM sensitive species). To prevent disruption of breeding activities, pre-construction surveys were completed in 2005 to determine the presence of active lek sites. WIC's proposed construction schedule would avoid seasonal timing constraint periods for those construction areas located within 2 miles of an active lek site. In addition, WIC would minimize habitat impacts on lek sites by reducing the width of the ROW within 0.25 mile of a lek to the extent practical, and would not construct aboveground facilities within 0.25 mile of a lek. Appropriate seed mixtures would be applied to restore sage grouse habitat and WIC has committed to coordinating with the appropriate agencies regarding reclamation efforts.

The Piceance Project could potentially affect BLM sensitive species, including 5 plants, 5 mammals, 12 birds, 2 amphibians, 1 reptile, and 4 fish. Based on WIC-committed protection measures and our analysis, we have concluded that while there may be effects on individuals, construction and operation of the Piceance Project would not cause a trend toward federal listing or loss of species viability.

Land Use, Recreation, and Visual Resources

The primary land use crossed by the Piceance Project would be rangeland that is used for livestock grazing. The proposed construction work area (i.e., the construction ROW and temporary additional workspaces) would not be located within 50 feet of any occupied residences or commercial buildings. A total of 860 acres would be newly dedicated to pipeline utility uses for the project life. The Piceance Project would conform to existing BLM land use plans and would acquire required permits and approvals to construct across state lands.

The Piceance Project would not cross or affect any developed recreation areas. In Colorado, the project would cross two CDOW properties (State Wildlife Areas). No wildlife habitat management areas would be crossed in Wyoming. The proposed pipeline would cross three designated natural conservation areas, all in Colorado. Pipeline construction could overlap with use of these areas during the fall and winter big game hunting seasons. WIC would coordinate with the agency managers of these areas to minimize conflicts with recreational user access to these areas.

The Piceance Project would generally be located in remote rural areas of Wyoming and Colorado, and would be located in or immediately adjacent to existing utility corridors over the majority of its route, though about 25.6 miles of construction would not be collocated with an existing utility corridor. The Piceance Project would be consistent with BLM Class III and IV Visual Resource Management criteria. Most aboveground facilities would be located at pre-existing facilities or within the proposed permanent ROW along lightly traveled roads.

Cultural Resources

Cultural resource inventories have been conducted along the majority of the proposed route, with only two extra workspaces, two 10-acre staging areas, four reroutes, and 0.4 mile of access road remaining to be surveyed. As of June 2005, these areas are now inventoried and will be reported on separately in an addendum report. Additional access roads requiring survey may be identified. To date, the completed surveys have identified 123 cultural resource sites in Colorado and 60 sites in Wyoming within the surveyed area. Of these sites, 35 sites in Colorado and 16 sites in Wyoming have been recommended for eligibility, or are officially eligible for listing on the National Register of Historic Places (NRHP). Additional investigations are recommended at a number of cultural resource sites to determine their NRHP eligibility.

The process of fully complying with Section 106 of the National Historic Preservation Act has not yet been completed for the Piceance Project. Surveys and evaluative testing have not been completed and reroutes to avoid eligible sites have not been finalized. Once evaluations are complete and it has been determined which sites can or cannot be avoided, the FERC, in consultation with the BLM and the Colorado and Wyoming State Historic Preservation Offices (SHPOs), would make final determinations of NRHP eligibility and project effects. For historic properties that would be adversely affected, the FERC and the BLM, in consultation with the SHPOs, would review the adequacy of WIC's proposed Treatment Plan. Once the Treatment Plan is approved, WIC would implement the specified treatment measures before any notice to proceed with project construction is authorized in any given area. Implementation of treatment would occur only after approval of the proposed project by both the FERC and the BLM. The FERC would ensure that treatment is carried out.

Socioeconomics and Transportation

WIC proposes to employ a peak workforce of about 600 workers to construct the pipeline and associated facilities during the final quarter of 2005, potentially extending into 2006. We estimated that about 92 percent of the workforce would consist of non-local personnel. The project would be completed using two separate workforces (spreads). One spread would extend northward from the existing CIG Greasewood Compressor Station in western Colorado to Moffat County Road 8 (milepost [MP] 75.6). The portion of this spread north of the Yampa River would be completed simultaneously with the southern spread segment (from the Greasewood Compressor to the Yampa River). The second spread would extend from the northern end of the first spread (MP 75.6) northward to the existing CIG Wamsutter Compressor Station in Wyoming. The concurrent construction activity on the two spreads near Craig at the outset of the project could strain the local supply of the temporary housing. Demand could ease once construction on the first spread shifts southward and construction on the second spread progresses northward. However, we anticipate the availability of temporary housing to be very limited in Rio Blanco and Garfield Counties, Colorado, based on the quantity of temporary housing and ongoing energy development activities. To help alleviate the housing shortage issue during construction, WIC plans to reopen several closed campgrounds and trailer parks in the project area, and it plans to pay for upgrades at several small campgrounds which require additional sewage facilities.

We anticipate increased short-term demand for public services, particularly for emergency medical response to respond to the large construction workforce. Alternatively, long-term demands for public services would not occur since the operational workforce would be small. Local communities would receive short-term benefits from worker goods and services expenditures, and long-term benefits from property taxes. The aggregate assessed valuation for pipeline and aboveground facilities was estimated to be $27.8 million, of which 17 percent of the value would be in Wyoming and 83 percent in Colorado. Total annual property tax on this aggregate valuation was estimated to be $0.58 million. These tax revenues would typically be used by local and state governments for infrastructure improvements such as roads, schools, and health facilities, and to meet other needs of the community.

WIC would acquire land for its pipeline through easement agreements with private landowners. Potential impacts on land values from construction of a new pipeline are highly site-specific. Permanent structures could not be built over the pipeline, but existing land uses, such as livestock grazing, could continue as before. Our analysis concludes that there would be no disproportionate economic or public safety effects on minority or low-income communities as a result of the Piceance Project construction and operation.

WIC would limit delays along and damage to state and federal highways by boring beneath them. Smaller roads would be trenched, which would cause short-term delays. Construction of the Piceance Project would utilize a variety of secondary roads. Use of these roads would be subject to weight restrictions. WIC's Traffic and Transportation Management Plan defines the road conditions, traffic management procedures, and the procedures for repairing BLM, county, and state roads.

Air Quality and Noise

Construction of the pipeline and aboveground facilities would generate short-term fugitive dust along roadways and along the construction corridor during clearing and grading activities. WIC has committed to control fugitive dust using water. WIC would install a natural gas-fired compressor at the existing CIG Greasewood Compressor Station in Colorado. In a related action (TransColorado's North Expansion Project), TransColorado Gas Transmission Company (TransColorado) plans to install a new compression station adjacent to CIG's Greasewood Compressor Station.[4] WIC would acquire operating permits from Colorado air quality permitting agencies, which may impose permit conditions to ensure that the new compressor's operation would meet air quality standards.

The new compressor at the CIG Greasewood Compressor Station would be located at the Greasewood Hub, a general location where multiple pipelines interconnect. Although this location is rural, there are other existing compressor stations at the Greasewood Hub. The nearest noise-sensitive area to the CIG Greasewood Compressor Station would be over 1,700 feet away. With the addition of the new compressor, the operation of this station is expected to remain in compliance with the FERC 55 decibels on the A-weighted scale standard. To ensure compliance with the FERC noise standard, we have recommended that WIC conduct noise measurements when operations begin to verify compliance.

Reliability and Safety

WIC would comply with U.S. Department of Transportation pipeline materials and construction standards for natural gas pipelines. Where located in a utility corridor with other pipelines, the WIC pipeline would be typically offset a minimum of 40 feet from adjacent pipelines, which greatly reduces the risk of pipeline damage from any repair activities on adjacent pipelines. After construction, WIC must initiate a pipeline integrity management plan. As part of its plan, WIC must identify High Consequence Areas (HCAs), which typically include residential areas or areas where people congregate. One potential HCA has been identified

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4 On May 27, 2005, TransColorado's North Expansion Project was approved by the FERC under a separate filing (FERC Docket No. CP05-45-000).

as the the parking lot at the LUVS Truck Stop near the CIG Wamsutter Compressor Station in Wyoming. Portions of the pipeline that are located within HCAs would require inspection every seven years.

Cumulative Impacts

We identified existing and foreseeable projects that overlap or could overlap with the Piceance Project in time and space throughout the length of the pipeline. The major existing projects are the one or more existing pipelines that the Piceance Project would parallel over nearly the entire length of the project. The major foreseeable projects are:

- EnCana Oil and Gas USA's (EnCana's) Meeker Pipeline and Gas Plant Project, located in Rio Blanco and Garfield Counties, Colorado;
- TransColorado's North Expansion Project, consisting of a new TransColorado Greasewood Compressor Station and a new 24-inch-diameter 2,200-foot-long lateral to the CIG Greasewood Compressor Station; and
- the Entrega Project, a 36- to 42-inch-diameter new natural gas pipeline that would be constructed in the same pipeline corridor as the Piceance Project over a distance of about 98 miles.

The following are the primary cumulative impacts identified:

1. Construction of the Piceance Project would expand the width of existing pipeline corridors, particularly where the Entrega Project and Piceance Project pipelines would be routed adjacent to one another. Both projects would temporarily impact irrigated pasture at the Yampa River crossing as well as dry pasture at the Little Snake River crossing. There would be a corresponding expansion of wildlife habitat discontinuities in shrubland and woodlands, which may inhibit or limit wildlife movements and increase predation rates on certain species such as the sage grouse. Where WIC proposes to construct its pipeline adjacent to the Uinta Basin Lateral, Entrega Project pipeline, or other existing pipeline between MP 0 and MP 98, WIC has agreed to reduce its offset to 40 feet (from 50 feet) where feasible to reduce impacts to soils, vegetation, and wildlife habitat.

2. The pipeline construction workforces for the Piceance and Entrega Projects could overlap between the Yampa River and Wamsutter during the fall and winter construction seasons of 2005. Additionally, a smaller construction workforce associated with the TransColorado North Expansion Project also would be in the Greasewood Hub area in the fall and winter of 2005. Construction associated with the EnCana Meeker Pipeline and Gas Project is proposed for mid-2005 and beyond. These projects could cause cumulative increases in short-term demand for temporary housing, short-term demand for public services, and local congestion on secondary roads that would be used for construction access by these projects.

Alternatives Considered

We have considered the No Action Alternative, which would deny the proposed project. While this alternative would eliminate the environmental impacts identified in this EIS, it also would deny U.S. markets access to the 350 Dthd (341 MMcfd) of natural gas which the Piceance Project would transport.

We evaluated possible system alternatives including the use of other existing pipeline systems and the use of the proposed Entrega Project. Existing interstate natural gas pipelines that traverse the Piceance Basin would need to be modified (looped and/or compression added) to transport the volume of natural gas that would be transported by WIC's Piceance Project. Expansion of other existing pipeline systems would likely cause surface disturbance comparable to that resulting from the construction of the Piceance Project.

We also considered the option of combining the Entrega Project and Piceance Project pipelines into a single pipeline. While requiring substantially less pipeline than the sum of the two proposed projects and resulting in less surface disturbance, this alternative would require a larger pipe with greater compression (with resultant long-term air quality and noise impacts for the life of the project). While attractive in concept, we concluded that the "one-pipe" alternative would present a number of challenges and that melding the various factors and requirements (receipt points and pressures, delivery points and pressures, scheduling terms and conditions, etc.) of each individual system into a common system would be extremely difficult. Thus, we eliminated the one-pipe system alternative from further consideration.

We evaluated the differences in environmental impacts if the Piceance Project route followed the existing Uinta Basin Lateral between the Greasewood Hub and MP 105.1. WIC's proposed route along this 36.6-mile-long segment would only parallel existing utility ROWs for about 11.1 miles. To make use of the existing Uinta Basin Lateral ROW along this segment, we considered two route alternatives that also would follow the proposed Entrega Project route. We did not initially identify major construction constraints for these alternative routes. The Uinta Basin Lateral route alternatives for this segment appear to reduce environmental impacts compared to the proposed route because of: 1) equal or less overall surface disturbance; 2) less disturbance of sage grouse winter range (a locally important issue); 3) less disturbance in CDOW state wildlife areas; and 4) more miles parallel to existing pipelines. In its comments on the draft EIS, WIC provided additional information at our request regarding the rationale for selecting its proposed route from MP 105.1 to MP 141.7 over the Uinta Basin Lateral alternative and the constraints associated with collocating their pipeline with the Uinta Basin Lateral. Furthermore, we also conducted an over-flight of the proposed pipeline ROW and alternative routes since publication of the draft EIS. Based on the steep topography along the Uinta Basin Lateral in the Colorow Gulch area, the lack of workspace to install an additional pipeline where the best route alignment is already occupied by the Uinta Basin Lateral and the presence of highly erosive soils prone to undercutting and slumping in Indian Valley, we do not recommend the Uinta Basin Lateral alternatives. Furthermore, we also note that WIC's proposed route avoids the crossing of Piceance Creek and associated hay pastures in the Piceance Creek Valley that are very susceptible to subsidence, which has affected the flow irrigation in the fields along the Uinta Basin Lateral, and which required 2 to 3 years of post-construction mitigation following construction of the Uinta Basin Lateral.

We also examined a collocation alternative north of MP 105.1 (within what we term the Danforth Hills North Study Area), where we evaluated the extent to which long-term disturbance of sage grouse habitat could be reduced by collocating the Entrega Project and Piceance Project in the same 150-foot-wide ROW. Along this segment, the proposed route and proposed Entrega Project route generally follow the Uinta Basin Lateral to Wamsutter. We estimated that about 264 fewer acres of sage grouse habitat (a 33 percent reduction) would be disturbed if the two proposed projects were collocated across 29 miles of sage grouse breeding and brooding habitat north of the Yampa River. There are a number of construction constraints in this area. Based on the engineering constraints associated with this alternative, including multiple pipeline crossings and pull-outs from the corridor, and difficult terrain at some wash crossings, we do not recommend use of the Collocation Alternative.

Conclusions

The conclusions and recommendations presented in this section are those of the FERC environmental staff. Our conclusions and recommendations were developed with input from the BLM as a cooperating agency; the BLM will use the final EIS in its Record of Decision for the Piceance Project.

Review of the information provided by WIC and further developed from responses to data requests; field investigations; scoping; literature research; alternatives analysis; and contacts with federal, state, and local agencies, and individual members of the public indicates that the proposed project would result in limited adverse environmental impact during construction and operation. We conclude that if the project is constructed and operated in accordance with applicable laws and regulations, WIC's proposed mitigation, and the additional mitigation recommendations presented below, the Piceance Project would be an environmentally acceptable action. Although many factors were considered in this determination, the principal reasons are:

- 82 percent of the proposed pipeline would be located adjacent to existing pipeline, utility, and road ROWs. Where WIC's proposed pipeline would parallel existing pipelines, it would generally be installed at a 40-foot offset from the nearest pipeline centerline;
- the project would be consistent with or in conformance with federal resource management plans;
- WIC would implement a number of resource- or activity-specific plans, procedures, and agreements to protect natural resources, avoid or limit environmental impact, and promote restoration of all disturbed areas during construction and operation of the project;
- the use of the HDD method would avoid disturbances to the beds and banks of the Little Snake, White, and Yampa Rivers;
- the appropriate consultations with the FWS, the SHPOs, the BLM, other affected land management agencies, and any appropriate pre-construction compliance actions resulting from these consultations, would be completed before WIC would be allowed to begin construction in any given area; and

- an environmental inspection program would be implemented to ensure compliance with all mitigation measures, Certificate of Public Convenience and Necessity (Certificate) conditions, and requirements contained in the POD.

In addition, we have developed specific mitigation measures to further reduce the environmental impacts that would otherwise result from construction of the project. The additional studies or field investigations, which we recommend, typically result in site-specific mitigation and further reduction of impacts; therefore, we are recommending that these mitigation measures be attached as conditions to any Certificate issued by the Commission.

INTRODUCTION

CHAPTER 1

1.0 INTRODUCTION

1.1 Background

On January 24, 2005, Wyoming Interstate Company, Ltd. (WIC), a subsidiary of El Paso Corporation, filed an application with the Federal Energy Regulatory Commission (FERC or Commission) in Docket No. CP05-54-000, to construct, own, and operate new natural gas transmission facilities in Colorado and Wyoming.[1] In its filing, WIC seeks a Certificate of Public Convenience and Necessity (Certificate) under Section 7(c) of the Natural Gas Act (NGA) and Part 157 of the Commission's regulations. The Commission's environmental staff has prepared this environmental impact statement (EIS) to assess the environmental impacts resulting from construction and operation of the facilities proposed by WIC in accordance with the requirements of the National Environmental Policy Act (NEPA).

WIC's proposal, referred to in this EIS as the Piceance Basin Expansion Project (Piceance Project), would involve construction and operation of about 141.8 miles of 24-inch-diameter natural gas pipeline, 1,650 horsepower of additional compression at an existing compressor station, four new metering stations, and related facilities. The pipeline would extend between the existing Colorado Interstate Gas Company (CIG) Wamsutter Compressor Station in Sweetwater County, Wyoming and the Greasewood Hub[2] in the Piceance Basin, terminating at the existing CIG Greasewood Compressor Station in Rio Blanco County, Colorado (**figure 1.1-1**).[3] The Piceance Project would be designed to receive and transport up to 350,000 dekatherms per day (Dthd); (equivalent to about 341 million cubic feet per day [MMcfd]) from the Greasewood Hub to the CIG Wamsutter Compressor Station, where it would interconnect with two interstate transportation pipelines. This project would meet the needs of Williams Power Company, Inc. (Williams), a major Piceance Basin gas producer, to transport natural gas from the Piceance Basin to markets in the east or westward from Wamsutter.

WIC proposes to begin construction in October of 2005, with construction being completed by the end of January 2006. Based on this proposed schedule, WIC proposes to place the pipeline into service by February 1, 2006.

1.2 Project Purpose and Need

The purpose of the Piceance Project is to transport natural gas from supply basins in the central Rocky Mountains to interstate shippers at Wamsutter who would carry the gas to markets in both the western and central United States (U.S.). The need for the project is dictated by an increasing natural gas supply (production) in the Rocky Mountain region without a concurrent increase in pipeline capacity to transport this gas to market. Gas production in the Rocky Mountain region (New Mexico, Colorado, Wyoming, Utah, and Montana) is predicted to increase from 3.3 trillion cubic feet per year (Tcfy) in 2002 to 4.6 Tcfy in 2010 and

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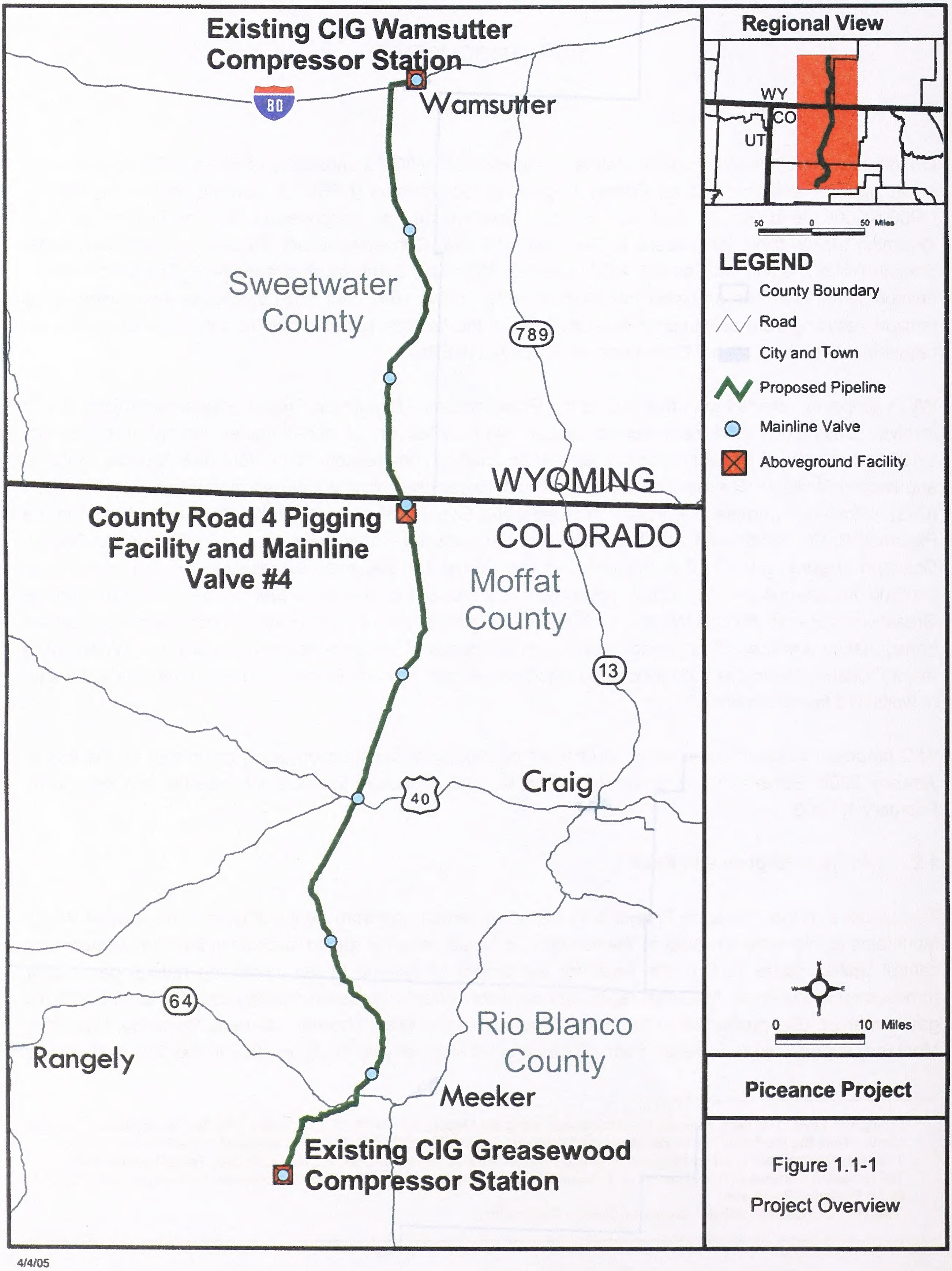
1 During the FERC Pre-filing Process this project was assigned Docket No. PF04-13-000. When WIC filed its application with the Commission, the pre-filing docket was closed and a new docket number (CP05-54-000) was assigned to the Piceance Project.

2 The Greasewood Hub is an existing convergence point for various interstate pipelines including CIG, TransColorado Gas Transmission Company (TransColorado), Questar Pipeline Company, as well as numerous pipeline gathering systems located in the Piceance Basin area.

3 Both WIC and CIG are affiliates owned by El Paso Corporation.



Existing CIG Wamsutter Compressor Station
80
Wamsutter
Sweetwater County
789
WYOMING
COLORADO
County Road 4 Pigging Facility and Mainline Valve #4
Moffat County
13
Craig
40
64
Rangely
Rio Blanco County
Meeker
Existing CIG Greasewood Compressor Station
Regional View
WY
CO
UT
50 0 50 Miles
LEGEND
County Boundary
Road
City and Town
Proposed Pipeline
Mainline Valve
Aboveground Facility
0 10 Miles
Piceance Project
Figure 1.1-1
Project Overview
4/4/05

6.3 Tcfy in 2025 (U.S. Department of Energy 2004). This increase in production will offset declining production in other U.S. gas producing regions.

1.3 Purpose and Scope of this Document

The principal purposes for preparing an EIS are to:

- identify and assess potential impact on the natural and human environment that would result from the implementation of the proposed action;
- identify and recommend reasonable alternatives and specific mitigation measures, as necessary, to avoid or minimize environmental impacts; and
- facilitate public involvement in the environmental review process.

This EIS focuses on facilities that are under the FERC's jurisdiction, i.e., about 141.8 miles of natural gas pipeline, additional compression to be installed at an existing compressor station, and related ancillary facilities. The scope of the analysis of those facilities not under the jurisdiction of the FERC (e.g., facilities related to development, production, gathering, and processing of natural gas) is described in section 1.5.

The topics addressed in this EIS include geology (including hazards, mineral resources, and paleontological resources); soils; groundwater; surface waters (including water quality); wetlands; vegetation; wildlife and aquatic species; special status species; land use (including agricultural resources); transportation; recreation and special interest areas (including Areas of Critical Environmental Concern [ACEC], Wild and Scenic Rivers, and Wilderness Areas); visual resources; socioeconomics (including population, housing, and public services); environmental justice; cultural resources; Native American concerns; air quality and noise; reliability and safety; cumulative impacts; and alternatives. The EIS describes the affected environment as it currently exists, discusses the environmental consequences of the proposed project, and compares the project's potential impact to that of alternatives. The EIS also presents recommended mitigation measures and our[4] conclusions.

The FERC is the "lead federal agency" for preparation of this EIS. This effort was undertaken with the participation and assistance of the U.S. Department of the Interior's Bureau of Land Management (BLM), which acted as a "cooperating agency" under NEPA. The EIS will provide a basis for coordinated federal agency decision-making in a single document, avoiding duplication between federal processes. In addition to the lead and cooperating agencies, other federal, state, and local agencies will use the EIS in approving or issuing permits or approvals for all or part of the proposed project (see section 2.8).

[4] "We," "us," and "our" refer to the environmental staff of the Commission's Office of Energy Projects (OEP). Unless specifically identified otherwise, the recommendations and conclusions presented in this EIS are those of the FERC staff.

1.3.1 FERC

The FERC is the federal agency responsible for regulating the transportation of natural gas in interstate commerce. Under the NGA, the FERC determines whether interstate natural gas facilities are in the public interest and, if so, grants a Certificate for construction and operation. As part of this determination, the FERC will consider the findings of this EIS as well as non-environmental issues in its review of WIC's application. The FERC will authorize the construction and operation of the proposed facilities only if it finds that the evidence produced on technical competence, financing, rates, market demand, gas supply, existing facilities and service, environmental impacts, long-term feasibility, and other issues demonstrate that a project is, or will be, required by the public convenience and necessity.

Environmental impact assessment and mitigation development are important factors in the overall public interest determination. Under NEPA, the FERC has a responsibility to consider the potential environmental impacts associated with proposals that come before it. This EIS has been prepared to fulfill that responsibility for WIC's proposal in compliance with the requirements of NEPA, the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA (Title 40 of the Code of Federal Regulations [CFR], Parts 1500-1508 [40 CFR 1500-1508]), and the FERC's regulations for implementing NEPA (18 CFR 380).

1.3.2 BLM

WIC's proposed pipeline route crosses federal lands managed by the BLM. Because the BLM must comply with the requirements of NEPA before issuing right-of-way (ROW) grants across lands under its management, the BLM has elected to cooperate with the FERC in preparing this EIS.

As a cooperating agency, the BLM proposes to adopt this EIS per 40 CFR 1506.3 to meet its responsibilities under NEPA in considering WIC's application for a ROW grant. WIC's application was submitted to the BLM's Rawlins, Wyoming, Field Office (FO) on June 25, 2004. Under section 185(f) of the Mineral Leasing Act of 1920 (MLA), the BLM has the authority to issue ROW grants for all affected federal lands. This action would be in accordance with 43 CFR 2800 and 2880, subsequent 2800 and 2880 Manuals, and Handbook 2801-1. For the Piceance Project, the BLM would consider the issuance of a new ROW grant and issuance of associated temporary use permits that would apply to BLM-managed lands crossed by the project. The BLM also would consider conformance with land use plans and impacts on resources and programs in determining whether to issue a ROW grant. The BLM's decision will be documented in a project Record of Decision (ROD) prepared by the BLM. BLM will consider any FERC approval or denial of WIC's proposal before issuing or denying a ROW grant for the proposed project.

The primary decisions to be addressed and made by the BLM include:

- Shall a ROW grant that includes mitigation and monitoring requirements be issued for a permanent pipeline ROW that will support pipeline construction and operation on federal lands?

- Shall Temporary Use Permits be granted for roads and extra workspaces needed for project construction on federal lands?

If the BLM decides to approve the Piceance Project, it will issue a ROW grant that would allow construction. ROW grants typically include standard agency stipulations, conditions imposed on the project as the result of the NEPA review, and a complete Plan of Development (POD).

1.4 Public Review and Comment

On June 29, 2004, the FERC approved WIC's request to use the FERC NEPA Pre-filing Process for the proposed Piceance Project and established Docket No. PF04-13-000 to place information filed by WIC and documents issued by the Commission into the public record.[5] The intent of the NEPA Pre-filing Process is to initiate environmental scoping and review activities early in the project planning process. Starting our environmental review before an application is formally filed with the Commission enables early involvement by the public, governmental agencies, and other interested parties while the project is still being designed. In this manner, we can identify environmental issues early in the process and facilitate resolution among the stakeholders.

As part of the NEPA Pre-filing Process, WIC mailed letters to landowners, government officials, and the general public informing them about the project and inviting them to attend the combined open houses/ scoping meetings. This forum provided stakeholders the opportunity to learn about the project and ask questions.

On July 14, 2004, the FERC issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Piceance Basin Expansion Project, Request For Comments On Environmental Issues, and Notice of Public Scoping Meetings and Route Inspection* (NOI). This document briefly described the project components, invited written comments from the public on the proposal, and listed the date and location of two public scoping meetings to be held in communities along the route. The NOI was sent to about 1,180 entities on a mailing list that included the landowners crossed and/or adjacent to the proposed ROW, federal and state agencies, Native American tribes, non-governmental and environmental organizations, libraries, the media, and other potentially interested citizens. The public scoping comment period for the Piceance Project closed on August 16, 2004.

We invited other federal agencies with jurisdiction and special expertise to be cooperating agencies during the project review. The BLM requested and received cooperating agency status. As part of this effort, we requested the cooperation of the U.S. Fish and Wildlife Service (FWS) and the U.S. Army Corps of Engineers (COE) because of their responsibilities under the Endangered Species Act of 1973, as amended (ESA) and the Clean Water Act of 1972 (CWA), respectively.

We held public scoping meetings in Craig, Colorado (August 3, 2004) and Meeker, Colorado (August 4, 2004). An additional scoping meeting was held in Rawlins, Wyoming, on June 8, 2004, for a related project proposed by Entrega Gas Pipeline Inc. (Entrega) (Entrega Project, FERC Docket No. CP04-413-000), which shares the same pipeline route in Wyoming as the Piceance Project (the Entrega Project is described below

[5] The request was made and the pre-filing docket was assigned in the name of El Paso Pipeline Group, Western Pipelines (WIC's affiliate). Both entities are subsidiaries of El Paso Corporation.

below in section 1.6). The Craig and Meeker meetings were announced in the NOI and in local area newspapers. Transcripts of the public scoping meetings are part of the public record and are available for viewing at the FERC website for the WIC docket.[6]

During the same time period, we organized and conducted a separate "agency" scoping meeting with federal, state, and local agency officials to solicit input and coordinate our review of the proposed project. This meeting was held in Rifle, Colorado on August 5, 2004. A summary of the issues discussed was made part of the public record and posted on the FERC website.

In addition to oral and written comments received during agency and public scoping meetings, the Commission received written comments during and after the close of the public scoping period (August 16, 2004). In total, 43 written correspondences[7] containing project comments were received from 30 parties, including items from federal and state government agencies; landowners; and environmental groups. Each letter was evaluated, and comments were divided into issue groups. When written comments were combined with oral meeting comments, 307 individual comments[8] were received. Many of these comments addressed the same environmental issues. Of the comments received, about one-third were non-environmental in nature (e.g., project need, easement acquisition, compensation, and general statements of support or opposition). **Table 1.4-1** lists the environmental issues and concerns identified by commentors during the scoping process.

The draft EIS was filed with the U.S. Environmental Protection Agency (EPA) and mailed to 511 federal, state, and local agencies, elected officials, Native American tribes, newspapers, public libraries, intervenors to the FERC's proceeding, and other interested parties. A formal notice indicating that the draft EIS was available for review and comment was published in the Federal Register (FR). The public was given 45 days from the date the EPA published a Notice of Availability in the FR to review and comment on the draft EIS both in the form of written comments and at public meetings held in communities along the pipeline route.

Three public meetings were held in the project area to receive comments on the draft EIS. These meetings were conducted in Craig, Colorado (June 7, 2005); Wamsutter, Wyoming (June 8, 2005); and Meeker, Colorado (June 9, 2005). Oral comments were received from only one local individual who was in support of the project. Written comments were received from two federal agencies, two state agencies, two local agencies, one organization and the project applicant. The comment period for receiving comments on the draft EIS closed on June 20, 2005. The oral and written comments and our responses to them are included as chapter 6.0 of this final EIS.

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6 Public meeting transcripts and a summary of the issues discussed during agency scoping meetings are available for viewing on the FERC Internet website (http://www.ferc.gov). Using the "eLibrary" link, select "General Search" from the eLibrary menu, enter the selected date range and "Docket No." (PF04-13-000), and follow the instructions. (For assistance, call 1-866-208-3676 or e-mail FercOnlineSupport@ferc.gov.) Because scoping was conducted during the pre-filing review, PF04-13-000 must be used in the "Docket No." field to view the public scoping transcripts.

7 Written correspondences included letters, return mailers (attached to our NOI), and electronic mail.

8 Due to the similarity of project location and timing between the Piceance Project and the Entrega Project, comments received during the Entrega Project scoping process from the areas where WIC proposes construction were considered relevant and included as part of the NEPA scoping process for the Piceance Project. The total reflects the sum of all individual comments, even if the same comment was received from the same person multiple times and in different formats (oral or written).

Table 1.4-1
Issues Identified and Comments Received During the Public Scoping Process for the Piceance Project

Purpose and Need
- Sources and suppliers of natural gas for the project.
- Existing regional pipeline transportation capacities.

NEPA Process
- Pipeline and ancillary facilities to be included in the EIS analysis.
- Consideration of a single combined EIS for the Piceance Project and the Entrega Project.
- Completion of the BLM Rawlins FO Resource Management Plan (RMP) prior to making ROW decisions for the Piceance Project.
- Jurisdiction for gathering pipelines that provide gas for the Piceance Project.

Geology
- Potential landslide risk on steep slopes.
- Potential pipe exposure at incised channel crossings.

Soils and Noxious Weeds
- Soil loss from wind and water erosion.
- Long-term loss of desirable vegetation caused by inappropriate species selection for revegetation; weed invasion; and difficult reclamation conditions (e.g., alkaline soils).
- Spread of noxious and invasive weeds in excavated soils.
- Loss of vegetation productivity from soil mixing and compaction.
- Restoration and monitoring of the ROW to original contour.

Water
- Increased sedimentation at river and stream crossings and irrigation ditches.
- Depletion of surface water sources used for dust control and hydrostatic testing.
- Potential reduction in water quality at hydrostatic test water discharge locations.
- Storage of hazardous materials at refueling sites.

Vegetation
- Long-term loss of native species and structural diversity in areas with high wildlife habitat values (sagebrush communities, mountain shrublands, riparian areas).

Fish and Wildlife
- Potential loss of wildlife individuals and reproductive success because of human activity, construction surface disturbance, and compressor station operational noise during critical periods of the year. Primary species of concern: big game and migratory birds (including raptors).
- Potential loss of fish individuals and reproductive success because of construction disturbance in waterways during critical periods of the year.
- Increased habitat fragmentation from expansion of surface disturbance caused by existing and new pipeline ROWs.
- Indirect effects (increased human activity and noise).

Special Status Species
- Potential loss of wildlife species individuals and reduced reproductive success because of human activity, construction surface disturbance, and compressor station operational noise during critical periods of the year. Primary species of concern: bald eagle and other special status raptors, sage grouse, prairie dog colonies and associated species, and other BLM special status species.
- Potential loss of fish individuals and reproductive success because of construction disturbance in waterways during critical periods of the year. Primary species of concern: native Colorado River system fish.

Table 1.4-1 (Continued)

Special Status Species (Continued)
- Depletion effects on surface water regimes and habitats for downstream listed species (Colorado River system).
- Potential loss of plant species individuals and reduced reproductive success because of construction surface disturbance. Primary species of concern: Dudley Bluffs twinpod, Dudley Bluffs bladderpod, BLM special status plants.
- Potential natural gas or condensate leaks and impacts on fish.

Land Use, Recreation, and Visual Resources
- Loss or delay of agricultural production and potential interference with livestock management, including fence and irrigation system repairs.
- Construction noise, human activity, and surface disturbance near residential areas and farms.
- Effects of heavy loads on county and private roads, and plans for repair.
- Visual impacts from new pipeline surface disturbance and aboveground ancillary facilities on nearby residential areas and Key Observation Points.
- Increased public access to public and private lands from new road construction.
- Potential conflicts between big game hunting and pipeline construction.
- Potential for precluded future land uses.
- Decommisioning plans for temporary access roads.
- Protection measures for unique or sensitive areas.

Cultural Resources
- Consultation with potentially affected Native American tribes.
- Identification and protection of cultural resources in and near construction areas.
- Identification and protection of traditional cultural properties in the area.
- Identification and protection of the Overland and Cherokee historic trails.

Socioeconomics
- ROW easement negotiations.
- Potential reductions in property value and changes in future use because of a new pipeline.
- Adequacy of temporary housing and camp sites during construction.
- Short- and long-term fiscal benefits and costs to local communities and counties.
- Carpooling or busing crews to work sites.
- Limited emergency medical and fire fighting capabilities in Rio Blanco County, Colorado.

Air and Noise
- Increased fugitive dust generation and need for control on access roads.
- Compressor station combustion emissions compliance with air quality standards.
- Compressor station noise impacts on nearby residences and potential mitigation.

Public Safety
- Proximity of adjacent pipelines.
- Construction practices around electrical transmission lines.
- Ensure pipe strength sufficient for heavy vehicles.
- Properly mark the location and ownership of underground utilities.
- Electrical grounding of the pipeline.

Cumulative Impacts
- Growth induced by increase in local pipeline capacity.
- Relationship to other oil and gas development activities.
- Inclusion of the proposed Entrega Project and its associated facilities.
- Disruption and loss of agricultural production from two pipelines (Piceance Project and Entrega Project) constructed sequentially.

Table 1.4-1 (Continued)

Cumulative Impacts (Continued)

- Cumulative impacts from multiple pipelines in nearby, but not abutting, ROWs.
- Cumulative pipeline impacts (surface disturbance, restoration, and precluded land use) on nearby landowners.
- Cumulative impacts on wildlife and their habitats.
- Conversion plans for the existing soda ash pipelines.

Alternatives

- Single pipeline for the Piceance Project and Entrega Project where the two projects overlap.
- Construction of Piceance and Entrega pipelines within a single, common ROW.
- Simultaneous construction and restoration of Piceance project and Entrega project.
- Construction of the Piceance Project pipeline in an alternative corridor between the CIG Greasewood Compressor Station (project end milepost [MP] 141.7) and approximate MP 106.

The final EIS was filed with the EPA and mailed to approximately 535 federal, state, and local agencies; elected officials, Native American tribes; newspapers; public libraries; intervenors to the FERC's proceeding; and other interested parties who provided scoping comments, commented on the draft EIS, or wrote to the FERC asking to receive a copy of the document. The distribution list for the final EIS is presented in appendix K. A formal notice indicating that the final EIS is available was published in the FR.

In accordance with CEQ regulations implementing NEPA, no agency decision on the proposed action may be made until 30 days after the EPA publishes a Notice of Availability of the final EIS in the FR. However, the CEQ regulations provide an exception to the rule when an agency decision is subject to a formal internal appeal process that allows other agencies or the public to make their views known. This is the case at the FERC, where any Commission decision on WIC's proposal would be subject to a 30-day rehearing period. Therefore, the agency decision may be made at the same time that notice of the final EIS is published by the EPA, allowing the appeal periods to run concurrently.

For the BLM, the date the EPA's Notice of Availability appears in the FR initiates a 30-day period before the decision to issue or amend a ROW grant is made. Comments received on the final EIS during the 30-day period will be reviewed to determine if they have merit (e.g., identify significant issues not previously addressed or introduce significant new information). If no changes are warranted, a ROD is prepared that documents the selected alternative as well as mitigation measures. No action concerning a proposal may be taken on federal land until the ROD for the ROW grant has been issued.

1.5 Nonjurisdictional Facilities

Under Section 7 of the NGA, the FERC is required to consider, as part of its decision to authorize interstate natural gas facilities, all factors bearing on the public convenience and necessity. The facilities for the proposed Piceance Project that would be under the FERC's jurisdiction include approximately 141.8 miles of natural gas pipeline, additional compression at the existing CIG Greasewood Compressor Station, four interconnections with existing pipelines, nine mainline valves (MLVs), and three pigging facilities.[9] These facilities are discussed in detail in section 2.1. Many of the proposed aboveground facilities would be located within existing compressor station facility sites.

Occasionally, proposed natural gas pipeline projects have associated facilities that do not come under FERC jurisdiction. These "nonjurisdictional" facilities may be integral to the need for the proposed project (e.g., a new or expanded power plant at the end of a FERC-jurisdictional pipeline) or they may be merely associated as a minor, non-integral component of the proposed jurisdictional facilities.

Natural gas for the Piceance Project pipeline would be derived from existing, previously permitted TransColorado and Williams pipelines. There are multiple sources of gas for these existing pipelines. On a regional scale, there are existing and planned nonjurisdictional facilities, such as natural gas development, production, gathering, and processing facilities that have been or will be constructed and operated by Williams or other producers in the basin, regardless of the status of the Piceance Project. These facilities are located upstream of the proposed Piceance Project facilities at the Greasewood Hub in Rio Blanco County, Colorado. **Table 1.5-1** lists currently identified nonjurisdictional facilities and the status of their environmental review. **Figure 1.5-1** illustrates these nonjurisdictional facilities.

We carefully considered the relationship between these nonjurisdictional facilities and the Piceance Project. Although many of these facilities would be functionally attached to the Piceance Project pipeline, we have concluded that these facilities do not represent actions that must be addressed at the same level of detail as the Piceance Project in this EIS. In addition, the facilities identified in **table 1.5-1** are existing facilities.

1.6 Related Actions

On January 6, 2005, TransColorado filed an application with the FERC in Docket No. CP05-45-000 to construct its North Expansion Project that would consist of constructing a new compressor station (the TransColorado Greasewood Compressor Station[10]) and a new 2,200-foot-long interconnecting pipeline between the new compressor station and CIG's Greasewood Compressor Stations (**figure 1.6-1**). TransColorado's new compressor station would contain three compressors with a combined total of 4,670 horsepower (International Organization for Standardization [ISO] rating) and metering facilities. We consider the North Expansion Project to be a related action since it directly provides natural gas supply for the project.[11] However, the North Expansion Project is not a connected action because the compressor's function is to compress gas that is being transported northward, serving multiple northbound shippers. While

9 A pipeline "pig" is a device used to clean or inspect the pipeline. A pigging facility may include a pig launcher, receiver, or combined launcher/receiver. A pigging facility is an aboveground facility where pigs are inserted into and/or retrieved from the pipeline.

10 TransColorado's proposed and CIG's existing compressor stations at the Greasewood Hub are both named "Greasewood Compressor Station." To avoid confusion, this EIS refers to the compressor stations as "TransColorado's Greasewood Compressor Station" and "CIG's Greasewood Compressor Station."

11 Williams' existing gathering facilities would deliver up to about 70,000 Dthd at the Greasewood Hub and Williams has arrangements with TransColorado to deliver the remaining volumes (280,000 Dthd) at the Greasewood Hub. Together these volumes comprise WIC's proposal to transport 350,000 Dthd to Wamsutter.

Table 1.5-1
Nonjurisdictional Facilities

Facility (see figure 1.5-1)	Status	Location	Interconnections	Facility Description	Environmental Review Status
Natural Gas Fields	Existing	Mesa, Garfield, and Rio Blanco Counties, Colorado	Multiple small diameter interconnecting pipelines with larger diameter gathering trunklines that feed gas to existing gas plants.	Natural gas wells on variable spacing (20, 40, 80 acres) that are connected to gathering pipelines.	Wells individually approved on a site-specific basis by the BLM on federal, state, and private lands with federal ownership of oil and gas rights. Wells individually approved on state and private lands under Colorado Oil and Gas Commission requirements where oil and gas rights are state or privately held.
Williams Processed Natural Gas Pipeline 16-inch-diameter natural gas pipeline (Initial transportation volumes of up to 68 MMcfd or 70,000 Dthd)	Existing	Garfield and Rio Blanco Counties, Colorado	From the Garfield County production field to the CIG Greasewood Compressor Station.	Existing 16-inch-diameter pipeline would flow processed gas to the CIG Greasewood Compressor Station.	Approved and operational.
Williams Processed Natural Gas Pipeline 24-inch-diameter natural gas pipeline (Initial transportation volumes of up to 273 MMcfd or 280,000 Dthd)	Existing	Mesa and Garfield, Counties, Colorado	From the Garfield County production field to the interconnection on the TransColorado Pipeline near DeBeque, Colorado.	Existing 24-inch-diameter pipeline would flow processed gas to the interconnection with TransColorado Pipeline.	Approved and operational.

Table 1.5-1 Continued

Facility (see figure 1.5-1)	Status	Location	Interconnections	Facility Description	Environmental Review Status
TransColorado Processed Natural Gas Pipeline 24-inch-diameter natural gas pipeline (Initial transportation volumes of up to 273 MMcfd or 280,000 Dthd)	Existing	Garfield and Rio Blanco Counties, Colorado	TransColorado Pipeline near Debeque, Colorado, to the proposed TransColorado Greasewood Compressor Station.	Existing 22-inch-diameter interstate pipeline would deliver processed gas to the proposed TransColorado Greasewood Compressor Station.	Approved and operational.

Note: Conversion factor is Dthd = 1027 x MMcfd.

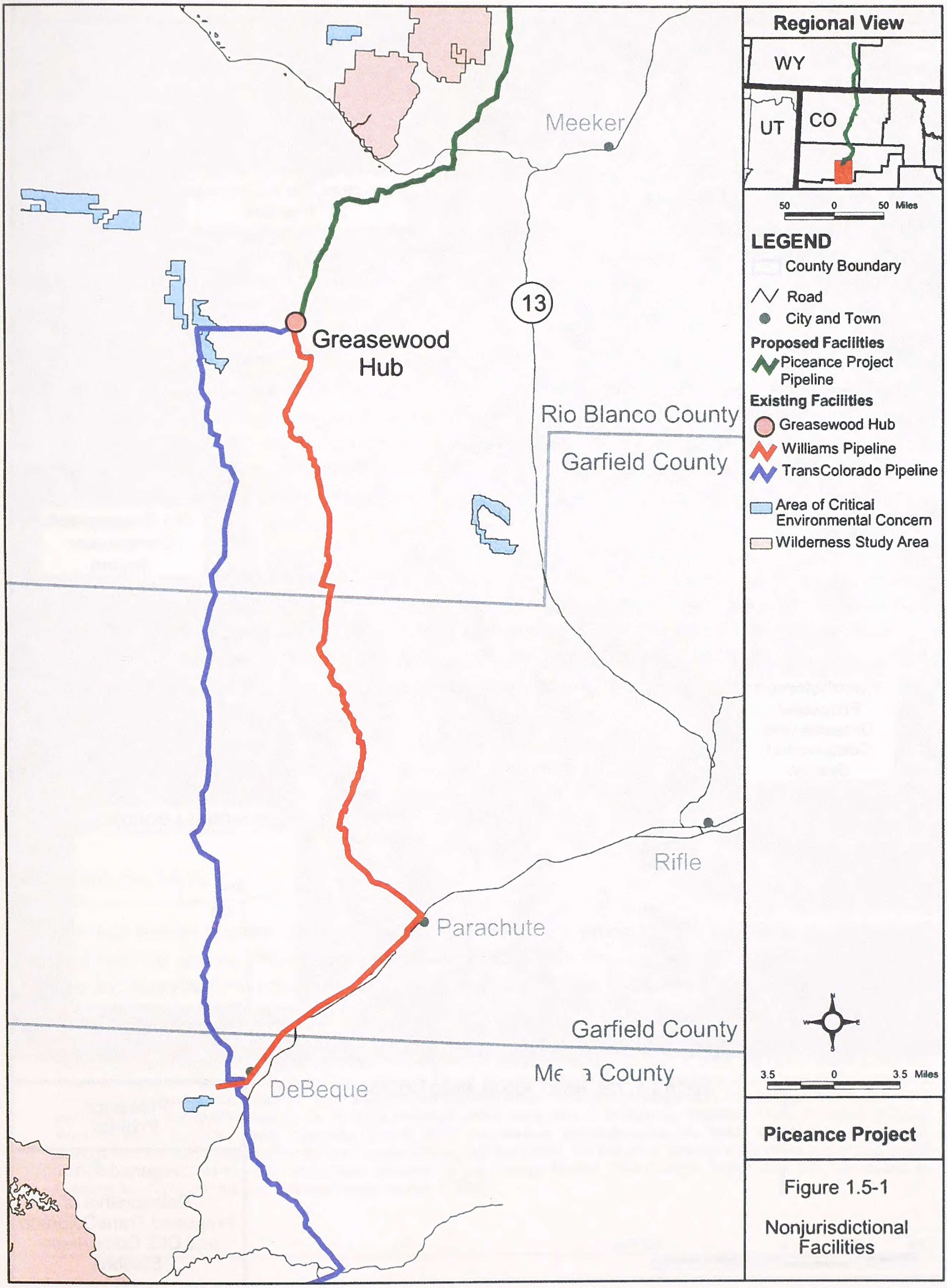

Figure 1.5-1

Nonjurisdictional Facilities

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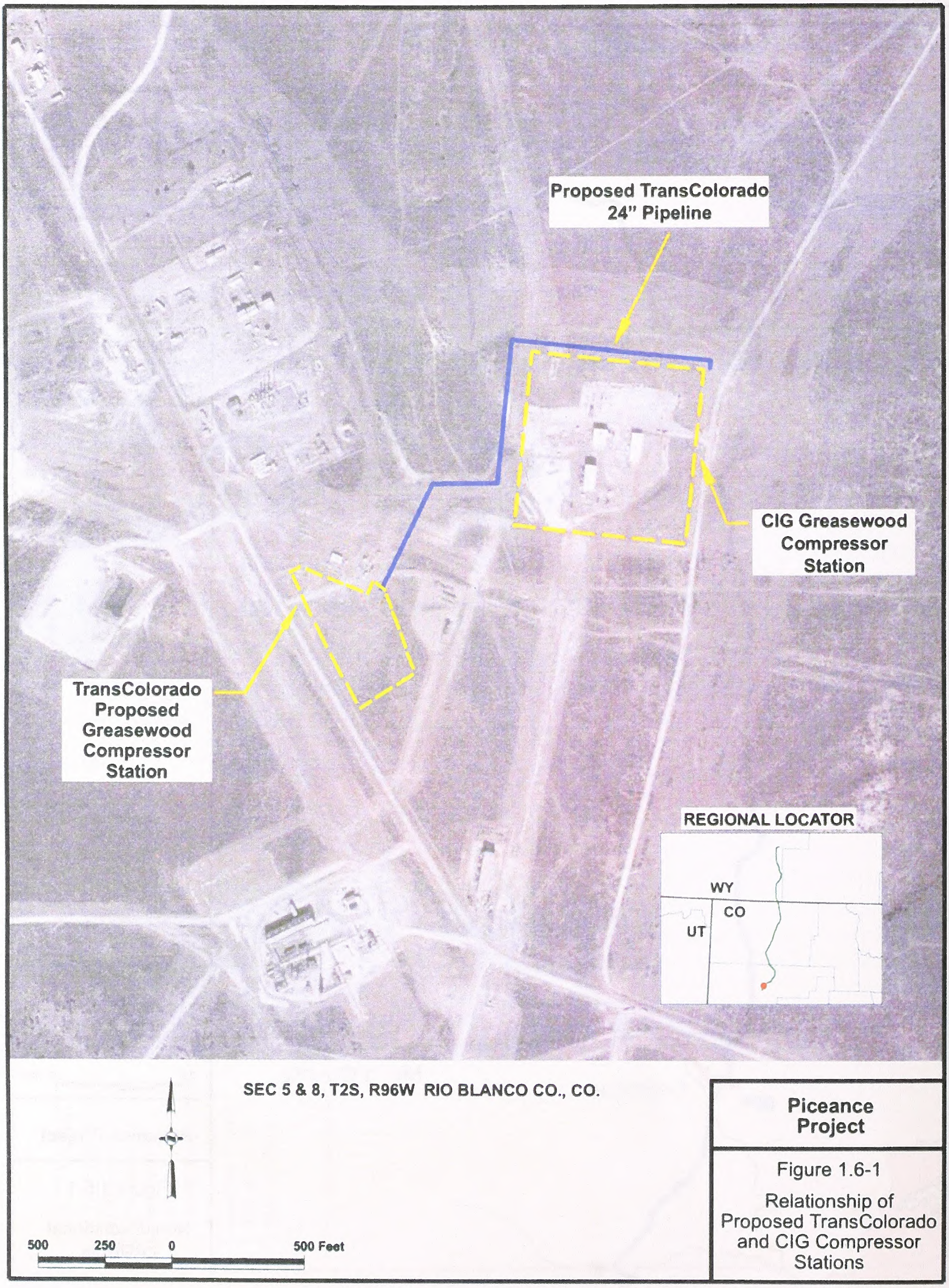

Figure 1.6-1

Relationship of Proposed TransColorado and CIG Compressor Stations the North Expansion Project would include service to the Piceance Project, it is not limited to providing compression to the Piceance Project. The North Expansion Project also would provide shippers on TransColorado's system the ability to deliver their gas into the existing interstate pipeline systems of CIG, Questar Pipeline Company, and Northwest Pipeline Company at the Greasewood Hub. As proposed, TransColorado requested approval of the North Expansion Project by the end of May 2005, with construction in the summer of 2005, and with a projected in-service date of January 2006. The North Expansion Project is on an earlier construction schedule than the Piceance Project (WIC's proposed construction would commence in the fall of 2005). The FERC analyzed the North Expansion Project separately in an environmental assessment that was issued on May 20, 2005, and this project was authorized on May 27, 2005. Remaining pipeline facilities that connect to the gas fields have already been constructed.

On October 28, 2003, EnCana Oil and Gas USA (EnCana) filed an application with the Rawlins BLM FO to construct and operate a new interstate natural gas pipeline and related facilities in Colorado and Wyoming. The name of the applicant was later modified on the BLM application to Entrega, an affiliate of EnCana. On September 17, 2004, Entrega filed applications with the FERC to construct and operate a new interstate natural gas pipeline and related facilities in Colorado and Wyoming.[12] As proposed, the Entrega Project would include:

- about 328.1 miles of 36- and 42-inch-diameter new natural gas pipeline, extending between a proposed Meeker Hub in Rio Blanco County, Colorado (about 7 miles west of the Greasewood Hub) and northward into Wyoming, where it would interconnect with two existing interstate natural gas transportation pipelines at Wamsutter, Wyoming. From Wamsutter, the pipeline would head southeast, where it would interconnect with other existing pipelines at the Cheyenne Hub in Weld County, Colorado;
- 66,020 horsepower of compression at three new compressor stations;
- seven new metering stations; and
- twenty-two MLVs.

The Entrega Project would receive natural gas from EnCana's proposed gas processing plant near the "Meeker Hub," as well as other natural gas pipelines. EnCana's proposed facilities, known as the Meeker Pipeline and Gas Plant Project, are currently being evaluated by the BLM using a preliminary environmental

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[12] On March 19, 2004, Entrega requested that the FERC initiate the NEPA Pre-filing process for the Entrega Project. The FERC granted Entrega's request and assigned Docket No. PF04-7-000 to the proceeding. On May 3, 2004, the FERC issued a *Notice of Intent to Prepare an Environmental Irnpact Statement for the planned Entrega Gas Pipeline Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meetings and Route Inspection* (Entrega NOI). The Entrega NOI invited public participation in stakeholder and public scoping meetings which were held in Cheyenne, Wyoming (June 7, 2004), Rawlins, Wyoming (June 8, 2004), Craig, Colorado (June 9, 2004), and Meeker, Colorado (June 10, 2004). On September 17, 2004, Entrega formally filed its application for the Entrega Project with the FERC. On that date, Entrega's Pre-Filing docket was closed and Docket Nos. CP04-413-000, et al. were assigned to the Entrega Project. The Entrega Project draft EIS was issued on February 25, 2005, and the final EIS was issued on July 1, 2005.

assessment (EA) which was issued on March 25, 2005. The final EA for this project is expected to be issued in July or August 2005.

The proposed Entrega Project pipeline would be constructed in approximately 8.5 miles of new ROW along Piceance Creek from a proposed Meeker Compressor Station to an intersection with the existing 20-inch-diameter CIG Uinta Basin Lateral pipeline. The Entrega Project pipeline would parallel the Uinta Basin Lateral (and other existing pipelines) the remainder of the distance to Wamsutter, Wyoming (**figure 1.6-2**). The proposed Piceance Project pipeline would be in the same utility corridor with the Entrega Project pipeline from approximate WIC's MP 0 to MP 105.1, where they are generally parallel with the Uinta Basin Lateral. For 98 miles the two projects very closely parallel and share the same utility ROW with other existing pipelines (WIC MP 0 to MP 98). For an additional 15 miles the two projects share a broader utility corridor, but do not plan to share the same ROW (WIC MP 65 to MP 73 and WIC MP 98 to MP 105.1). Entrega proposes to begin construction in 2005, with a desired in-service date of January 2006.

Because the Entrega Project would be located in the same utility corridor as the Piceance Project over a distance of approximately 105 miles, and both projects are proposed to be constructed in nearly the same timeframe between the Piceance Basin and Wamsutter, the FERC and BLM considered whether to analyze both projects together in the same EIS. This approach was rejected because the planning for the Piceance Project was several months behind that of the Entrega Project. We determined that if either project were delayed, development of a single EIS would potentially penalize the other project by imposing unnecessary NEPA processing delays. If WIC's project development caught up with the Entrega Project prior to release of a draft EIS, the issue of a single EIS covering both projects would have been revisited. However, the Entrega Project draft EIS was issued on February 25, 2005.

Consequently, each project is being analyzed in a separate EIS; however, the combined environmental effects of both projects are being considered together where the two projects overlap. In some instances, the decisions to be made for the Entrega Project could affect the location and construction procedures for the Piceance Project. To account for the joint environmental and construction issues for both projects, route alternatives were developed in which both projects would be located together for all or part of the pipeline segment between the Piceance Basin and Wamsutter. The purpose of these alternatives is to examine options to reduce the overall surface disturbance for both projects and a consequent reduction in resource effects. Another purpose is to determine whether one applicant's proposal would yield greater environmental protection benefits than the other proposal where the two proposed routes are geographically separate (south of MP 105.1). The rationale and scope of the route alternatives are presented in chapter 4.0. The FERC and the BLM are encouraging the two companies to work together to closely collocate their facilities wherever possible and to conduct joint construction planning with the goal of minimizing environmental impacts to the maximum extent practicable.

On February 18 and March 1 and 2, 2005, the BLM hosted meetings with both Entrega and WIC to discuss construction and reclamation procedures that each company would employ while constructing across federal lands. The FERC and BLM staff prefer that both companies use similar construction and reclamation procedures to ensure consistency between the projects and to facilitate environmental monitoring. Also

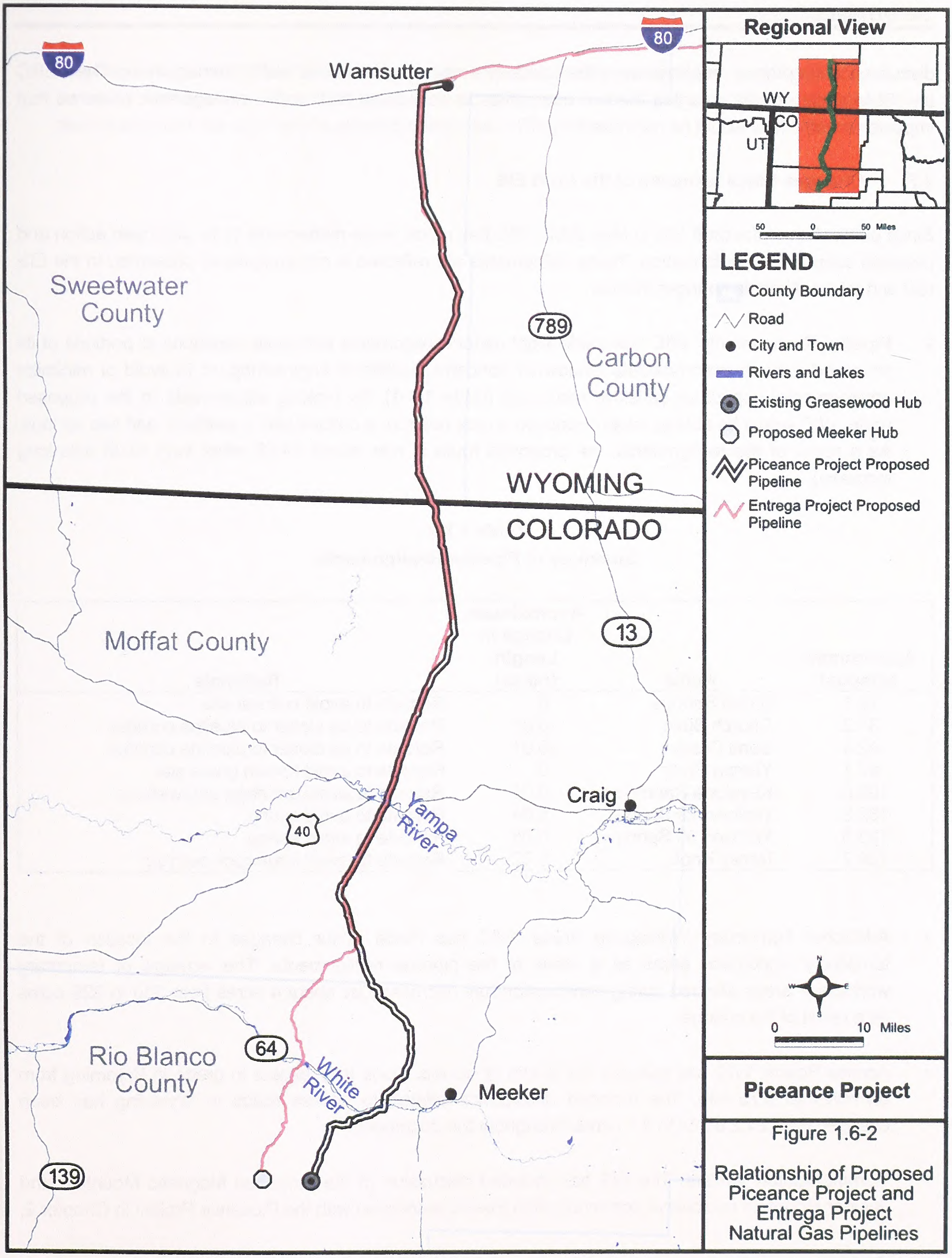

Figure 1.6-2

Relationship of Proposed Piceance Project and Entrega Project Natural Gas Pipelines

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discussed during these meetings were the topics of access road use and traffic management. The FERC and BLM staffs are encouraging the two companies to coordinate their traffic management plans so that impacts on traffic flow would be minimized.

1.7 Changes Since Issuance of the Draft EIS

Since publication of the draft EIS in May 2005, WIC has made some refinements to its proposed action and provided supplemental information. These refinements are reflected in our analysis as presented in the EIS text and tables. Notable changes include:

- Pipeline Realignments: WIC has made eight minor realignments and route variations to portions of its proposed route to accommodate landowner concerns, additional engineering, or to avoid or minimize environmental impact on sensitive resources (**table 1.7-1**). By making adjustments to the proposed route, WIC would be able to avoid impact on a rock outcrop, a cultural site, a wetland, and two springs. As a result of the realignments, the proposed route is now about 141.8 miles long (0.06 mile-long increase).

Table 1.7-1
Summary of Pipeline Realignments

Approximate Milepost	Name	Approximate Change in Length (miles)	Rationale
18.1	Barrel Springs	0	Reroute to avoid cultural site
33.2	Church Butte	-0.01	Reroute to be closer to pipeline corridor
42.4	Sand Creek	-0.01	Reroute to be closer to pipeline corridor
87.1	Yampa River	0	Reroute to avoid known grave site
105.6	Keystone Ranch	-0.01	Reroute to avoid drainage and wetland
132.9	Wetland 29 Spring	0.04	Reroute to avoid spring
133.5	Wetland 30 Spring	0.05	Reroute to avoid spring
134.7	Rocky Knob	0.02	Reroute to avoid large rock outcrop

- Additional Temporary Workspace Areas: WIC has made minor changes to the location of the temporary workspace areas as a result of the pipeline realignments. The acreage of temporary workspace areas affected during construction has decreased by about 4 acres from 330 to 326 acres as a result of the change.

- Access Roads: WIC has reduced the length of access roads they expect to grade in Wyoming from 6.7 miles to 0.75 mile. The reported disturbance related to access roads in Wyoming has been changed from 24.2 acres to 2.7 acres throughout the document.

- Communication Towers: The EIS has included discussion of the proposed Magnetic Mountain and Juniper Mountain microwave communication towers associated with the Piceance Project in Chapter 2, Proposed Action, and identified the acreage affected during construction and operation of the communication towers. The impacts associated with construction and operation of the towers is discussed under the appropriate affected resources in Chapter 3.

PROPOSED ACTION

CHAPTER 2

2.0 PROPOSED ACTION

WIC proposes to construct and operate a new 141.8-mile interstate natural gas transmission system from the existing CIG Wamsutter Compressor Station in Sweetwater County, Wyoming, to the existing CIG Greasewood Compressor Station in Rio Blanco County, Colorado. In addition to the pipeline, WIC would add 1,650 horsepower of compression to the existing CIG Greasewood Compressor Station, construct four interconnections and metering stations, nine MLVs, three pigging facilities, and other associated facilities. An overview map of the project location and facilities is provided in **figure 1.1-1**. Detailed maps showing the pipeline route and aboveground facilities are contained in appendix A.

WIC plans to begin construction in October 2005 with construction completed by the end of January 2006. This would allow for an in-service date of February 1, 2006.

2.1 Proposed Facilities

2.1.1 Pipeline Facilities

The Piceance Project would consist of about 141.8 miles of 24-inch-diameter pipeline in Colorado and Wyoming. The pipeline would begin at the existing CIG Wamsutter Compressor Station (MP 0.0) located in Sweetwater County, Wyoming, and terminate at the existing CIG Greasewood Compressor Station (MP 141.7) located in Rio Blanco County, Colorado. The pipeline route would traverse Sweetwater County, Wyoming; and Moffat and Rio Blanco Counties, Colorado. The line parallels CIG's existing Uinta Basin Lateral for most of its route (MP 0 to MP 105.1); it also parallels the proposed Entrega Project along this same segment. The maximum allowable operating pressure (MAOP) of the system would be 1,480 pounds per square inch gauge (psig).

The entire pipeline would be constructed in Class 1 areas as defined by U.S. Department of Transportation (DOT) regulations at 49 CFR 192. However, the pipeline would be designed, constructed, and hydrostatically tested to meet the more stringent Class 2 requirements. The pipeline would be constructed of high-strength steel pipe (grade X70) with a wall thickness of 0.353 inch. A higher grade of pipe would be used at road and waterbody crossings in accordance with DOT regulations. All pipe would be manufactured, constructed, and operated in accordance with applicable local, state, and federal regulations.

2.1.2 Compressor Stations and Appurtenant Facilities

Minor aboveground facilities associated with the Piceance Project would include four metering stations, nine MLVs, three pigging facilities, and two microwave tower sites (**table 2.1-1**). Two metering stations, a MLV, and a pigging facility would be installed at both the existing CIG Wamsutter (MP 0.0) and CIG Greasewood (MP 141.7) Compressor Stations. The remaining seven MLVs would be spaced 15 to 20 miles apart along the pipeline ROW to meet DOT valve spacing requirements. The remaining pigging facility would be installed with a MLV at MP 54 (Moffat County Road 4 Pigging Facility). WIC would add 1,650 horsepower of new compression at the existing CIG Greasewood Compressor Station and proposes to install two microwave communication facilities; one in Rio Blanco County, Colorado, and the other in Moffat County, Colorado.

Table 2.1-1
Proposed Facilities Associated with the Piceance Project

Facility Name	Milepost[1]	County, State	Map No.[2]
PIPELINE			
Wamsutter to Greasewood (24 inches in diameter)	0.0-141.7	Sweetwater County, Wyoming; Moffat and Rio Blanco Counties, Colorado	1 through 7
COMPRESSOR STATIONS			
CIG Wamsutter Compressor Station (existing) (no new compression proposed)	0.0	Sweetwater County, Wyoming	1
CIG Greasewood Compressor Station (existing) (proposed addition of 1,650 horsepower)	141.7	Rio Blanco County, Colorado	7
DELIVERY AND RECEIPT STATIONS (METERING STATIONS)			
Wamsutter Delivery Station - WIC (located at the existing CIG Wamsutter Compressor Station)[3]	0.0	Sweetwater County, Wyoming	1
Wamsutter Delivery Station - CIG (located at the existing CIG Wamsutter Compressor Station)	0.0	Sweetwater County, Wyoming	1
CIG Greasewood Receipt Station – Williams (located at the existing CIG Greasewood Compressor Station)	141.7	Rio Blanco County, Colorado	7
CIG Greasewood Receipt Station – TransColorado (located at the existing CIG Greasewood Compressor Station)	141.7	Rio Blanco County, Colorado	7
MAINLINE VALVES (MLV)			
MLV #1[3]	0.0	Sweetwater County, Wyoming	1
MLV #2	19.6	Sweetwater County, Wyoming	1
MLV #3	38.1	Sweetwater County, Wyoming	2
MLV #4	54.0	Moffat County, Colorado	3
MLV #5	73.0	Moffat County, Colorado	4
MLV #6	88.0	Moffat County, Colorado	5
MLV #7	106.0	Moffat County, Colorado	6
MLV #8	123.9	Rio Blanco County, Colorado	7
MLV #9	141.7	Rio Blanco County, Colorado	7
PIG LAUNCHERS AND RECEIVERS			
Wamsutter Pigging Facility[3]	0.0	Sweetwater County, Wyoming	1
County Road 4 Pigging Facility	54.0	Moffat County, Colorado	3
Greasewood Pigging Facility	141.7	Rio Blanco County, Colorado	7
MICROWAVE COMMUNICATION FACILITIES			
Magnetic Mountain Site	NA[4]	Rio Blanco County, Colorado	6
Juniper Mountain Site	NA[4]	Moffat County, Colorado	5

[1] All mileposts are approximate.
[2] All project facilities are presented on the maps in appendix A.
[3] Located within the existing CIG Wamsutter Compressor Station.
[4] Off-ROW facilities.

As shown in **table 2.1-1**, WIC also would construct four interconnections with existing pipelines. These would include two interconnections at the CIG Wamsutter Compressor Station (WIC and CIG pipelines) and two interconnections at the CIG Greasewood Compressor Station (Williams and TransColorado pipelines).

2.2 Land Requirements

Table 2.2-1 summarizes the land requirements for the proposed Piceance Project. WIC proposes to use an 85-foot-wide construction ROW for the majority of the pipeline route. **Figure 2.2-1** illustrates the typical construction ROW and equipment work locations where the Piceance Project pipeline would not be located near an existing pipeline; **figure 2.2-2** illustrates the proposed construction ROW where the pipeline would be located parallel to an existing pipeline. WIC also has requested that the BLM authorize 50 feet of the construction ROW centered on the pipeline to be retained as part of WIC's permanent easement[13], which would be permanently maintained (e.g., by periodic clearing) during operation of the new facilities. WIC has agreed to reduce the construction ROW width to 75 feet in wetlands. Where the proposed pipeline is aligned adjacent to an existing pipeline between MP 0 and MP 105.1, WIC would generally locate its pipeline within 40 feet of the closest pipeline. The pipeline alignment deviates from the 40-foot offset in some segments out of necessity due to steep terrain; river wash, road, and pipeline crossings; landowner requests; and to avoid or minimize impacts to sensitive environmental features.

Construction of the proposed Piceance Project would disturb approximately 1,884 acres of land, including the pipeline construction ROW, additional temporary workspace areas, the existing compressor station sites, pipe storage and contractor yards, microwave communication sites, and access road widening. Of this total, about 1,460 acres would be disturbed by the pipeline construction ROW, 326 acres would be disturbed by additional temporary workspace areas, 29 acres would be disturbed by staging areas associated with construction at the existing compressor stations, 58 acres would be disturbed by pipe storage and contractor yards, and 10 acres would be disturbed for improvements to existing roads required for construction access.

Approximately 860 acres of the 1,884 acres used for construction would be required for operation of the project. Of this total, all but about 0.2 acre would be for the pipeline permanent ROW. The MLV and pigging facility at MP 54 would be partially located outside of the typical 50-foot-wide permanent ROW and account for an additional 0.1 acre to the permanent ROW footprint and the microwave communication facilities would be off-ROW and would account for the remaining 0.1 acre. The facilities proposed at the existing compressor stations would not require any expansion to the existing outside perimeter fencing. The remaining 1,024 acres of land would be restored and allowed to revert to former uses.

Approximately 54 percent of the land (76.5 miles) crossed by the project is managed or owned by public entities with 46 percent managed by the BLM and 8 percent managed by the State of Colorado (Colorado Department of Wildlife [CDOW] and Colorado State Land Board [CSLB]). The remaining 46 percent of the lands that would be crossed are privately owned.

2.2.1 Pipeline ROW

Approximately 116 miles (82 percent) of the proposed pipeline ROW would parallel existing pipeline and powerline easements. The existing pipeline ROWs include pipelines owned by CIG, Williams, Amoco,

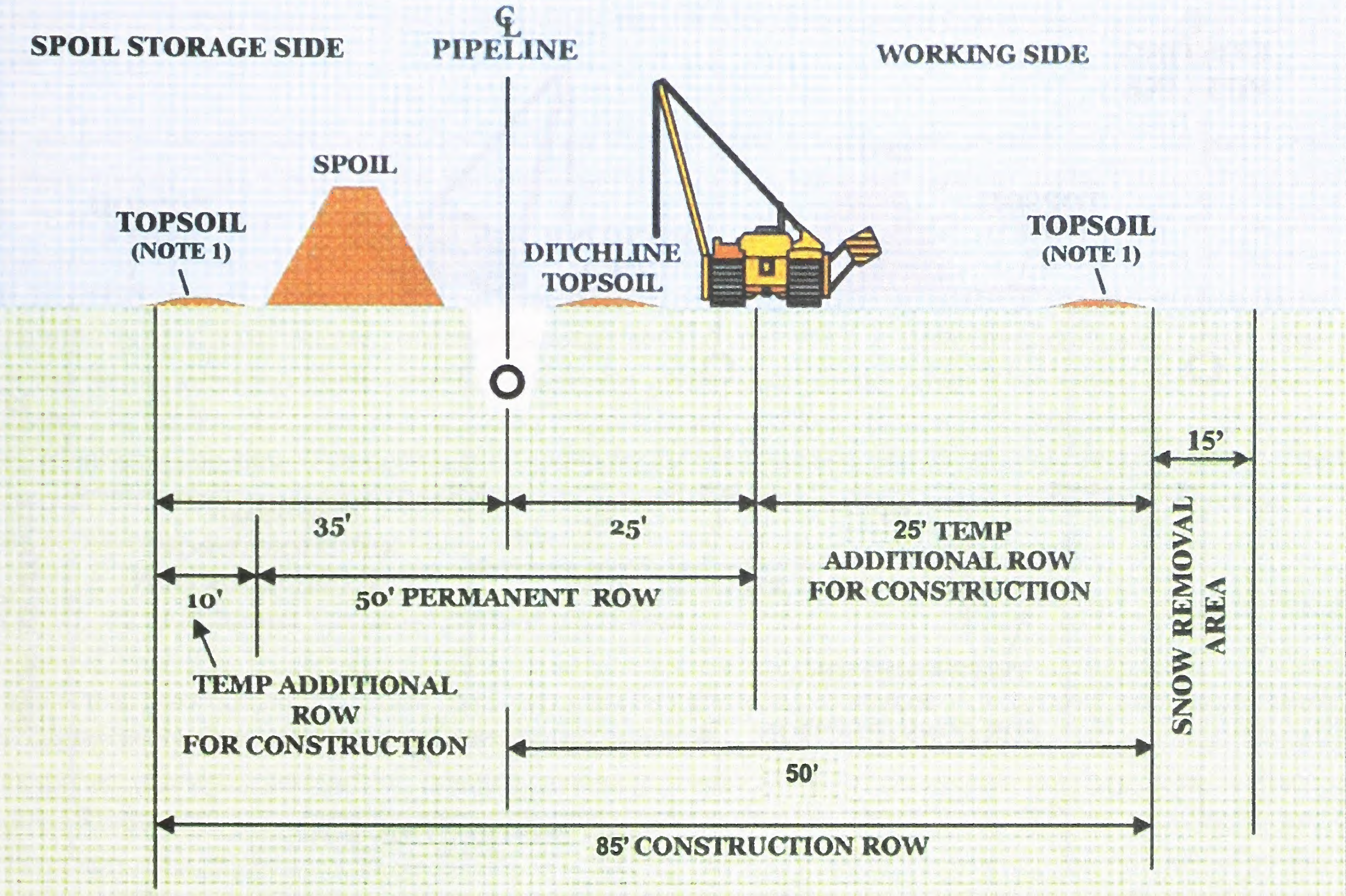
[13] On federal lands, BLM approves a ROW Grant for a term of 30 years subject to renewal per conditions of the MLA, rather than a permanent easement.

Table 2.2-1

Summary of Land Requirements Associated with the Piceance Project

Facility	Milepost(s)	Land Affected During Construction (acres)	Land Affected During Operation (acres)
WYOMING			
Pipeline Facilities			
Pipeline ROW	0.0 to 51.9	534 [1]	315 [1]
Additional Temporary Workspace Areas (including staging areas)	Various	103	0
Pipe and Contractor Yards	Off-ROW; various	38 [2]	0
Pipeline Interconnections	0.0	0 [3]	0 [3]
Access Roads	Various	3	0
Wyoming Pipeline Facilities Total		*678*	*315*
Aboveground Facilities			
Compressor Station (existing Wamsutter)	0.0	11 [4]	0 [5]
Metering Station (at CIG Wamsutter Compressor Station)	0.0	0 [6]	0 [6]
Mainline Valves	0.0, 19.6, 38.1	0 [7]	<1 (0) [8]
Pig Launchers & Receivers	0.0	0 [9]	0 [9]
Wyoming Aboveground Facilities Total		*11*	*0*
Wyoming Subtotal		***689***	***315***
COLORADO			
Pipeline Facilities			
Pipeline ROW	51.9 to 141.7	926 [1]	545 [1]
Additional Temporary Workspace Areas (including staging areas)	Various	224	0
Pipe and Contractor Yards	Off-ROW; various	20 [2]	0
Pipeline Interconnections	141.7	0 [3]	0 [3]
Access Roads	Various	7	0
Colorado Pipeline Facilities Total		*1,177*	*545*
Aboveground Facilities			
Compressor Station (existing CIG Greasewood)	141.7	18 [10]	0 [5]
Metering Station (at CIG Greasewood Compressor Station)	141.7	0 [6]	0 [6]
Mainline Valves	54.0, 73.0, 88.0, 106.0, 123.9, 141.7	0 [7]	<1 (0.1) [8]
Pig Launchers & Receivers	54.0, 141.7	0 [9]	0 [9]
Microwave Communication Facilities (2)	Off-ROW	0.1 [11]	0.1 [11]
Colorado Aboveground Facilities Total		*18*	*<1*
Colorado Subtotal		***1,195***	***545*** [12]
PROJECT TOTAL		1,884	860

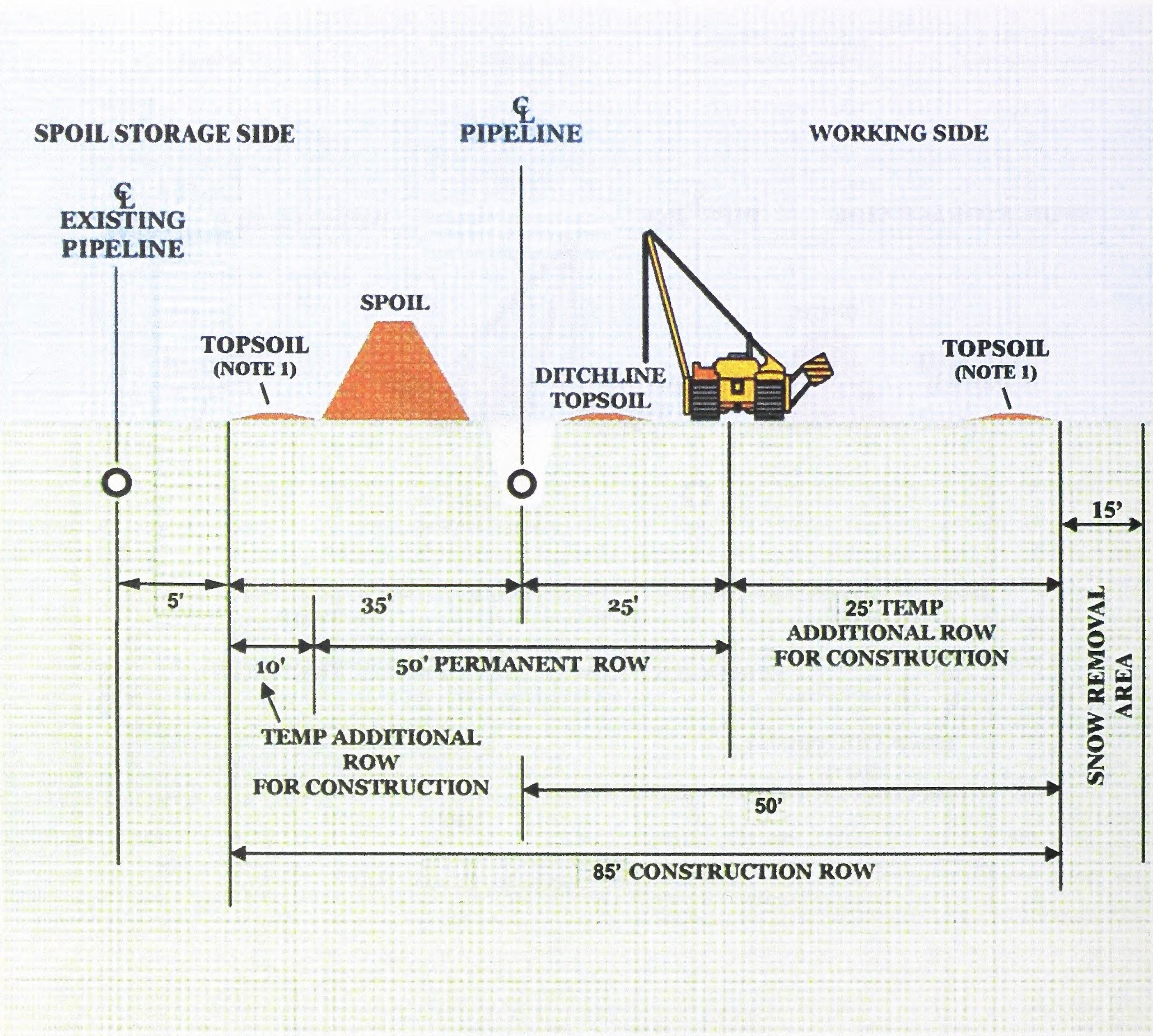
[1] Based on an 85-foot-wide construction ROW, except in wetlands where a 75-foot-wide construction ROW would be used. Operation acreage was estimated based on a 50-foot-wide permanently maintained ROW in all areas and does not include access roads.
[2] This total represents offline pipe yards only. Staging areas are proposed for use as contractor yards; land requirements are previously accounted for within additional temporary workspace areas.
[3] The pipeline interconnection construction acreage is previously accounted for under the additional temporary workspace areas (associated with the staging areas located at the CIG Wamsutter and CIG Greasewood Compressor Stations). Acres of land affected by operation is previously accounted for under the pipeline ROW.
[4] Facilities proposed for installation within the existing CIG Wamsutter Compressor Station include two interconnections, a MLV, and a pigging facility. One interconnection, the Uinta Basin Lateral interconnection, would extend about 120 feet beyond the fenceline. The disturbance area is accounted within the staging area footprint.
[5] Operation of the proposed new facilities at the existing compressor station site would not require any additional land.
[6] Two metering stations would be installed at the existing CIG Greasewood Compressor Station, and two metering stations would be installed at the existing CIG Wamsutter Compressor Station. Acres of land affected for construction and operation of these metering stations is within the compressor station total.
[7] Each MLV would be constructed within the 85-foot-wide construction ROW. Therefore, disturbance acreage is previously accounted for under the pipeline ROW total.
[8] Each MLV would be operated within the permanently maintained 50-foot-wide ROW with one exception. At MP 54, an additional 0.1 acre would be required to operate the combined MLV/pigging facility. The aboveground facility acreage is disclosed in the table; however, the total does not double-count this acreage since it is previously accounted for in the pipeline ROW.
[9] Pigging facility areas of disturbance are previously accounted for under the Compressor Station rows (for pigging facilities located at MP 0.0 and MP 141.7) or under the MLV totals (for MP 54.0).
[10] Approximately 1,650 horsepower of new compression would be installed within the existing CIG Greasewood Compressor Station. Concurrent with this installation would be the installation of two interconnections, a MLV, and a pigging facility. These facilities would be installed within the existing fenced area.
[11] Magnetic Mountain Site in Rio Blanco County (0.06 acre) and Juniper Mountain Site in Moffat County (0.06 acre).
[12] Differences between the total value and the sum of the addends are due to rounding.



Note:

1) This location for topsoil will be required if full width topsoil stripping is required.

Piceance Project
Figure 2.2-1 Typical Construction ROW



Note:
1) This location for topsoil will be required if full width topsoil stripping is required.

Piceance Project
Figure 2.2-2 Typical Construction ROW when Adjacent to Existing Pipeline

Kinder Morgan, Western Supply Gas, Western Slope Pipeline, and Public Service Company of Colorado (PSCo). Starting at the CIG Wamsutter Compressor Station, the pipeline parallels CIG's existing Uinta Basin Lateral for much of its route (MP 0 to MP 105.1).[14] From MP 105.1, the proposed Piceance Project route follows a new ("greenfield") alignment through Coyote Basin to the Moffat County-Rio Blanco County line (MP 110.4). The new route then traverses Strawberry Creek Valley in Rio Blanco County heading generally southward to its crossing of the White River (MP 127.7). From the south side of the White River, the proposed route generally follows an existing powerline corridor (MP 127.0 to MP 127.3; MP 128.5 to MP 128.6; and MP 130.0 to 130.3), paralleling the river in a westerly direction until it intersects a PSCo pipeline, which it then follows on a southerly route into the CIG Greasewood Compressor Station (MP 131.3 to MP 141.7).

WIC proposes to construct the pipeline using two construction spreads (see section 2.3.1). Spread 1, the southern spread, would begin at the Yampa River (MP 87.6) and proceed north to Moffat County Road 8 at MP 75.6 where Spread 2 begins. Spread 1 also would start construction simultaneously at the CIG Greasewood Compressor Station (MP 141.7) and work north to the Yampa River. Spread 2 would begin at MP 75.6 and extend north to the CIG Wamsutter Compressor Station, while a second work crew on Spread 2 would simultaneously construct between MP 0.0 and MP 3.1. Both Spreads 1 and 2 have been split into two construction fronts each to address big game winter range construction timing issues that are discussed in section 3.5. The use of multiple spreads would allow simultaneous construction that would reduce construction time. Pre-construction planning for each spread allows WIC to identify any required additional temporary workspace areas, pipe storage and contractor yards, and access roads that could be used during construction, pending FERC and/or BLM authorization.

2.2.2 Additional Temporary Workspace Areas

In addition to the construction ROW, WIC has identified the types of additional temporary workspace areas that would be required (**table 2.2-2**) and where these areas would be located. These additional temporary workspaces would be needed for locations requiring special construction techniques (e.g., river, wetland, and road crossings; horizontal directional drill (HDD) entry and exit points; steep slopes; rocky soils) and construction staging areas. The combined acreage of those 210 locations where WIC has identified the need for additional temporary workspaces along the pipeline route is about 326 acres. The BLM will require that WIC identify the location of temporary workspaces on BLM-administered lands in WIC's POD. These workspaces would require approval of the BLM. Prior to construction, WIC would be required to file a complete and updated list of temporary workspace areas with the Secretary of the Commission (Secretary) for review and approval prior to use. Any additional temporary workspace areas on federal land would require authorization from the BLM through a variance approval process. This process would ensure that the request complies with NEPA and cultural and biological inventory requirements prior to approval.

[14] If the Entrega Project were approved and constructed, the Piceance Project pipeline also would parallel the new Entrega Pipeline along this same segment. As proposed by both WIC and Entrega, the pipelines would typically be within a 300-foot-wide corridor, except in areas where precluded by terrain and other construction constraints.

Table 2.2-2
Dimensions and Acreage of Typical Additional Temporary Workspace Areas

Feature	Dimensions[1] (length by width in feet at each side of crossing)	Acreage[1]
Steep hill or side slopes	Length of area x width of area dependent upon hill and/or side slope grade	Varies
Spread mobilization/demobilization and staging (possible use as contractor yards)	1,200 x 415[2]	11.4
Foreign pipeline crossovers	200 x 65	0.3
Open-cut roads	200 x 32.5[3]	0.2
Bored highways and railroads	300 x 32.5[3]	0.2
Open-cut waterbodies <50 feet wide	300 x 32.5[3]	0.2
Open-cut waterbodies >50 feet wide	300 x 82.5[3]	0.6
Open-cut wetlands	150 x 32.5[3]	0.1
Directionally drilled waterbodies	200 x 57.5 plus the length of the drill[4]	0.3+

1 Dimensions and acreage are for each workspace; some crossings would require workspace on both sides of the feature.
2 Varies; Spreads 1 and 2 staging area shared.
3 Space for one crossing could consist of up to four additional temporary workspace areas. Space dimension is the minimum that would be required; actual dimensions could increase depending upon the individual crossing.
4 Space for one crossing could consist of up to four additional temporary workspace areas. Space dimension is the minimum that would be required; actual dimensions could increase depending upon the individual crossing and are dependent upon the length between the drill entry and exit point to accommodate pipe lay-down area.

2.2.2.1 Contingent Winter Construction Workspace

Because WIC proposes to commence construction in October 2005, winter weather conditions could complicate pipeline construction. In light of the possibility that snow removal may be necessary to allow construction to proceed at certain times in specific locations, WIC has requested authorization to use an additional 15-foot-wide strip adjacent to the working side of the construction ROW for snow storage, as necessary. The extra 15-foot-wide strip would not be bladed or cleared of vegetation and no vehicles or construction equipment of any type would be permitted to operate within it. It would be used for snow storage only, and only as necessary. Assuming the worst-case scenario, WIC's use of the 15-foot-wide strip for the entire length of the ROW could potentially affect an additional 258 acres of vegetation by the weight of the stored snow (see section 3.4, table 3.4.2).

WIC would be required to obtain prior authorization from the FERC and the BLM (on federal land) via a variance and/or temporary use authorization to allow snow stockpiling outside the nominal 85-foot-wide construction ROW. Obviously, use of the 15-foot-wide strip is not expected to be necessary for the entire length of the ROW and only would be authorized on a site-specific, case-by-case basis.

2.2.3 Pipe Storage and Contractor Yards

Off-ROW extra workspace areas that would be used during the construction phase of the project include pipe storage yards and contractor yards. WIC proposes to use three pipe storage and three contractor yards during construction (**table 2.2-3**). The pipe storage yards are located off-ROW; the contractor yards are located with staging areas identified for the project at the project start, terminus, and the break point between spreads (MP 75.6). To the extent practical, WIC proposes to use existing commercial/industrial sites or sites that previously have been used for construction. Existing public or private roads would be used to access each yard. Pipe storage yards and contractor yards would be used on a temporary basis and would be restored upon completion of construction.

Table 2.2-3
Locations and Acreage of Pipe Storage Yards and Contractor Yards

State/Yard Name	Status	Legal Description	Acreage[1]
WYOMING			
Wamsutter Staging Area (proposed for use as contractor yard)	Existing compressor station yard (MP 0.0)	Sweetwater County T20N, R94W, Section 27	11 [2]
Wamsutter Pipe Storage Yard	Previously disturbed industrial yard	Sweetwater County T20N, R94W, Section 34	27
Cresent Junction Pipe Storage Yard	Previously disturbed industrial yard	Sweetwater County T20N, R92W, Section 15	11
COLORADO			
Craig Pipe Storage Yard	Cultivated cropland	Moffat County T6N, R91W, Section 1	20
Spreads 1 and 2 Staging Area (proposed for use as contractor yard)	Along proposed ROW near Moffat County Road 8 (MP 75.44)	Moffat County T8N, R94W, Section 6	12 [2]
Greasewood Staging Area (proposed for use as contractor yard)	Existing compressor station site (MP 141.7)	Rio Blanco County T2S, R96W, Section 5	18 [2]

[1] Each yard would be accessed via existing roads.
[2] Acreage is included in **table 2.2-1** as pipe and contractor yards or compressor station yards. Differences between the total value and the sum of the addends are due to rounding.

2.2.4 Access Roads

WIC would use existing roads to provide access to most of the construction ROW. WIC plans to use 119 existing roads (about 453 miles) on a temporary basis to transport personnel, equipment, vehicles, heavy trucks, and materials to project work areas. Some of these roads may not support heavy construction equipment and, therefore, only would be used for light truck traffic (e.g., pickup trucks).

In most cases, the roads are existing paved or graveled public roads that would not require modification unless the road base deteriorated, making driving difficult or unsafe for both public and construction traffic. All of the two-track and dirt roads would probably require some level of improvement to support construction equipment, vehicles, and ongoing maintenance during the construction period, especially when rain or snow occurs and travel over the roads degrades their condition. Road improvements such as blading and filling would be restricted to the existing road footprint (i.e., the road would not be widened) wherever possible and where there is evidence that the road was previously graded. WIC has proposed that where there is no evidence of previous grading or if the road required widening, road maintenance would be allowed only after completing cultural resources and biological surveys and completing the appropriate State Historic Preservation Office (SHPO) and FWS consultations. In all cases, roads would be used and maintained only with permission of the landowner or land management agency.

Existing roads would be used to access the new facilities within the existing CIG Wamsutter and CIG Greasewood Compressor Stations. MLVs along the pipeline ROW would be located immediately adjacent to existing roads, where the ROW would be used for the short access distance. Although new permanent roads are not anticipated, if permanent access roads were needed, WIC would be required to identify the access roads and submit them to the Secretary for review and approval. At a minimum, construction of new access roads would require completion of cultural resource surveys and biological surveys, along with appropriate SHPO and FWS consultations and approvals. Other state and local permits also may be required prior to construction. In the future, maintenance of any newly created access roads would be the responsibility of WIC, with ownership over the road remaining with the affected land management agency or private landowner. Any permanent roads on federal lands would be considered an ancillary facility to the ROW and added to any grant from the BLM.

2.2.5 Aboveground Facilities

Because the facilities proposed at the existing compressor stations would not require any expansion of the outside perimeter fencing at these industrial facilities, the only additional land requirements associated with construction activities proposed at the compressor stations are the staging areas associated with these compressor stations. These staging areas account for a temporary disturbance of approximately 29 acres.

Two interconnections, two metering stations, a MLV, and a pigging facility would be installed within each of the existing compressor stations (CIG Wamsutter and CIG Greasewood). At the CIG Wamsutter Compressor Station, the interconnection to the Uinta Basin Lateral would extend approximately 120 feet beyond the facility's fenceline.[15] We estimate that the construction of the interconnection beyond the existing fenceline would affect an area approximately 85-foot by 120-foot (0.2 acre) in size, which is included within the staging area disturbance. WIC would add a new compressor (1,650 horsepower) at the existing CIG Greasewood Compressor Station. This compressor would be housed in a new building within the existing compressor station yard. Interconnections with other pipelines would be completely contained within the existing site. Metering stations would include pressure regulating, heating, sampling, chromatography, tube switching, and electronic gas measurement equipment. The metering station at the CIG Wamsutter Compressor Station would include two meter units, one for the CIG interconnection and one for the WIC interconnection. The metering station at the CIG Greasewood Compressor Station would include two meter units, one for the Williams interconnection and one for the TransColorado interconnection. Pigging facilities would consist of pig launching or receiving equipment and would allow the pipeline to accommodate a high-resolution internal inspection tool.

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15 The existing fenceline would not be relocated.

Construction of the seven MLVs not associated with the compressor stations would occur with the proposed pipeline. These valves would be fenced and represent approximately 1.2 acres of permanent land disturbance. The fenced valves would be located within the 50-foot-wide permanent pipeline easement, with one exception. The combined pigging facility and MLV facility at MP 54 would be located partially outside the 50-foot-wide permanent pipeline ROW, requiring an additional 0.1 acre of permanent disturbance.

WIC would install two microwave communication facilities in Colorado; both would be located adjacent to existing communication towers. One facility would be located on top of Magnetic Mountain in Rio Blanco County (Township 3 North Range 94 West Section 28 [T3N R94W S28]) and the other would be on Juniper Mountain in Moffat County (T6N R95W S23). These facilities would allow remote monitoring of the pipeline and communication with valves, compressors, and personnel during operation.

The amount of BLM-administered lands available for a communications site atop Magnetic Mountain is limited. Consequently, WIC proposes to lease an existing microwave communications tower and related facilities on privately owned land immediately adjacent to the existing communications site on BLM land. The previously disturbed 50-foot by 50-foot (0.06 acre) site would be graveled and fenced and includes an existing communications building and tower. Commercial power is available on the site and an existing road provides access.

The Juniper Mountain tower would be located on BLM-administered lands near existing communication sites owned by CIG. The Juniper Mountain communication facility would be sited on a previously disturbed 40-foot by 60-foot (0.06 acre) area, which would be graveled and fenced upon completion of construction. Commercial power is available at the site and an existing road provides access. The two communication sites together would account for approximately 0.12 acre of permanent disturbance.

2.3 Construction Procedures

At a minimum, the proposed facilities would be designed, constructed, tested, and operated in accordance with all applicable requirements included in the DOT regulations in 49 CFR 192, *Transportation of Natural Gas and Other Gas by Pipeline: Minimum Federal Safety Standards*, and other applicable federal and state regulations. These regulations are intended to ensure adequate protection for the public and to prevent natural gas pipeline accidents and failures. Among other design standards, Part 192 specifies pipeline material and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion.

To reduce construction impact, WIC would implement its project-specific *Upland Erosion Control, Revegetation, and Maintenance Plan* (WIC's Plan) in upland areas (see appendix B) and its project-specific *Wetland and Waterbody Construction and Mitigation Procedures* (WIC's Procedures) for construction across wetlands and waterbodies (appendix C). WIC's Plan and Procedures are based on the mitigation measures contained in our *Upland Erosion Control, Revegetation, and Maintenance Plan* (FERC Plan, FERC 2003a) and *Wetland and Waterbody Construction and Mitigation Procedures* (FERC Procedures, FERC 2003b). The differences between WIC's Plan and Procedures and the FERC's Plan and Procedures generally reflect the arid western climate and do not compromise the effectiveness of the proposed mitigation or the protection of the resources. We have reviewed WIC's Plan and Procedures and believe they would provide a level of environmental protection that is equivalent to the measures contained in the FERC Plan and Procedures.

WIC's Plan and Procedures, paired with WIC's detailed project Reclamation Plan (appendix D), describe reclamation techniques and procedures, including specifics of seedbed preparation, seed mixtures and rates, seeding methods, mulching rates, success criteria, and monitoring and reporting requirements. WIC's topsoil segregation program would be an important mitigation element especially in arid habitats where vegetation is notably sensitive to disturbance and revegetation would be a slow process.

WIC has provided a proposed treatment plan for historic properties as part of its inventory report. The plan proposes various treatment options such as avoidance through reroutes or construction restrictions, data recovery prior to and after construction, monitoring, and open trench inspection. The proposed plan requires review and approval by the FERC and BLM, in consultation with the SHPOs.

WIC submitted a proposed monitoring and mitigation plan for paleontological resources as part of their paleontological evaluation and survey report. The plan proposes various mitigation options such as avoidance through reroutes, monitoring of construction activities, recording of fossil localities, excavation, and salvage. The proposed plan requires review and approval by the FERC and BLM.

In addition to WIC's Plan and Procedures, WIC has prepared specific plans that include measures to mitigate for potential impacts. These supplemental plans are included as appendices to its project-specific POD (WIC 2005a). It is our intent that the mitigation and other measures contained in the POD not be limited to federal lands alone, but considered the basic design applicable to all lands disturbed by the Piceance Project. This approach would enable construction to proceed with a single set of "rules," irrespective of the ownership status (federal versus non-federal) of the land being crossed. On private lands, this basic design may be modified slightly to accommodate specific landowner requests/preferences. For example, while WIC proposes to strip and segregate topsoil from the ditch line only where surface conditions allow, a private landowner may request the topsoil on their property be stripped from a larger portion of the ROW (or even the full ROW). Another example is illustrated by a condition frequently attached to FERC Certificates which states (in abbreviated version) that the FERC staff must review and provide written approval for all route realignments *except for* minor field realignments per landowner needs and requirements that do not affect other landowners or sensitive environmental areas (see recommendation 5 in section 5.5).

The supplemental plans in the project-specific POD include:

- Spill Prevention, Containment, and Countermeasure Plan (SPCC Plan);
- Stormwater Pollution Prevention Plan (SWPPP);
- Hydrostatic Testing Plan (appendix E);
- Waterbody Crossing Plan (appendix F);
- Blasting Plan;
- Noxious and Invasive Weed Plan (Weed Plan; appendix G);
- Fire Prevention and Suppression Plan;
- Traffic and Transportation Management Plan (TTMP);

- Emergency Response Plan (ERP);
- Reclamation Plan (appendix D);
- Unanticipated Discoveries Plan; and
- Conservation Measures Plan (appendix H).

WIC would implement its SPCC Plan to avoid or minimize the potential for harmful spills and leaks during construction. WIC's SPCC Plan describes spill prevention practices, emergency response procedures, emergency and personnel protection equipment, release notification procedures, and cleanup procedures. The SPCC Plan is discussed further under the context of many different resources (e.g., sections 3.2, 3.3, and 3.5).

The SWPPP describes measures to protect water quality and manage stormwater during construction-related activities. The SWPPP identifies best management practices (BMPs) to reduce the introduction of pollutants to stormwater, remove excess sediments from stormwater before flowing offsite, and reduce the velocity of stormwater flowing offsite. The implementation of these BMPs, coupled with the reestablishment of existing contours and vegetation along the pipeline corridor, would minimize the potential for erosion.

The Hydrostatic Test Plan (appendix E) identifies the sources and volumes of water that would be used to test the pipe prior to operation, and the discharge locations (by milepost). In the document, WIC commits to control the rates of withdrawal and discharge to minimize impacts to fish and sensitive habitats.

The Waterbody Crossing Plan (appendix F) provides engineering design specifications for the three major waterbodies crossed by the project in Colorado (the Little Snake River [MP 53.1], the Yampa River [MP 87.6] and the White River [MP 127.7]). Measures detailed in the site-specific plans would reduce environmental impacts from construction in and adjacent to waterbodies crossed by the Piceance Project. This plan includes the details for the proposed HDD crossing of the Yampa, White, and Little Snake Rivers and includes measures regarding inadvertent return.

The Blasting Plan identifies blasting procedures, including safety, use, storage, and transportation of explosives that are consistent with minimum safety requirements as defined by federal, state, and local regulations. Additionally, the plan addresses environmental aspects of blasting activities,and identifies areas of concern along the proposed pipeline route. A brief description of the major requirements of the Blasting Plan is provided in section 3.3.1.

WIC's Weed Plan (appendix G) includes site-specific measures that WIC would implement to control noxious weeds, including the use of cleaned, weed-free equipment; pressure washing of all vehicles and equipment prior to arrival at the work site; the use of water to remove seeds and other propagules from equipment prior to leaving a work site; and the use of certified weed-free straw/hay bales to control erosion. A key element of the Weed Plan is WIC's proposal to identify and treat existing weed infestations prior to construction.

The Fire Prevention and Suppression Plan describes the responsibilities for prevention and suppression of fires during construction of the pipeline, defines the minimum requirements that would be incorporated into construction documents and contracts, and outlines the procedures for immediate response and notification for wildfires should they occur.

The TTMP identifies measures required for equipment access to and from the ROW during construction across federal lands. Implementation of this plan would provide dust control measures and provide for road maintenance during and after construction.

The purpose of the ERP is to identify WIC's emergency personnel and the logical sequence of actions which should be taken in the event of an emergency involving WIC system facilities during construction of the Piceance Project pipeline. Once the pipeline is constructed and pipeline operations commence, the ERP would be finalized so that it meets federal safety requirements (49 CFR 192.615). The current version of the ERP begins to establish written emergency shutdown procedures, communication coordination, and clean-up responsibilities in the event of a gas pipeline emergency or a natural disaster.

WIC's Reclamation Plan (appendix D) details measures related to soil management, seeding, mulching, special management areas (e.g., wetlands), and monitoring to combat problems associated with soil conditions, sensitive plant communities, harsh weather conditions, and repeated disturbance. The Reclamation Plan was developed in coordination with regional soil reclamation experts, wetlands and vegetation specialists, FERC guidance, the local Natural Resources Conservation Service (NRCS) offices, BLM FOs, and the CSLB Commissioners.

WIC's Unanticipated Discoveries Plan would be used in the event of the unanticipated discovery of cultural resources or human remains during construction. The plan includes provisions for stopping work, notification and consultation procedures with the appropriate parties, and actions to be taken in the event of an inadvertent off-ROW or workspace disturbance.

The Conservation Measures Plan (appendix H) describes the potential impacts that the proposed project would have on federally listed threatened and endangered species of plants and animals, including candidate species and species proposed for listing. The document also details proposed efforts to avoid, minimize, or mitigate impacts to these species.

All of WIC's mitigation plans discussed above are important components of its POD. The POD is an applicant-prepared document required by the BLM prior to issuance of the ROD. If the project is approved, the POD would be appended to the ROW grant issued by the BLM and would serve as a project resource manual. The BLM and WIC are currently in the process of finalizing the POD, which would include all of the measures that are described in this EIS as well as additional site-specific stipulations that are determined by the affected federal land management agency (BLM) to be necessary on federal lands. Any additional site-specific measures included in the POD would not contradict the mitigation measures of this EIS.

2.3.1 General Pipeline Construction Procedures

Before starting construction, WIC would finalize engineering surveys of the ROW centerline and extra workspaces and complete land or easement acquisition on private and state land. If the necessary land rights or easements could not be obtained through good faith negotiations with landowners and the project were approved by the Commission, WIC could use the right of eminent domain granted to it under Section 7(h) of the NGA to obtain an easement. WIC would still be required to compensate the landowners for the ROW, as well as for any damages incurred during construction. However, the level of compensation would be determined by the court system according to state laws regarding eminent domain. Easement negotiations and compensation issues are beyond the scope of our environmental review and are not addressed in this EIS. On federal land, WIC would need to obtain a ROW grant from the BLM.

Overland pipeline construction in a rural environment would generally proceed as a moving assembly line as shown in **figure 2.3-1** and as summarized below. WIC currently plans to construct the pipeline in two spreads. Spread 1 (MP 75.6 to MP 141.7) would encompass the southern portion of the project and Spread 2 (MP 0.0 to MP 75.6) would cover the northern half of the project. Typically, job-specific work crews would construct the facilities associated with the compressor stations.

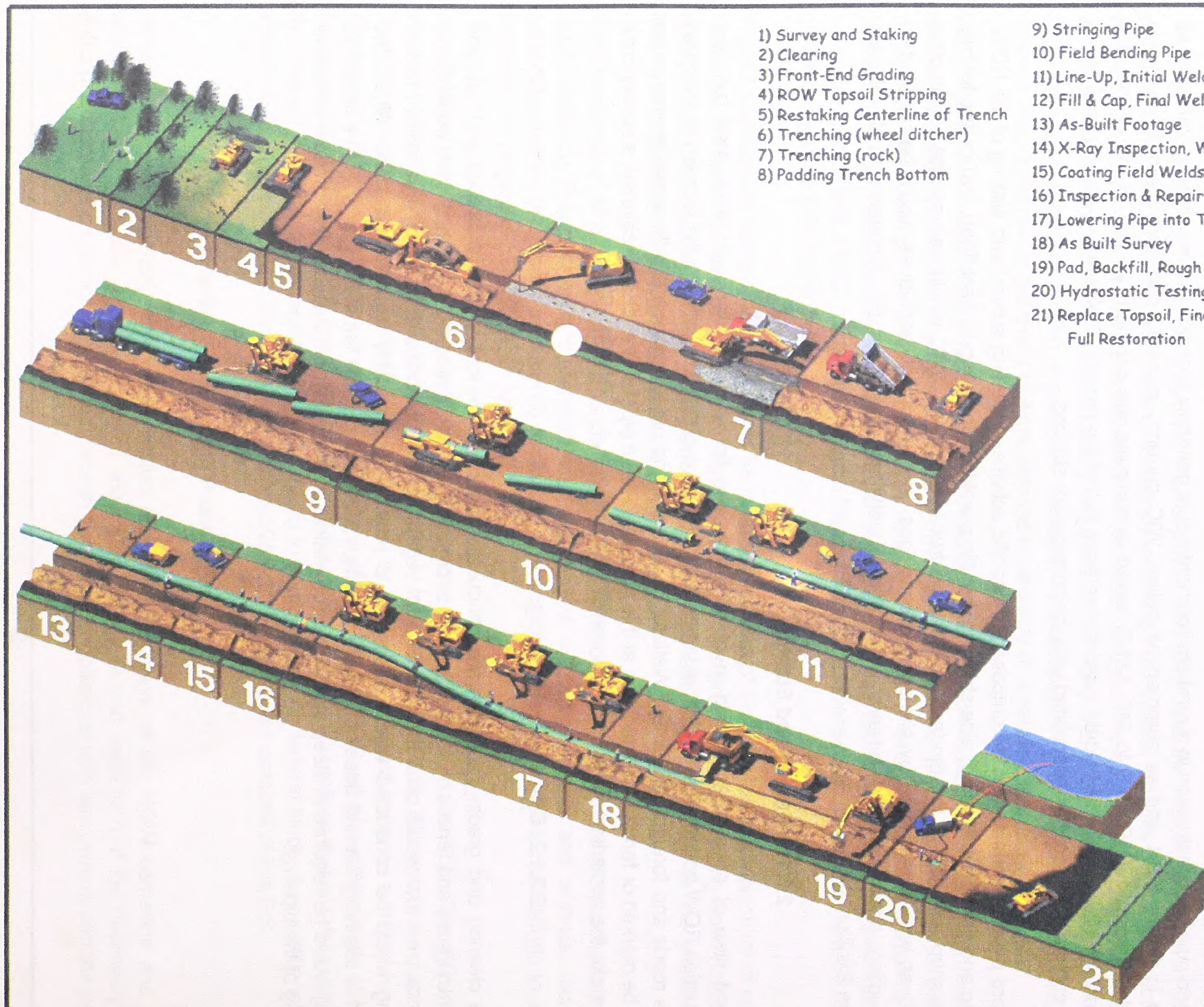
Standard pipeline construction is composed of specific activities including survey and staking of the ROW, clearing and grading, trenching, pipe stringing, bending, welding, lowering-in, backfilling, hydrostatic testing, and cleanup. In addition to standard pipeline construction methods, WIC would use special construction techniques where warranted by site-specific conditions. These special techniques would be used when constructing across rugged terrain, waterbodies, wetlands, paved roads, highways, and railroads (section 2.3.2).

2.3.1.1 Survey and Staking

The first step of construction would involve marking the limits of the approved work area (i.e., the construction ROW boundaries, additional temporary workspace areas) and flagging the location of approved access roads and foreign utility lines. Wetland boundaries and other environmentally sensitive areas also would be marked or fenced for protection at this time. Before the pipeline trench is excavated, a survey crew would stake the centerline of the proposed trench.

2.3.1.2 Clearing and Grading

Before clearing and grading activities are conducted, landowner fences would be braced and cut, and temporary gates and fences would be installed to contain livestock, if present. A clearing crew would follow the fence crew and would clear the work area of vegetation and obstacles (e.g., trees, logs, brush, rocks). Grading would be conducted where necessary to provide a reasonably level work surface. Where the ground is relatively flat and does not require grading, rootstock would be left in the ground. More extensive grading would be required in steep side-slopes or vertical areas and where necessary to prevent excessive bending of the pipeline.



Piceance Project

Figure 2.3-1

Typical Pipeline Construction Sequence

2.3.1.3 Trenching

The trench would be excavated to a depth that provides sufficient cover over the pipeline after backfilling. Typically, the trench would be about 4 to 6 feet wide in stable soils and about 6 to 7 feet deep, depending on the pipeline diameter and DOT Class location. This would allow for the required minimum of 30 to 36 inches of cover.[16] Additional cover for the pipeline would be provided at road and waterbody crossings, while less cover (a minimum of 18 inches) is required in rock.

When rock or rocky formations were encountered, tractor-mounted mechanical rippers or rock trenchers would be used for fracturing the rock prior to excavation. In areas where mechanical equipment could not break up or loosen the bedrock, blasting would be required (section 2.3.2.5). Excavated rock would be used to backfill the trench to the top of the existing bedrock profile.

In areas where there was a need to separate topsoil from subsoil, topsoil would be graded prior to trenching. Topsoil over the ditch line would be segregated for the majority of the project (unless otherwise requested by the landowner). Clearing on the spoil side would be limited to that which is necessary for construction activity. Topsoil would be stored in a pile separate from subsoil to allow for proper restoration of the soil during the backfilling process. Spoil typically would be deposited on the non-working side of the ROW. Gaps would be left between the spoil piles to prevent stormwater runoff from backing up or flooding. Topsoil would be returned to its original horizon after subsoil was backfilled in the trench.

In areas where rangeland is used for grazing and livestock could not be temporarily relocated by the landowner, construction activities could potentially hinder the movement of livestock across those allotments. To minimize impacts on grazing areas and livestock during construction, WIC would install soft plugs (areas where the trench is excavated and replaced with minimal compaction) across the trench at the intersection of livestock trails to allow for safe livestock passage. Additionally, ramps would be installed on each side of the soft plugs to allow for the escape of livestock or wildlife if they fell into the trench.

2.3.1.4 Pipe Stringing, Bending, and Welding

Prior to or following trenching, sections of externally coated pipe up to 80 feet long (also referred to as "joints") would be transported by truck over public road networks and along authorized private access roads to the ROW and placed or "strung" along the trench in a continuous line.

After the pipe sections were strung along the trench and before joints were welded together, individual sections of the pipe would be bent where necessary to allow for uniform fit of the pipeline with the varying contours of the bottom of the trench. A track-mounted, hydraulic pipe-bending machine would shape the pipe to conform to the contours of the terrain. Where multiple or complex bends were required in a section of pipe, that section of the pipeline would be bent at the factory.

[16] The DOT requires buried pipelines to be covered by a minimum of 30 inches of soil in all Class 1 locations. The proposed route crosses land currently designated as Class 1, defined as having ten or fewer buildings intended for human occupancy within 220 yards of the pipeline per mile. In more populated areas and beneath public road ditches and railroad crossings, the minimum cover requirement would be 36 inches of soil. In consolidated

After the pipe sections were bent, the joints would be welded together into long strings and placed on temporary supports. The pipeline joints would be lined up and held in position until securely joined by welding. One hundred percent of the welds would undergo radiographic inspection (X-ray), as outlined in Title 49 CFR Part 192. Welds that do not meet established specifications would be repaired or removed. Once the welds were approved, a protective epoxy coating would be applied to the welded joints. The pipeline would then be electronically inspected or "jeeped" for faults or voids in the epoxy coating, and visually inspected for any faults, scratches, or other coating defects. Damage to the coating would be repaired before the pipeline was lowered into the trench.

2.3.1.5 Lowering-in and Backfilling

Before the pipeline is lowered in, an environmental inspector (EI) would inspect the trench to be sure it was free of livestock or wildlife that may be trapped in the trench, as well as rocks and other debris that could damage the pipe or protective coating. In areas where water had accumulated, dewatering could be necessary to inspect the bottom of the trench. The pipeline then would be lowered into the trench. On sloped terrain, trench breakers (stacked sand bags or foam) would be installed in the trench at specified intervals to prevent subsurface water movement along the pipeline. The trench would then be backfilled using the excavated material. Segregated topsoil would be restored last, to its original grade and contour.

In rocky areas, the pipeline would be protected with a rock shield (fabric or screen that is wrapped around the pipe to protect the pipe and its coating from damage by rocks, stones, roots, and other debris). Alternatively, the trench bottom would be filled with padding material (e.g., finer grain sand, soil, or gravel) to protect the pipeline. No topsoil would be used as padding material.

2.3.1.6 Hydrostatic Testing

The pipeline would be hydrostatically tested to ensure the system was capable of withstanding the operating pressure for which it was designed. This process involves isolating the pipe segment with test manifolds, filling the line with water, pressurizing the section to a pressure commensurate with the MAOP and class location, and then maintaining that pressure for a period of 8 hours. The hydrostatic test would be conducted in accordance with Title 49 CFR Part 192. WIC proposes to obtain water for hydrostatic testing from surface water sources through specific agreements with landowners and in accordance with federal, state, and local regulations. The pipeline would be hydrostatically tested after backfilling and all construction work that would directly affect the pipe has been completed. If leaks were found, the leaks would be repaired and the section of pipe retested until specifications were met. Water used for the testing would then be transferred to another pipe section for subsequent hydrostatic testing or the water would be analyzed to ensure compliance with the National Pollution Discharge Elimination System (NPDES) discharge permit requirements, treated if necessary, and discharged. Hydrostatic testing is discussed further in sections 3.3.2, 3.5.1, and 3.6.3.

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rock, the minimum cover requirement is 18 inches in Class 1 locations and 24 inches in more populated areas and beneath public road ditches and railroad crossings.

2.3.1.7 Final Tie-in

Following successful hydrostatic testing, test manifolds would be removed and the final pipeline tie-ins would be made and inspected.

2.3.1.8 Commissioning

After final tie-ins are complete and inspected, the pipeline would be cleaned and dried using mechanical tools (pigs) that are moved through the pipeline with pressurized, dry air. The pipeline would be dried to minimize the potential for internal corrosion. Once the pipe has dried sufficiently, pipeline commissioning would commence. Commissioning involves activities to verify that equipment has been properly installed and is working, the controls and communications systems are functional, and that the pipeline is ready for service. In the final step, the pipeline is prepared for service by purging the line of air and loading the line with natural gas.

2.3.1.9 Cleanup and Restoration

Trash and construction debris will be cleaned up during and after construction. Construction debris on the ROW would be disposed of and work areas would be final graded. Preconstruction contours would be restored, unless otherwise directed by the landowner or land managing agency. Appropriately spaced breaks would be left in the mounded topsoil and spoil piles to prevent interference with groundwater runoff and irrigation. Segregated topsoil would be spread over the surface of the ROW, and permanent erosion controls would be installed. After backfilling, WIC would begin final cleanup as soon as weather and site conditions permit. Every reasonable effort would be made to complete final cleanup (including final grading and installation of erosion control devices) within 20 days after backfilling the trench. Construction debris would be cleaned up and taken to a disposal facility.

After permanent erosion control devices are installed and final grading has been completed, WIC would see all disturbed work areas as soon as possible. Seeding is intended to stabilize the soil, improve the appearance of the area disturbed by construction, and, in some cases, restore native flora. Timing of the reseeding efforts would depend upon weather and soil conditions and would be subject to the prescribed dates and seed mixes specified by the landowner, land-managing agency, or NRCS recommendations.

WIC would restrict access along the ROW using gates, boulders, or other barriers to minimize unauthorized entry by all terrain vehicles. BLM would encourage the use of large woody debris to be used to control unauthorized access, when such debris is available. Pipeline markers would be installed at fence and road crossings to show the location of the pipeline. Markers would identify the owner of the pipeline and convey emergency information. WIC also would install special markers providing information and guidance to aerial patrol pilots.

2.3.2 Special Construction Procedures

In addition to standard pipeline construction methods, WIC would use special construction techniques where warranted by site-specific conditions. These special techniques would be used when constructing across paved roads, highways, railroads, steep terrain, waterbodies, and wetlands, and when blasting through rock. These are described below.

2.3.2.1 Road, Highway, and Railroad Crossings

WIC's TTMP identifies mitigation to reduce potential impacts of project-related road use and construction activity, and plans for maintenance or moderate upgrading of existing access roads. Construction across paved roads, highways, and railroads would be in accordance with the requirements of WIC's road and railroad crossing permits and approvals obtained by WIC. In general, major paved roads, highways, and railroads would be crossed by boring beneath the road or railroad. Boring requires the excavation of a pit on each side of the feature, the placement of boring equipment in the pit, then boring a hole under the road at least equal to the diameter of the pipe. Once the hole was bored, a prefabricated pipe section would be pushed through the borehole. For long crossings, sections could be welded onto the pipe string just before being pushed through the borehole. Boring would result in minimal or no disruption to traffic at road, highway, or railroad crossings. Each boring would be expected to take 2 to 10 days.

Most smaller, unpaved roads and driveways would be crossed using the open-cut method where permitted by local authorities or private owners. The open-cut method would require temporary closure of the road to traffic and establishment of detours. If no reasonable detour was feasible, at least one lane of traffic would be kept open, except during brief periods when it is essential to close the road to install the pipeline. Most open-cut road crossings would be completed and the road resurfaced in 1 or 2 days. WIC would take measures, such as posting signs at open-cut road crossings, to ensure safety and minimize traffic disruptions.

2.3.2.2 Steep Terrain

WIC has identified multiple areas that contain rough or steep terrain that would require additional workspace areas (**table 2.3-1**). Additional grading may be required in areas where the proposed pipeline route would cross steep slopes. Steep slopes often need to be graded down to a gentler slope to accommodate pipe-bending limitations. In such areas, the slopes would be cut away and, after the pipeline was installed, reconstructed to their original contours during restoration.

In areas where the proposed pipeline route crosses laterally along the side of a slope, cut-and-fill grading may be required to obtain a safe, flat, work terrace. Generally, on steep side-slopes, soil from the high side of the ROW would be excavated and moved to the low side of the ROW to create a safe and level work terrace. Under these circumstances, WIC would strip topsoil from the entire width of the ROW. After the pipeline is installed, the soil from the low side of the ROW would be returned to the high side, topsoil replaced, and the slope's original contours would be restored.

In steep terrain, temporary sediment barriers such as silt fence and certified weed-free straw bales would be installed during clearing to prevent the movement of disturbed soil off the ROW. Temporary slope breakers consisting of mounded and compacted soil would be installed across the ROW during grading, and permanent slope breakers would be installed during cleanup. Following construction, WIC would apply seed to steep slopes and mulch the ROW with certified weed-free hay or non-brittle straw, or cover it with erosion control fabric. WIC would use certified weed-free mulching materials approved by the BLM on the portion of the route that is under BLM jurisdiction. Sediment barriers would be maintained across the ROW until permanent vegetation is established.

Table 2.3-1
Extra Workspaces Associated with Difficult Terrain Along the Proposed Piceance Project

Milepost Begin	Milepost End	ROW Width (feet)	ROW Length (feet)	Additional Acres[1]	Description
4.2	4.7	150	1,200	1.8	Rock ridges
20.3	20.5	175	1,072	2.2	Terrain
21.7	21.9	300	1,168	5.8	Side hill ridge crossing
28.1	28.3	200	676	1.8	Rocky ridge
33.4	33.7	150	1,979	3.0	Terrain
38.3	79.3[2]	110 to 300	77,306	82.0	Rough terrain
85.7	86.2	100	2,239	0.8	Rough terrain
104.2	104.3	150	720	1.1	Rough terrain
110.3	112.9	150 to 200	9,252	14.6	Terrain, side hill
114.7	114.8	150	666	1.0	Terrain
116.7	117.4	110	3,751	2.2	Terrain
128.5	135.7	150 to 200	19,086	46.3	Rough terrain, side hill

[1] Acres in addition to disturbance associated with the typical construction ROW.
[2] There is not a continuous extra workspace for this segment. The extra workspaces in this segment are intermittent.

2.3.2.3 Waterbody Crossings

A total of 4 perennial waterbodies and approximately 178 intermittent waterbodies would be crossed by the proposed Piceance Project. Some of these waterbodies would be crossed multiple times. When crossing waterbodies, WIC would adhere to the guidelines outlined in WIC's Plan and Procedures (appendices B and C) and the requirements of its waterbody crossing permits.

With the exception of the White, Yampa, and Little Snake Rivers that would be crossed using the HDD method, WIC's preferred method to cross a waterbody that was flowing at the time of construction typically would be the open-cut method. The open-cut crossing method would involve trenching through the waterbody while water continues to flow through the trenching area. If no water were flowing at the time of construction, then WIC would cross the waterbody using conventional upland cross-country construction techniques. The flume, dam-and-pump, and HDD methods also could be considered as alternative crossing methods. The flume crossing method would involve diverting the flow of water across the trenching area through one or more flume pipes placed in the waterbody. The dam-and-pump method is similar to the flume method except that pumps and hoses would be used instead of flumes to move water around the construction work area. The HDD method would involve drilling a hole under the waterbody and installing a prefabricated segment of pipe through the hole.

WIC has prepared a Waterbody Crossing Plan that addresses the crossings of the Little Snake (MP 53.1), Yampa (MP 87.6), and White Rivers (MP 127.7). WIC would avoid impacts to endangered fish and other aquatic biota by using the HDD method of construction across the White, Yampa, and Little Snake Rivers. The HDD method involves drilling a pilot hole under the waterbody and banks, then enlarging the hole through successive reamings until the hole is large enough to accommodate a prefabricated segment of pipe. Throughout the process of drilling and enlarging the hole, a slurry made of non-toxic fluids, such as bentonite and water, would be circulated through the drilling tools to lubricate the drill bit, remove drill cuttings, and hold the hole open. This slurry is referred to as drilling mud. Pipe sections long enough to span the entire crossing would be staged and welded along the construction work area on the opposite side of the waterbody and then pulled through the drilled hole. Ideally, use of the HDD method results in no impact on the banks, bed, or water quality of the waterbody being crossed. **Figure 2.3-2** shows a conceptual HDD waterbody crossing.

Regardless of the crossing method, additional temporary workspace areas would be required on both sides of all waterbodies to stage construction, fabricate the pipeline, and store materials. For most crossings, these workspaces would be located at least 50 feet away from the water's edge, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land.

Before construction, temporary bridges (e.g., clean rock fill over culverts, timber mats supported by flumes, railcar flatbeds, flexi-float apparatus) would be installed across all perennial waterbodies to allow construction equipment to cross. Construction equipment would be required to use the bridges, except the clearing crew who would be allowed one pass through the waterbodies before the bridges were installed.

As stated in WIC's Procedures (V.B.2.c and VI.B.2.g), clearing of vegetation between extra work areas and the edge of waterbodies would be limited to the certificated ROW and tree stump removal and grading activities would be limited to the trenchline only. If no herbaceous strip existed, sediment barriers would be installed at the top of the streambank. Initial grading of the herbaceous strip would be limited to the extent needed to create a safe approach to the waterbody and to install bridges. During clearing, sediment barriers would be installed and maintained across the ROW adjacent to waterbodies and within additional temporary workspace areas to minimize the potential for sediment runoff. Silt fence and/or certified weed-free straw bales located across the working side of the ROW would be removed during the day when vehicle traffic was present and would be replaced each night. Alternatively, drivable berms could be installed and maintained across the ROW in lieu of silt fence and/or certified weed-free straw bales.

In general, equipment parking, refueling, and lubricating near waterbodies would take place in upland areas that are 100 feet or more from the edges of the water. On federal lands, storage of fuels, lubricants, and hazardous materials would be located at least 500 feet from waterbodies. When circumstances dictate that equipment refueling and lubricating would be necessary in or near waterbodies, WIC would follow its SPCC Plan to address the handling of fuel and other materials.

After the pipeline is installed beneath the waterbody using one of the methods described above, WIC would begin restoration. Waterbody banks would be restored to preconstruction contours or to a stable angle of repose. Rock riprap or gabion baskets (rock enclosed in wire bins) would be installed as necessary on steep waterbody banks in accordance with permit requirements. More stable banks would be seeded with native

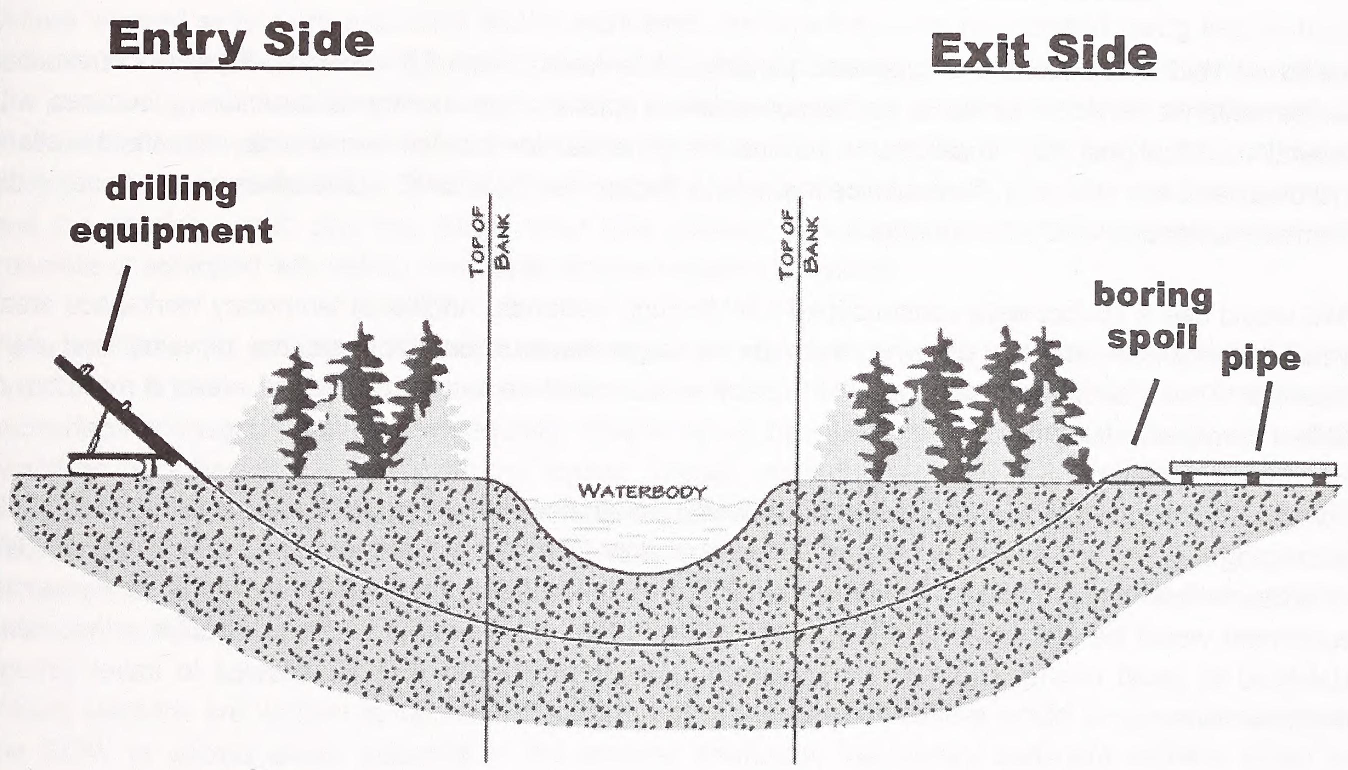

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Figure 2.3-2
Piceance Project
Conceptual Horizontal Directionally Drilled Waterbody Crossing

grasses and certified weed-free mulch or covered with erosion control fabric. Waterbody banks would be temporarily stabilized within 24 hours of completing in-stream construction. Sediment barriers, such as silt fence and/or certified weed-free straw bales or drivable berms would be maintained across the ROW at all waterbody approaches until permanent vegetation was established. Temporary equipment bridges would be removed following construction.

2.3.2.4 Wetland Crossings

Based on field delineations, the proposed pipeline route would cross 25 wetlands. Pipeline construction across wetlands would be similar to typical conventional upland cross-country construction procedures, with several modifications and limitations to reduce the potential for pipeline construction to affect wetland hydrology and soil structure. To minimize impacts to the environment, WIC would cross wetlands using the methods outlined in WIC's Procedures.

WIC would use a 75-foot-wide construction ROW through wetlands. Additional temporary workspace areas would be required on both sides of wetlands to stage construction, fabricate the pipeline, and store materials. These additional temporary workspace areas would be located in upland areas a minimum of 50 feet from the wetland edge.

Construction equipment working in wetlands would be limited to that essential for clearing the ROW, excavating the trench, fabricating and installing the pipeline, backfilling the trench, and restoring the ROW. In areas where there is no reasonable access to the ROW except through wetlands, non-essential equipment would be allowed to travel through wetlands only if the ground was firm enough or had been stabilized to avoid rutting. Otherwise, non-essential equipment would only be allowed to travel through wetlands once.

Clearing of vegetation in wetlands would be limited to trees and shrubs, which would be cut flush with the surface of the ground and removed from the wetland. To avoid excessive disruption of wetland soils and the native seed and rootstock within the wetland soils, stump removal, grading, topsoil segregation, and excavation would be limited to the area immediately over the trenchline. A limited amount of stump removal and grading could be conducted in other areas if dictated by safety-related concerns.

During clearing, sediment barriers such as silt fence and staked certified weed-free straw bales would be installed and maintained adjacent to wetlands and within additional temporary workspace areas as necessary to minimize the potential for sediment runoff. Sediment barriers also would be installed across the full width of the construction ROW at the base of slopes adjacent to wetland boundaries. Silt fence and/or certified weed-free straw bales installed across the working side of the ROW would be removed during the day when vehicle traffic was present and would be replaced each night. Alternatively, drivable berms could be installed and maintained across the ROW in lieu of silt fence or certified weed-free straw bales. Sediment barriers also would be installed within wetlands along the edge of the ROW, where necessary, to minimize the potential for sediment to run off the construction ROW and into wetland areas located outside the work area.

The method of pipeline construction used in wetlands would depend largely on the stability of the soils at the time of construction. If wetland soils are not excessively saturated at the time of construction and can support construction equipment on equipment mats, timber riprap, or certified weed-free straw mats, construction would occur in a manner similar to conventional upland cross-country construction techniques. In unsaturated wetlands, topsoil from the trenchline would be stripped and stored separately from subsoil. Topsoil segregation generally would not be possible in saturated soils.

Where wetland soils were saturated and/or inundated, the pipeline could be installed using the push-pull technique. The push-pull technique would involve stringing and welding the pipeline outside of the wetland and excavating and backfilling the trench using a backhoe supported by equipment mats or timber riprap. The prefabricated pipeline would be installed in the wetland by equipping it with buoys and pushing or pulling it across the water-filled trench. After the pipeline was floated into place, the floats would be removed and the pipeline would sink into place. Most pipe installed in saturated wetlands would be coated with concrete or equipped with set-on weights to provide negative buoyancy.

Because little or no grading would occur in wetlands, restoration of contours would be accomplished during backfilling. Prior to backfilling, trench breakers would be installed where necessary to prevent the subsurface drainage of water from wetlands. Where topsoil has been segregated from subsoil, the subsoil would be backfilled first, followed by the topsoil. Topsoil would be replaced to the original ground level leaving no crown over the trenchline. In some areas where wetlands overlie rocky soils, the pipe would be padded with rock-free soil or sand before backfilling with native bedrock and soil. Equipment mats, timber riprap, gravel fill, geotextile fabric, and/or certified weed-free straw mats would be removed from wetlands following backfilling.

Where wetlands are located at the base of slopes, permanent slope breakers would be constructed across the ROW in upland areas adjacent to the wetland boundary. Temporary sediment barriers would be installed where necessary until revegetation of adjacent upland areas was successful. Once revegetation was successful, sediment barriers would be removed from the ROW and disposed of properly.

In wetlands where no standing water was present, the construction ROW would be seeded in accordance with the recommendations of the local soil conservation authorities. Lime, mulch, and fertilizer would not be used in wetlands.

2.3.2.5 Blasting

Because the majority of construction activities would occur within a previously disturbed utility corridor, WIC anticipates that blasting in areas other than in the ditch line would be limited. WIC has stated that limited blasting might be required in areas where competent shallow bedrock or boulders were encountered that could not be removed by conventional excavation methods (**table 2.3-2**). If blasting were required to clear the ROW and to fracture the ditch, strict safety precautions would be followed. WIC would exercise extreme care to avoid damage to underground structures, cables, conduits, pipelines, and underground watercourses or springs. To protect property or livestock, WIC would provide adequate notice to adjacent landowners or tenants in advance of blasting. Our recommendations for blasting affects on nesting raptors and avian species, as well as general wildlife, is found in section 3.5.2 of the EIS. Blasting activity would be performed during daylight hours and in compliance with federal, state, and local codes and ordinances and manufacturers' prescribed safety procedures and industry practices. Blasting would not occur in streams.

Table 2.3-2
General Locations of Shallow Bedrock
(by Milepost)

Starting MP	Ending MP
4.7	7.7
20.3	51.5
54	57.7
76.5	76.7
84.3	84.4
95.9	96
110.5	110.6
120.9	141.7

2.3.2.6 Residential Construction

WIC did not identify any residences located within 50 feet of the proposed construction ROW. Impacts to residences are not anticipated. As such, residential construction mitigation is not applicable to the Piceance Project.

2.3.2.7 Fences and Grazing

WIC would contact grazing lessees and appropriate BLM FOs prior to crossing any fence on public lands or any fence between public and private land, and would offer the BLM and lessee the opportunity to be present when the fence is cut so that the BLM and lessee can be satisfied that the fence was adequately braced and secured. The grazing permitees would be contacted prior to the start of construction and reclamation on their allotments. To prevent the passage of livestock, the opening in the fenceline would be temporarily closed when construction crews left the area. If gaps in natural barriers used for livestock control were created by the pipeline construction, the gaps would be fenced according to the landowners or land management agency requirements. Whenever possible, a minimum of 10 feet of undisturbed area would be maintained where the pipeline paralleled a fenceline.

All existing improvements, such as fences, gates, irrigation ditches, cattle guards, and reservoirs would be maintained during construction and repaired to pre-construction conditions or better. If pipelines transporting water for livestock and wildlife were damaged by construction activities, WIC would repair the pipelines to the landowner or land management agency specifications. If needed, WIC has committed to providing an emergency source of potable water.

2.3.2.8 Construction Immediately Adjacent to Foreign Lines

Between MP 96.5 and MP 105.1 (near Bob Hughes and Deception Creeks), WIC proposes to locate the pipeline along and parallel to CIG's existing Uinta Basin Lateral and Kinder Morgan's Rocky Mountain Pipeline. This area is characterized by steep drainages and narrow canyon terrain. Where possible, the proposed pipeline would be constructed 40 feet east of the existing Uinta Basin Lateral or the Rocky Mountain Pipeline. In locations where this is not feasible, WIC has proposed to locate its line within 20 feet or less of one or both of the existing pipelines, generally between the two existing pipelines. WIC would arrange with its affiliate, CIG, to restrict flows or reduce pressure in the Uinta Basin Lateral during construction periods to allow heavy equipment to work over the CIG line. Spoil from the ditch would be cast over the Rocky Mountain Pipeline and no equipment would move back and forth over that particular pipeline. Once construction was completed, flows and/or pressures in the Uinta Basin Lateral would resume at normal levels.

2.3.3 Aboveground Facility Construction Procedures

Construction activities at each of the Piceance Project aboveground facility locations would follow a standard sequence of activities: clearing and grading, installing of the proposed facilities, and erecting the appropriate structures (e.g., to house the new compressor at the CIG Greasewood Compressor Station) or fencing (e.g., to protect the MLVs). Construction activities and the storage of building materials would be confined to the designated work areas at the existing CIG Wamsutter and CIG Greasewood Compressor Stations and the pipeline ROW. **Figures 2.3-3** and **2.3-4** illustrate the locations of the existing compressor stations and proposed aboveground facilities in relation to surrounding topography and land uses. Similarly, **figure 2.3-5** illustrates the location of pigging facility and the MLV at MP 54.

The valves, pigging facilities, metering stations, and interconnections proposed at the CIG Wamsutter and CIG Greasewood Compressor Stations would be installed within or immediately adjacent to the existing, fenced industrial facility. The aboveground perimeter fencing of these stations would not change as a result of the installation of the proposed facilities.

WIC proposed to install 1,650 horsepower of additional compression at the existing CIG Greasewood Compressor Station. A new compressor building would be built to house this compressor and would be acoustically treated to attenuate sound. Natural gas piping, both aboveground and belowground associated with the installation of the interconnections, metering stations, and pigging facilities at the two existing compressor stations, would be installed and pressure-tested using methods similar to those used for the main pipeline. After testing is successfully completed, the piping would be tied in to the main pipeline. Piping installed below grade would be coated for corrosion protection prior to backfilling. In addition, all below grade facilities would be protected by a cathodic protection system. Before being put into service, compressors, controls, and safety devices would be checked and tested to ensure proper system operation and activation of safety mechanisms, as necessary.

The existing CIG Wamsutter and CIG Greasewood Compressor Stations already have electrical power and telephone facilities. No changes to these services are proposed.

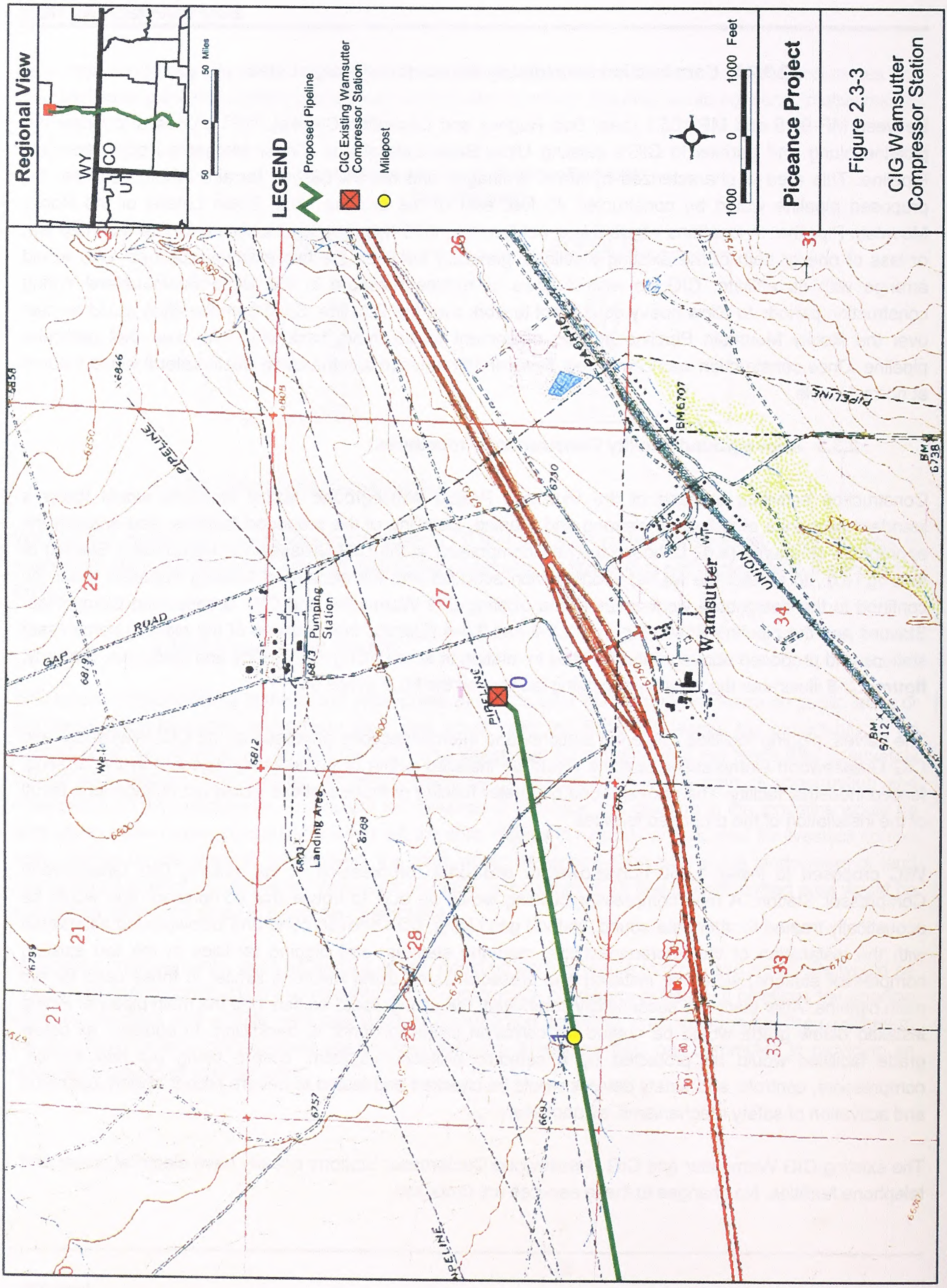
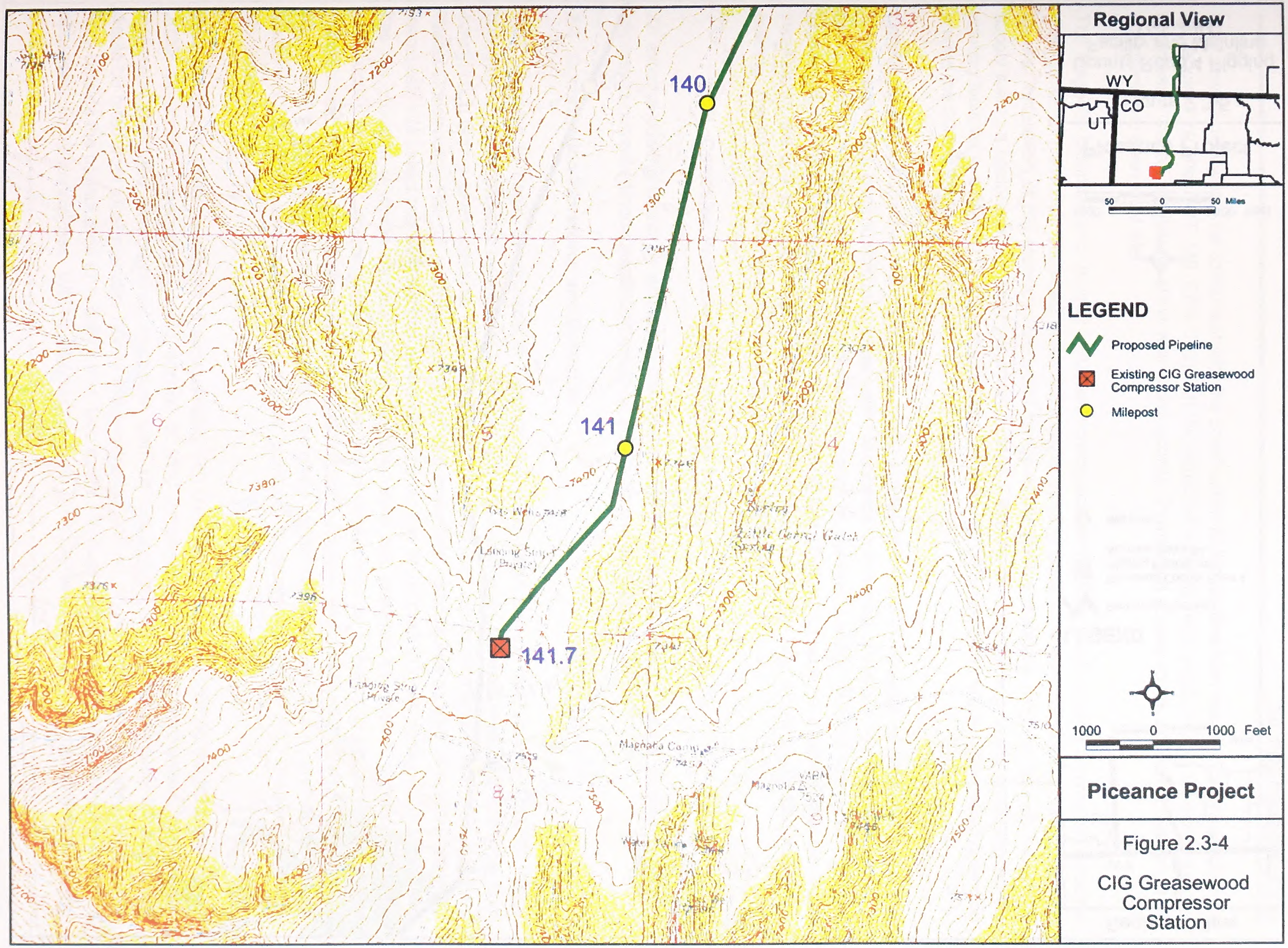


Figure 2.3-3
CIG Wamsutter Compressor Station

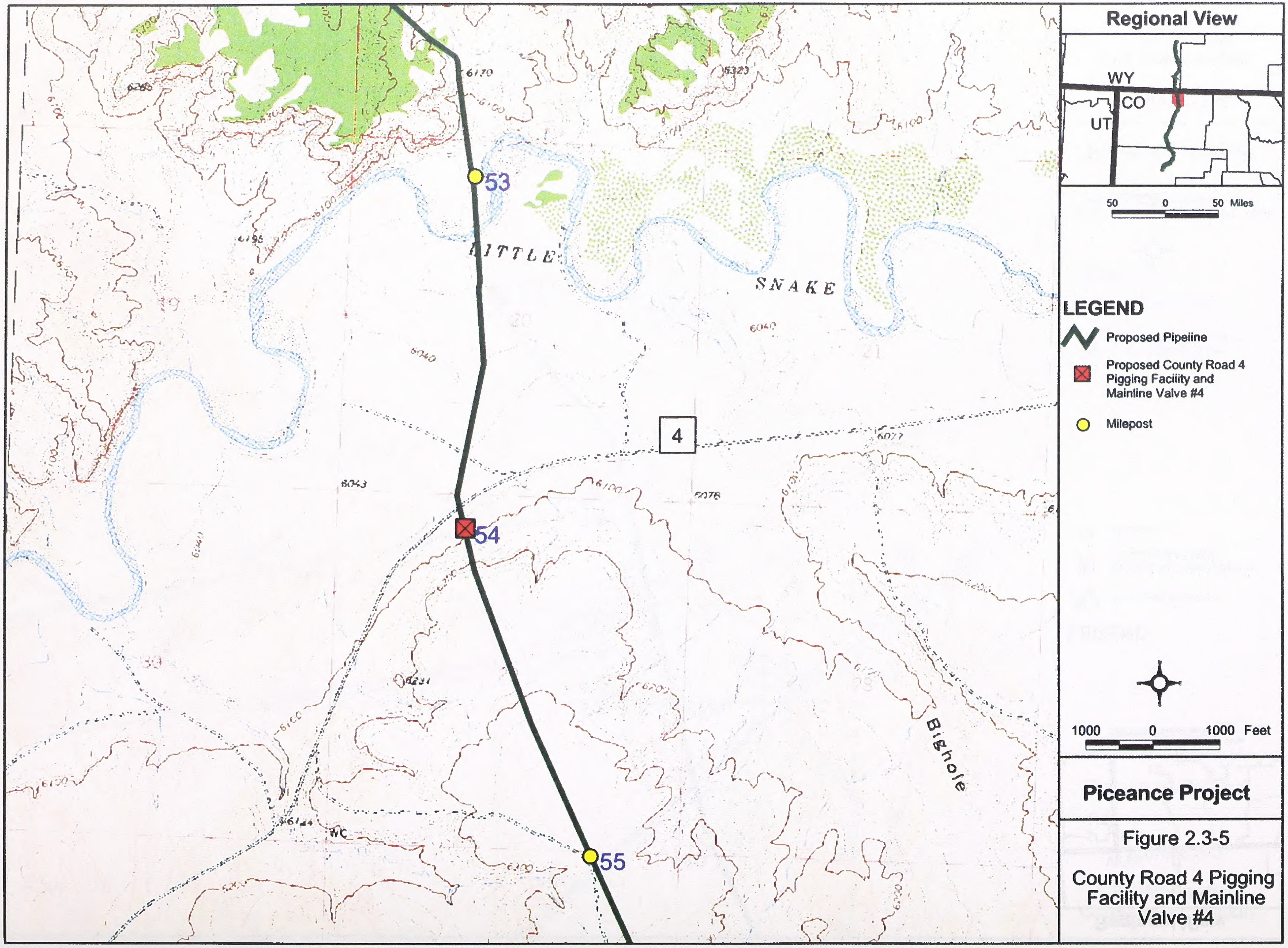


Piceance Project

Figure 2.3-4

CIG Greasewood Compressor Station

4/4/05



Piceance Project

Figure 2.3-5

County Road 4 Pigging Facility and Mainline Valve #4

3/2/05

MLV construction would be concurrent with the construction of the pipeline with valves installed at spacings as required by the DOT (49 CFR 192). MLVs would be located near public roads or within existing compressor station facilities to allow year-round access. Permanent access roads or approaches would be constructed to each MLV site.

The Magnetic Mountain and Juniper Mountain communication facilities would involve minimal construction disturbance in previously disturbed areas adjacent to existing communications facilities, including existing towers. Installation of the Magnetic Mountain facility would involve placing a propane tank on the site to supply fuel to a back-up emergency generator located inside the existing building; laying gravel around the existing facilities in a 50-foot by 50-foot (0.06 acre), previously disturbed area; and erecting security fencing around the 50-foot by 50-foot area.

Construction of the Juniper Mountain facility would involve erecting a 40-foot-tall, self-supporting (no guy wires), three leg communications tower with associated microwave parabolic dish antennas and a self-contained 11-foot by 21-foot by 9-foot-tall concrete communications building on a simple slab foundation within a previously disturbed 40-foot by 60-foot (0.06 acre) area. A propane tank would be installed on the site to supply fuel to a back-up emergency generator that would be located inside the building. The 40-foot by 60-foot area would be graveled and fenced.

2.3.4 Corrosion Protection and Detection Systems

An external coating would be applied to the pipeline and all buried facilities to reduce external corrosion. Impressed current cathodic protection would be installed along the pipeline.

2.4 Construction Workforce and Schedule

WIC proposes to begin construction in October 2005, and begin service by February 1, 2006. Winter construction is complicated by weather conditions and can result in environmental impacts that differ from construction during other seasons. Consequently, in the draft EIS, we recommended that WIC develop a Winter Construction Plan to address construction and reclamation procedures as well as specific mitigation measures. We asked that WIC file this plan prior to the closing of the draft EIS comment period. While WIC has not provided a winter construction plan to date, WIC has provided information on planned winter construction activities, including details regarding winter construction as it relates to big game habitat, soil management, erosion control, access roads, and cultural resources, and proposed mitigation measures for each. WIC's proposed winter construction activities and mitigation measures are discussed in sections 3.2.2, 3.5.2, and 3.8.3; however, we continue to recommend that WIC develop a Winter Construction Plan.

WIC anticipates a peak workforce of approximately 600 construction personnel during the fall and winter of 2005. Construction personnel would consist of WIC employees, contractor employees, construction inspection staff, and environmental inspection staff. Of that amount, up to approximately 50 employees would be hired from local sources. During the construction period, no workers are anticipated to commute from outside the project area on a daily basis. Due to the nature of the project, temporary housing could be necessary for all employees. WIC is planning to build the pipeline in two spreads headquartered in the

Wamsutter or Rawlins, Wyoming (Spread 2) and Craig, Meeker, or Rifle, Colorado (Spread 1), areas. Construction activity would occur simultaneously in each spread.

During construction, personnel would work during daylight hours, 6 to 7 days per week depending on schedule constraints. **Table 2.4-1** outlines WIC's proposed construction schedule and workforce requirements by spread for the proposed project.

Table 2.4-1
Pipeline Construction Workforce and Proposed Schedule

Spread	Begin MP	End MP	Estimated Workforce	Proposed Schedule	County and State
1	75.6	141.7	<300	October 2005 to January 31, 2006	Moffat and Rio Blanco, Colorado
2	0	75.6	<300	October 2005 to January 31, 2006	Sweetwater, Wyoming and Moffat, Colorado

WIC, through its construction contractors and subcontractors, would attempt to hire temporary construction staff from the local population. At peak workforce, we anticipate that up to about 8 percent of the total construction workforce could be hired locally (currently residing in Colorado or Wyoming). The remaining portion of the workforce (92 percent or more) would include non-local personnel. Based on the specialized nature of the position, environmental inspection staff would most likely consist entirely of non-local employees.

Only work vehicles would be allowed on the construction ROW or additional temporary workspace areas during construction. Equipment operators could drive a company-owned or personal pick-up truck to the construction site. Parking would be limited to the construction ROW, additional temporary workspace areas, or along existing roads. Adjacent ROWs would not be used for parking. Construction workers would not be permitted to travel cross-country on private or public lands during construction of the project or on non-authorized and permitted access plan roads.

2.5 Environmental Inspection, Compliance Monitoring, and Post-Approval Variances

Under the NGA, the FERC may impose conditions on any Certificate it grants for the Piceance Project. These conditions could include additional requirements and mitigation measures recommended in this EIS to minimize the environmental impacts that would result from the construction and operation of the project (see chapters 3.0, 4.0, and 5.0). We will recommend that these additional requirements and mitigation measures (bold type in the text) be included as specific conditions to any approving Certificate issued for the Piceance Project. We also will recommend that WIC be required to implement the mitigation measures that it has proposed as part of the project unless specifically modified by other Certificate conditions (see recommendation 1 in section 5.5).

In accordance with the MLA, the BLM would require WIC to furnish a bond or other security to ensure that WIC would comply with the terms and conditions of the BLM's ROW grant. While there would be some jurisdictional differences between the FERC's and the BLM's requirements, the environmental inspection and compliance monitoring programs for the Piceance Project would address requirements placed on the project by the federal and other agencies.

WIC initially proposed to assign at least one EI to each construction spread. The EI would likely be hired from a qualified third-party contractor. The responsibilities of the EIs are outlined in section II of WIC's Plan and would include ensuring that the Certificate and environmental conditions attached to other permits and authorizations are met. During the construction phase, WIC's EIs would inspect all construction and mitigation activities to ensure compliance with the requirements of environmental plans, permits, and conditions. EIs also may oversee cultural resource monitors and/or biological monitors that may be required to monitor and evaluate construction impacts on resources as specified in this EIS.

The lengths of WIC's construction spreads are about 65 miles on Spread 1 and 75 miles on Spread 2. We believe that more than two EIs would be necessary to adequately inspect all construction and mitigation activities and perform the other duties outlined above. Therefore, in the draft EIS we recommended that WIC employ a team of EIs (i.e., three or more) on <u>each</u> construction spread. In its comments on the draft EIS, WIC has agreed to use three EI's per spread.

In addition, one EI will be added for each mini-crew activity, such as work in big game critical range habitat, for the duration of construction by that mini-crew. WIC also will have a Chief EI responsible for supervision of the EI crews for both spreads.

Inspectors from the FERC and BLM also would conduct field inspections during construction. Other federal and state agencies also may oversee or monitor inspection to the extent determined necessary by the individual agency.

After construction is completed, the FERC and BLM would continue to conduct oversight inspection and monitoring. If it is determined that any of the proposed monitoring timeframes are not adequate to assess the success of restoration, WIC would be required to extend its post-construction monitoring programs. The BLM would retain WIC's bond or other security until the BLM is satisfied with WIC's reclamation efforts.

2.5.1 Compliance Monitoring

The BLM has indicated that it intends to require a separate compliance monitoring program to evaluate WIC's environmental inspection program during construction and to ensure compliance with the terms and conditions of the BLM ROW grant. We believe that a joint third-party independent Environmental Compliance Monitoring and Reporting Program (ECMR Program) would provide a number of benefits, both to the agencies themselves and to WIC. WIC has agreed to support the ECMR Program. The overall objective of an ECMR Program would be twofold: to assess environmental compliance during construction in order to achieve a high level of environmental compliance throughout the project and to assist the FERC and BLM staffs in screening and processing variance requests during construction.

The joint ECMR Program would involve the use of full-time third-party compliance monitors representing both agencies at each construction spread to monitor compliance with project mitigation measures and requirements throughout construction. These monitors would provide continuous feedback on compliance issues to both agencies, as well as to WIC's personnel. These monitors also would track and document progress of construction by the preparation and submittal of reports to the FERC and BLM staffs on a regular and timely basis.

2.5.2 Post-Approval Variance Process

Surface disturbance locations and acreages identified in this EIS are anticipated to be sufficient for the construction and operation (including maintenance) of the project and all ancillary improvements. However, route realignments and other project refinements often continue past the project review phase and into the construction phase. As a result, work area locations and disturbed acreages documented in the EIS may change after project approval. These changes frequently involve minor route realignments or moving approved extra workspace, adding new temporary workspace, and adding access routes to work areas and associated temporary workspace areas. This section describes the procedure used for assessing impact on workspace areas outside those evaluated in this EIS and for approving their use.

Subsequent to project approval, when work areas outside those evaluated in this EIS are found to be needed, additional inventory and evaluation would be performed to ensure that impact on biological, cultural, and other resources would be avoided or minimized to the maximum extent practicable. New workspace location and survey results would be documented and forwarded to the FERC (and the BLM, as applicable) in the form of a "variance request"; one of the two federal agencies would take the lead on reviewing the request, depending on the ownership status of the subject land.[17] Appropriate agency consultations/approvals would be conducted/obtained prior to approval of the variance. At the conclusion of the project, as-built drawings would be provided to the FERC and BLM.

2.6 Operation and Maintenance

WIC would operate and maintain the project facilities in accordance with the DOT regulations in 49 CFR 192 and other applicable federal and state regulations. Operation and maintenance of the pipeline system would be accomplished by existing WIC personnel; there would be no additional staff required by WIC to maintain the facilities after construction. Operation of the pipeline would require access along the pipeline ROW by WIC personnel. While WIC would make an effort to notify landowners prior to entering private property, landowner notification is not required for entry along the ROW, particularly in emergency situations.

2.6.1 ROW Monitoring and Maintenance

In order to maintain accessibility of the ROW and to accommodate pipeline integrity surveys, vegetation along the pipeline ROW would be periodically cleared over the pipeline. In most areas, the ROW would be maintained in an herbaceous state (i.e., large trees would be removed from the permanent ROW). WIC would use only mechanical mowing or cutting along its ROW for normal vegetation maintenance.

[17] Recommendation 5 in section 5.5 illustrates our approach to considering variance requests subsequent to project authorization.

Noxious weeds and invasive plant monitoring and control activities would be conducted during routine ROW monitoring and maintenance activities. Noxious and invasive weeds discovered within the ROW would be controlled according to the measures specified in the Weed Plan (see appendix G).

In the future, pipeline integrity surveys and vegetation maintenance could identify areas on the ROW where permanent erosion control devices need to be repaired or additional erosion control devices may be needed. If problem areas were evident, erosion control devices would be repaired or installed as necessary and the ROW would be stabilized to prevent future degradation.

Active corrosion, leakage, encroachments, soil erosion, ground movements, missing or damaged markers, or other changes requiring attention would be reported and the required repairs made. Operation and maintenance of valves would be performed in accordance with DOT requirements. The Piceance Project would be remotely monitored by a Supervisory Control and Data Acquisition (SCADA) system. El Paso Gas Control would monitor the SCADA system 24 hours a day. Remote locations on the pipeline would be monitored via telecommunications (radios, phone lines, and/or satellite) systems.

In the vicinity of waterbodies, wetlands, and upland areas, WIC would adhere to the operation and maintenance procedures described in WIC's Plan and Procedures. WIC also has committed to adhere to the maintenance commitments made in its POD and associated appendices for the BLM (WIC 2005a). Operation and maintenance procedures, including record keeping, would be performed in accordance with the DOT requirements.

2.6.2 Pipeline Integrity

WIC's pipeline facilities would be operated and maintained in accordance with the federal safety standards (49 CFR 192). Operation and maintenance of the Piceance Project facilities would be performed by or at the direction of WIC. The pipeline would be inspected periodically from the air and on foot as operating conditions permit, but no less frequently than as required by 49 CFR 192. These surveillance activities would provide information on possible encroachments and nearby construction activities, erosion, exposed pipe, and other potential concerns that may affect the safety and operation of the pipeline. Evidence of population changes would be monitored and class locations changed as necessary. WIC also would inspect MLVs annually and document the results.

2.7 Future Plans and Abandonment

Greater volumes of natural gas could be transported between the CIG Greasewood and CIG Wamsutter Compressor Stations with the installation of a new compressor station. However, WIC has not presented plans to expand the system or increase its capacity at the present time. If, in WIC's judgment, future market demands warrant expansion of the Piceance Project, WIC would file an appropriate application with the FERC at that time and an appropriate NEPA analysis would be prepared to address the impacts of the project expansion.

Properly maintained, the proposed pipeline is expected to operate for 50 or more years. If and when WIC abandons any of the proposed facilities, the abandonment would be subject to separate approvals by the

FERC, the BLM, and other land managing agencies. The FERC review would be conducted under Section 7(b) of the NGA. On federal lands, the BLM would require WIC to submit an abandonment plan at least 90 days prior to anticipated abandonment. WIC has no plans for abandonment of the pipeline system.

The FERC typically allows a buried pipeline that has reached the end of its service life to be internally cleaned, purged of natural gas, isolated from interconnections with other pipelines, and sealed without removing the pipe from underground. We believe that this approach generally minimizes surface disturbance and other potential environmental impact. The aboveground pipeline at compressor and metering stations would be completely removed, including all related aboveground equipment and foundations, and the station sites restored to as near original condition as possible. The disposition of pipeline facilities on federal lands would depend on decisions made in the abandonment plan discussed above.

Upon abandonment of the pipeline, in part or in whole, the ROWs associated with the abandoned facilities would normally be returned to the landowners/land management agencies according to the specific easement agreements between the landowners/land managing agencies. However, on federal lands, the pipeline ROW could be used for other utility ROW (e.g., fiber optic lines) depending upon future decisions made by the BLM.

2.8 Permits, Approvals, and Regulatory Requirements

As federal agencies, the FERC and the BLM are required to comply with a number of regulatory statues, including, but not limited to, the NEPA, the ESA, and the National Historic Preservation Act of 1966, as amended (NHPA). In addition, the BLM would review the proposed project and facilities and make a determination whether or not the project would conform with its own statutory requirements and regulatory frameworks. Because the BLM administers all federally owned lands crossed by the proposed pipeline, it has additional permitting requirements under other rules and regulations, such as the Federal Land Policy and Management Act, Archaeological Resources Protection Act, and/or Native American Graves Protection and Repatriation Act.

Federal, state, or local agencies that have permit, approval, or consultation authority for portions of the proposed project are identified in **table 2.8-1**. The Commission states in its orders that applicants should cooperate with state and local agencies. However, any state or local permits issued with respect to jurisdictional facilities must be consistent with the conditions of any Certificate the Commission may issue. Although the Commission encourages cooperation between interstate pipelines and local authorities, this does not mean that state and local agencies, through application of state and local laws, may prohibit or unreasonably delay the construction or operation of facilities approved by the Commission.

Section 7 of the ESA, as amended, states that any project authorized, funded, or conducted by any federal agencies (e.g., the Commission) should not "...jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined...to be critical..." [16 U.S. Code [USC] § 1536(a)(2)(1988)]. The Commission, or the applicant as a non-federal representative, is required to consult with the FWS to determine whether any federally listed or proposed endangered or threatened species or their designated Critical Habitat occur in the vicinity of the proposed project. If, upon review of existing data, the Commission determines that these species or habitats may be affected by the proposed project, the Commission is required to prepare a Biological Assessment (BA) to identify the nature and extent of potential impact, and to recommend mitigation measures that would avoid the habitat and/or species or that would reduce potential impact to acceptable levels. We requested that the FWS consider the draft EIS as our BA for the proposed project. The FWS is currently reviewing this document and would issue a Biological Opinion if the project is likely to adversely affect a listed species or adversely modify Critical Habitat designated for a listed species. See section 3.6 of this EIS for a detailed discussion of threatened and endangered species.

The BLM would prepare a ROD to authorize an additional pipeline within new or existing corridors through BLM-administered lands in Colorado and Wyoming. As discussed above, the BLM would adopt this EIS per 40 FR 1506.3 to meet its responsibilities under NEPA in considering WIC's application for a ROW grant. Under Section 28 of the MLA, the BLM has the authority to issue the ROW grant for all affected federal lands.

Section 106 of the NHPA, as amended, requires the FERC to take into account the effects of its undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. Historic properties are prehistoric or historic districts, sites, buildings, structures, objects, or properties of traditional religious or cultural importance, which are listed or eligible for listing on the National Register of Historic Places (NRHP). The Commission is using the services of WIC, as an applicant, to prepare information, analyses, and recommendations necessary to comply with Section 106, according to the ACHP's regulations at 36 CFR 800.

WIC must comply with Sections 401, 402, and 404 of the CWA. Water quality certification (Section 401) has been delegated to the jurisdiction of individual state agencies, with review by the EPA. Water used for hydrostatic testing that is point-source discharged into waterbodies would require a NPDES permit issued by the state with EPA oversight.

The COE has responsibility for determining compliance with all regulatory requirements associated with Section 404 of the CWA, which includes compliance review and approval by the states and EPA with respect to Section 401. WIC submitted its Section 404 permit applications to the appropriate COE District Offices in 2005. Authorization to commence activities under Nationwide Permit 12 was granted by the COE in February 2005 for the Wyoming segment of the project.

Ambient air quality is protected by federal regulations under the Clean Air Act (CAA). These regulations include compliance under the New Source Performance Standards (NSPS) and the requirements for the Prevention of Significant Deterioration (PSD). The federal permitting process for the CAA has been delegated to individual state agencies. Although applications are reviewed by both Colorado and the EPA, Colorado would determine the need for NSPS or a PSD permit.

Table 2.8-1
Major Permits, Approvals, and Consultations for the Piceance Project

Agency	Permit or Consultation/Authority	Agency Action
FEDERAL		
Advisory Council on Historic Preservation (ACHP)	Section 106, National Historic Preservation Act (NHPA)	Provide comments on the proposed undertaking, as necessary.
Federal Energy Regulatory Commission (FERC)	Certificate of Public Convenience and Necessity (Natural Gas Act [NGA])	Determine whether the construction and operation of the proposed project is in the public interest. Consider issuance of a Certificate.
U.S. Department of Commerce National Oceanographic and Atmospheric Administration	National Ocean Service's National Geodetic Survey	Consider approval of relocations of geodetic control monuments, disturbed by the project.
U.S. Department of Defense		
Corps of Engineers (COE) - Sacramento and Omaha Districts	Section 404, Clean Water Act (CWA) Individual Permit (Stream and Wetland Crossings)	Consider issuance of Section 404 individual permits for the placement of dredge or fill material in waters of the U.S., including wetlands.
	Section 404, CWA Nationwide Permit	Consider issuance of Section 404 nationwide permits, as applicable.
U.S. Department of Interior		
Bureau of Land Management (BLM)	Archaeological Resources Protection Act Permit	Consider issuance of cultural resource use permit to excavate or remove cultural resources on federal lands.
	Paleontological Resources Use Permit	Consider issuance of paleontological permit to excavate or remove significant paleontological resources on public lands.
	ROW Grant and Temporary Use Permit under Section 28 (Mineral Leasing Act [MLA])	Consider approval of ROW grant and temporary use permits for the portions of the project that would encroach on federal lands.
	Plan of Development (POD)	Consider approval of WIC's detailed plan for construction, operation, and maintenance.
	Notice to Proceed	Following issuance of a ROW grant and approval of WIC's POD, consider the issuance of a Notice to Proceed with project development and mitigation activities.
Fish and Wildlife Service (FWS)	Endangered Species Act (ESA), Section 7 Consultation, Biological Opinion	Consider lead agency finding of an impact on federally listed or proposed species. Provide Biological Opinion if the project is likely to adversely affect federally listed species or their habitats.
	Migratory Bird Treaty Act of 1918	Provide guidance to protect migratory birds from deleterious acts.

Table 2.8-1 (Continued)

Agency	Permit or Consultation/Authority	Agency Action
	Fish and Wildlife Coordination Act	Provide comments to prevent the loss of and damage to wildlife resources.
U.S. Department of Transportation (DOT)		
Federal Highway Administration	Encroachment Permit	Consider issuance of permits for the crossing of federally funded highways.
U.S. Department of Treasury		
Bureau of Alcohol, Tobacco, and Firearms	Explosive User's Permit	Consider issuance of a permit to purchase, store, and use explosives for site preparation during pipeline construction.
U.S. Environmental Protection Agency (EPA), Region VIII	Section 401, CWA, Water Quality Certification	In conjunction with states, consider the issuance of water use and crossing permits.
	Section 402, CWA, National Pollutant Discharge Elimination System (NPDES)	In conjunction with states, review and issue NPDES permit for the discharge of hydrostatic test water.
	Section 404, CWA	Review CWA, Section 404 applications for wetlands dredge-and-fill applications for the COE with 404 veto power for wetland permits issued by the COE.
	Stormwater Discharge Permit	In conjunction with states, review and issue stormwater permit for activities associated with pipeline and aboveground facilities construction.
COLORADO		
Colorado Historical Society	Consultation under Section 106, NHPA	Review and comment on activities potentially affecting cultural resources.
Department of Natural Resources		
Division of Water Resources	Section 401, CWA, Water Quality Certification	Consider issuance of a permit for stream and wetland crossings.
	NPDES Temporary Discharge Permit	Consider issuance of a permit regulating hydrostatic test water discharge, and construction dewatering to waters of the state.
	NPDES Stormwater Discharge Permit	Consider the issuance of a permit regulating discharge of stormwater from the construction work area.
Division of Wildlife (CDOW)	Consultation	Review and comment on activities potentially affecting wildlife, particularly state-listed species and potential impacts to state lands.

Table 2.8-1 (Continued)

Agency	Permit or Consultation/Authority	Agency Action
Department of Public Health and Environment		
Air Quality Control Division	Permit to construct	Consider issuance of a permit to construct facilities with the potential for air emissions.
	Permit to operate	Consider issuance of a permit to operate facilities with the potential for air emissions.
Department of Transportation	Encroachment Permits	Consider issuance of permits for encroachment on state highways.
Board of Land Commissioners	ROW Permit	Consider issuance of a permit to construct pipeline facilities on state lands.
County Road Departments	Encroachment Permits	Consider issuance of permits for encroachment on county roads.
WYOMING		
Department of Environmental Quality		
Water Quality Division	Section 401, CWA, Water Quality Certification	Consider issuance of a permit for stream and wetland crossings.
	NPDES Temporary Discharge Permit	Consider issuance of a permit regulating hydrostatic test water discharge, and construction dewatering to waters of the state.
	NPDES Stormwater Discharge Permit	Consider issuance of a permit regulating discharge of stormwater from the construction work area.
Department of Transportation	Encroachment permits	Consider issuance of permits for encroachment on state highways.
Game and Fish Department	Consultation	Review and comment on activities potentially affecting wildlife, particularly state-listed species and potential impacts to state lands.
State Historic Preservation Office	Consultation under Section 106, NHPA	Review and comment on activities potentially affecting cultural resources.
County Road Departments	Encroachment Permits	Consider issuance of permits for encroachment on county roads.

ENVIRONMENTAL ANALYSIS

CHAPTER 3

3.0 ENVIRONMENTAL ANALYSIS

3.1 Geology

3.1.1 Geology and Physiography

The proposed Piceance Project route would cross parts of three major physiographic provinces: the Wyoming Basin, Southern Rocky Mountain, and the Colorado Plateau (Howard and Williams 1972). The Wyoming Basin Province generally consists of mountain ranges separated by broad basins. The pipeline route crosses a section of the Wyoming Basin known as the greater Green River Basin. The portion of the Southern Rocky Mountains Province that is crossed is an area of moderate relief called the Danforth Hills, but the route mainly crosses alluvial areas. The Colorado Plateau Province is characterized by mesas and plateaus and the southern portion of the pipeline route is located in the Piceance Basin. **Table 3.1-1** summarizes by MP the physiographic provinces and geology along the proposed pipeline route.

Construction of the proposed project facilities would not materially alter the geologic and physiographic conditions or worsen existing unfavorable geologic conditions in the area. Construction effects would include disturbances to the natural topography along the ROW and aboveground facilities due to grading and trenching activities. Upon completion of construction, WIC would restore topographic contours and drainage patterns as closely as possible to their pre-construction condition. Operation of the pipeline and its associated facilities would not affect the geologic and physiographic conditions in the project area.

3.1.2 Mineral Resources

<u>Potentially Exploitable Resources</u>

In Colorado, the route crosses areas containing sedimentary rock strata that are productive of oil and gas. The Sand Wash and Piceance Basins primarily produce natural gas from Tertiary and Cretaceous rocks. The route crosses or is in the vicinity of several oil and gas fields including Piceance Creek, Danforth Hills, Big Hole, and Big Hole North (Wray et al. 2002). Most of the route is underlain by strata that are potentially productive of oil and gas. These areas may be potentially capable of producing coal bed methane (EPA 2002). From MP 135.3 to MP 141.7, the proposed project lies within an area of known oil shale-bearing strata of the Green River Formation in the Piceance Basin (Tweto 1979). The proposed project also crosses potential coal-bearing formations located in the Danforth Coal Field (Tremain et al. 1996). The Danforth Coal Field is located in the extreme northeast Piceance Basin and contains coal resources in upper Cretaceous rocks that are potentially mineable from surface or underground mines.

In Wyoming, the pipeline route crosses areas that are entirely underlain by strata that are potentially productive of oil and gas. Oil and gas are produced from Tertiary and upper Cretaceous rocks. South of Wamsutter to just north of the Wyoming-Colorado state line, the proposed route crosses known oil shale bearing strata of the Green River Formation in the Washakie Basin. The proposed route crosses Tertiary and upper Cretaceous coal bearing formations of the Green River Coal Field that are potentially mineable (Glass et al. 1980; Jones 1991).

Table 3.1-1
Physiographic Provinces and Geologic Conditions Along the Proposed Pipeline Route

Physiographic Province	Geologic Feature	MP Range	Geology	Topography/Elevation
WYOMING				
Wyoming Basin	Wamsutter Arch-Washakie Basin	0.0 to 51.9	Alluvial, colluvial Quaternary deposits along drainages. Tertiary oil shales and marlstones, claystone, sandstone, and conglomerate bedrock.	Approximately 6,260 feet to 7,100 feet above mean sea level (msl). Low to moderate relief.
COLORADO				
Wyoming Basin	Sand Wash Basin	51.9 to 87.6	Alluvial, colluvial, and mud flow Quaternary deposits along drainages. Tertiary and Cretaceous claystone, shale, siltstone, and sandstone bedrock.	Approximately 5,900 feet to 6,900 feet above msl. Moderate to low relief.
Southern Rocky Mountains	Axial Basin Uplift	87.6 to 127.8	Tertiary and Cretaceous siltstone and sandstone bedrock with Quaternary alluvium along drainages.	Approximately 5,900 feet to 7,000 feet above msl. Variable low to moderate relief.
Colorado Plateau	Piceance Basin	127.6 to 141.7	Alluvial, colluvial, and mud flow Quaternary deposits along drainages. Tertiary and Cretaceous claystone, shale, siltstone, and sandstone bedrock.	Approximately 6,000 feet to 7,460 feet above msl. Low to moderate relief along pipeline route.

Source: Howard and Williams (1972); Love and Christiansen (1985); Tweto (1979).

Typically, the pipeline trench would be about 6 to 7 feet deep to account for the pipe and adequate cover. Limited blasting could be required in areas where competent shallow bedrock or boulders were encountered that could not be removed by conventional excavation. Additional discussion of blasting impacts is presented in section 3.3.1, Groundwater.

None of the oil and gas wells identified would be located within the proposed pipeline construction ROW. However, blasting operations could potentially damage nearby oil and gas wells, and trenching could encounter underground gathering pipelines associated with the wells. Because oil and gas is generally produced from depths of more than 1,000 feet, construction of the pipeline would not be expected to affect the ability of the wells to produce oil and/or natural gas. Rather, any construction-related damage that could occur would be limited to surface or near-surface components of the wells and gathering systems, which could temporarily disrupt production until repairs were made. Potential affects of blasting on nearby wells would be mitigated by implementing the project-specific Blasting Plan (WIC 2005b) as well as additional mitigation measures identified in section 3.3.1. Prior to construction, WIC would identify any associated underground gathering lines in the project construction ROW and would either avoid piping, or construct in a manor to protect the integrity of such facilities. Consequently, impacts from construction activities would not be significant.

Mining and Mineral Resource Operations

In places where the route would follow drainages in both Colorado and Wyoming, the surface materials (alluvium, colluvium, and fan deposits) are potentially mineable for industrial minerals, such as sand and gravel (Harris 1996).

Mining and mineral recovery operations within 1,500 feet of the proposed project were identified using aerial photography, U.S. Geological Survey (USGS) topographic maps, information on mineral operations from the National Atlas of the U.S. (U.S. Department of the Interior 2002), state mineral publications, and the USGS Minerals Yearbook (USGS 2003). Two active gas field well pads (MP 11.2 and MP 64.9) were identified within 1,500 feet of the proposed route.

Potential impacts to surface mining operations, would be limited to temporary short-term encumbrances during construction and would be minimized by WIC working with the owners and/or operators of these mining operations during ROW negotiations and facilities construction to minimize conflicts where mineral resources could be affected. Because construction of the pipeline would be limited to near-surface disturbance, the proposed project would not impact oil and gas production in the area or other underground resource recovery operations, such as coal.

Operation of the proposed pipeline and aboveground facilities would not have a significant added impact on current or future mineral recovery operations in the area because most of the proposed pipeline route would follow existing ROWs that have already precluded mineral development along the route. Additionally, impacts on future mineral development would not constitute a significant loss of mineral resource or mineral availability because of the narrow, linear nature of the pipeline ROW relative to the expanse of areas with mineral resource potential.

It is anticipated that the pipeline would be backfilled with materials derived from the trench excavation, and it might be necessary to obtain some construction sand and gravel from local, existing commercial sources for use as backfill, road base, or surface facility pads. These demands for sand and gravel would not substantially affect the long-term availability of construction materials in the area.

3.1.3 Geologic Hazards

Geologic hazards are natural physical conditions that, when active, can result in damage to the land and structures, or injury to people. Geologic hazards that exist in the proposed project area consist of seismic related hazards (i.e., earthquakes, ground rupture, soil liquefaction), landslide, subsidence, flooding/scour, and avalanche. The conditions necessary for the occurrence of other geologic hazards, such as karst features and volcanism, are not present in the project area. The potential for geologic hazards to affect pipeline facilities is characterized as low to moderate.

<u>Seismic Hazards</u>

No active faults are crossed by the proposed route in either Colorado or Wyoming (Case et al. 2002; Colorado Office of Emergency Management 1999). An active fault is defined as a fault that movement has occurred within the last 10,000 to 11,000 years before present (Hart and Bryant 1997). A potentially active fault is a fault that has had surface movement within the last 1.6 million years (Quaternary time).

Secondary seismic effects (liquefaction, lateral spreading, flow failure) are often more damaging than shaking or surface faulting. Soil liquefaction is a phenomenon that occurs when saturated, cohesionless soils are subjected to strong and prolonged shaking from seismic events. Liquefaction can lead to loss of load bearing strength and can result in lateral spreading, flow failures, and flotation of buried pipelines. Lateral spreading and flow failure involve the horizontal movement of competent surficial soils due to the liquefaction of an underlying deposit. These events can pose a potential hazard to pipeline integrity since they can shift large amounts of material that could bend and weaken a pipeline along slopes. Lateral spreading normally develops on very gentle slopes and involves displacements ranging from 3 to 6 feet, while flow failures generally occur in saturated, loose sands with ground slopes ranging between 10 and 20 degrees.

For soil liquefaction and the related effects of lateral spreading or flow failure to occur, a relatively shallow water table, rapid, strong ground motions, and susceptible soils all must be present.

Since the potential for strong ground-shaking to occur along the proposed pipeline route in Colorado and Wyoming is categorized as low (peak acceleration less than 10 percent of gravity with a 10 percent probability of exceedence in 50 years), the potential for soil liquefaction and related effects to develop also is considered to be low (USGS 2002).

During the operating life of the project, the predicted level of ground shaking that might occur would not be expected to affect the pipeline or surface facilities. In the project area, the potential for surface faulting and associated soil liquefaction and shaking-induced flow failures to occur is low. To protect the pipeline and facilities from seismic activity and its associated hazards, project facilities would be constructed and tested to meet federal standards outlined in 49 CFR Part 192 and geotechnical studies would be conducted so that facilities would be designed and constructed to minimize any effects that shaking or faulting could have on the project facilities.

Landslides

Landslides refer to the downward and outward movement of slope-forming materials reacting under the force of gravity. **Table 3.1-2** identifies areas where the potential for landslides along the proposed pipeline route may exist. Although portions of the route in the Wyoming Basin Province are moderately susceptible to landslides, no area of high landslide susceptibility was identified for the proposed route. No landslides were identified along the proposed route in Wyoming (Wyoming Geological Survey, undated). The Piceance Basin portion of the route is in an area of high landslide susceptibility, but, again, no landslides were identified along the proposed route (Radbruch-Hall et al. 1982)

WIC's proposed route generally would follow existing pipeline ROWs. By following existing or previously studied corridors, many of potential slope instability hazards would be avoided.

The Piceance Project would parallel CIG's existing Uinta Basin Lateral along many segments in western Colorado and southwestern Wyoming. Implementation of WIC's Plan and Procedures (appendices B and C) and the project-specific Blasting Plan (WIC 2005b) would reduce the potential for construction-related activities to trigger landslides or other slope failures. Additional measures to reduce potential for ground failure would include the implementation of erosion control measures as described in WIC's Plan. At a minimum, these measures would include the construction of trench breakers, permanent slope breakers, and establishment of permanent vegetation within the ROW.

Subsidence

Subsidence, the loss of surface elevation due to removal of subsurface support, is one of the most diverse forms of ground failure, ranging from small or local collapses to broad regional lowering of the earth's surface. Causes of subsidence can include dissolution in limestone aquifers (karst topography), past and present underground mining, and withdrawal of fluids (groundwater, petroleum, geothermal).

The greatest risk for collapse or subsidence in the project area is from underground mining operations. In Colorado, the most common form of subsidence occurs over abandoned underground coal and clay mines. No areas along the proposed pipeline route in Colorado were identified to have the potential for subsidence resulting from underground mining activities. Further, the proposed project would not cross directly over any known active or abandoned underground mines. WIC has not experienced problems with mining-induced subsidence along the Uinta Basin Lateral pipeline along adjacent segments.

Similarly, the most common form of subsidence in Wyoming is associated with abandoned underground coal and clay mines. WIC found no evidence of either abandoned underground mines or subsidence directly underlying the route. In Wyoming, the proposed Piceance Project route generally follows existing pipelines, which would reduce the likelihood of encountering previously unknown areas of subsidence.

Table 3.1-2
Potential Geologic Hazards Along the Proposed Pipeline Route

Physiographic Province	Geologic Structural Basin	Approximate MP(s)	Potential Geologic Hazard
WYOMING			
Wyoming Basin	Wamsutter Arch	MP 0.0 to MP 4.3	Low landslide susceptibility and low liquefaction susceptibility.
		MP 3.6	Alluvial floodplains and alluvial fans are subject to flooding and scour. Internal drainage basins are subject to flash flooding during storm events.
	Washakie Basin	MP 4.3 to MP 51.9	Low landslide susceptibility and low liquefaction susceptibility.
		MP 27.7 to MP 27.8, MP 41.6 to MP 41.8	Alluvial floodplains and alluvial fans are subject to flooding and scour.
COLORADO			
Wyoming Basin	Sand Wash Basin	MP 51.9 to MP 86.0	Moderate to low landslide susceptibility and low liquefaction susceptibility.
		MP 53.0 to MP 53.4, MP 76.0, MP 77.5, MP 84.0	Alluvial floodplains and alluvial fans are subject to flooding and scour.
Southern Rocky Mountains	Axial Uplift Basin	MP 86.0 to MP 127.6	Moderate to low landslide susceptibility and low liquefaction susceptibility.
		MP 87.6 to MP 87.9, MP 106.5	Alluvial floodplains and alluvial fans are subject to flooding and scour. Floodplains adjacent to high-angle slopes are especially susceptible to debris flows.
Colorado Plateau	Piceance Basin	MP 127.6 to MP 141.7	Moderate to low landslide susceptibility and low liquefaction susceptibility.
		MP 127.6 to MP 127.8, MP 135.0	Alluvial floodplains and alluvial fans are subject to flooding and scour. Floodplains adjacent to high-angle slopes are especially susceptible to debris flows or land slides.

Flooding

In general, seasonal flooding hazards exist where the proposed pipeline route would cross major streams and rivers, and flash flooding hazards exist where the pipeline would cross localized drainages. The proposed pipeline route would cross 4 perennial and 90 intermittent waterbodies in Colorado and 0 perennial and 89 intermittent waterbodies in Wyoming, all of which are locations where seasonal or flash flooding could occur. **Table 3.1-2** indicates areas where the proposed pipeline route would cross alluvial floodplains and alluvial fans, which are areas with an elevated risk for flood-related debris flows and scouring to occur. Though flooding in and of itself does not represent a significant risk to buried pipelines, stream scour and mud/debris flows that can accompany flooding can impact pipelines by exposing and leaving unsupported spans of pipe. To minimize these effects, the pipeline would be buried at a sufficient depth to avoid possible scour at waterbody crossings.

We are concerned about the potential for streambed scour on the White, Yampa, and Little Snake Rivers, since these rivers can experience very large spring runoff events. WIC would cross the White, Yampa, and Little Snake Rivers by HDD, placing the pipeline well below scour depth.

Flooding also could damage the project's aboveground facilities by inundating surface facilities, scouring streambeds at the point of the pipeline crossing, or causing debris flows that could damage surface facilities. The CIG Greasewood Compressor Station site, metering and pigging facilities, and MLVs are located within areas susceptible to flooding.

Due to the routing of the pipeline and its design, we conclude that it is unlikely that the pipeline facilities would suffer significant damage from geologic hazards or other naturally occurring events during operation. Further, construction and operation of the project and facilities would not worsen unfavorable geologic conditions in the area.

3.1.4 Paleontological Resources

A paleontological study of existing data was conducted to identify geological units and known fossil localities crossed by the proposed pipeline route. The study identified 13 formal geological formations ranging in age from the Cretaceous to the Pliocene along the proposed pipeline route, many of which are known to contain scattered vertebrate fossil localities and abundant plant and invertebrate fossil sites in the vicinity of the proposed project (Uinta Paleontological Associates Inc. 2004). The study also identified three informal Quaternary units. The sensitivity of each unit for containing fossil material subsequently was evaluated using a three-tiered classification system established by the BLM (BLM Paleontology Resources Management Manual 8270 and Handbook H-8270-1). Under this system, units are ranked according to their potential for noteworthy fossil occurrences as follows:

- Condition 1 – Areas that are known to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils.
- Condition 2 – Areas with exposures of geological units or settings that have high potential to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils.

- Condition 3 – Areas that are very unlikely to produce vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils based on their surficial geology, igneous or metamorphic rocks, extremely young alluvium, colluvium, or aeolian deposits, or the presence of deep soils.

Applying these criteria, approximately 114.8 miles of the proposed pipeline route (81 percent) were classified as Condition 1 areas, 4.6 miles of Condition 1 to 2 (3.2 percent), 21.6 miles as Condition 2 areas (15 percent), and 0.7 miles as Condition 3 areas (less than 1 percent) (**table 3.1-3**). In addition, the study identified 31 known fossil localities within 1 mile of the proposed pipeline ROW.

Table 3.1-3
Total Miles of Fossil Occurrence Potential Condition 1, 2, and 3 Areas Along the Piceance Project Pipeline Route

Formation	BLM Rating	Total Miles
Aeolian deposits	Condition 3	0.7 mile
Alluvial sediments	Condition 2	14.6 miles
Playa lacustrine deposits	Condition 2	1.3 miles
Terrace deposits	Condition 2	2.0 miles
Browns Park Formation	Condition 1	8.1 miles
Uinta Formation or intertonguing Uinta/Green River formations	Condition 1	8.3 miles
Washakie Formation	Condition 1	Less than 1 mile
Green River Formation – Parachute Creek Member	Condition 1	2.4 miles
Green River Formation – Laney or lower Member	Condition 1	26.7 miles
Green River Formation – Wilkins Peak Member	Condition 1	0.3 mile
Green River Formation – Tipton Shale Member	Condition 1	6.0 miles
Green River Formation – Luman Member	Condition 1	0.4 mile
Wasatch Formation aka DeBeque Formation in NE Colorado, Atwell Gulch Member, Molina Member, Shire Member	Condition 1	16.1 miles
Wasatch Formation (main body – Red Desert tongue and Hiawatha Member) (Cathedral Bluffs Member)	Condition 1	46.5 miles
Fort Union Formation	Condition 2	1.6 miles
Ohio Creek Formation	Condition 2	0.4 mile
Lance Formation	Condition 2	0.2 mile
Lewis Shale	Condition 2	0.2 mile
Mesaverde Group (CO) – including Williams Fork and Iles formations	Condition 1 to 2	4.6 miles
Mancos Formation	Condition 2	1.3 miles

Source: Uinta Paleontological Associates Inc. 2004.

WIC conducted a paleontological field survey in autumn and early winter of 2004 to identify fossil localities that could be impacted by pipeline construction. The survey covered a 250- to 300-foot-wide corridor along the length of the fossiliferous strata of the proposed pipeline route, unless the grade was considered too steep, the surface exposures were too well vegetated, or there was substantial alluvial or soil cover. Along segments of the proposed route that parallel an existing pipeline, the edge of the 250- to 300-foot-wide corridor was located 50 feet from the proposed centerline on the side with the existing pipeline and 200 to 250 feet from the centerline on the other side. Where the proposed pipeline would not parallel an existing pipeline, a 300-foot-wide survey corridor centered on the staked centerline of the pipeline route was examined.

The field survey consisted of intensive field reconnaissance of Condition 1 units with exposed bedrock and/or good surface visibility, and spot checking of Condition 2 units with exposed bedrock and/or good surface visibility. Condition 1 and 2 units covered by recent Quaternary deposits or heavy vegetation and Condition 3 units were not examined. Survey coverage included the majority of the proposed pipeline corridor as well as aboveground facilities, extra temporary workspaces, and access roads. No field surveys were conducted from MP 97.0 to MP 141.7 due to heavy vegetation or snow cover. WIC stated that it would complete surveys along this segment of the pipeline route prior to construction.

The field survey identified 38 occurrences of fossils in Colorado grouped into 16 localities (plus 7 localities within 1.2 miles of the corridor), and 218 occurrences of fossils in Wyoming grouped into 43 localities. The localities contained the fossil remains of plants, vertebrates, and invertebrates.

Potential impacts to fossil localities during construction could be both direct and indirect. Trenching through significant fossil beds could result in direct damage to or destruction of fossils. Indirect effects during construction could include erosion of fossil beds due to slope regrading and vegetation clearing. Another possible indirect effect could be unauthorized collection of significant fossils by construction workers or the public due to increased access to fossil localities along the ROW.

To manage impacts to fossil localities, WIC has prepared and would implement a Monitoring and Mitigation Plan to protect fossil resources that may be encountered during project construction, including the resources identified during the field survey (Uinta Paleontological Associates Inc. 2004). Primary elements of the Monitoring and Mitigation Plan include:

- paleontological mitigation during construction activities such as on-site monitoring or spot checking as determined by a qualified paleontologist, with emphasis on Condition 1 and 2 units;
- mitigation procedures for fossil localities identified during construction (e.g., avoidance, excavation, recording of localities);
- provisions for the preparation and curation of fossil collections; and
- provisions for the preparation of a final report based on the recovered data.

All work conducted under the Monitoring and Mitigation Plan would be performed by qualified paleontologists with trained assistants. The plan would be filed with the Secretary prior to construction.

Implementation of the Monitoring and Mitigation Plan would reduce impacts on paleontological resources to less than significant levels during construction.

Normal operation of the proposed pipeline and its associated facilities would not impact important paleontological resources. Maintenance activities would result in surface disturbance, but typically would occur within the trenchline previously disturbed during construction. Since no new disturbances would be anticipated from maintenance activities (i.e., maintenance activities would occur within the WIC ROW), impacts to paleontological resources would be negligible. If any maintenance activities occur that widen the trench, impacts may occur.

3.2 Soils and Noxious and Invasive Weeds

Soils characteristics that can affect construction or increase the potential for soil impacts include: highly erodible soils; prime farmland; hydric soils; compaction-prone soils; presence of stones and shallow bedrock; droughty soils; depth of topsoil; and percent slope. Additional soil-related issues include revegetation potential, soil salinity, and soil contamination. **Tables 3.2-1** and **3.2-2** summarize characteristics of soils that would be crossed by the pipeline route.

Overall, the potential for site restoration and revegetation success is limited throughout the project region by climate, geology, and topography. Low annual precipitation is a major limiting factor for plant establishment. Brief, high-energy thunderstorms generate splash erosion and concentrated runoff. Sandy or clayey soil parent materials lie relatively close to the surface, and frequently exhibit saline/alkaline conditions. These factors combine to generate relatively thin, erodible topsoils that overlie substrates with elevated salt levels. Approximately 68 percent of the soils along the proposed ROW have topsoil layers 12 inches thick or less (**table 3.2-2**).

Table 3.2-1
Acreage Summary of Sensitive Soils

State/ County	Total Acres[1]	Highly Erodible Water[2]	Highly Erodible Wind[3]	Prime Farmland Suitability[4]	Hydric[5]	Compaction Prone[6]	Stony – Rocky[7]	Shallow Bedrock[8]	Droughty[9]
WYOMING									
Sweetwater	652	187	0	0	0	0	0	431	324
COLORADO									
Moffat	745	21	239	97	17	0	84	18	463
Rio Blanco	430	44	0	26	2	0	140	162	31
Project Total[10,11]	**1,826**	**252**	**239**	**123**	**19**	**0**	**224**	**611**	**818**

1 Acreage assumes a 85-foot-wide construction ROW, except in wetlands where a 75-foot-wide construction ROW would be used and includes additional temporary workspace. Individual soils may occur in more than one characteristic class, therefore totals may not be consistent across rows.
2 Includes land in capability subclasses 4E through 8E and soils with slopes greater than or equal to 9 percent.
3 Includes soils in wind erodibility groups 1 and 2.
4 Includes land listed by the NRCS (1995) as potential prime farmland if adequate drainage and adequate protection from flooding are provided.
5 As designated by the NRCS (1995).
6 Includes soils that have clay loam or finer textures in somewhat poor, poor, and very poor drainage classes.
7 Includes soils that have either: 1) a cobbly, stony, bouldery, gravelly, or shaly modifier to the textural class, or 2) have >5 percent (weight basis) of stones larger than 3 inches in the surface layer.
8 Shallow bedrock locations (within 5 feet of the surface) were determined using the State Soil Geographic (STATSGO) database (NRCS 1995). MPs represent areas where 15 percent or more of the map unit comprises shallow to bedrock soils.
9 Includes coarse-textured soils (sandy loams and coarser) that are moderately well to excessively drained.
10 Discrepancies in acreages are due to rounding.
11 Total does not include 19.7 acres in Colorado and 38.3 acres in Wyoming of land to be used for pipe storage and contractor yards or 0.1 acre in Colorado for microwave communication facilities, as no soil data were available.

Table 3.2-2
Acreage Breakdown of Topsoil Depth and Average Slope Class Along the Piceance Project Pipeline Route

State/ County	Total Acres[1]	Topsoil Depth[2] (inches)					Slope Class[3] (percent)				
		0 - 6	>6 - 12	>12 - 18	>18 - 24	>24	0-5	>5-8	>8-15	>15-30	>30
WYOMING											
Sweetwater	651	459	192	0	0	0	651	0	0	0	0
COLORADO											
Moffat	745	12	421	201	1	110	87	380	112	146	20
Rio Blanco	430	17	143	141	2	127	68	74	80	197	11
Project Total[4, 5]	**1,826**	**488**	**756**	**342**	**3**	**237**	**806**	**454**	**192**	**343**	**31**

[1] Acreage assumes a 85-foot-wide construction ROW, except in wetlands where a 75-foot-wide construction ROW would be used, and includes additional temporary workspace areas.
[2] Topsoil includes A-horizons (layers 1, 11, and 12) listed in the STATSGO layer table.
[3] Slopes are grouped by the averages of the high and low slope ranges provided in the STATSGO database for each Mapping Unit Identification (MUID) component soil series. For example, Tresano series, 3 to 10 percent slopes, is 20 percent of MUID CO010. Its average slope is 6.5 percent. The representative acreage, calculated by multiplying percent composition by the total MUID acreage, is included in the >5 to 8 percent slope class.
[4] Discrepancies are due to rounding.
[5] Total does not include 19.7 acres in Colorado and 38.3 acres in Wyoming of land to be used for pipe storage and contractor yards or 0.1 acre in Colorado to be used for microwave communicate facilities, as no soil data were available.

About 44 percent (806 acres) of the soils along the proposed ROW have average slopes in the 0 to 5 percent category (**table 3.2-2**). Successful site stabilization and revegetation are more difficult on steeper slopes common to the region. About 54 percent (989 acres) of the soils are generally within the 5 to 30 percent slope range. About 2 percent of the soils along the proposed ROW have average slopes greater than 30 percent (31 acres).

Pipeline construction activities that have the potential to adversely affect soils and revegetation potential include: clearing and grading along the ROW, trenching, backfilling, and restoration. Potential soil impacts include: loss of soil due to water or wind erosion, especially on steep slopes or fine sandy soils; reduction of soil quality by mixing topsoil with subsoil or by bringing excess rocks to the surface; soil compaction due to traffic by heavy equipment; introduction of noxious weeds or invasive plant species; and disruption of surface and subsurface drainage or irrigation systems.

The Piceance Project would include construction and operation of aboveground facilities, including nine MLVs, three pigging facilities, and four metering stations (**table 2.1.1**). These aboveground facilities would be located within existing compressor station sites with the exception of seven of the nine MLVs and a pigging facility at MP 54. Soil constraints for these facilities would be the same as those identified for the surrounding pipeline ROW. Soil impacts would be mitigated by the implementation of the measures in WIC's

Plan, such as erosion control practices, topsoil separation and handling procedures, and remediation of compacted soils.

Ancillary facilities would consist of microwave towers, 3 pipe storage yards, and a number of staging areas, which would occupy a total of about 104 acres of land in addition to the proposed pipeline ROW disturbance. The microwave towers are small existing sites that have been previously disturbed. The pipe storage yards and several staging areas would be located in areas already used for industrial purposes; however, some sites would be located partially or entirely in rangeland. Excavation is not generally anticipated to be required for these areas. Upon completion of the project, compacted soils would be mitigated according to WIC's Plan, and the area would be reseeded as necessary. Following construction, these sites would be restored to their original use. As noted in the footnotes to **table 3.2-1**, soil types in storage yards and staging areas have not been quantified. Soil types at the proposed microwave towers have not been quantified, and these locations are already disturbed. Impacts on soils from construction activities at these facilities would be minimized because construction and reclamation would follow soil conservation procedures as identified in WIC's Plan, Procedures, and POD.

While normal operations would have negligible effects to soil resources, future routine maintenance activities could result in infrequent, isolated surface disturbances along the pipeline ROW. These future maintenance activities would adhere to construction and reclamation standards within WIC's Plan, Procedures, and POD. Adherence to these plans would minimize impacts associated with future maintenance activities.

3.2.1 Accelerated Erosion

The majority of the proposed route would cross range and shrublands on gently rolling to moderately steep slopes that are highly erodible. Of the total 1,826 acres (not including pipe storage, contractor yards, or 0.1 acre in Colorado for the microwave communication facilities) potentially affected by pipeline construction, 252 acres (approximately 14 percent) are considered highly water erodible (**table 3.2-1**). Removal of vegetation and topsoil on the proposed ROW would accelerate erosion by wind or water. Soils that are highly water erodible are primarily located on rolling to steep landscapes and often have clayey or silty textures with little organic matter. Unstable streambanks or long, unbroken gentle slopes also may contribute to soil losses by water erosion. In addition to waterbody crossings, severe water erodibility may occur at the following sections of the proposed pipeline: MP 4.0 to MP 7.5; MP 16.0 to MP 22.0; MP 27.0 to MP 29.5; MP 37.0 to MP 44.5; MP 48.2 to MP 52.9; MP 101.0 to MP 113.3; and MP 131.4 to MP 136.5. Other short, highly erodible sections occur at steep slopes or cutbanks scattered along the proposed ROW.

Soils having more sandy textures, or silty textures with accumulations of calcium carbonate, may be prone to accelerated wind erosion when disturbed. Isolated locations of such soils occur generally north of the Little Snake River on exposed knolls, basin rims, and windward slopes. They comprise 239 acres (13 percent) of the proposed ROW (**table 3.2-1**).

WIC would control erosion and sedimentation by a variety of different methods as discussed in the project Plan, Procedures, and POD. Major water erosion control measures that would be used during construction include temporary slope breakers, sediment barriers, certified weed-free mulch applications, and revegetation. Trench breakers (sand bags or polyurethane foam within the trench) and permanent slope breakers would be installed for long-term water erosion control. During the operation and maintenance phases of the project, WIC would monitor and maintain revegetation and control off-road vehicle access (appendix B). During construction in areas prone to wind erosion, WIC proposes to flatten the topsoil stockpiles using the blade of a motor grader, then compact the topsoil to the degree reasonably possible with the rubber tires of a motor grader. The pipe also would be cribbed up over the topsoil to reduce wind erosion. To further reduce topsoil loss due to wind erosion, segregated topsoil in wind-prone areas will be sprayed with water or an approved tackifier to form a crust to minimize topsoil losses due to wind-blown transport. Topsoil losses reduce soil productivity, which encourages still further erosion, and reduces the reclamation potential of the site.

To further minimize soil loss due to wind and maintain air quality, additional dust abatement may be necessary. WIC proposes to use two 3,000 gallon water trucks per spread to water the ROW where dust is causing either a health hazard or a safety hazard such as near road crossings. Each truck would distribute two loads of water per day for a total of 12,000 gallons of water per day for each spread. WIC is not planning to draw water from streams and may use a tackifier for dust abatement. WIC would require light duty vehicles and rubber tired vehicles to use county roads instead of driving down the ROW, where possible.`

In areas susceptible to erosion, some of the restored soil covering the pipeline could erode away. While the DOT requires that a pipeline be buried to a specified depth during construction (30 inches in most locations), there are no regulations dictating that the depth of cover be maintained during the life of the pipeline. If noticeable wind or water erosion occurs during restoration or operations (as indicated by poor revegetation success, noticeable deflation, sheet or rill erosion, and/or downgradient soil deposition), WIC would renew site restoration treatments (including soil stabilization and revegetation) and install and monitor erosion minimization treatments (e.g., certified weed-free crimped mulch, water and sediment barriers, snow fences) to ensure soil stabilization as part of its ongoing maintenance program. Such efforts would be conducted in coordination with landowners or appropriate federal or state land management agencies.

3.2.2 Reduced Soil Quality

During construction across BLM and state-owned lands, and subject to the approval of the land managing agency, WIC proposes to strip and segregate topsoil from the ditch line only, except in cut areas where the ROW or additional temporary workspace areas must be leveled for safe construction. In the latter areas, WIC would strip the full ROW. Stripped topsoil would be stored separately and not allowed to mix with trench spoil. On private lands, WIC would segregate topsoil according to landowner requests. If the landowner has not made a specific request regarding topsoil segregation, WIC would use the same methods as described above for BLM and state-managed lands.

We generally agree that limiting the amount of stripping in shallow topsoil areas reduces impacts on topsoil by limiting its disturbance and how much it is handled. Fewer disturbances generally equates to improved reclamation success and less opportunity for the introduction of invasive species; less handling results in less topsoil loss, which is especially important when topsoil is shallow. However, by not stripping topsoil from the working side of the construction ROW, there is the potential for heavy construction equipment to pulverize the topsoil and intermix it with subsoil as the equipment and vehicles move up and down the ROW. In windy areas, pulverized topsoil would be blown off the ROW and effectively lost. WIC indicates that it would continue construction activity in croplands when rutting occurs in excess of 4 to 6 inches in depth. This would significantly increase the chance of subsoil mixing with topsoil, and compaction of growth media. Once construction is complete, WIC has committed to cover the affected area with at least an adequate volume of suitable topsoil to replace mixed soils and subsoils. WIC proposes to obtain such topsoil in the project vicinity. WIC would need to obtain additional approval from FERC and the BLM if it obtains topsoil in the project vicinity that adds to the extent of construction disturbance, increases the area to be stabilized and reclaimed, or creates further potential for environmental impacts.

When construction activities proceed under inclement weather conditions or periods of snowmelt, soil rutting would create compaction and potentially mix topsoil with subsoil. The resulting growth media would have limited infiltration and aeration properties, and may have adverse salt or textural characteristics. Limits on construction activities during these periods, and procedures identified in WIC's Plan would mitigate such impacts. In accordance with WIC's Plan, the EI would advise WIC's construction contractor when construction activities restrictions are warranted to avoid excessive rutting under wet weather conditions. On federal lands, the BLM would require that WIC cease construction activities when soil rutting occurs to a depth of 3 inches or more. WIC would interact closely with appropriate BLM offices to follow the agency's RMPs or other authorized guidance with respect to cessation of work due to rutting on access roads and construction areas on federal lands. Contractors also would attend BLM training as necessary to accomplish access road repair and maintenance on federal land. If construction along any segment of the ROW has been shut down due to inclement weather conditions or periods of snowmelt, it would be up to the EI to determine if conditions are favorable to resume construction, with written approval to resume from the federal compliance monitor.

WIC proposes to utilize a 15-foot strip adjacent to the working side of the construction ROW for snow storage. WIC's construction contractors propose to apply selected methods to mitigate frozen spoil conditions. The first method would involve waiting until the pipe is welded before digging the ditch, and then placing the pipe in the ditch and backfilling before the spoil has a chance to freeze. The second method would be to use selective backfilling methods. In the early winter, the frozen soil will be limited to a shallow crust layer on the spoil and topsoil. The unfrozen material would be installed in the trench first with any frozen material then placed on top.

As described previously, WIC would closely monitor rutting conditions during construction. In areas where rutting or mixing of the topsoil becomes a problem, WIC proposes to topsoil the top 4 inches of the ditch and working side of the ROW. WIC recognizes that frozen soils resulting from an early winter could preclude immediate final cleanup and restoration. In this case, temporary erosion control measures would remain in place over winter. Some settling of the ditch can be expected (even with summer construction). WIC plans to correct any subsidence and perform any remaining final clean up and restoration at an appropriate time in the following spring/or summer.

WIC proposes to follow its Plan and Procedures wherever feasible. If the ground is not frozen, WIC would perform final cleanup and restoration, including the application of certified weed-free mulch, crimping and seeding where appropriate. If the ground is frozen, the temporary construction erosion control measures (i.e., temporary water bars, hay bales, silt fencing, etc.) would remain in place over winter. Any remaining final clean up and restoration would be performed at an appropriate time in the following spring/or summer. The timing of such activities would be appropriate with any applicable environmental windows.

WIC has worked with the various county road departments to facilitate pre-treating the major county roads prior to construction. Snow removal on county roads would be performed either by the counties or by the construction contractors in conjunction with the counties. Snow removal on private and BLM roads, if required, would be accomplished by grading or dumping the snow in a 15-foot strip along the edge of the road with permission from the FERC's and BLM's Environmental Compliance Monitor. Access roads would be maintained by the contractor during construction and restored after construction. If isolated spots become rutted, these areas would be repaired during construction by application of gravel or by use of wooden mats. If the roads are too wet, the road would not be used until it dries sufficiently to allow passage without rutting.

These proposed approaches would minimize potential winter construction impacts on soil resources and restoration efforts. However, we are also concerned about protecting soil resources along the ROW during the winter shut-down period after WIC has completed pipeline construction. Following this shut-down period, WIC would complete the final restoration of the ROW when favorable conditions return in the spring. During the winter shut-down period, melting snow, rain, wind and the lack of vegetation cover may cause erosion control failures along the ROW, particularly in steep areas. In order to ensure that soil resources are protected during the winter shut-down period, **we recommend that WIC formally develop and file a Winter Construction Plan with the Secretary for review and written approval by the Director of OEP prior to construction. This plan should include monitoring of temporary erosion controls during the winter shut-down period as well as following any significant rain or snowmelt events during this period.**

During the overall construction program, WIC plans to have EIs monitor for potential topsoil degradation in areas where it would not typically be stripped from the working side of the construction ROW. If topsoil in these areas becomes powdered or pulverized to a depth of 4 inches and is being mixed with subsoil, or if wind is moving topsoil off the ROW regardless of dust control measures applied, then WIC would strip topsoil from both the ditch line and the working side of the ROW and replace topsoil in the impacted areas. As required by WIC's Plan, topsoil stockpiles would be segregated from trench spoil. WIC would continue with this expanded topsoil stripping procedure until construction encountered an area with soils having a less inherently wind-erodible texture and structure under traffic conditions. Such soils would generally exhibit greater cohesion. Here topsoil stripping of only the ditch line could be resumed if approved by both the EIs and federal agencies' compliance monitors. If, in the opinion of the EI (and with concurrence from the federal monitor), topsoil stripping from the working side would result in the total loss of root base from existing vegetation, then WIC proposes that the EI (with concurrence from the federal monitor) can require that such topsoil not be stripped. On federal lands, the BLM has indicated that wherever WIC would need to grade the ROW for purposes of equipment safety, or to avoid significant topsoil degradation on the working side, the top 6 inches of topsoil would be removed separately from the graded area regardless of loss of root base. Additional plan provisions and conditions for erosion control, successful revegetation, weed control, and monitoring would still pertain to site restoration requirements.

No areas of compaction-prone soils were identified along the proposed pipeline (**table 3.2-1**). However, BLM input indicates that compactable soils do in fact occur along the proposed ROW; their occurrence is masked by the large scale at which soil assessments were conducted for the proposed project. During restoration, WIC would implement its proposed compaction-relief procedures at any location where compaction occurs in accordance with WIC's Plan.

Soils containing shallow bedrock occupy about 34 percent (632 acres) of the proposed pipeline route. About 12 percent of the pipeline route contains soils with substantial rocks and stones in the surface soil horizons, with the majority of rocky soils occurring in Wyoming (**table 3.2-1**). Given the geology of the proposed ROW, it is expected that the near-surface bedrock in almost all of these areas is soft enough to be ripped with backhoes or bulldozers equipped with rippers.

During construction, WIC would minimize the introduction of substrate rock into topsoil, ensuring that the amount of rock on the ROW after construction would be similar to or less than the area adjacent to the ROW. Rock excavated from the trench may be used to backfill the trench only to the top of the existing bedrock profile. Excess rock would be removed from at least the top 12 inches of soil in all actively cultivated or rotated cropland and pastures, hayfields, as well as other areas at the landowner's request. Where necessary, excess rock would be either hauled off the ROW or disposed of on the ROW, if approved by the landowner or land management agency and as allowed by applicable permit conditions.

About 45 percent (818 acres) of soils along the proposed route are inherently droughty (**table 3.2-1**). To mitigate the adverse effects of pipeline construction on droughty soils and to assist with revegetation efforts, WIC would apply certified weed-free mulch and stabilize the soil surface to minimize wind erosion and to conserve soil moisture. Proposed seed mixes for sandy or salt desert sites may be used on these areas, as indicated in WIC's updated Reclamation Plan.

Soils suitable for use as prime farmlands comprise about 7 percent (123 acres) of the proposed ROW. It is likely that most or all of these areas have been historically used for growing crops or hay. In several locations, notably along the Yampa and White Rivers and in the Coyote Basin, irrigation systems are in place. The pipeline also would cross about 19 acres of hydric soils, an indicator of areas that may contain drain tiles for crop production. WIC has committed to replace or repair any drain tiles damaged by construction activities. WIC has agreed to maintain water flow to irrigation systems throughout construction unless landowner permission is obtained to temporarily interrupt water flow. If damage to irrigation systems occurred during construction, WIC has agreed to restore or repair the damage.

Areas where near-surface soil salinity and/or alkalinity may make site restoration more difficult include the following portions of the ROW: MP 8.5 to MP 9.0; MP 16.5 to MP 17.0; MP 19.8 to MP 20.5; MP 27.7 to MP 28.3; MP 52.9 to MP 53.4; MP 79.9 to MP 81.1; MP 87.9 to MP 88.3; and shorter lengths of ROW at about MP 69.4 and MP 78.4. Other saline/alkaline sites may occur in scattered locations. These soils exhibit a characteristic pattern of localized bare spots and scattered, salt-tolerant vegetation. Although saline and sodic soils do not comprise a large acreage of soils along the pipeline route, construction disturbances in areas containing these soils would be difficult to revegetate and could require additional efforts to achieve adequate restoration. WIC would consult with the NRCS and BLM, or other soils specialists, as appropriate, to develop additional restoration measures for these soils.

3.2.3 Soil Contamination

Soil contamination along the route could result from at least two sources: material spills during construction and trench excavation through pre-existing contaminated areas. Contamination from spills or leaks of fuels, lubricants, coolants, and solvents from construction equipment could impact soils by destroying microbial populations, changing the chemical nature of the soil, and adversely affecting soil structure, permeability, and aeration. The occurrence and extent of these impacts would typically be minor because of the low frequency and volumes of spills. WIC would be required to clean up spills in accordance with its SPCC Plan (WIC 2005c). There are currently no known contaminated sites crossed by the proposed pipeline route or affected by aboveground and ancillary facilities. If contaminated or suspect soils (e.g., hydrocarbon contamination) were identified during trenching operations, work in the area of the suspected contamination would be halted until the type and extent of the contamination was determined. The type and extent of contamination, the responsible party, and local, state, and federal regulations would determine the appropriate cleanup method(s) for these areas.

There are no known National Priority List sites, Comprehensive Environmental Response, Compensation, and Liability Information System sites, or state landfills within 1 mile of the proposed pipeline route (EPA 2003a,b). Review of the National Response Center identified no reported spills within 1 mile of the proposed pipeline route (EPA 2004a).

3.2.4 Noxious Weeds and Other Invasive Plant Species

Subsequent to soil disturbances, vegetation communities can be susceptible to infestations of invasive or exotic weed species. Vegetation removal and soil disturbance during construction could create optimal conditions for the establishment of invasive, non-native species. Construction equipment traveling from weed-infested areas into weed-free areas could disperse noxious or invasive weed seeds and propagates, resulting in the establishment of these weeds in previously weed-free areas.

The prevention of the spread of noxious and invasive weeds is a high priority to nearby communities. Under Executive Order (EO) 13112, federal agencies shall not authorize, fund, or carry out actions likely to cause or promote the introduction or spread of noxious or invasive species in the U.S. or elsewhere unless it has been determined that the benefits of such actions outweigh the potential harm caused by these species and that all feasible and prudent measures to minimize the risk of harm will be taken in conjunction with the actions.

The Little Snake, White River, and Rawlins FOs of the BLM provided lists of noxious weed species having the potential to occur along the proposed ROW (**table 3.2-3**). In total, there are 20 species included on these lists, of which 16 may potentially occur within the proposed project area in Wyoming and 14 may occur in the proposed project areas in Colorado. These are species that the BLM attempts to manage in the western U.S. The states of Colorado and Wyoming also maintain similar, but not identical, lists of designated noxious weed species (**table 3.2-3**). In total, there are 42 noxious weed species that potentially occur within the proposed project area in Colorado and 24 noxious weed species that potentially occur within the proposed project area in Wyoming. Additionally, WIC conducted field surveys for noxious weeds in 2004 and the findings are summarized in **table 3.2-3**.

Table 3.2-3
Noxious Weeds Potentially Occurring Along the Proposed Pipeline Route

Common Name	Scientific Name	Colorado Noxious Weed List	Wyoming Noxious Weed List	BLM Little Snake FO	BLM White River FO	BLM Rawlins FO	Rio Blanco County, CO	Moffat County, CO	Sweetwater County, WY	Located During 2004 and 2005 Field Surveys
Quackgrass	*Agropyron repens*	B	X						X	MPs 27.05, 37.21, 38.47
Camelthorn	*Alhagi pseudalhagi*	A								
Common Burdock	*Arctium minus*	C	X			X	X		X	MPs 110.91-111.62, 135.05
Cheatgrass	*Bromus tectorum*	C		X						
Whitetop / Hoary Cress	*Cardaria draba*	B	X	X		X	X		X	Widespread
Plumeless Thistle	*Carduus acanthoides*	B	X	X			X	X	X	
Musk Thistle / Biannual Thistle	*Carduus nutans*	B	X	X	X	X	X		X	MP 111.0
Spotted Knapweed	*Centaurea maculosa*	B	X	X	X	X	X	X	X	
Diffuse Knapweed	*Centaurea diffusa*	B	X	X		X	X	X	X	
Black Knapweed	*Centaurea nigra*						X			
Meadow Knapweed	*Centaurea pratensis*	A								
Russian Knapweed	*Centaurea repens*	B	X	X		X	X	X	X	
Yellow Starthistle	*Centaurea solstitialis*	A					X			
Squarrose knapweed	*Centaurea virgata*	A								
Rush Skeletonweed	*Chondrilla juncea*	A								
Oxeye Daisy	*Chrysanthemum leucanthemum*		X						X	
Canada Thistle	*Cirsium arvense*	B	X	X	X	X	X	X	X	MPs 95.05, 103.6, 111, 114.29, 114.6, 114.7, 114.8, 114.95, 120.1, 120.3, 122.69, 122.8, 127.7, 127.83, 135.0
Bull Thistle	*Cirsium vulgare*	B		X	X			X		
Field Bindweed	*Convolvulus arvensis*	C	X	X		X	X	X	X	MPs 102.38, 108.44, 110.72-111.62, 131.47, 135.05
Common Crupina	*Crupina vulgaris*	A								
Houndstongue	*Cynoglossum officinale*	B	X	X	X	X	X		X	MPs 102.06, 103.62, 110.97-111.85, 114.31-114.71, 116.97,

Table 3.2-3 (Continued)

Common Name	Scientific Name	Colorado Noxious Weed List	Wyoming Noxious Weed List	BLM Little Snake FO	BLM White River FO	BLM Rawlins FO	Rio Blanco County, CO	Moffat County, CO	Sweetwater County, WY	Located During 2004 and 2005 Field Surveys
										119.53, 133.65, 133.05, access road in Strawberry Park area
Cypress spurge	*Euphorbia cyparissias*	A								
Leafy Spurge	*Euphorbia esula*	B	X	X		X	X	X		MPs 127.7, 129.6-133.65, access road near MP 129.5
Myrtle Spurge	*Euphorbia myrsinites*	A								
Skeletonleaf Bursage	*Franseria discolor*	A	X						X	
Curly Cup / Gum Weed	*Grindelia squarrosa*						X			
Halogeton	*Halogeton glomeratus*	C		X		X	X			Widespread, Wamsutter Compressor Station to the Wyoming-Colorado border
Foxtail Barley	*Hordeum jubatum*								X	
Hydrilla	*Hydrilla verticallata*	A								
Black Henbane	*Hyoscyamus niger*	B		X	X	X	X	X	X	MPs 114.3, 114.6
Common St. Johnswort	*Hypericum perforatum*	C	X						X	
Dyer's Woad	*Isatis tinctoria*	A	X			X			X	
Kochia / Fireweed / Summer Cypress	*Kochia scoparia*						X			
Perennial Pepperweed / Tall Whitetop	*Lepidium latifolium*	B	X	X	X	X	X	X	X	
Sericea Lespedeza	*Lespedeza cuneata*	A								
Dalmation Toadflax	*Linaria dalmatica*	B	X	X		X	X		X	
Yellow Toadflax	*Linaria vulgaris*	B	X				X		X	
Wyeth Lupine	*Lupinus wyethii*									
Purple Loosestrife	*Lythrum salicaria*	A	X						X	
Scotch Thistle	*Onopordum acanthium*	B	X				X		X	MPs 111.0, 117.62, 117.68, 118.09, 120.28, 125.91, 127.57, 127.77

Table 3.2-3 (Continued)

Common Name	Scientific Name	Colorado Noxious Weed List	Wyoming Noxious Weed List	BLM Little Snake FO	BLM White River FO	BLM Rawlins FO	Rio Blanco County, CO	Moffat County, CO	Sweetwater County, WY	Located During 2004 and 2005 Field Surveys
Plains Pricklypear	*Opuntia polyacantha*									
African Rue	*Penganum harmala*	A								
Sulfur Cinquefoil	*Potentilla recta*	C					X			
Russian Thistle / Tumbleweed	*Salsola tragus*						X			
Mediterranean Sage	*Salvia aethiopis*	A								
Giant Salvinia	*Salvinia molesta*	A								
Tansy Ragwort	*Senecio jacobaea*	A								
Perennial Sowthistle	*Sonchus arvensis*	C	X						X	
Medusahead	*Taeniatherium caput-medusae*	A								
Salt Cedar / Tamarisk	*Tamarix* spp.	B	X	X		X			X	MPs 83.98, 126.06
Common Tansy	*Tanacetum vulgare*	B	X						X	
Common Mullein	*Verbascum thapsus*	C		X	X		X	X	X	MPs 102.39, 110.91-111.85, 115.95, 127.57, 135.05

The Wyoming Weed Program is a programmatic plan, similar to the BLM Weed Management Plan. In comparison, the Colorado Weed Program is more prescriptive. Under the Colorado Noxious Weed Act (§ 35 5.5-101 through 119, C.R.S. [2003]), noxious weeds are classified into three lists, A, B, and C. Each list has specific control requirements, with the most stringent requirements for those species found on List A. List A includes noxious weeds targeted for eradication and for which management plans have been developed for their control. Control of these species is required by law. If these species were found along WIC's ROW or aboveground facilities in Colorado, WIC would be required to follow the prescribed management techniques stipulated by Colorado's Noxious Weed Act. These techniques must be applied for the duration of the seed longevity for the particular species. List B species are recommended for control, but management plans have not yet been developed for these species and control is not required by law. List C species are generally considered too widespread to effectively control, and control of List C species is not required.

To control the spread of noxious weeds, WIC has prepared a Weed Plan (appendix G) incorporating details regarding known occurrences of noxious weeds along the proposed project. The Weed Plan addresses current treatment of known noxious weed areas, and mitigation measures that WIC would implement to minimize the spread and establishment of these species. WIC would require that its contractors adhere to the mitigation measures outlined in its Weed Plan. The following summary identifies mitigation measures which would be implemented to prevent the spread of noxious weeds. Please refer to appendix G for a comprehensive list of preventative and treatment measures.

- Based on survey results and agency consultations, pretreatment of noxious weed infestations may be conducted in selected areas. Depending on the species and the time of construction, treatment methods could include chemical or mechanical methods to remove noxious weed populations from the construction ROW prior to surface disturbance;

- Prior to mobilizing to the project area, all contractor vehicles and equipment would be required to be cleaned of soil and debris that is capable of transporting noxious weed propagules. All contractor vehicles and equipment would be inspected by the EI(s) and may require additional cleaning;

- The contractor would ensure that certified weed-free straw or certified weed-free hay bales used to construct sediment control devices or used as mulch applications are obtained from approved certified sources, as recommended by the County Weed and Pest Districts, Weed Control Supervisors, and the states of Colorado and Wyoming;

- Segregated topsoil in areas identified as supporting noxious weeds would not be moved outside the boundaries of that area or transported for use to other locations on the project;

- The Contractor would implement the reclamation of disturbed lands immediately following construction as outlined in the Reclamation Plan. Continuing revegetation efforts would ensure adequate vegetation cover to minimize the establishment of noxious and invasive weeds;

- Suitable habitat for four state and BLM-listed sensitive plants has been identified along the proposed ROW (section 3.6). Weeds will usually be controlled by manual methods. However, in Wyoming, manual methods in combination with spot-herbicide application may be approved by the BLM for use to control noxious weed populations.

To prevent vehicles from tracking noxious and invasive weeds along other parts of the ROW, **we recommend that WIC strip topsoil from the full width of the ROW in areas with known weed infestations.**

During scoping, we received several comments expressing concern about loss of vegetation productivity. However, the most common concern expressed was the potential for the introduction and spread of noxious and invasive weeds. Many of the concerns and suggestions are addressed by elements of WIC's Plan (such as topsoil segregation and NRCS recommendations for seeding and weed control) and by WIC's Weed Plan. This plan presents information provided by WIC, various county weed departments, and BLM offices, identifying where noxious species are present along portions of the proposed pipeline route. WIC proposes to use compressed air to remove noxious weeds and weed propagules from construction equipment. We consulted with local weed control agencies and washing with water would be the preferred method to remove noxious weeds and their seeds. As additional mitigation to reduce the potential for the introduction and spread of weeds, WIC has agreed to include in its Weed Plan in consultation with the appropriate BLM FOs the following additional elements:

a. invasive weeds listed by the appropriate BLM FO(s);

b. a site-specific plan for each location where noxious or invasive weeds are present that:

    i. describes options for pretreatment (including the month(s) of the year when pretreatment would be effective);

    ii. identifies who was consulted regarding possible pretreatment options;

    iii. includes whether the landowner/administrator has approved of the pretreatment;

c. the replacement of the compressed air wash stations proposed for removal of noxious weeds from construction equipment with water wash stations that are more effective in removing weeds and their seeds;

    i. review and revise, as necessary, the location of all equipment wash stations (by MP) in consultation with the BLM;

    ii. for each wash station, plans would identify the source(s) of the wash water, how effluent from the wash stations would be monitored/treated to prevent seed releases, and specific plans for station decommissioning;

    iii. include a scaled plot plan of a typical wash station in the Weed Plan, identifying all features;

iv. locate wash stations at least 0.25 mile from all perennial streams and monitor wash station locations for weeds after construction as part of the ROW monitoring and reclamation efforts; and

v. include plans for an intermediate wash station south of the Yampa River to minimize the spread of whitetop (*Cardaria* species) north of the river resulting from construction traffic through the heavy infestations between the Yampa River and the Greasewood Compressor Station.

However, we noted the absence of several of these elements in the revised weed plan. Therefore, **we recommend that WIC file an updated Weed Plan with the Secretary for review and written approval of the Director of the OEP prior to construction. This Weed Plan should include any missing elements mentioned above, as well as MP locations of wash stations that have been coordinated with BLM FOs, conservation districts, local governments, weed management areas, and the Wyoming Weed and Pest Council. At a minimum these wash stations should be located at the crossing of affected county lines.**

Despite efforts to prevent the spread of noxious weeds, it is possible that pipeline operation and maintenance activities (e.g., ground surveillance, routine checks of MLVs) would increase the prevalence of noxious weeds along the ROW or that weeds would be transported into areas that were relatively weed-free. WIC proposes to monitor noxious weeds annually for 5 years, and would continue monitoring as long as it takes to control any infestations. WIC's operations personnel would be trained in the identification of predominant noxious weed populations and would report spreads of noxious weeds during the normal course of maintenance. To further reduce the spread of invasive and noxious weeds following construction activities, **we recommend that WIC conduct weed management surveys and control measures at least once every 3 years (following the initial 5 years of reclamation and weed control surveys) for the life of the project.** WIC has agreed to make future weed management survey results available to land management agencies, the affected counties, and the Commission.

Finally, to provide landowners with a specific avenue for resolving construction and ROW restoration issues, WIC has developed an environmental complaint resolution procedure that would remain active for at least 3 years following the completion of construction. The procedure would provide landowners with clear and simple directions for identifying and resolving their environmental mitigation problems/concerns during construction of the project and restoration of the ROW. Prior to construction, WIC would mail the complaint resolution procedure to each landowner whose property would be crossed by the project. In addition, WIC has agreed to include a table in its weekly status report describing each landowner problem or concern.

3.3 Water Resources

3.3.1 Groundwater

Aquifers within the proposed project area consist mainly of consolidated sedimentary bedrock formations. Thin alluvial aquifers parallel larger drainageways, but groundwater is typically withdrawn from the deeper bedrock zones. **Figure 3.3-1** illustrates the locations of major water-bearing geologic formations that would underlie the proposed project. Some of these aquifers overlap each other at varying depths. At the proposed construction start in Sweetwater County, Wyoming, regional groundwater resources occur in sedimentary rocks of the Wasatch - Fort Union aquifer (Whitehead 1996). The principal water-yielding beds consist of sandstones; these are interbedded with shale, mudstone, and some coal. Depth to groundwater varies, but is generally less than 200 feet. The water is typically of good quality. Southward near the Washakie Basin, relatively small yields are supplied by aquifer zones of the Laney Member of the Green River Formation (Whitehead 1996; WIC 2005a). Younger members of the Green River Formation form confining units near the proposed ROW along the basin margin. Depth to groundwater increases to 500 feet or more, and water quality ranges from fresh (at shallow depths along the basin margins) to briny (at greater depths).

Along the proposed route in Moffat County, Colorado, the Wasatch Formation is again the primary source of water to wells. South of the Yampa River, sandstones of the Browns Park Formation also yield water. On a regional basis within Colorado, these units have been grouped with the Mesa Verde aquifer system (Robson and Banta 1995; WIC 2005a). In the Piceance Basin of Rio Blanco County and southern Moffat County, the Uinta Formation and the Parachute Creek Member of the Green River Formation contain the major aquifer zones. Regionally, these are part of the Uinta-Animas aquifer system (Robson and Banta 1995; WIC 2005a). Intergranular spaces in these rocks have mostly been filled with bicarbonate cements, but numerous fractures produce substantial permeability. Dissolved solids concentrations in the upper part of the aquifer range from 500 to over 1,000 milligrams per liter.

In addition to sedimentary rocks, narrow streamlaid deposits of sands and gravels form alluvial groundwater sources along major drainages. Significant alluvial aquifers occur along the Yampa and White Rivers and Strawberry Creek. Alluvial aquifers also occur along the Little Snake River and Spring Creek, both tributaries to the Yampa River. Depth to water is shallow in these aquifer zones (often less than 20 feet). Water quality varies, but is typically suitable for domestic and agricultural uses.

Springs are known to occur along the southern half of the proposed route, and may occur at isolated locations in the northern portion as well. A number of these are located in or adjacent to alluvial deposits, at the intersection of the channel and groundwater flow within the stream terrace system. Others occur on hillsides at a distance upgradient from the proposed ROW. Springs in these locations are not likely to be affected by blasting or other construction practices. At other locations, notably near MP 115.5 and MP 133.7, springs occur where pipeline construction or access road improvements may affect flows. For this reason, we are including springs in our discussion of potential impacts.

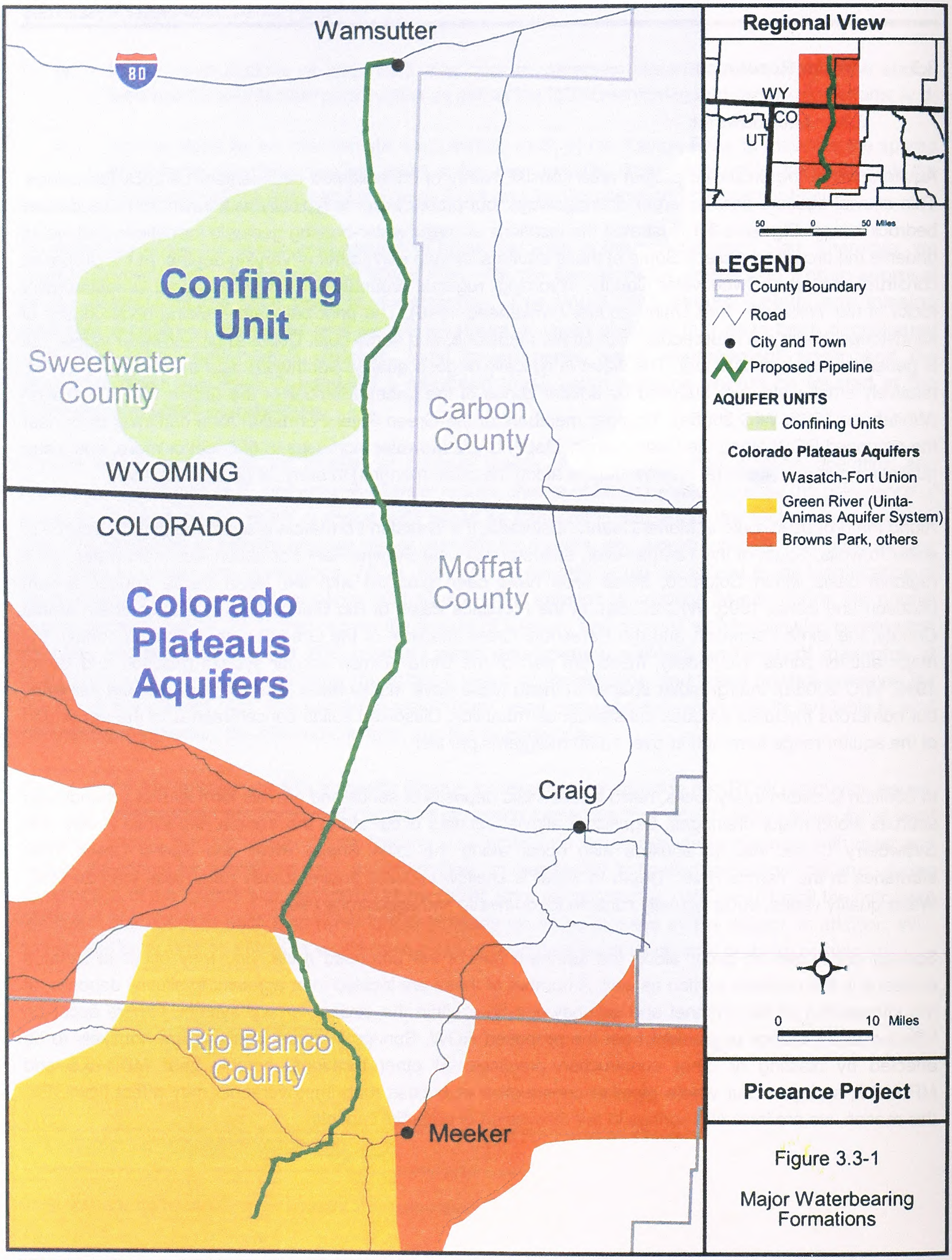


Figure 3.3-1

Major Waterbearing Formations

4/4/05

Many public and private water supply wells in Colorado and Wyoming are in alluvial valleys (lowlands next to streams and rivers). Such wells can be very productive and yield high quality water; however, because they are relatively shallow, they are the most vulnerable to pollution from surface activities. The depth to groundwater in alluvial wells is often influenced by water levels in nearby streams and can fluctuate several feet seasonally. No public water supply wells or wellhead protection areas are known to be located within 400 feet of the pipeline route. Private water wells occur along the proposed pipeline route, but almost all are 150 feet or more from the centerline. WIC obtained water well location data from the state engineer's offices in Wyoming and Colorado (WIC 2005a), as well as from surveyors' data taken during route alignment. Three water wells were found by field survey within 150 feet of centerline (**table 3.3-1**), all within Colorado. One of these is used for watering livestock, the other two are monitoring wells.

Table 3.3-1
Groundwater Wells Within 150 Feet of the Proposed Centerline

Milepost	Distance from Centerline (feet)	Well Use	Well Owner
101.8	66	Livestock	Private
135.0	8	Monitoring	Private
135.0	38	Monitoring	Private

Because permanent aboveground facilities would be located at existing facilities and either on or adjacent to the proposed ROW, groundwater resources in the vicinity of aboveground facilities would be the same as those described for the proposed pipeline route. WIC has no plans to use groundwater during construction or operation; consequently, impacts to groundwater quantity would be limited to those caused by the physical disturbance of the overlying soils and runoff during grading, trenching, and blasting. No groundwater resources are anticipated to be affected at the microwave tower sites proposed for the project. These are existing, previously disturbed locations at high elevations. The occurrence of near-surface groundwater is unlikely, and project activities at these locations would be restricted to relatively shallow depths.

Impacts to groundwater resources would be minimized or avoided by the use of standard construction practices as outlined in WIC's Plan and Procedures. Ground disturbance associated with typical pipeline construction primarily would be limited to 10 feet or less below the existing ground surface, which is above most shallow aquifers and well completion zones. Nevertheless, construction activities such as trenching, blasting, dewatering, and backfilling could encounter shallow alluvial aquifers and cause minor fluctuations in shallow groundwater levels and/or increased turbidity within the aquifer adjacent to the activity. Impacts to deeper aquifers are not anticipated. Since most shallow alluvial aquifers exhibit rapid recharge and groundwater movement, shallow aquifers would likely quickly reestablish equilibrium if disturbed, and turbidity levels would rapidly subside. Consequently, the effects of construction would be short term.

Blasting would likely be required along segments of the proposed pipeline where hard bedrock is on or near the ground surface (**tables 2.3-2 and 3.2-1**). Blasting operations have the potential to damage nearby structures including springs, wells, buildings, and underground pipelines. To minimize potential impacts, WIC has developed a Blasting Plan (WIC 2005b) that identifies blasting procedures including safety, use, storage and transportation of explosives, and limits on particle velocities, seismological frequency, and time delay. Briefly, the Blasting Plan requires that:

- blasting for grade or ditch excavation would only be used after all other reasonable means of excavation have been used and are unsuccessful in achieving the required results, and a detailed blasting plan has been provided by the construction contractor and approved;
- all blasting would be performed by licensed blasters who would be required to secure all necessary permits and comply with regulatory requirements in connection with the transportation, storage, and use of explosives, and blast vibration limits;
- precautions would be taken including, but not limited to, appropriate flags, barricades, and visual and audible warning signals be used to ensure safety during blasting operations. Blast mats or approved dirt cover would be used when needed to prevent damage and injury from fly rock;
- control would be exercised to prevent damage to underground structures, such as cables, conduits and pipelines, or to springs, water wells and other water courses. Blasts would be monitored to ensure that the peak particle velocity did not exceed the specified maximum velocities;
- blasting would not be done until occupants of nearby buildings, stores, residences, places of business, places of public gathering and farmers have been notified sufficiently in advance to protect personnel, property, and livestock; and
- all blasting within 300 feet of a high pressure line would require seismological monitoring unless otherwise agreed upon following review of the detailed blasting plan.

In addition, WIC states in its water resources report that it would make every effort to avoid blasting within 150 feet of an existing well or spring. Based on surveys and agency contacts, there are no known springs, water supply wells, or structures within 150 feet of the proposed pipeline. The proposed pipeline was rerouted to avoid two springs at MP 132.9 and MP 133.5. Should such features be discovered and blasting occur within 150 feet of them, WIC would test wells for depth and water quality prior to and after blasting. If a well were damaged, WIC would repair the well casing and monitor the well until pre-blasting criteria were achieved or landowner accord was satisfied. If necessary, a new well would be drilled. Flows from springs in the vicinity of the blasting would be tested for flow volume and water quality prior to and after blasting.

In response to previous recommendations concerning the proposed Blasting Plan, WIC has agreed to the following supplemental provisions in order to minimize potential impacts from blasting and to adequately assess groundwater resource conditions before and after blasting:

a. integrate provisions from the filed environmental report into the Blasting Plan (e.g., before-and-after inspections at any water supply wells and springs within 150 feet of construction areas, and subsequent repairs or compensation, if necessary), so that one inclusive reference is available for the construction and inspection staff;

b. monitor ground vibrations at the nearest structure, spring, or water supply well within 150 feet of construction areas during blasting activities;

c. provide an alternative source of water (if water supply wells/systems were damaged during construction) until the well or system was repaired/replaced or the landowner was fairly compensated for the damage;

d. coordinate blasting in the vicinity of existing pipelines with the other pipeline operator(s) and follow operator-specific procedures as necessary; and

e. file a report with the Secretary within 30 days of placing the pipeline facilities in service identifying all water supply wells/systems damaged by construction and how they were repaired, including a discussion of any complaints concerning the well yield or water quality and how each problem was resolved.

In addition to the procedures already set forth in WIC's Blasting Plan, we agree that these additional approaches would minimize potential blasting impacts on water resources. In order to include a revised Blasting Plan as part of WIC's overall Plan and Procedures, **we recommend that WIC revise its Blasting Plan to include the supplemental provisions from its June 20, 2005 filing. WIC should file the revised Blasting Plan with the Secretary for review and written approval by the Director of OEP prior to construction.**

A potential hazard of long-term groundwater contamination exists from vehicle refueling and maintenance, from hazardous material spills that occur during construction, or from the disturbance of contaminated soils. Spills or leaks of fuels or other hazardous liquids may affect groundwater quality, and dispersal of pollutants from affected soils could be a continuing source of aquifer contamination. The deterioration of groundwater quality by such factors could adversely affect groundwater uses. These impacts could be avoided or minimized by restricting the locations of parking, refueling, and storage areas and by implementing procedures to prevent and respond to spills or leaks of hazardous materials.

In the event that contaminated soil and/or groundwater contamination was encountered during construction, WIC would notify the affected landowner and coordinate with the appropriate federal and state agencies as mandated by notification requirements. Overall, WIC's Plan and Procedures set forth measures that restrict locations for overnight parking and fueling of equipment, hazardous materials storage, and concrete coating activities. Additional procedures address preparedness for rapid containment and prompt and effective cleanup of spills. WIC has developed a SPCC Plan (WIC 2005c), that addresses some of these issues. In combination with its SPCC Plan, WIC's overall Plan and Procedures:

- identify preventative measures to avoid hazardous material spills or leaks;
- regulate locations for refueling, lubricating, and equipment washing activities;
- provide for vehicle and equipment inspection and maintenance;

- define proper storage and handling of fuels, lubricants, and hazardous materials;
- identify immediate spill response procedures for uplands, wetlands, or waterbodies; and
- establish reporting and notification protocols.

Equipment refueling, parking and lubrication, and storage of fuel, hazardous materials or other potential contaminants would typically be restricted to locations at least 100 feet from waterbodies, wetlands, and potable water wells on non-federal lands. If contingency sites are necessary (due to space restrictions and/or efforts to avoid excessive ROW disturbance), their locations would be reviewed with the construction EI before initiating refueling, materials storage, parking, washing, or other activities.

WIC's Procedures require that refueling activities and hazardous material storage occur at least 100 feet from a wetland, waterbody, or designated municipal watershed areas. The Wyoming Game and Fish Department (WGFD) recommended that all chemicals, solvents, and fuels be kept at least 150 feet away from streams and wetlands. We believe that the restrictions within WIC's Procedures regarding refueling activities and hazardous material storage would adequately protect wetlands, waterbodies, and watershed areas. We note, however, that the BLM believes that the separation distance for storage of fuels, lubricants, and hazardous materials should be increased to 500 feet in order to minimize the potential that groundwater resources could be damaged by pipeline construction. Therefore, the BLM would require that WIC restrict such storage to at least 500 feet away from the edge of any stream, wetland, ditch, or other waterbody on federal lands unless written approval from the BLM is received.

Pipeline construction may involve disposal of groundwater encountered during trench excavation. Since the disposal structures are likely to be located outside the cleared disturbed area, prior approval from the landowner and state agencies would be required. By law, WIC would be required to apply to the states for temporary groundwater disposal permits, and would be required to comply with permit stipulations as well as erosion control/revegetation provisions of WIC's Plan and POD. It is expected that such regulatory compliance would avoid or minimize potential impacts from trench dewatering.

We believe that implementation of the measures and the procedures contained in WIC's Plan and Procedures would avoid or minimize potential impacts associated with vehicle and equipment refueling and lubricating activities, hazardous material storage and handling, and responses to spills or leaks of hazardous materials during construction of the project. During future operation and maintenance activities, WIC would continue to adhere to standards within its Plan, Procedures, and POD to prevent contamination of groundwater resources from potential spills of hazardous materials. Future variances from these procedures would require the approval of the FERC and the affected land management agency or landowner. Given the low probability of a pipeline leak and the physical and chemical properties of processed natural gas, adverse impacts to groundwater resources would not be anticipated during operation and maintenance of the pipeline and its associated facilities. Overall, we believe that construction and operation of the proposed project would not significantly impact groundwater resources.

3.3.2 Surface Water

The proposed pipeline would be located within the upper Colorado River Basin and the Great Divide Basin. The latter is a large, enclosed basin (having no external drainage) in southwestern Wyoming. Only the proposed ROW immediately south of Wamsutter is located in the Great Divide Basin. The remainder of the project area eventually drains to the Green River, a tributary of the upper Colorado River. Principal waterbodies along the proposed ROW include the Little Snake, Yampa, and White Rivers. **Figure 3.3-2** illustrates these regionally important drainageways and **table 3.3-2** further characterizes them. Spring Creek, Deception Creek, Bob Hughes Creek, Strawberry Creek, and the Dry Fork of Piceance Creek are additional tributary streams important to surface water resources along the proposed pipeline route.

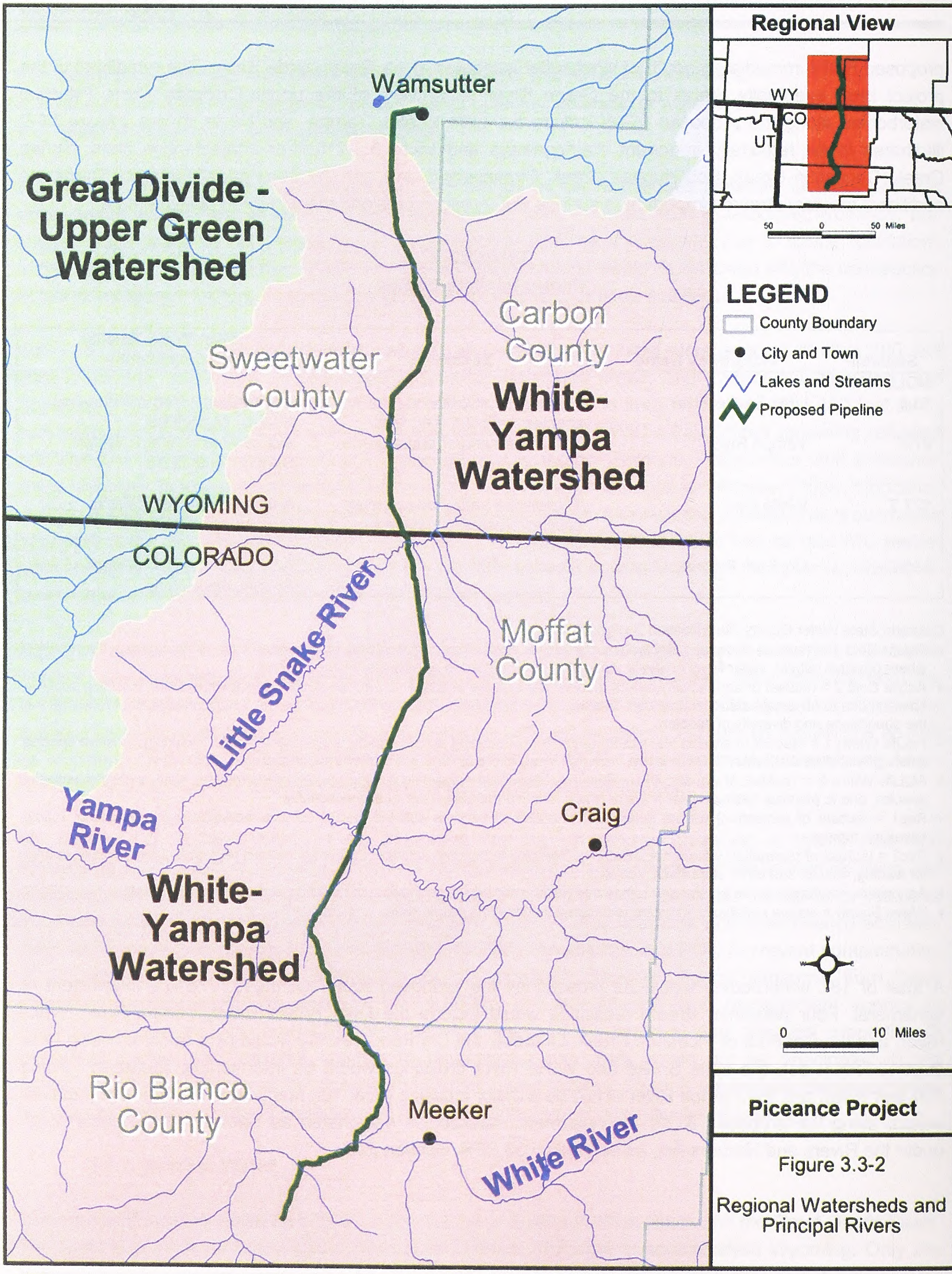
Table 3.3-2
Perennial Waterbodies

State/MP	Waterbody Name	Sensitivity	State Water Quality Classification
COLORADO			
53.1	Little Snake River	Threatened and/or endangered species; crossing = 40 feet.	AqLife Cold1; Rec1; Water Supply; Agriculture
87.6	Yampa River	Threatened and/or endangered species present; crossing = 140 feet.	AqLife Warm1; Rec1; Water Supply; Agriculture
127.7	White River	Threatened and/or endangered species present; crossing = 75 feet.	AqLife Cold1; Rec1; Water Supply; Agriculture
135.0	Dry Fork Piceance Creek	Crossing <10 feet.	AqLife Cold 2; Rec2;Water Supply, Agriculture

Colorado State Water Quality Classification Designations:

- AqLife Cold 1 = (subset of aquatic life) waters capable of sustaining a wide variety of coldwater biota, including sensitive species, where physical habitat, water flows or levels, and water quality result in no substantial impairments.
- AqLife Cold 2 = (subset of aquatic life) waters that are not capable of sustaining a wide variety of coldwater biota, including sensitive species, due to physical habitat, water flows or levels, or uncorrectable water quality conditions that result in substantial impairment of the abundance and diversity of species.
- AqLife Warm 1 = (subset of aquatic life) waters capable of sustaining a wide variety of warmwater biota, including sensitive species, where physical habitat, water flows or levels, and water quality result in no substantial impairment.
- AQLife Warm 2 = (subset of aquatic life) waters not capable of sustaining a wide variety of warmwater biota, including sensitive species, due to physical habitat, water flows or levels, or uncorrectable water quality conditions.
- Rec1 = (subset of recreation) waters suitable or intended to become suitable for recreational activities (e.g., swimming, rafting, kayaking, tubing).
- Rec2 = (subset of recreation) waters not suitable or intended to become suitable for primary contact recreation uses, but are suitable for wading, fishing, and other streamside activities.
- Agriculture = waters suitable or intended to become suitable for irrigation of crops and not hazardous for use by livestock.
- Water Supply = waters suitable or intended to become suitable for potable water supplies.

A total of 182 waterbodies would be crossed by the proposed route. Of these, 178 are intermittent or ephemeral. Four perennial stream crossings would include the Little Snake River, Yampa River, White River, and the Dry Fork of Piceance Creek. Of these, the Dry Fork crossing would be a minor crossing (less than 10 feet wide), the Little Snake and White River crossings would be intermediate (between 10 and 100 feet wide), and the Yampa River would be a major crossing (over 100 feet wide). There are no impaired waters along the proposed ROW, nor are there waterbodies designated as Section 10 navigable water under the Rivers and Harbors Act, as defined by 33 CFR, Section 328.



Piceance Project

Figure 3.3-2

Regional Watersheds and Principal Rivers

4/4/05

WIC proposes to use the HDD method to construct the pipeline crossings of the Little Snake, Yampa, and White Rivers. The Dry Fork of Piceance Creek would be crossed using a dry crossing technique in accordance with WIC's Procedures. All other waterbody crossings would be constructed by the open-cut method. During construction, impacts to surface water resources would be minimized or avoided by the use of standard practices as outlined in WIC's Plan, Procedures, and POD and as described in section 2.3.2.3 of this EIS. Measures would be implemented at major river crossings and at crossings of deeply incised drainages to ensure that the drainage channel and banks were stabilized to prevent erosion and the possibility of exposing the pipeline (see appendix F). Protection of pipeline crossings at smaller streams and incised drainages is an additional consideration for site restoration and minimizing erosion and sedimentation. WIC has prepared drawings that indicate pipeline placement relative to stream channels and banks, erosion control devices as appropriate, and the use of jute or other erosion control fabric for bank protection. Such an approach may be suitable for smaller streams along the proposed ROW.

Extra workspaces would be required at waterbody crossings and, unless impractical due to topography or other technical constraint, these areas would be set back at least 50 feet from the edge of the waterbody. Deviations from this 50-foot setback would require approval of the FERC prior to construction.

<u>Site-Specific Crossing Plans</u>

WIC would employ standard practices (as presented in their Plan, Procedures, and POD and as outlined in this document in chapter 2.0 and appendices D and F), to minimize or avoid impacts to surface water resources during construction. WIC would employ procedures at principal river crossings and other waterbodies to ensure that drainage channels and banks were stabilized to minimize erosion. At the Little Snake, Yampa, and White Rivers, WIC would use containment berms to prevent migration of drilling mud (in accordance with permits), and dispose of drill cuttings at approved sites. In-stream construction would occur within time windows as appropriate for coldwater or warmwater fisheries (see section 3.5.1). Equipment bridges would be used at the principal crossings, and the upper 1 foot of trench backfill would consist of clean gravels at coldwater fishery crossings. Equipment bridges and other facilities amenable to dual project uses would be shared by the proposed WIC and Entrega projects at appropriate HDD crossings.

WIC's proposed crossings of the Yampa and Little Snake Rivers are at the same general locations as the crossings proposed by Entrega for the Entrega Project. In order to minimize disturbance at these crossing locations, **we recommend that WIC coordinate with Entrega regarding the crossings of the Yampa and Little Snake Rivers. This coordination should attempt to minimize in-stream and bank disturbances and should consider the use of a shared crossing bridge at each location. WIC should file the results of this coordination with the Secretary for the review and written approval of the Director of OEP prior to constructing these crossings.**

WIC prepared site-specific Waterbody Crossing Plans for the proposed HDD crossings of the Little Snake, Yampa, and White Rivers (see appendix F). The volume and source of water needed for drilling has been estimated to be approximately 100,000 gallons (0.31 acre-feet) at each HDD crossing. Also, WIC has identified measures it would take to minimize impacts on water quality from a frac-out. WIC would minimize the possibility of a frac-out in the rivers by requiring a minimum cover of 15 feet. In addition, site-specific guidelines in WIC's Waterbody Crossing Plans indicate mitigation procedures for a frac-out as follows:

the possibility of a frac-out in the rivers by requiring a minimum cover of 15 feet. In addition, site-specific guidelines in WIC's Waterbody Crossing Plans indicate mitigation procedures for a frac-out as follows:

- Drilling would cease immediately.
- The contractor shall have containment booms or similar containment devices available to contain drilling mud in the rivers.
- The contractor would attempt to remove as much of the drilling mud as practical from the river bottom by suction hoses or other means.
- The contractor may attempt to resume drilling with an alternative mud viscosity.
- If the frac-out cannot be stopped by viscosity changes, a new pilot hole may be attempted at greater depth.
- Open cutting of the river crossing will only be proposed if all attempts at drilling fail. Open cutting would require prior approval from the FERC, FWS, and other agencies.

In addition, WIC has indicated that the project would require an on-site monitor to specifically watch for any indication of a frac-out in the rivers as evidenced by the presence of drilling mud or increased siltation in the flows during drilling. Should a frac-out occur, WIC would immediately notify the EI and FWS. Additional drilling activities would not resume without appropriate agency concurrence. We agree with these provisions.

No municipal or domestic surface water intakes are known to occur within 3 miles downstream of the proposed HDD crossings, so potential impacts to such water supply sources are not anticipated.

The FERC Procedures requires a 50-foot setback for extra workspace at any stream crossings. WIC states that in certain locations a 10-foot setback would eliminate extra movement of spoil by a track hoe, resulting in less riparian habitat disturbance and a decrease of construction time in the streambed. As indicated in WIC's Procedures, it would need to request site-specific approval prior to construction to allow a setback of less than 50 feet at any waterbody crossing. One such request for reduced setbacks is where adjacent upland consists of actively cultivated or rotated cropland or other disturbed land. We agree that the reduced setback would be acceptable in these areas and would offer adequate protection to the waterbody.

The Site-Specific Waterbody Crossing Plans for the Little Snake, Yampa, and White Rivers show that a 10-foot buffer zone would be maintained at these crossings. However, in its comments on the draft EIS, WIC stated that the 50-foot spacing restriction is acceptable for these HDD installations. WIC states that it does not anticipate requests for additional workspace within 50 feet of the water's edge unless a frac-out occurs. In the event of a frac-out, additional workspace for response activities may be required within 10 feet of the river bank.

Water Supply Watersheds

The proposed route would not cross any protected public water supply watershed systems. The watersheds near Craig, Dinosaur, Meeker, and Rangely, Colorado are over 10 miles from the proposed pipeline corridor. There are no potable public water intakes located within 3 miles downstream of any of the perennial stream crossings. Drinking water sources at Maybell (downstream of the proposed Yampa River HDD crossing) consist entirely of privately owned domestic wells (Poirot 2005). Based on review of USGS topographic maps, the pipeline route would cross one aqueduct in Colorado at about MP 84. Given these conditions, no construction impacts on water supply watersheds would occur.

Water Quality. In order to minimize potential impacts on water quality, WIC would adhere to the measures contained in its Procedures, including, but not limited to: installing and maintaining sediment barriers to prevent silt-laden water from entering wetlands and waterbodies, restoring original contours, and revegetating disturbed areas.

The accidental release of hazardous materials (fuels, lubricants, and coolants) used by heavy equipment during pipeline construction could adversely affect aquatic species and contaminate surface water. WIC's SPCC Plan (WIC 2005c) would minimize the potential impact of spills of these hazardous materials. Furthermore, WIC would comply with NPDES permit requirements for water discharges associated with construction activity.

The proposed ROW closely parallels Spring Creek and Deception Creek at locations which are immediately upstream of the Yampa or White Rivers. Construction activities (including refueling, lubricating, and storage of hazardous materials) would take place in upland settings along the terraces paralleling these streams, and thus would likely be at least 100 feet from a waterbody or wetland crossing. However, a spill of potential surface water or groundwater contaminants could rapidly migrate down the steep terrace faces onto the floodplains associated with these waterbodies, or into the waterbodies themselves. Given the proximity to the Yampa River or the White River, and the potential for significant adverse water quality impacts if a substantial spill entered either river, we recommended in the draft EIS that WIC should locate areas designated for refueling, parking, or maintenance, or storage of fuels, lubricants, or hazardous materials a minimum of 100 feet from the upper edge (crest) of the stream terraces along Spring Creek and Deception Creek. In commenting on the draft EIS, WIC agreed to this recommendation but indicated that terrain constraints between MP 100 and MP 101 may make it impractical to move equipment more than 100 feet from the upper edge of the stream terrace. WIC has revised its Procedures to indicate that refueling, parking, or hazardous materials storage would be avoided within 100 feet of Spring Creek unless the EI determines in advance that such a storage setback could not be made practical. In such a case, appropriate precautions would be taken, including secondary containment and providing for prompt cleanup in case of a spill. For Deception Creek, WIC's revised Procedures indicate that temporary containment may be built around equipment if necessary to park the equipment overnight, subject to approval by the FERC. Upon review of the alignment between MP 100 and MP 101, we believe that WIC's proposed secondary containment requirements would minimize potential impacts on waterbodies in this area if the 100-foot setback restriction is impractical.

Sediment Contamination

The proposed pipeline route would not cross any watersheds containing areas of probable concern for sediment contamination (EPA 1997). Additionally, none of the waterbodies crossed by the pipeline route are known to contain contaminated sediments (Vranka 2004; Parker 2004).

Hydrostatic Test Water and Dust Control

To verify the integrity of the pipeline before placing it into service, WIC would conduct a series of hydrostatic tests as described in its Hydrostatic Test Plan (appendix E). These tests would involve filling the pipeline with water, pressurizing it, and then checking for pressure losses due to pipeline leakage. As currently proposed, the pipeline would be divided into multiple test sections. **Table 3.3-3** shows the sources of hydrostatic test water as being the Little Snake, Yampa, and White Rivers. The approximate water volumes that would be required, the rate of withdrawal, and the duration of the use are also shown in the table. WIC has not stated the mechanism by which water would be procured for the testing, but because these waters are appropriated, WIC would likely purchase water from landowners owning water rights and work with the Colorado State Engineer for temporary use of the water. WIC has communicated with the Colorado State Engineer for this purpose.

Table 3.3-3
Currently Proposed Hydrostatic Test Water Volumes and Sources

Source	Location (MP)	Volume to be Withdrawn (gallons)	Volume to be Withdrawn (acre feet)	Maximum Withdrawal Rate (gallons per minute)	Maximum Withdrawal Rate (cubic feet per second)	Duration of Use
White River	127.7	5,177,600	15.9	2,500	5.6	90 days maximum
Yampa River	87.6	2,850,000	8.7	2,500	5.6	90 days maximum
Little Snake River	53.1	9,125,395	28.0	2,500	5.6	90 days maximum
Total Withdrawal		**17,152,995**	**52.6**			

Withdrawls on the Little Snake and Yampa Rivers may affect designated surface water uses, including aquatic life and fisheries. Effects from water withdrawls from the Little Snake River could be further complicated by the recent completion of High Savery Dam, upstream of the proposed intake location. Daily streamflows vary substantially in semi-arid regions, and can range over orders of magnitude, particularly during low-flow months. Depending on the timing of withdrawals and flow conditions in the river basins, water withdrawn for hydrostatic testing purposes could represent a substantial portion of the flow during the low-flow part of the year when withdrawals are planned. Therefore, existing river conditions at the time of planned withdrawals would determine the extent of potential impacts on surface water flows and related resources. Because of this, **we recommend that WIC consult the appropriate state and federal fisheries agencies and the Colorado State Engineer to determine suitable flow conditions and**

locations for hydrostatic test water withdrawals and discharge locations. In addition, WIC should coordinate with the FWS and appropriate state agencies before and during construction to ensure that surface water withdrawals required for HDD purposes have minimal impacts on flows and fisheries. WIC should incorporate the outcome of these consultations in its weekly status reports prior to any hydrostatic testing or HDDs.

WIC would minimize the potential effects of hydrostatic testing on surface water resources by adhering to the measures in WIC's Procedures and Hydrostatic Test Plan. WIC has identified proposed withdrawal and discharge locations on alignment sheet photograph bands at a scale of 1:6,000. WIC also has confirmed that all proposed discharge locations would avoid known cultural sites. In response to recommendations in the draft EIS, WIC has indicated that pumps would be sized and monitored to control the rate of water withdrawal, and would have intake screens installed to minimize effects on larval fish.

WIC does not anticipate that any withdrawals would be greater than 5 percent of average monthly river flows during the construction period. The monthly mean October and November streamflows in the Little Snake River, which are the smallest flows of any of the three rivers, are approximately 51,000 to 54,000 gallons per minute. WIC proposes to withdraw a maximum of 2,500 gallons per minute, and would reduce the withdrawal rate if necessary. As a secondary precaution, WIC has moved the starting point of its southern spread to the Yampa River. This would allow the Yampa to serve as an alternate source of hydrostatic test water should flow conditions in the Little Snake River not be amenable to withdrawals. Proposed maximum withdrawal rates would represent between 1 to 5 percent of the average October and November flows. WIC has indicated that they would not withdraw more than 5 percent of the average monthly flow.

For any particular day or week, withdrawals could represent substantially more of these average river flows. Existing river conditions at the time of planned withdrawals would determine the extent of potential impacts to surface water flows and related resources. WIC also has indicated that appropriate state and federal agencies would be consulted to determine suitable flow conditions and locations for hydrostatic test water withdrawals and discharges. Three proposed discharge locations (MP 52.1, MP 53.2, and MP 53.9) are located at or near the Little Snake River. Two proposed discharge locations (MP 87.7 and MP 88.0) are at or near the Yampa River, and two (MP 127.8 and MP 127.9) are at or near the White River. Approximately 18 other potential discharge sites are located in upland positions, as indicated on alignment sheets. Several of these locations are in uplands adjacent to ephemeral or intermittent stream channels such as Deception Creek and Hay Gulch.

When hydrostatic testing is completed, WIC would release the water back into the basin from which it was withdrawn. If discharge rates of hydrostatic test water are not carefully controlled, discharges into surface waters could cause erosion of the streambanks and streambottoms, resulting in a temporary increase of sediment load and destruction of habitat. To minimize the potential for these effects, WIC proposes that all hydrostatic test water would be discharged on upland areas through a certified weed-free hay or straw bale dissipation device, slowing the velocity to minimize potential erosion impacts and removing solids. WIC would test discharge water quality to ensure that any contaminant levels would be within NPDES requirements. Depending on the site chosen and the distance from a channel, most or all of the discharged hydrostatic test water would infiltrate into the semi-arid upland soils before reaching a watercourse. WIC anticipates that mitigation for testing would include a form of compensation for water consumption.

WIC has indicated that discharging hydrostatic test water in upland locations is warranted as well as prudent due to the method of pipeline dewatering and the season of construction. Compressed air would be used to assist in prompt pipeline dewatering, drying, and tying-in. WIC has indicated that completing these efforts promptly is particularly important during the winter season. Ice in the pipe can cause extensive damage to valves and instrumentation, and would have to be removed by heating and/or chemical injections. These processes would delay construction and possibly add contaminants to the discharge. In addition, because of significant elevation variations along the proposed ROW, WIC indicates that the length of pipeline segment to be dewatered should be minimized in an effort to prevent air from bypassing the dewatering pigs and forming air pockets. When pressurized and ultimately released, such pockets may create dangerous and destructive conditions at discharge locations. The WGFD indicated that the release of hydrostatic test water into a waterbody could result in alterations of stream channels, increased sediment loads, and the potential addition of chemicals into drainages. The WGFD also has recommended that all releases of hydrostatic test water should avoid direct discharges to streams in Wyoming. We believe that for the reasons stated above, discharging the hydrostatic test water in upland locations would be an environmentally acceptable action in both Colorado and Wyoming.

No reaches of the Little Snake, Yampa, or White Rivers are listed on Colorado's Section 303(d) list of water-quality-limited segments. However, downstream of discharge locations, all three rivers are being monitored and evaluated for water quality impairment from sediment.

Contaminant concentrations in the hydrostatic test waters would likely be low, since the pipeline would be constructed entirely from new pipe. No chemical or biological additives would be used during testing, and pipes would be capped at night. WIC would be required to obtain permits from the appropriate agencies and adhere to stipulations in its NPDES permit when discharging hydrostatic test water. This would include a requirement for WIC to sample, test, and if necessary, treat the hydrostatic test water prior to discharge. In Colorado, discharges of test water would require a permit from the Colorado Department of Public Health and Environment (CDPHE). WIC would analyze discharges as required for selected water quality constituents, and report the results to the CDPHE in accordance with the Colorado Discharge Permit System. On the basis of proposed construction materials and procedures, agency consultations, and adherence to regulatory requirements, the potential for impacts from the introduction of chemical contaminants or erosion and sedimentation from hydrostatic test water discharges is likely to be minimal.

Impacts on fisheries resources from sedimentation and water depletions (associated with hydrostatic test water withdrawals) are discussed in greater detail in sections 3.5 and 3.6.

Dust control operations would utilize water along the ROW, access roads, parking areas, and storage/refueling locations. Most or all of this water would be lost to other beneficial uses by evaporating or seeping into the ground surface. Currently, the sources of dust control water have been identified as being private landowners or small towns. Dust control water would not be removed from small creeks. The volume of dust control water needed is estimated by WIC as being approximately 12,000 gallons per day. Over the anticipated 90-day construction period, this would total approximately 3.3 acre-feet of water. Over such a timeframe, this amount would not be likely to create impacts to water resources. However, the sources of dust control water may include existing wells, and water quality in some aquifer zones may not be suitable for subsequent seeding and revegetation efforts when applied to the proposed ROW. In order to ensure suitable withdrawals and water quality for plant growth, **we recommend that WIC file with the Secretary for review and written approval of the Director of the OEP data to characterize the quality of potential dust control water sources prior to their use. We further recommend that WIC ensure that all water or water/chemical mixes applied to areas to be revegetated must meet state or federal water quality standards set for irrigated agricultural uses.**

Overall, impacts to surface water resources from construction would be short-term and minimal. Construction would cause temporary increases in sediment transport, but these impacts would be minimized by setbacks, sediment barriers, and streambank stabilization. Waterbody crossings would normally be completed within several days, minimizing the duration of the effects.

Surface water would not be required for the operation of the pipeline and aboveground facilities. To minimize sedimentation and to prevent contamination of surface water resources from spills of hazardous materials associated with future maintenance activities conducted along the pipeline ROW, WIC would be required to adhere to construction and reclamation standards within its Plan, Procedures, and POD. Future variances from these plans and procedures would require the approval of the FERC, the affected land management agency, and affected landowner. Given the low probability of a pipeline leak (particularly a leak in a location that could enter surface water) and the physical and chemical properties of processed natural gas, adverse impacts on water resources from operations and maintenance are not expected.

3.3.3 Wetlands

Based on field wetland delineation surveys conducted by WIC, wetlands occupy approximately 0.9 mile (0.6 percent) of the 141.8-mile-long proposed pipeline (**table 3.3-4**). Of this distance, about 0.8 mile occurs in Colorado, and the remainder (0.06 mile) occurs in Wyoming. None of the aboveground facilities are located within wetlands delineated by WIC surveys or Nationwide Wetland Inventory (NWI) mapping.

Wetland vegetation communities occurring along the proposed project area include emergent and scrub-shrub wetland communities. The most common type of wetland along the proposed project area is emergent wet meadow. Emergent wetlands are dominated by rooted herbaceous vegetation, while scrub-shrub wetlands are dominated by woody species less than 20 feet in height. The shrub-scrub communities occur in narrow riparian bands along both sides of the Yampa River (MP 87.63), along Deception Creek upstream of the Yampa River (MP 97.23), and in a tributary to Bob Hughes Creek (MP 99.32). Common water sources for wetland communities include sub-irrigation in alluvial settings, springs at surface/bedrock interfaces, seepage from ditches and canals, irrigation runoff, and ponding in concave topography. Common wetland species identified along the pipeline route are included in section 3.4.

Table 3.3-4
Summary of Wetland Types Affected by Construction and Operation

State	NWI Wetland Classification[1]	Length of Wetland Crossed (miles)	Wetland Acreage Affected During Construction[2]	Wetland Acreage Affected During Operation[3]
WYOMING				
	PEM	0.06	0.45	0.27
Wyoming subtotal		**0.06**	**0.45**	**0.27**
COLORADO				
	PSS	0.02	0.17	0.11
	PEM	0.78	8.41	4.31
Colorado subtotal		**0.80**	**8.58**	**4.42**
Project Total				
	PSS	0.02	0.17	0.11
	PEM	0.84	8.86	4.58
	Overall	**0.86**	**9.03**	**4.69**

1 NWI Wetland Types
PSS – Palustrine scrub-shrub
PEM – Palustrine emergent
2 Wetland locations and types were generated from maps based on WIC field surveys. Disturbance estimates were based on the proposed pipeline ROW and extra workspaces.
3 Based on the amount of wetlands within the 50-foot-wide new permanent easement; however, because the wetlands are emergent and no vegetation maintenance is anticipated, no operational impact from the pipeline would occur except in areas designated palustrine scrub-shrub, where a permanent 10-foot-wide ROW would be maintained.

Based on the WIC field delineations, a total of 25 wetlands would be crossed by the proposed pipeline; 23 in Colorado and 2 in Wyoming. These wetlands are identified in appendix I and on the project maps provided in appendix A. The vast majority of the wetlands crossed are characterized as emergent, with the remaining (roughly 10 percent) comprised of mixed emergent and scrub-shrub types. No farmed or forested wetlands would be crossed by the proposed project.

Construction in wetlands would primarily result in temporary effects including the temporary loss of wetland vegetation, soil disturbance, and temporary increases in turbidity and fluctuations in wetland hydrology. To minimize these impacts to wetlands, WIC would use a 75-foot-wide construction ROW through wetland areas, would follow the measures identified in WIC's Procedures, and would locate the pipeline route immediately adjacent to existing utilities, where possible, to minimize impacts by overlapping the construction ROW along previously disturbed corridors. Project activities at the microwave towers would not affect wetlands. These locations have been previously disturbed, and local BLM staff indicate that no wetlands occur at these sites.

Extra workspaces would be required at wetland crossings and, unless impractical due to topography or other constraint, these areas would typically be set back at least 50 feet from the edge of the wetland. While WIC's site-specific Waterbody Crossing Plan identifies a setback of less than 50 feet at the proposed Little Snake, Yampa, and White River crossings, deviations from the standard 50-foot setback would require approval of the FERC prior to construction.

After the pipeline is constructed, WIC has proposed to seed non-saturated wetlands with annual ryegrass in accordance with its Procedures. No lime or fertilizer would be used in wetland areas. While non-native annual ryegrass is not anticipated to persist in wetlands, the BLM has expressed concern that ryegrass could become established in nearby upland areas, particularly in wheat fields. Consequently, the BLM may require WIC to use a commercial hybrid (sterile) cover crop for temporary stabilization and reclaim wetlands with native species. WIC has indicated that it would file with the Secretary its project-specific Wetland Restoration Plan, indicating by MP how wetlands disturbed by project activities would be restored to pre-construction conditions, for review and written approval by the Director of OEP prior to construction. WIC would include the comments of the land management and state agencies with which it consulted during plan development.

A total of 9.03 acres of wetlands (8.58 acres in Colorado and 0.45 acre in Wyoming) would be affected by pipeline construction (**table 3.3-4**). In general, we expect that emergent wetland vegetation would be reestablished within 3 years after construction, while scrub-shrub vegetation would take somewhat longer.

WIC would maintain its permanent ROW to facilitate periodic inspections. Thus, a 30-foot-wide strip centered over the pipeline would be maintained clear of trees taller than 15 feet to facilitate pedestrian and aerial inspections. Additionally, a 10-foot-wide strip centered over the pipeline would be maintained clear of woody vegetation to allow vehicles rapid access along the ROW in case of emergencies. As a result, operational impacts in wetlands would result in the conversion of about 0.1 acre of scrub-shrub wetland to herbaceous wetland within the 10-foot-wide maintained strip (**table 3.3-4**).

3.4 Vegetation

3.4.1 Vegetation Communities

Vegetation Communities

Four general vegetation communities characterize the proposed Piceance Project area: grassland, shrubland; agricultural land; and woodlands (**table 3.4-1**, **figure 3.4-1**). The two predominant vegetation communities that are crossed by the proposed pipeline route are shrubland and woodland, comprising 81 and 10 percent of the vegetated lands based on acres of disturbance, respectively. Open water and waterbodies (including dry washes, discussed in section 3.3.2), commercial land, and areas with bare rock account for less than 1 percent of the disturbance along the proposed pipeline route and do not display vegetation characteristics; consequently, they are not discussed in this section of the EIS (see section 3.7).

Construction of the proposed pipeline and aboveground facilities would disturb approximately 77 acres of grasslands, 1,519 acres of shrublands, 100 acres of agricultural land, and 188 acres of woodlands (**table 3.4-2**). The primary impact of the proposed project on vegetation would be the cutting, clearing, and/or removal of existing vegetation within the construction work area. Temporary ROW and additional temporary workspace areas cleared for construction would be reseeded and allowed to revegetate naturally with tree and shrub species after construction was completed. An additional total of 258 acres of vegetation, which is accounted for in **table 3.4-2**, could potentially be affected by snow storage due to winter conditions. The requested 15-foot-wide strip along the ROW for snow storage would not be bladed or cleared of vegetation and no vehicles or construction equipment would be permitted to operate within this strip.

To minimize environmental impacts and ensure site stabilization and revegetation, WIC would follow construction procedures detailed in its POD, including its Plan and Procedures with approved variances. The Plan and Procedures (in conjunction with the WIC Reclamation Plan [appendix D]) describe methods that would be implemented to stabilize disturbed sites by reducing runoff and erosion; to reestablish a vegetation condition comparable to preconstruction conditions; to restore functional qualities of the area including wildlife habitat and livestock forage; and to prevent degradation of areas off the construction ROW. Additionally, WIC would follow the measures outlined in the SPCC Plan (WIC 2005c) and the SWPPP (WIC 2005d) to minimize and mitigate potential impacts to wetlands and other vegetation.

Upon completion of construction, disturbed areas would be revegetated in compliance with WIC's Plan or in accordance with specific requirements from applicable federal, state, and local agencies. Timely stabilization of the construction ROW and reseeding with an appropriate seed mix would minimize the duration of vegetation disturbance. The FERC and BLM staff would inspect the pipeline ROW for several years to ensure WIC's compliance with revegetation standards established in WIC's Plan and Procedures.

After construction, the vegetation along the majority of the pipeline ROW would be allowed to revert to preconstruction conditions. WIC would reduce the width of the permanently maintained ROW in woodland areas (i.e., pinyon-juniper); however, given the long recovery period for woodlands, maintenance of

Table 3.4-1
Vegetation Communities Crossed by the Piceance Project Pipeline

Community Designation	Milepost[1] (MP)	Vegetation Sub-Community[2]	General Description	Common Species
Grassland	21-25 95-97	Sagebrush steppe	• Combination of shrubs and grasses where grasses are 50 percent or more of the species composition. • Density and variety of species in the community is greatly affected by fire suppression.	big sagebrush, black sagebrush, broom snakeweed, rabbitbrush, prickly pear, mountain mahogany, ephedra, fourwing saltbush, winterfat, blue grama, bottlebrush squirreltail, Indian ricegrass, needle and thread grass, western wheatgrass, cheatgrass, Great Basin wildrye, yarrow, viscid rabbitbrush, and mountain snowberry
Shrub-scrub	0-21, 25-44, 45-48, 49-51, 53-87, 88-95, 97-109, 110-118, 121-123, 124-126, 128-129, 130-132, 139-142	Sagebrush	• Combination of dense sagebrush, with a sparse understory of grasses, forbs, and smaller shrubs (<50 percent cover). • Occurs throughout central and western Wyoming and northwestern Colorado.	big sagebrush, black sagebrush, sand sagebrush, broom snakeweed, rabbitbrush, prickly pear, mountain mahogany, horsebrush, spiny hopsage, ephedra, saltbush, Indian ricegrass, needle and thread grass, western wheatgrass, Great Basin wildrye, crested wheatgrass, cheatgrass, and yarrow
		Salt desert scrub/greasewood	• Occurs as a mosaic within sagebrush communities, dominated by greasewood. • Found throughout central and western Wyoming and northwestern Colorado.	greasewood, saltbush, spiny hopsage, budsage, winterfat, and western wheatgrass
		Foothill shrub-scrub	• Mountain mahogany found within northern mixed prairie and short grass prairie habitats. • Gambel oak extends from Colorado into Wyoming on the western slope of the Rocky Mountains.	mountain mahogany, scrub oak (Gambel oak), serviceberry, mountain snowberry, western wheatgrass, and elk sedge
Agriculture	87-88, 109-110, 118-121, 126-128	Pasture/ hay/ orchard	• Natural vegetation is not evident. • Land currently used for grazing or horticulture.	irrigated hay and alfalfa fields, livestock feeding areas, horticultural areas

Table 3.4-1 (Continued)

Community Designation	Milepost[1] (MP)	Vegetation Sub-Community[2]	General Description	Common Species
Woodlands	44-45, 48-49, 51-53, 123-124, 129-130, 132-139	Pinyon-juniper woodland	• Commonly found on dry ridge tops with shallow soils. • Highly competitive and supports a highly variable understory. • Pinyon component increases at higher elevations.	Colorado pinyon pine, Utah juniper, one-seed juniper, Rocky Mountain juniper, big sagebrush, black sagebrush, mountain mahogany, snakeweed, bitterbrush, little rabbitbrush, Sandberg bluegrass, needle and thread grass, Indian ricegrass, squirreltail, western wheatgrass, stemless golden weed, oval buckwheat, yellow-eye cryptantha, scarlet gilia, dwarf cateye, brittle prickly pear, claretcup, and heartleaf twistflower
Wetlands[3]	39, 10, 53, 69, 84, 87, 97, 99, 100, 106, 107, 111	Emergent	• Dominated by rooted herbaceous vegetation.	baltic rush, inland saltgrass, alkali sacaton, sedges, bluejoint reedgrass, and bent grass
		Scrub-shrub	• Scrub-shrub wetlands are dominated by woody vegetation less than 20 feet in height.	willow, thinleaf alder, river birch, and red-osier dogwood
		Littoral/playa	• Most obvious in spring due to snowmelt, precipitation, and high water table. • Wetlands that have been dry for over a year frequently have a thin layer of grasses and forbs on the bottom.	Due to their ephemeral nature, the entire composition of these wetlands can change over short periods of time.
		Shoreline and aquatic bed	• Found adjacent to or located within surface waters.	narrowleaf cottonwood, salt cedar, willow, thinleaf alder, river birch, red-osier dogwood, wild rose, serviceberry, and snow berry

[1] Mileposts are broad generalizations. See appendix A for more detailed vegetation description by milepost.
[2] Sub-communities indicated in this table are shown in **figure 3.4-1.** Wetlands are listed as presented in appendix I.
[3] Wetland communities are delineated by vegetation type.

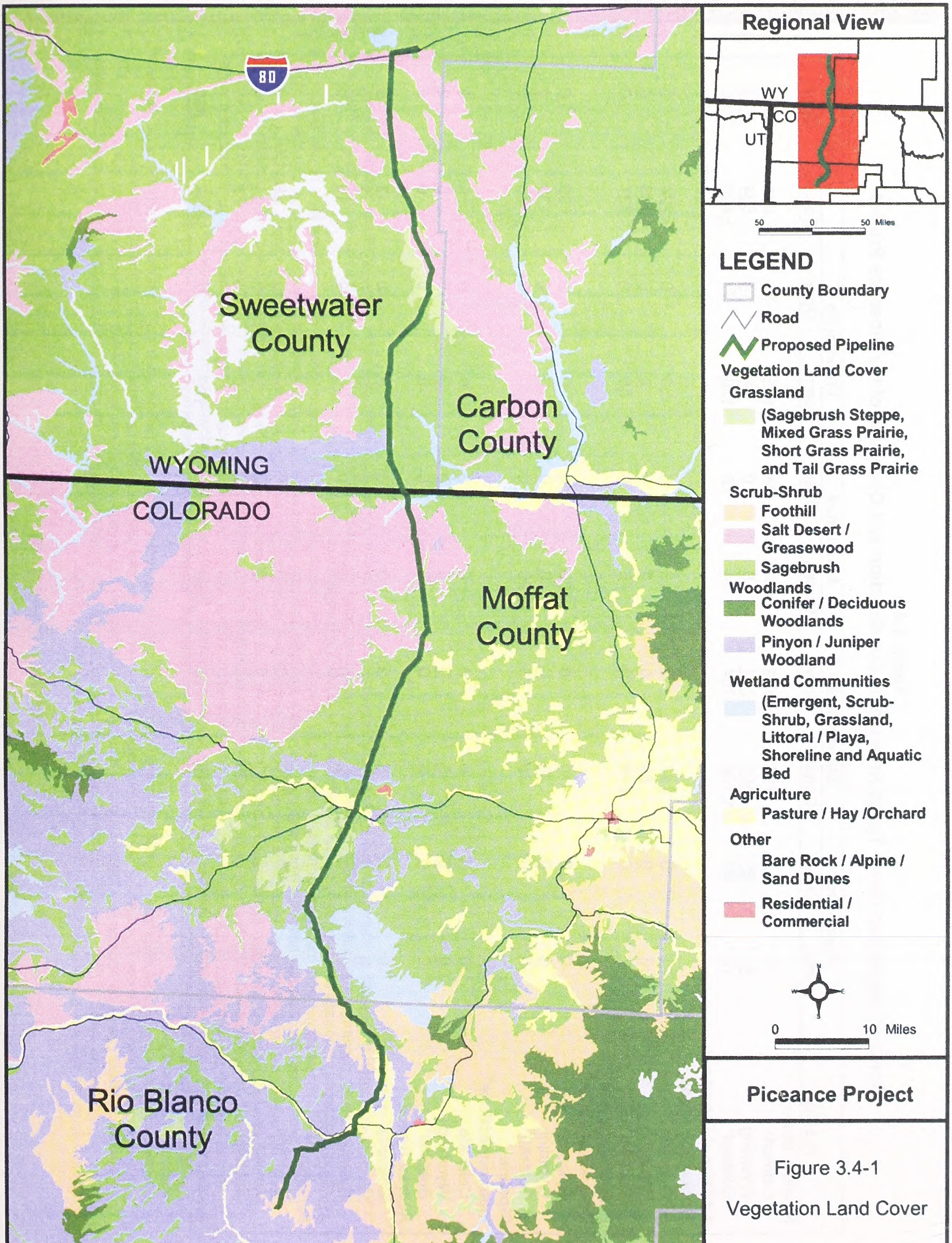


Figure 3.4-1

Vegetation Land Cover

4/4/05

Table 3.4-2
Acres of Vegetation Cover Types Affected by Construction and Operation of the Piceance Project

Facility	Grassland		Shrub-scrub		Agriculture		Woodlands[1]		Total	
	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
Pipeline (main)[2]										
Colorado	21	12	735	433	64	38	106	63	926	546
Wyoming	49	29	461	271	0	0	24	14	534	314
Subtotal[3]	70	41	1,196	704	64	38	130	77	1,460	860
Additional Temporary Workspace Areas										
Colorado	1	0	157	0	16	0	50	0	224	0
Wyoming	6	0	89	0	0	0	8	0	103	0
Subtotal[3]	7	0	246	0	16	0	58	0	327	0
Pipe Storage and Contractor Yards[4]										
Colorado	0	0	0	0	20	0	0	0	20	0
Wyoming	0	0	38	0	0	0	0	0	38	0
Subtotal[3]	0	0	38	0	20	0	0	0	58	0
Pipeline Interconnections[5]										
Colorado	0	0	0	0	0	0	0	0	0	0
Wyoming	0	0	0	0	0	0	0	0	0	0
Subtotal[3]	0	0	0	0	0	0	0	0	0	0
Access Roads										
Colorado	0	0	3	0	0	0	0	0	3	0
Wyoming	0	0	7	0	0	0	0	0	7	0
Subtotal[3]	0	0	10	0	0	0	0	0	10	0
Aboveground Facilities[6]										
Colorado	0	0	18	0	0	0	0	0	18	0
Wyoming	0	0	11	0	0	0	0	0	11	0
Subtotal[3]	0	0	29	0	0	0	0	0	29	0
Project Total[3,7]	**77**	**41**	**1,519**	**704**	**100**	**38**	**188**	**77**	**1,884**	**860**

Table 3.4-2 (Continued)

[1] Includes acreages associated with fire-damaged pinyon-juniper habitat in Rio Blanco County.

[2] Const. – Construction. Oper. – Operation. Construction ROW based on an 85-foot-wide construction ROW, except in wetlands where a 75-foot-wide construction ROW would be used. Operation acreage was estimated based on a 50-foot-wide permanently maintained ROW in all areas and does not include access roads.

[3] The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the exact sum of the addends in all cases.

[4] This total represents offline pipe yards only. Staging areas are proposed for use as contractor yards; land requirements are previously accounted for in additional temporary workspace areas.

[5] The pipeline interconnect construction acreage is previously accounted for under the additional temporary workspace areas row (associated with the staging areas located at the CIG Wamsutter and CIG Greasewood Compressor Stations). Operation acreage is previously accounted for under the pipeline ROW.

[6] Facilities proposed for installation at the existing CIG Wamsutter Compressor Station include two interconnections, two metering stations, a MLV, and a pig facility. Approximately 1,650 horsepower of new compression would be installed at existing CIG Greasewood Compressor Station. Concurrent with this installation would be the installation of two interconnections, two metering stations, a MLV, and a pig facility. Operation of the proposed new facilities at the existing compressor stations would not require any additional land. Nine MLVs and one pigging facility would be constructed within the 85-foot-wide construction ROW; therefore, disturbance acreage is previously accounted for under the pipeline ROW. Each MLV would be operated within the permanently maintained 50-foot-wide ROW with one exception. At MP 54, an additional 0.1 acre would be required to operate the combined MLV/pigging facility at this location. Construction and operation of the Juniper and Magnetic Mountain microwave communication towers will require 0.1 acre that are considered to have no vegetation cover.

[7] Contingent winter construction workspace may contribute up to 258 additional acres of disturbance during construction; a maximum of 12 acres of grassland, 212 acres of shrubland, 11 acres of agriculture, and 23 acres of woodlands could be disturbed. Disturbance would only occur in specific areas after an approval of a site-specific variance.

vegetation in the future would be nominal. Impacts to vegetation from permanent aboveground facilities would be limited to those required for the operation of pigging facilities and MLVs (1 acre of sagebrush shrubland and <1 acre of pinyon-juniper woodland).

Grassland

Grassland occurs along approximately 7 miles (77 acres, 4 percent) of the proposed pipeline route, with sagebrush steppe being the dominant sub-community. Sagebrush steppe is semi-closed steppe characterized by an overstory of sagebrush and understory of grasses, forbs, and smaller shrubs. Grass species comprise more than 50 percent of the species composition in this community; big sagebrush is the dominant shrub component throughout.

Long-term impacts may occur on sagebrush steppe, as well as native grasslands and shrublands. Recovery of these habitats may take a minimum of 5 to 7 years due to poor soil and low moisture conditions.

Shrub-scrub

Shrubland accounts for approximately 116 miles (1,519 acres, 81 percent) of vegetation cover that would be crossed by the pipeline route. This community designation includes sagebrush, salt desert shrub/greasewood, and foothills shrub-scrub sub-communities. Sagebrush is the most widespread shrubland sub-community. This vegetation type is characterized by an overstory of big sagebrush and an understory of grasses, forbs, and smaller shrubs. Salt desert shrub/greasewood occurs as a mosaic within sagebrush communities, frequently on the fringes of playas, desert lakes, ponds, rivers, and streams. Foothills shrub-scrub communities consist of both mountain mahogany and scrub oak sub-communities. This deciduous shrub forms dense thickets with sparse understory vegetation. It typically occurs on rocky or shallow soils and is often associated with a limestone, sandstone, or shale substrate. In oak scrub, Gambel oak is the dominant shrub, comprising more than a quarter of the total vegetation cover. This sub-community occurs along the length of the project, extending from Colorado into Wyoming on the western slope of the Rocky Mountains.

Long-term construction impacts may occur on shrublands, such as sagebrush. Recovery of these habitats may take a minimum of 20 to 30 years due to poor soil and low moisture conditions.

Agriculture

Agricultural land occurs along about 6 miles (100 acres, 5 percent) of the proposed pipeline route. This community is primarily comprised of irrigated hay and alfalfa fields. These areas are used primarily for livestock grazing.

Pasture and hayfields would typically regenerate quickly after cleanup and reseeding of the construction ROW, typically within 2 years. WIC would reseed pasture and hayfields with seed mixes as requested by the landowner to restore the area to preconstruction conditions. WIC would not reseed cultivated agricultural areas unless requested by the landowner.

Woodlands

Woodlands occur along approximately 13 miles (188 acres, 10 percent) of the proposed pipeline route. Woodland sub-communities include pinyon-juniper and riparian woodland. Colorado pinyon pine and Utah juniper dominate the pinyon-juniper woodland plant community. The pinyon-juniper sub-community is highly competitive and supports a highly variable understory. The pinyon component of this sub-community increases at higher elevations. The riparian woodland sub-community occurs adjacent to surface waters and is characterized by the presence of narrow leaf cottonwood and willow.

Clearing of woodland vegetation within the construction ROW would result in long-term and permanent impacts. In this region, it is anticipated that regrowth of woodlands to mature conditions could take between 50 to 100 years, depending on the species (long-term impact). Permanent impacts to woodlands would be limited to the permanent corridor, which WIC would maintain in an herbaceous state by occasional mowing or brush clearing.

The project would be adjacent to, but would not cross riparian woodlands at the White River crossing. According to WIC's site-specific Waterbody Crossing Plan, construction would avoid large trees at this location.

While impacts resulting from construction of the Piceance Project would result in the long-term and permanent loss of woodland vegetation, the effects would be small relative to the available habitat in the region. The project also would cause a small, incremental increase in woodland fragmentation.

Unique, Sensitive, and Protected Vegetation Communities

No additional unique, sensitive, or protected vegetation communities have been identified within the project area.

3.5 Fish and Wildlife

3.5.1 Fishery Resources

The proposed route would cross four perennial waterbodies that support fisheries, including one that supports warmwater fisheries and three that support coldwater fisheries (**table 3.5-1**). These fisheries are all in Colorado; no perennial waterbodies would be crossed in Wyoming. No waterbodies are present within the boundaries of the proposed aboveground facilities; thus, there would be no impacts on fisheries at these locations.

Table 3.5-1
Perennial Fisheries Crossed by the Proposed Piceance Project

Waterbody	Milepost	Fishery Classification	Maximum Crossing Width (feet)	Number of Times Crossed	Crossing Method
Little Snake River	53.1	Coldwater	40	1	HDD
Yampa River	87.6	Warmwater	140	1	HDD
White River	127.7	Coldwater	75	1	HDD
Dry Fork Piceance Creek	135.0	Coldwater	<10	1	Flume or Dam and Pump

Representative game fish species that occur in the vicinity of the proposed crossing of the Yampa River include smallmouth bass and northern pike. Other non-game fish species having the potential to occur in the Yampa River near the proposed pipeline route include carp, fathead minnow, speckled dace, redside shiner, and bluehead sucker. Representative game species that occur in the White River include mountain whitefish, rainbow trout, brown trout, northern pike, channel catfish, and green sunfish. The Little Snake River supports a limited number of mountain whitefish and rainbow trout east of the proposed crossing below Baggs, Wyoming. Dry Fork Piceance Creek supports brook trout in non-drought years. Representative non-game species that occupy the White River, Little Snake River, and Dry Fork Piceance Creek include roundtail chub, speckled dace, redside shiner, and flannelmouth sucker.

No waterbodies potentially affected by the project contain or have the potential to contain species managed by the National Marine Fisheries Service, nor do they support essential fish habitat (EFH) as defined under the Magnuson-Stevens Fishery Conservation and Management Act. Therefore, the Piceance Project would not affect EFH.

State wildlife agencies have expressed concerns about open-cut construction across some waterbodies. In response to these concerns, WIC has prepared a site-specific Waterbody Crossing Plan (appendix F) that supplements its Procedures. We have reviewed this plan and believe it would help minimize sedimentation and ensure channel bank stabilization.

Construction-related impacts on fisheries would be primarily dependent on season of construction, duration of in-stream activities, and stream crossing methods. As stated in WIC's Procedures, construction activities at coldwater fisheries would occur from June 1 to September 30, and from June 1 to November 30 for warmwater fisheries, unless otherwise permitted or restricted by the CDOW. We note that the CDOW has indicated that instream construction should be avoided between May 15 and September 15. We further note that based on WIC's proposed construction schedule (beginning October 1), WIC would not be able to cross Dry Fork Piceance Creek within the timeframe mentioned in its Procedures. Thus, WIC would not be authorized to cross the Dry Fork Piceance Creek until a variance is granted by FERC or if the crossing method where changed to HDD. The HDD crossing of the Little Snake and White Rivers could be constructed outside of the coldwater fisheries window, as long as there are no in-stream impacts.

The Little Snake, White, and Yampa Rivers would be crossed by HDD. If successful, an HDD crossing would result in no impact on fisheries. However, a potential leak or rupture under these rivers during drilling could accidentally release muds (called a "frac-out") or disturb bottom sediments in a localized area near the rupture site. The release of drilling muds (primarily bentonite and cellulose) could cause localized increases in sediment loads and could fill interstitial gaps in the streambed, smothering habitat for benthic invertebrates, larval fish, and eggs. The amount of area impacted by a release of drilling muds would be relatively small since the consistency of the drilling muds would limit widespread dispersal along the streambed. To reduce the impacts of a frac-out WIC prepared a HDD Plan that identifies detection and monitoring procedures, response equipment, notification procedures, and corrective actions.

The Dry Fork of Piceance Creek would be crossed using a dry crossing technique in accordance with WIC's Procedures. In general, non-HDD methods can increase sediment loads and turbidity that could affect fishery resources. Increased sediment loads can alter a stream's substrate composition and fill interstitial spaces and pool habitats. Increased sediment loads can degrade the existing aquatic habitat by reducing spawning habitat, available rearing habitat, and benthic invertebrate production (the primary food supply of many fish). Increased sediment loads also can affect fish populations by suffocating eggs and newly hatched larvae living in gravels and by abrading sensitive gill membranes of both young and adult fish. However, an open-cut crossing is typically the quickest crossing method, involving 1 day or less of in-stream construction for the waterbodies crossed by the Piceance Project. Therefore, sedimentation and turbidity resulting from construction would be short term and generally limited to periods of active construction within a waterbody. Adverse effects to aquatic biota would tend to be localized. We further note that most of the waterbodies that would be crossed are intermittent, and crossing such waterbodies would have little to no impact on fisheries.

In addition, WIC would store trench spoil at least 50 feet from streambanks, use sediment barriers such as silt fence to prevent or significantly reduce runoff into streams, and complete construction as quickly as possible to shorten the duration of sedimentation and turbidity. Following completion of construction, WIC would immediately stabilize the construction site, including the streambanks (see also our recommendation regarding bank stabilization in section 3.3.2). If circumstances required a construction delay, WIC would employ adequate site stabilization measures in accordance with its Procedures and permit conditions.

Clearing and grading of vegetation within the construction ROW and additional temporary workspace areas during construction could increase erosion along streambanks and turbidity levels in the waterbodies, as well as cause localized changes in water temperature and light penetration, which could affect aquatic habitat, primary and secondary production, and fish use patterns. As stated in WIC's Procedures (V.B.2.c and VI.B.2.g), clearing of vegetation between extra work areas and the edge of waterbodies would be limited to the certificated ROW, and tree stump removal and grading activities would be limited to the trenchline only. Alteration of the natural drainages or compaction of soils by heavy equipment near streambanks during construction could accelerate erosion of the banks, runoff, and the transportation of sediment into waterbodies. The degree of impact on aquatic organisms due to erosion would depend on sediment loads, stream velocity, turbulence, streambank composition, and sediment particle size. Additionally, localized changes in water temperature and light penetration caused by the removal of boulders, woody debris, streambank vegetation, and undercut banks could temporarily displace fish that utilize these features for cover, nesting, and feeding. However, these impacts would be temporary and relatively minor due to the limited amount of total stream bank area affected per waterbody.

To minimize impacts associated with streambank erosion during construction, WIC would use equipment bridges, mats, and pads to support equipment that would cross the waterbody or work in saturated soils adjacent to the waterbody. In accordance with its Procedures and where topography allows, WIC would locate additional temporary workspace areas at least 50 feet from the edge of flowing waterbodies, except where site-specific approval has been granted, and limit clearing of vegetation between additional temporary workspace areas and the edge of the waterbody to the certificated construction ROW. WIC would implement erosion and sediment control measures (e.g., silt fence) to minimize erosion and prevent sediments from leaving the construction site and entering waterbodies. WIC anticipates completing in-stream construction activities for open-cut waterbody crossings within 12 hours, further minimizing sedimentation and channel instability impacts to fishes and their habitats.

The withdrawal and discharge of hydrostatic test water also could affect fisheries (see also section 3.3.2). WIC has identified the White (MP 127.7), Yampa (MP 87.6), and Little Snake Rivers (MP 53.1) as the sources of hydrostatic test water. The approximate water volumes that would be required, the rate of withdrawal, and the duration of the use are shown in **table 3.3-3**. Procedures to avoid uptake of organic debris or entrainment of aquatic species during water withdrawals are discussed in section 3.6.3. WIC would not use chemical additives during hydrostatic testing. WIC has proposed to return hydrostatic test water to open ground areas within the same basin as the withdrawal, rather than discharging directly into surface waters. Further discussion of hydrostatic test water withdrawals and associated impacts on federally listed species is included in section 3.6.3.

A direct spill of fuel, drilling fluids, or other hazardous materials into a waterbody could adversely affect aquatic resources. To minimize the potential for spills, WIC would implement its SPCC Plan, which specifies preventive measures such as personnel training, equipment inspection, and refueling procedures to reduce the likelihood of spills, as well as mitigative measures, such as containment and cleanup, to minimize potential impacts should a spill occur. The SPCC Plan restricts the location of fuel storage, fueling activities, and construction equipment maintenance along the construction ROW and provides procedures for these activities. Training and lines of communication to facilitate the prevention, response, containment, and cleanup of spills during construction activities also are described in the SPCC Plan.

Adherence to the SPCC Plan would prevent a large spill from occurring near surface waters because fuels storage and construction equipment fueling by mobile tankers or mobile tanks is prohibited within 100 feet of the waterbody bank. If a small spill were to occur, adherence to measures in the SPCC Plan would decrease the response time for control and cleanup of the spill, thus avoiding or minimizing the effects of a spill on aquatic resources.

3.5.2 Wildlife Resources

The predominant wildlife habitats along the proposed pipeline route consist of grassland, shrub-scrub (sagebrush, salt desert shrub/greasewood, foothill shrub-scrub), woodlands (pinyon-juniper), wetlands, and agricultural land. These vegetation types support a diversity of wildlife species. This section focuses on species of high economic and/or recreational importance and those that are considered sensitive to human disturbance.

In total, construction activities would result in the incremental long-term disturbance of approximately 1,884 acres of wildlife habitat. However, due to the linear nature of the Piceance Project over a large geographic area, this acreage represents far less than 1 percent of the available wildlife habitat on a regional basis.

Potential impacts to terrestrial wildlife species from the proposed Piceance Project can be classified as short-term, long-term, and permanent. Short-term impacts consist of activities associated with project construction and changes in wildlife habitats lasting less than 5 years. Long-term impacts would consist of changes to wildlife habitats lasting 5 years or more. Permanent impacts result from construction of aboveground facilities that convert natural habitat to natural gas operations. The severity of both short- and long-term impacts would depend on factors such as the sensitivity of the species impacted, seasonal use patterns, type and timing of project activities, and physical parameters (e.g., topography, cover, forage, climate).

Less mobile or burrowing species may be killed as a result of crushing from construction vehicles and equipment. Other potential impacts include habitat loss or alteration, habitat fragmentation, and animal displacement. Individuals may be permanently displaced and perish due to increased competition or other effects of being forced into sub-optimal habitat. Indirect impacts from increased noise and additional human presence also could lead to displacement and lowered fitness. Although the habitat adjacent to the construction zone may support some displaced animals, any species that is at or near its carrying capacity could exhibit increased localized mortality.

Habitat fragmentation is frequently a concern when clearing ROWs. In general, fragmentation can result in an altered wildlife community as species more adaptable to edge habitats establish themselves, while species requiring undisturbed habitats are subject to more negative effects. However, fragmentation disturbance to wildlife and wildlife habitats from the proposed Piceance Project is not expected to be significant because a majority of the construction would be adjacent to or overlap an existing cleared natural gas ROW. Thus, new edge habitat would replace existing edge habitat. In addition, most of the pipeline would cross relatively open habitat types (e.g., grassland, agriculture, shrubland). As such, we believe the effects of habitat fragmentation would not be significant.

Trenching activities could hinder the movement of livestock, horses, and/or wildlife. As stated in WIC's revised Plan (appendix B), WIC has committed to placing earthen trench plugs, with ramps on either side, at

1-mile intervals along the trench as well as at well-defined livestock and wildlife trails intersected by the trench to minimize potential impacts to wildlife, horses, and livestock. WIC would leave breaks in the strung and welded pipe, topsoil, and spoil piles at locations that correspond to the earthen trench plugs to allow movement of wildlife and livestock across the construction ROW. WIC would consult with the BLM regarding specific placement of trench plugs and ramps on lands managed by the BLM.

Operation of the proposed pipeline would require the permanent maintenance of a 50-foot-wide ROW corridor. In wetlands, a 50-foot-wide ROW would be maintained clear of trees taller than 15 feet, with 10 feet of this permanent ROW maintained clear of all woody vegetation. In addition, 1.2 acres associated with aboveground pipeline facilities (e.g., pig launcher/receiver and MLVs) would be permanently converted for natural gas operations. As a result, approximately 860 acres of wildlife habitat would experience incremental long-term or permanent impacts. These acreages represent far less than 1 percent of available wildlife habitat on a regional basis. In many cases, the acres affected by operational impacts would be included in the acres of long-term impacts attributed to construction, given the long recovery period of vegetation in the region.

Operation of the pipeline also could result in future surface disturbance activities due to maintenance of the pipe (e.g., pothole inspections, repair of pipe, replacement of rectifier beds). We do not anticipate that noise levels from operation of the proposed CIG Greasewood Compressor Station and/or CIG Wamsutter Compressor Station modifications would result in a significant impact on wildlife resources. WIC would follow its POD and other measures referenced in this EIS to minimize impacts to wildlife and their habitats during pipeline operation.

Big Game

The primary big game species that occur within the project area are elk, mule deer, and pronghorn antelope (pronghorn). White-tailed deer also could be present. Certain habitat ranges for these species are considered crucial for maintenance of game populations. In Wyoming, WGFD and the BLM have established several categories based on seasonal use of the habitat. For example, crucial winter range areas are considered essential in determining a game population's ability to maintain itself at a certain level over the long term. Other regions may not usually be a part of a herd's range, but are used as survival areas during extremely harsh winters. Likewise, the CDOW has identified critical winter habitat ranges for elk, mule deer, and pronghorn in Colorado. **Table 3.5-2** summarizes the linear miles and acreage of disturbance that would occur within important big game ranges along the project route.

Elk inhabit a variety of habitats along the project route including grassland, shrubland, pinyon-juniper woodland, and, to a lesser extent, agricultural and pasture lands. Approximately 32.7 miles of winter range for elk would be crossed by the project ROW in Rio Blanco and Moffat Counties in western Colorado. This accounts for two critical winter range areas identified by CDOW as having a No Activity restriction between December 1 and April 15 (Petch 2005). The first critical winter range in Colorado occurs in Moffat County from the vicinity of Mud Spring Draw to the mouth of Deception Creek Canyon. A portion of this critical area is located on the Bitter Brush State Wildlife Area (SWA). The second area encompasses the area from the White River to the CIG Greasewood Compressor Station in Rio Blanco County. No elk crucial winter range would be crossed by the project ROW in Wyoming.

Table 3.5-2
Crucial/Critical Big Game Habitats Affected by the Piceance Project

State/Habitat Type	Milepost Locations	Total Length Crossed (miles)	Acreage Affected During Construction[1]	Acreage Affected by Permanent Facilities[2]
COLORADO[3]				
Elk, Mule Deer, and Pronghorn Critical Winter Habitat	82.0 to 99.0	17.0	453	<1
	126.0 to 141.7	15.7		
WYOMING[4]				
Mule Deer Crucial Winter Habitat	48.5 to 51.9	3.4	42	0
Pronghorn Crucial Winter/Yearlong Habitat	0.0 to 3.1	3.1	104	0
	47.5 to 51.9	4.4		

[1] Based on a 85-foot-wide construction ROW, aboveground facilities, and additional extra workspace areas, but does not include pipe contractor yards or temporary access roads.
[2] Permanent aboveground facilities impacting crucial big game habitats is represented by one MLV in Moffat County.
[3] Colorado Source: Petch 2005.
[4] Wyoming Source: WGFD 2005.

Mule deer occur throughout the majority of the project region, inhabiting virtually all vegetation types, but reach the greatest densities in shrublands on rough, broken terrain, which provide abundant browse and cover. Critical winter range for mule deer in Colorado is the same as described above for elk. In addition, approximately 3.4 miles of crucial winter range would be crossed by the project route in Sweetwater County in Wyoming.

Pronghorn are generally found in prairie grassland and semi-desert shrubland habitats on flat to rolling terrain with good visibility. They are most abundant in short- or mid-grass prairies and are least common in xeric habitats. Critical winter range for pronghorn in Colorado is the same as described above for elk and mule deer, including two important winter ranges, as described above for elk. In addition, approximately 7.5 miles of crucial winter/yearlong range would be crossed by the Piceance Project route in Sweetwater County in Wyoming.

In Colorado, the proposed pipeline route would cross two SWAs; the Piceance Creek SWA and Bitter Brush SWA (both owned by the CDOW). The Piceance Creek SWA would be crossed by the pipeline ROW at two locations (MP 131.7 to MP 134.3, and MP 134.7 to MP 135.4) in the area immediately south of the White River. The Bitter Brush SWA is located along Deception Creek, south of the Yampa River (MP 89.2 to MP 91.9). Both of these SWAs constitute a portion of the big game critical winter range areas described above. Construction activities would result in the long-term incremental reduction of approximately 65 acres of habitat in the Piceance Creek SWA, and approximately 31.4 acres of habitat in the Bitter Brush SWA in Rio Blanco and Moffat Counties, respectively. On a regional basis, these acreages of disturbance would represent a small percentage (less than 1 percent) of the overall available habitat within these areas. No

Wildlife Habitat Management Areas would be crossed by the proposed route in Wyoming. State lands are discussed further in section 3.7.1.

The Piceance Creek SWA was purchased by the CDOW to provide hunting opportunities and winter range for deer and elk. The purchase of the Piceance Creek SWA was made with Federal Aid in Wildlife Restoration Act grant funds. Therefore, CDOW would need to obtain the approval of the Regional Director, Region 6, FWS, through grant amendments, prior to their approval of easements for the construction of the pipeline through this area.

The Piceance Creek SWA contains suitable habitat for nesting raptors (including American peregrine falcon, eagles, and northern goshawk), sage grouse, and mountain plover. The SWA also provides potentially suitable habitat for special status plant species such as Piceance bladderpod, Dudley Bluffs bladderpod, narrow-stem gilia, Dudley Bluffs twinpod (a.k.a. Piceance twinpod), and Ute ladies'-tresses. However, none of the above mentioned species were observed during the 2004 and 2005 field surveys within 2 miles of the proposed Piceance Project ROW where it crosses the Piceance Creek SWA. Protection and mitigation measures for these species are discussed in section 3.6, as well as WIC's Conservation Measures Plan (appendix H).

Construction impacts to big game species (elk, mule deer, and pronghorn) would include the incremental loss of potential forage (native vegetation and previously disturbed vegetation) and would result in an incremental increase in habitat fragmentation within the proposed surface disturbance areas. However, as noted above, these incremental losses of vegetation would represent only a small percent of the overall available habitat within the broader project region. The loss of native vegetation would be long-term (greater than 5 years and, in some cases, more than 20 years). In the interim, herbaceous species may become established within 3 to 5 years, depending on future weather conditions and grazing management practices that would affect reclamation success in the project region. In most instances, suitable habitat adjacent to the disturbed areas would be available for wildlife species until grasses and woody vegetation were reestablished within the disturbance areas. The WGFD has indicated that reclamation seed mixes for big game habitat are being developed. Therefore, WIC would coordinate with WGFD's wildlife biologist to determine an appropriate seed mix for reclaiming these areas.

Indirect impacts would result from increased noise levels and human presence during surface disturbance activities. Big game animals (especially pronghorn and mule deer) likely would decrease their use within 0.5 mile of surface disturbance activities due to increased noise levels (Ward et al. 1980; Ward 1976). This displacement would be short-term and animals would return to the disturbance area following construction activities. However, assuming the adjacent habitats are at or near carrying capacity, and given the current drought conditions in the project region, displacement of wildlife species (e.g., big game) as a result of construction could cause some unquantifiable reduction in wildlife numbers. WIC would minimize potential blasting impacts on wildlife by adhering to sensitive big game habitat timing restrictions and coordinating with the appropriate agency (local BLM FO, CDOW, WGFD, FWS) prior to blasting.

In accordance with BLM and CDOW recommendations, WIC would avoid critical winter range for elk, mule deer, and pronghorn in Colorado between December 1 and April 30. However, WIC has indicated that agreements have been received from CDOW (via easement agreements) to construct within critical big game winter habitat, up to December 31 between MP 88.9 and MP 99.0. The BLM's Little Snake FO has indicated that because of the isolated nature of the public land parcels between MP 88.9 and MP 99.0, and the determination of the CDOW concerning construction timing windows on adjacent SWA lands, BLM would agree to the exemption and would allow construction activities on these parcels between December 1 and December 31 as long as CDOW continued to apply the same closure date to adjoining state owned properties. The area at the Bitter Brush SWA and north of the Yampa River (MP 82.0 to MP 99.0) is complicated by the need to mitigate archaeological concerns in the area. Although archeological mitigation may be authorized to begin following any certification by the FERC and following completion of the Section 106 process, it is unknown at this point whether archaeological mitigation could be completed in time to have a mini-crew start and finish construction in this reach. WIC has submitted a letter to the CDOW requesting a variance to the No Activity restriction. WIC would not be authorized to construct in a CDOW or BLM No Activity location during restricted dates without approval from the CDOW and BLM.

In accordance with the recommendations of the BLM Rawlins FO and WGFD, WIC would avoid crucial big game winter habitat in Wyoming between November 15 and April 30. WIC plans to have a mini-crew construct the northernmost 3.1 miles of Spread 2 (MP 0.0 to MP 3.1) in order to complete construction before November 15, 2005. The main spread is expected to complete construction between MP 47.5 and MP 51.9 before November 15 as well. WIC would not be authorized to construct within the exclusion window in crucial winter habitat without approval from the WGFD and BLM.

WIC has scheduled its southern construction spread (Spread 1) to commence construction at the Yampa River (MP 87.6) and to proceed north to the spread break (MP 75.6). Spread 1 also would start construction simultaneously at the CIG Greasewood Compressor Station (MP 141.7) and work north, completing the critical segment between MP 126.0 and MP141.7 before December 1, 2005.

Spread 2 will commence construction at MP 75.6 and work north. Construction located in crucial habitat between MP 47.5 to MP 51.9 is scheduled to be completed before November 15, 2005. In order to eliminate the need for a test manifold at MP 50, WIC has added a hydrostatic test section at this location.

Operational activities occurring from permanent aboveground facilities (i.e., compressor stations, pigging facilities, metering stations, and MLVs) would result in the additional permanent loss of less than 1 acre of critical winter habitat for elk, mule deer, and pronghorn in Colorado. This permanent disturbance would result from the construction and maintenance of one MLV (MP 87.9) in Moffat County. No permanent aboveground facilities would be constructed within big game crucial winter habitat in Wyoming.

Small Game Species

Small game species that occur within the project region include upland game birds, waterfowl, furbearers, and other small mammals. Furbearers include beaver, muskrat, mink, badger, bobcat, coyote, red fox, and swift fox. Small game species include greater sage grouse, mourning dove, white-tailed jackrabbit, desert cottontail, Nuttall's cottontail, and a number of migratory waterfowl. The greater sage grouse is considered the most sensitive small game species along the project route and is discussed further in section 3.6.

Potential impacts on small game from the proposed project would result in the incremental loss of habitat and increased habitat fragmentation until reclamation has been completed and native vegetation is reestablished. Potential direct impacts on small game species would include nest or burrow abandonment or loss of eggs or young. Indirect impacts could include the temporary displacement of small game from the disturbance areas as a result of increased noise and human presence. Displacement of small game animals from disturbance areas would be short term and animals would be expected to return to the disturbance areas following construction activities.

Nongame Species

A diverse number of nongame species (e.g., small mammals, raptors, passerines, amphibians, and reptiles) occupy a variety of trophic levels and habitat types along the proposed pipeline ROW. Common wildlife species include small mammals such as bats, voles, squirrels, gophers, prairie dogs, woodrats, and mice. These small mammals provide a substantial prey base for the area's predators including larger mammals (coyote, badger, bobcat), raptors (eagles, buteos, accipiters, owls), and reptiles.

In order to minimize potential impacts on smaller, less mobile species, WIC has committed to capping uncovered pipe that has been placed in the trench at the end of each workday to prevent animals from entering the pipe. In addition, EIs or biological monitors would remove animals (including nongame and small game species mentioned above) from open trenches during construction.

Raptors and Other Migratory Birds

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) (16 USC 703-711) and EO 13186 (66 FR 3853). The MBTA serves to protect migratory birds from deleterious impacts. EO 13186 was enacted to, among other things, ensure that environmental analyses of federal actions evaluate the impacts of actions and agency plans on migratory birds.

Other elements of the EO state that the federal agency should restore and enhance the habitat for migratory birds and abate the detrimental alteration of the environment from pollution. EO 13186 also states that emphasis should be placed on species of concern, priority habitats, and key risk factors. General impacts to migratory birds and WIC's proposed measures to minimize such impacts are discussed below. Federally listed and other sensitive bird species are discussed in section 3.6.2.

Migratory birds are considered integral to natural communities and act as environmental indicators based on their sensitivity to environmental changes caused by human activities. Some of the more visible bird species that occur within the project region are lark bunting, brewer's sparrow, and chipping sparrow.

Four general vegetation communities would be affected by the Piceance Project: shrubland (1,540 acres), woodland (189 acres), agriculture (100 acres), and grassland (77 acres). Sagebrush is the most widespread shrubland sub-community. Migratory bird species that use this habitat type in the project area for nesting include Brewer's sparrow, sage sparrow, and sage thrasher (Nicholoff 2003). Common migratory birds within the woodland community (mainly pinyon-juniper) include the gray flycatcher, chipping sparrow, and blue-gray gnatcatcher. Grassland is frequented by such migratory birds as the horned lark, lark bunting, and vesper sparrow (Beidleman 2000). Habitat fragmentation and "edge effects" are concerns for nesting migratory birds along the Piceance Project ROW. These effects could result in overall changes in habitat quality, habitat loss, increased animal displacement, reductions in local wildlife and migratory bird numbers, and changes in species composition. However, the severity of these effects on migratory birds depends on factors such as sensitivity of the species, seasonal use, type and timing of project activities, and physical parameters (e.g., topography, cover, forage, climate). Approximately 116 miles, or 82 percent of the proposed pipeline ROW, parallels existing pipeline and powerline easements. The areas where the Piceance Project does not parallel existing ROW consist of shrubland (approximately 212 acres, 18 miles), agriculture (approximately 64 acres, 5.4 miles), and woodland (approximately 29 acres, 2.2 miles).

Because a majority of the construction would be adjacent to or overlap an existing ROW, new edge habitat would replace existing edge habitat. In addition, most of the pipeline would cross relatively open habitat types (e.g., grassland, agriculture, and shrubland) rather than fragmenting dense woodland habitat. As such, we believe the effects of habitat fragmentation to migratory birds and their habitats from the proposed Piceance Project would not be significant.

Representative raptor species that occur as residents or migrants within the project region include eagles (bald and golden eagles), buteos (e.g., red-tailed hawk, Swainson's hawk, ferruginous hawk), falcons, (e.g., peregrine falcon, prairie falcon, American kestrel), accipiters (northern goshawk, Cooper's hawk, sharp-shinned hawk), owls (e.g., great-horned owl, burrowing owl, long-eared owl, short-eared owl), the northern harrier, and the turkey vulture. A total of 189 nest sites were identified as occurring in the project vicinity. Raptor nest locations identified during WIC's 2004 survey are listed in appendix H, Conservation Measures Plan, appendix E-2. For most nests, biologists were unable to determine the associated species. However, species identification was determined for nine of the nests. In Wyoming, nests were found to be occupied by golden eagle (1) and prairie falcon (1). In Colorado, nests were occupied by bald eagle (2), golden eagle (2), burrowing owl (1), American kestrel (1), and great-horned owl (1). The BLM identified two tracts of potential northern goshawk nest habitat, both occurring south of the White River in pinyon-juniper habitat; one site occurs in scattered habitat between MP 129.5 and MP 134.9 while the other area is located between MP 134.9 and MP 141.7.

WIC does not currently propose to construct the Piceance Project during the raptor nesting season (typically from mid-February through mid-August); therefore, we do not anticipate direct effects to nesting raptors. **Should construction extend into the raptor nesting season, we recommend that WIC conduct additional pre-construction raptor nest surveys in accordance with agency (BLM, state wildlife agency, and FWS) approved protocols. Results of the raptor nest surveys should be reported to the appropriate BLM FO, state wildlife agency, and FWS Western Colorado FO for review and reconsideration of appropriate protective buffers. Further, we recommend that WIC report the results of any pertinent communications it has with the BLM, FWS, CDOW, and WGFD with the Secretary and should not begin construction until the FERC staff has reviewed the information, completed any necessary consultations with the FWS, and the Director of OEP notifies WIC in writing that construction or use of mitigation may begin.**

In order to minimize impacts on raptors (should construction extend into the raptor breeding season), the BLM and FWS recommend seasonal restrictions and buffers for raptor nests. The seasonal restriction is typically from mid-February to mid-August, although the period may be adjusted based on site-specific factors (e.g., distance, topography, and natural barriers; pre-existing conditions such as highways; and the specific activity of a given nest). In the Department of the Interior letter dated June 15, 2005, the FWS Western Colorado FO recommended that WIC adopt state-specific buffer zones for nesting raptors in the project area (FWS 2005). In Wyoming, WIC would follow FWS protection measures, which require 1.0 mile avoidance zones for ferruginous hawks and bald eagles (including roosts), and 0.5 mile avoidance zones for all other raptors (including burrowing owls). Avoidance zones in Colorado have been established by the CDOW and are acceptable to the FWS. These avoidance zones range from 75 yards for burrowing owls to 0.5 mile for bald eagles and ferruginous hawks. However, there may be exceptions to the tolerance limits a given species is thought to exhibit, especially in wide open or remote country. Therefore, buffers may require modification to ensure that raptors continue to occupy the area. Environmental monitors, qualified in raptor ecology, should observe known nests for behavioral changes that may indicate possible abandonment and, after coordination with the FWS, buffers should be adjusted accordingly. Raptor nests and roosts on federally managed land may have different buffers, based on BLM requirements. Certain sensitive non-raptor bird species also have seasonal and spatial considerations (e.g., mountain plover and sage grouse; see section 3.6). On federal land, the BLM is the agency responsible for including BLM-approved land use stipulations or conditions consistent with BLM RMPs for protecting nesting raptors and migratory birds.

Likewise, any construction that was to extend into spring would overlap the start of the breeding season for other migratory birds. Depending on the specific habitat, birds of several species (e.g., long-billed curlew; loggerhead shrike; sage thrasher; and several jays, warblers, and sparrows, among others) could be directly affected by WIC's construction of the Piceance Project. FWS has indicated that construction activities should occur outside the nesting season for all migratory birds (FWS 2005).

The removal of suitable foraging and nesting habitat can be considered a type of direct impact on migratory birds. This type of impact cannot be avoided altogether during construction; however, WIC has proposed measures that would minimize it to the extent practicable. This EIS discusses several of WIC's plans (e.g., WIC's Plan, Procedures, SPCC Plan, and POD) that would reduce the extent and duration of impacts on migratory bird habitat, actively and naturally allow a great majority of the construction ROW to return to pre-construction condition, and limit the potential effects from spills or environmental contamination. For example, WIC has committed to reducing the construction ROW width in wetlands (favorable habitat for many bird species) and would restore upland vegetation habitats (e.g., grassland and shrub-scrub) in the construction ROW to preconstruction conditions.

We believe that if blasting is deemed necessary, blasting effects to nesting birds and other wildlife should be taken into consideration and minimized to the extent practicable, including establishing protective buffers as appropriate. Therefore, **we recommend that prior to construction, WIC contact the FWS (and BLM on federal land) for guidance regarding mitigation measures that may be necessary to protect raptor nests, roost sites, or other wildlife concerns where blasting is anticipated along the Piceance Project ROW. The results of any such coordination should be filed with the Secretary for the review and approval of the Director of OEP. The filing should specify the specific locations (by MP) where blasting may occur, known raptor and roost locations within the general vicinity of the blasting, and**

mitigation measures that should be implemented to minimize impacts on nesting raptors, roost sites, or other wildlife concerns.

We note that EO 13186 requires federal agencies to avoid or minimize negative impact to migratory bird populations. The executive order also requires the federal agency to identify where unintentional "take" is likely to have a measurable negative effect on migratory bird populations. Effects to non-sensitive ground-nesting birds (which do not have significantly reduced populations) would not result in long-term or significant population-level effects, given the stability of local populations and the abundance of available habitat outside of the proposed ROW, and the linear nature of the project over a large geographic range (see also our discussion on the burrowing owl, an underground-dwelling raptor, in section 3.6.2).

Because of WIC's proposed construction schedule, its measures to minimize habitat disturbance, and our recommendations, we conclude that the proposed Piceance Project would not result in population-level impacts on migratory bird species.

3.6 Special Status Species

Special status species are those species for which state or federal agencies afford an additional level of protection by law, regulation, or policy. Included in this category are federally listed and federally proposed species that are protected under the ESA or are considered as candidates for such listing by the FWS, and those species that are state-listed as threatened or endangered. For this EIS, special status species also include those species that have been designated by the BLM as sensitive.

WIC, acting as the FERC's non-federal representative for the purpose of complying with Section 7(a)(2) of the ESA, initiated informal consultation with the FWS on July 13, 2004, regarding federally listed species with the potential to be affected by the proposed project. Initial consultations concluded that the Grand Junction, Colorado FO of the FWS would serve as the lead office for project consultations.

In accordance with Section 7 of the ESA, the lead agency (in this case, the FERC), in consultation with the FWS, would ensure that any action authorized, funded, or carried out by the applicant does not jeopardize the existence of a federally listed threatened or endangered species, or result in the adverse modification of the designated Critical Habitat of a federally listed species. We previously requested that the FWS consider the draft EIS as our BA for the proposed project, and the resulting Section 7 consultation has not yet been completed. Our recommendations (detailed below, as applicable) would ensure that WIC would not be authorized to begin project work until any necessary comments, concurrence, or formal consultation is completed between the FERC and the FWS regarding the proposed action.

In addition, as stated in Special Status Species Management Policy 6840 (Policy 6840) (Rel. 6-121), it is BLM policy "to conserve listed species and the ecosystems on which they depend, and to ensure that actions requiring authorization or approval by the BLM are consistent with the conservation needs of special status species and do not contribute to the need to list any special status species, either under the provisions of the ESA, or other provisions" identified in Policy 6840.

The construction impact analysis for special status plant and wildlife species focused on those species that were identified as potentially occurring within the project area. Special status plant and animal species originally considered for the proposed project are presented in appendix J. Our evaluation determined that some of these species are highly unlikely to occur in the project area or would otherwise not be affected by WIC's proposed action. We provide our comments on these species in appendix J and do not discuss them further.

Applicant-committed protection measures that have been developed for the project to prevent or minimize direct impacts on special status species are included in WIC's Draft Conservation Measures Plan (appendix H, WIC 2005e), also filed with the BLM as a part of WIC's POD. The Draft Conservation Measures Plan contains WIC's proposed measures that it would implement if federally listed species or species of concern were identified along the proposed pipeline route during project-specific or species-specific surveys. We have reviewed WIC's Draft Conservation Measures Plan and proposed mitigation measures and believe that, in general, these measures would reduce project-related impacts on special status species. We have included additional recommendations, where necessary, to ensure that impacts on special status species are minimized to the greatest extent practicable.

3.6.1 Plant Species

A total of 14 sensitive plant species were originally identified as potentially occurring within the project area. These species, their associated habitats, and their potential for occurrence along the project route are summarized in appendix J. Occurrence potential along the project route was evaluated for each species based on its habitat requirements and/or known distribution. Based on these evaluations, six plant species (Park rockcress, ephedra buckwheat, Utah genetian, narrow-leaf evening primrose, Rollins cryptanth, and western prairie-fringed orchid) were eliminated from detailed analysis. The remaining eight plant species are analyzed in greater detail.

Potential impacts on sensitive plant species from surface-disturbing activities could include the loss of individuals as a result of crushing from construction vehicles and equipment. Construction-related impacts also could result in the incremental long-term disturbance of habitat for these species along portions of the project route and at ancillary facilities (i.e., compressor stations, metering stations, MLVs, extra workspaces, and pipe and contractor yards). Because surface disturbance within the project area would be localized and distributed over a large geographic area, population-level impacts on sensitive species are not anticipated. Nevertheless, construction activities could potentially affect local populations of special status plant species within the project area. Species-specific impact summaries, WIC's committed conservation measures, additional mitigation measures, and our recommendations and determination statements (as applicable) are presented below.

<u>Federally Listed Plants</u>

Dudley Bluffs Bladderpod, Dudley Bluffs Twinpod (also known as Piceance Twinpod), and Ute ladies'-tresses. The Dudley Bluffs bladderpod and Dudley Bluffs twinpod are found on the Thirteen Mile tongue portion of the Parachute Creek Member of the Green River Formation. Ute ladies'-tresses are known to occur in moist soils near wetland meadows, springs, lakes, and perennial streams between 4,200 and 7,000 feet elevation. None of these federally listed plant species were observed along the proposed pipeline ROW during WIC's 2004 surveys. Potentially suitable habitat for Dudley Bluffs bladderpod and Dudley Bluffs twinpod exists within the project ROW between MP 128.0 and MP 141.7, and potentially suitable habitat for Ute ladies'-tresses was observed at several locations along the ROW in Colorado. WIC has committed to conducting pre-construction surveys for these plant species in suitable habitat. Although surveys were completed in 2004, the FWS will require additional surveys in 2005. **We recommend that prior to conducting surveys, WIC should coordinate with the FWS to ensure proper survey timing and protocols. We further recommend that, prior to the start of construction, WIC should file the following information with the Secretary:**

a. name(s) and qualifications of the person(s) conducting the survey;

b. method(s) used to conduct the survey;

c. date(s) of the survey;

d. **area surveyed (include the mileposts surveyed); and**

e. **results of the surveys, to indicate species presence or absence.**

In order for us to complete our ESA Section 7 obligations, if a federally listed plant species is found during the preconstruction surveys, **we recommend that WIC notify the Commission staff, the FWS, and the BLM (for plants found on BLM-managed lands) before commencing any project construction activity. This notification should contain WIC's evaluation of whether or not the plant(s) could be avoided by fencing, reroute, or by the use of a horizontal bore. Further, WIC should not begin construction activities until:**

a. **the staff receives comments from the FWS regarding the proposed action;**

b. **the staff completes formal consultation with the FWS, if required; and**

c. **WIC has received written notification from the Director of OEP that construction or use of mitigation may begin.**

Determination Statement

Effect on Critical Habitat: No effect. No Critical Habitat for federally listed plants has been designated within the project area.

Effect on the Species: We conclude that the Piceance Project *may affect, but is not likely to adversely affect* the Dudley Bluffs bladderpod, Dudley Bluffs twinpod (also known as Piceance twinpod), and Ute ladies-tresses. Our determination is based on 1) negative results for the 2004 surveys; 2) our analysis of WIC's proposed action and mitigation plans (e.g., WIC's Plan and Procedures, Draft Conservation Measures Plan, Weed Plan); and 3) our recommendations.

BLM Sensitive Plant Species

Debris Milkvetch, Nelson Milkvetch, Narrow-stem Gilia, Piceance Bladderpod, and Gibben's Beardtongue. Debris milkvetch occurs in pinyon-juniper woodland and mixed desert shrub, often on rocky soils ranging from sandy clays to sandy loams. It also occurs on alluvial terraces with cobbles. WIC's 2005 surveys identified 6 populations of debris milkvetch within the project vicinity. Each location varies in population size and proximity to the centerline. BLM has indicated that additional debris milkvetch surveys will be required in July 2005. Mitigation measures will be determined pursuant to the results of this survey. Per BLM's request, **we recommend that WIC submit the 2004 and 2005 survey results for debris milkvetch to the FWS for review. Prior to construction, WIC shall file with the Secretary correspondence confirming that the FWS has received these survey results.**

WIC would survey for BLM sensitive plants in suitable habitat prior to construction. WIC further states that it would attempt to avoid any such plants by the use of fencing or a reroute, and that it would transplant any

BLM sensitive plants that could not be avoided. We note that the following protection measures would be included in the BLM ROD and ROW Grant for BLM lands:

- WIC would coordinate with the BLM to determine if additional mitigation measures or other appropriate actions would be required to reduce potential impacts to the population. WIC would not be authorized to proceed with construction until any BLM required mitigation had been implemented in accordance with the BLM ROW Grant.
- The Field Manager may grant an exception if the ground plant inventory is conducted and an analysis indicates that the nature or conduct of the action as proposed would not directly or indirectly contribute to the need to list or perpetuate listings under the ESA or the BLM special status species policy provisions. An inventory would determine, to the extent practical, the occurrence, distribution, population dynamics and habitat condition and significance on BLM lands with respect to maintaining or restoring those species.

WIC would monitor and implement the Conservation Measures Plan to ensure actions are consistent with recovery needs. Topsoil would be segregated for ditch line and spoil storage areas containing sensitive plants to ensure adequate topsoil is segregated and would replace the topsoil to ensure the seed bank is returned to the affected area.

Implementation of WIC's Weed Plan would minimize the introduction and/or spread of invasive plant species. We believe that the Piceance Project may impact individual plants but is not likely to cause a trend to federal listing or loss of viability for these plant species.

3.6.2 Terrestrial Animal Species

A total of 25 sensitive terrestrial species (mammals, birds, reptiles, amphibians) were originally identified as potentially occurring within the project area. These species, their associated habitats, and their potential for occurrence along the project route are summarized in appendix J. Occurrence potential along the project route was evaluated for each species based on its habitat requirements and/or known distribution. Based on these evaluations, two species (swift fox and yellow-billed cuckoo) were eliminated from detailed analysis since the Piceance Project would not affect these two species. The remaining 23 terrestrial wildlife species are analyzed in greater detail, below.

Potential impacts to sensitive species from surface disturbance activities would include the loss (short-term, long-term, or permanent), alteration, or fragmentation of potential breeding and/or foraging habitats. Potential impacts also could result in mortalities of less mobile or burrowing species as a result of crushing by vehicles and equipment, and the potential abandonment of a nest site or territory and the loss of eggs or young. Other impacts would include short-term displacement of some of the more mobile species from the disturbance areas as a result of increased noise and human presence.

Federally Listed Animal Species

Black-footed Ferret. The federally endangered black-footed ferret was once distributed throughout the high plains of the Rocky Mountains and western Great Plains regions, but is now thought to be the rarest mammal in the U.S. In general, ferrets are secretive, primarily nocturnal, and rarely observed.

The black-footed ferret was considered extirpated from the U.S. until a small population was discovered in Wyoming in 1981. A captive breeding and re-introduction program, guided by the FWS, established some experimental/nonessential populations in Wyoming, Montana, South Dakota, and Arizona; however, ferret reintroduction efforts in Wyoming were suspended in 1995 because of disease. No reintroduced populations were established in the proposed project area; however, the project location is within the historic range of the ferret. There are no recent sight records although, according to the Wyoming Natural Diversity Database, a ferret skull was found in Sweetwater County in 2000.

Black-footed ferrets are found in association with prairie dog colonies in grasslands and shrublands, and are highly dependent on prairie dog towns for both food and shelter. All active prairie dog towns or complexes of towns large enough to support ferrets are considered to be potential habitat.

In Wyoming, black-footed ferret surveys are no longer recommended in black-tailed prairie dog towns or in white-tailed prairie dog towns except those noted in a February 2, 2004, letter from the FWS. The white-tailed towns found in Townships 13N to 20N, Range 94W have not been cleared and may have to be surveyed. Some prairie dog towns in eastern Colorado have been block cleared and surveys for ferrets are no longer recommended. No block clearances of white-tailed prairie dogs are in place in western Colorado. However, the FWS has designated prairie dog towns in Moffat County, Colorado, and Sweetwater County, Wyoming, as experimental populations. These populations are considered low probability of ferret occurrence and are designated as potential ferret introduction sites. These areas, as mentioned above, do not require ferret searches. The FWS encourages project applicants to protect all prairie dog towns for their value to the prairie ecosystem and the myriad of species that rely on them.

To better understand the current status of white-tailed prairie dogs in the Wyoming portion of the project area, **we recommend that WIC provide maps of all white-tailed prairie dog towns within 0.5 mile of the outside edge of the ROW to the FWS for review.** With this information the FWS can assist in determining whether ferret surveys are warranted, and if so, on which towns.

WIC identified four active white-tailed prairie dog towns that would be crossed by the Piceance Project route in Wyoming (MP 0.0 to MP 30.1) (WIC 2005f). WIC has indicated that if prairie dog complexes over 200 acres in size would be crossed, it would coordinate with the FWS to determine survey requirements and colony protection measures. The pipeline's route from the Wamsutter Compressor Station (MP 0.0) to MP 12 in Sweetwater County was considered a potential site for ferret searches based on the BLM's survey using aerial mapping of prairie dog burrows and WIC's 2004 survey suggesting a continuous complex of burrows in this same area. The 2005 survey confirmed the existence of a 51-acre town south of the Wamsutter Compressor Station plus two locations of burrows in the Uinta Basin Lateral's trenchline occupied by prairie dogs at MP 5.35 and MP 5.7. A visual inspection of burrows between MP 0.0 and MP 15.0 showed that 99 percent of the burrows were either abandoned or occupied by ground squirrels.

The 51-acre town and two sets of burrows does not meet the 200-acre minimum in a complex per the FWS's ferret search guidelines from April 1989. However, the extent of the prairie dog complexes (colonies less than 4.3 miles apart) and review of prairie dog town mapping within 0.5 mile of the ROW still needs to be reviewed by the FWS. Therefore, **if prairie dog survey results indicate the need for protocol ferret surveys, we recommend that WIC not begin construction activities until:**

a. the staff receives comments from the FWS regarding the proposed action;

b. the staff completes formal consultation with the FWS, if required; and

c. WIC has received written notification from the Director of OEP that construction or use of mitigation may begin.

Determination Statement

Effect on Critical Habitat: No effect. No Critical Habitat has been designated for this species.

Effect on the Species: We conclude that the Piceance Project *may affect, but is not likely to adversely affect* the black-footed ferret. This determination is based on the low potential for occurrence by this species within the project area, WIC's commitment to conduct pre-construction surveys, and our recommendations.

Bald Eagle. The bald eagle is currently federally listed as threatened. Historically, populations of bald eagles were drastically reduced principally due to low productivity as a result of the bioaccumulation of pesticides. Since the banning of organochlorine pesticides such as DDT (dichlor-diphenyl-trichloroethane), bald eagle numbers have been increasing, leading to the species being proposed for federal delisting on July 4, 1999, as recovered. The bald eagle will, however, remain protected under the ESA until delisting is finalized. Bald eagles also are protected under the MBTA and the Bald and Golden Eagle Protection Act.

Because the bald eagle's diet consists mostly of fish, individuals tend to be found associated with bodies of water such as lakes, rivers, and reservoirs. Eagles also may forage opportunistically, especially in winter, feeding on waterfowl, dead fish, jackrabbits, and big game carrion.

Bald eagles may be present in the project area, where they typically roost communally during the winter/spring and nest during the spring/summer. Winter roosts in the project area may be occupied from November 1 through April 15. Typically, bald eagles will select roost sites such as large, stoutly limbed trees, snags, broken-topped trees, or rocks or cliff facings near water that provide easy access to hunting or feeding areas. Eagles tend to use the same roosts each year.

The bald eagle nesting season in the project area is generally from November 15 to August 15, but the specific dates vary, depending on location (i.e., Colorado or Wyoming). Migrant (non-nesting) individuals also could be present during the summer in appropriate habitat. Nests are usually large and conspicuous stick assemblages, and are built in habitat similar to that used for roosting. In Colorado and Wyoming, nest tree habitat can include old-growth ponderosa pine as well as narrow strips of riparian vegetation surrounded by rangeland.

Potential direct impacts on bald eagles during construction could include displacement of individuals to adjacent habitats or damage to occupied and/or unoccupied nests. If construction were to occur during the nesting season, impacts also could include abandonment of eggs or nestlings, injury to or mortality of nestlings, or destruction of eggs. Additionally, construction could potentially affect the availability of the bald eagles' primary food sources, thereby indirectly affecting individual eagles.

WIC identified two active bald eagle nest sites during its 2004 and 2005 biological surveys. One of the nests was located approximately 1,500 feet from the Little Snake River crossing (approximate MP 53.1), and the second nest was located approximately 1,350 feet from the White River crossing (approximate MP 128.5). If construction were to occur during the breeding season for the bald eagle, **we recommend that WIC conduct pre-construction bald eagle nest surveys at known nest sites and within suitable nesting habitat during the appropriate period in accordance with approved BLM, state wildlife agency, and FWS protocols**.

WIC indicated in its response to FERC recommendations that it believes there should be a 0.5-mile buffer around bald eagle nests and roosts. WIC also indicated in its response that it would be constructing outside the bald eagle nesting and roosting season. However, in the Department of the Interior letter dated June 15, 2005, the FWS Western Colorado FO recommended that WIC adopt state-specific buffer zones for nesting and roosting bald eagles in the project area (FWS 2005). Therefore, **we recommend that WIC should not construct within 1 mile of active bald eagle nest sites in Wyoming during the nesting season (February 1 through August 15)**. In Colorado, **we recommend that WIC should not construct within 0.5 mile of active bald eagle nest sites during the nesting season (November 15 through July 31).** Buffer zones and timing windows may be adjusted upon consultation with the FWS on a site-specific basis depending on topography and line-of-sight factors, the specific project activity (e.g., active construction vs. a one-time pass-through), other features in the area (e.g., a highway between the nest site and the construction zone), and the status of the nest (e.g., downy eaglets vs. fully fledged young). WIC would have a biological monitor present to evaluate these and other factors to determine whether or not to request a buffer zone or timing variance from the FWS.

We further recommend that if WIC encounters a previously unidentified active bald eagle nest within 1 mile of the construction ROW in Wyoming or within 0.5 mile of the construction ROW in Colorado, WIC should stop work in the area and concurrently notify the Commission staff, the BLM (if on federal land), and the FWS, and file such information with the Secretary. WIC should not continue with construction until the staff has reviewed the information, completed any necessary consultation with the FWS, and the Director of OEP notifies WIC in writing that construction may proceed or use of mitigation may begin. The BLM is the agency responsible for including BLM-approved land use stipulations or conditions consistent with RMPs for the area to mitigate impacts to nesting bald eagles.

In the event that an active bald eagle nest is located within the specified buffer zone, WIC would provide an experienced biologist to monitor the nest prior to construction to determine when young birds are no longer dependent on the natal nest or nest area.

Four bald eagle roost sites were observed during WIC's 2004 and 2005 biological surveys. The roost sites were located along the Yampa and White Rivers, ranging from 862 to 3,548 feet from the proposed Piceance Project ROW. Impact on roosting bald eagles generally occurs in either of two ways: 1) construction activity directly disturbs roosting eagles or 2) construction results in the clearing of potential roost trees in suitable habitat.

Non-nesting bald eagles may be temporarily displaced during construction, but this is not usually considered a significant impact. Individual eagles could find other suitable roosts in the general area until construction activity has passed. However, the FWS often recommends measures to minimize the amount and extent of such displacement. Examples of such measures include a spatial buffer zone around roosting eagles, timing construction to certain portions of the day, or having a waiting interval to see if eagles will leave the area on their own accord. Typically, if construction is ongoing and an eagle enters the project activity area, construction would not have to stop.

As discussed above for bald eagle nests, the FWS recommended that WIC adopt state-specific buffer zones for roosting bald eagles in the project area (FWS 2005). In order to minimize impacts to roosting bald eagles, WIC has indicated in their revised Conservation Measures Plan (appendix H) that the roosts would be monitored every morning and evening starting November 1 or when construction is within 3 miles of a roost. WIC would cease construction activity at a sign of disturbance (defined as a decrease of 50 percent or more in roosting eagles on two consecutive nights, assuming a stable roosting population prior to construction's activity) and would contact the FWS to determine appropriate actions necessary to ensure that bald eagles are not disturbed further. **WIC should report the results of the coordination with FWS and/or BLM in a filing with the Secretary, and should not begin construction until the staff has reviewed the information, completed any necessary consultations with the FWS, and the Director of OEP notifies WIC in writing that construction or use of mitigation may begin.** On federal land, BLM is the agency responsible for including BLM-approved land use stipulations or conditions consistent with RMPs for the area to mitigate impacts to roosting bald eagles.

In order to avoid impacts on bald eagle roosting habitat, WIC has committed to not removing any roosting trees along its proposed route. Trees exceeding 12 inches diameter at breast height (dbh) that may be removed during construction would be designated during planning for each stream crossing. WIC states that any tree exceeding 12 inches dbh not specifically designated for removal in the planning process but lost to construction would require financial compensation through the CDOW. If WIC believes that removal of a roost tree is unavoidable, **we recommend that WIC should not remove the identified tree until:**

a. the staff receives comments from the FWS regarding the proposed action;

b. the staff completes formal consultation with the FWS, if required; and

c. WIC has received written notification from the Director of OEP that construction or use of mitigation may begin.

Determination Statement

Effect on Critical Habitat: No effect. No Critical Habitat has been designated for this species.

Effect on the Species: We conclude that the Piceance Project *may affect, but is not likely to adversely affect* the bald eagle. This determination is based on the implementation of WIC's proposed conservation measures and our recommendations.

Pygmy Rabbit. This smallest of the Leporidae family occurs in portions of many western states including southwestern Wyoming where this species can be found in a few isolated populations in Lincoln, Uinta, Sweetwater, Sublette, and Fremont counties, Pygmy rabbits are sagebrush obligate species and are primarily found in dense western big sagebrush communities preferably where at least two other species of sagebrush and forbs occur as well. Loss of sagebrush grassland habitat, habitat fragmentation, and overgrazing are considered potential threats to pygmy rabbits.

The FWS received a petition (April 21, 2003), to list the pygmy rabbit under the ESA. A 90-day finding on the petition was published on May 20, 2005, in which the FWS determined that the petition does not provide substantial information indicating the listing may be warranted. WIC's field surveys in 2005 have produced new reports of pygmy rabbits within the project area in Wyoming.

According to the 2005 field surveys that WIC conducted for the pygmy rabbit along the Piceance Project ROW, this species is common and widespread across the project area in Colorado and Wyoming (WIC 2005f). However, subsequent field surveys conducted in 2005 by the CDOW found no evidence of pygmy rabbits in the Colorado portion of the project. Consequently, based on surveys conducted by CDOW, it is unlikely that pygmy rabbits would be affected by construction activities in the Colorado portion of the project. Based on the results of WIC's 2005 survey, construction would impact three high density concentrations of pygmy rabbit in Wyoming. Potential impacts would be similar to those discussed for small non-game species in section 3.5.2. As WIC indicated in its Conservation Measures Plan and Pygmy Rabbit Survey Report (WIC 2005f), impacts and mitigation would be determined with the direction and guidance of the FWS.

Because a majority of the construction would be adjacent to or overlap an existing ROW, impacts to large tracts of undisturbed pygmy rabbit habitat would be minimized. As part of the project planning measures, approximately 116 miles (82 percent) of the proposed pipeline ROW parallels existing pipeline and powerline easements. As such, we believe that habitat fragmentation and loss of sagebrush habitat have been minimized and would not pose a significant effect to pygmy rabbits. We believe that the Piceance Project may impact individual pygmy rabbits but is not likely to cause a trend to federal listing or loss of viability of this species. This determination is based on the distribution of the species across the project area, where this species was observed to be common and widespread (WIC 2005f).

BLM Sensitive Animal Species

Townsend's Big-eared Bat, Fringed Myotis, and Yuma Myotis. The Townsend's big-eared bat and fringed myotis typically inhabit coniferous forests, and roost sites consist of caves, abandoned mines, rock crevices, and buildings. The Yuma myotis typically inhabits shrublands, grassland, barren areas, cliffs, and rock outcrops, and roosts are primarily in human-built structures (buildings and bridges) and occasionally in mines and caves. No historic communal bat roost sites (e.g., hibernacula, nursery colonies, bachelor roosts) have been recorded along the project route. Much of the project route would occur adjacent to or within previously disturbed ROW, thus we do not anticipate any direct impacts to communal roosts. Potential direct impacts to individual bats could occur as a result of crushing by vehicles and equipment during ROW clearing and other project-related construction. Impacts also would result from the incremental long-term reduction of potential foraging habitat (including habitat fragmentation) until reclamation is completed and native vegetation has become reestablished. Indirect impacts could result from increased noise levels and human presence. WIC would minimize potential direct and indirect impacts on bats by implementing BLM BMPs.

The proposed project may impact individuals but is not likely to cause a trend to federal listing or loss of viability of these bat species.

White-tailed Prairie Dog. Prairie dogs live in colonies and inhabit dry, flat, open grasslands with low, relatively sparse vegetation, including areas overgrazed by cattle. Fine-to-medium textured soils are preferred, presumably because burrows and other structures tend to retain their shape and strength better than in coarse, loose soils. White-tailed prairie dogs tend to live at higher elevations and in meadows with more diverse grass and herb cover than do black-tailed prairie dogs.

During WIC's 2005 field survey, four active white-tailed prairie dog towns were identified along the project ROW between MP 0.0 and MP 25.5 (Wyoming), and six towns were observed between MP 49.6 and MP 94.1 (Colorado) for a total of 10 towns. Three of the above mentioned white-tailed prairie dog towns were observed along access roads (WIC 2005f).

The potential effects of construction through a prairie dog colony may include temporary loss of forage and shelter due to vegetation clearing, collapsing of burrows, and temporary disruption of foraging and resting activities due to disturbance associated with construction equipment. Direct mortality of prairie dogs could result if active burrows are occupied at the time of construction. If construction occurs later in the prairie dog's reproductive season (late May to early June), most prairie dogs are expected to be mobile and able to avoid construction traffic; however, some individual prairie dogs may be injured or killed during construction. In addition, there is a potential for destroying active dens with young if construction occurs during the reproductive season. If WIC's construction schedule changes and construction would occur during the white-tailed prairie dog's reproductive season, BLM will likely impose a construction timing restriction from May through July on BLM land. Following construction and restoration, the revegetated ROW would provide foraging habitat for prairie dogs, and the unconsolidated soils along the trench would likely provide a good substrate for burrowing.

We believe that the Piceance Project may impact individuals but is not likely to cause a trend to federal listing or loss of viability to white-tailed prairie dogs.

Wyoming Pocket Gopher. This species occurs in upland drier ridge tops (gravelly loose soils) in greasewood habitat. The Wyoming pocket gopher often nests in a maternal burrow, and usually feeds underground in a shallow tunnel, pulling roots and plants. The Wyoming pocket gopher is a BLM sensitive species in Wyoming.

Potential impacts on the Wyoming pocket gopher from construction of the Piceance Project would be minimal because its range is limited to the southeastern corner of Sweetwater County; however, a small amount of potentially suitable habitat could occur along the project route. The highest possibility for direct impact could occur during clearing if heavy equipment collapses dens and tunnels while navigating the ROW, or during the trenching process. Once operational, the pipeline corridor would provide loose soil for dens and rodent burrows, plus forbs, grasses and seeds for rodent forage.

The habitat for the Wyoming pocket gopher was reassessed during WIC's 2005 field surveys. No gopher burrows were noticed when crossing the rocky ridges in southern Sweetwater County. Since the gopher will likely be estivating during construction, an EI or biological monitor would accompany the ditching machine or track hoes through appropriate habitat and watch for any animals unearthed in the construction process. If an animal is killed and can be retrieved in a safe manner, it will be given to either the BLM or the University of Wyoming as a specimen. Recovery of any live animal unearthed during construction would require direction from the BLM on procedure. During reclamation, the pipeline ROW would be reseeded with BLM and NRCS seed mixes appropriate to the area's soil and range conditions.

We believe that the Piceance Project may impact individual pocket gophers but is not likely to cause a trend to federal listing or loss of viability to this species.

Golden Eagle, Ferruginous Hawk, Swainson's Hawk, American Peregrine Falcon, Northern Goshawk. Potential impacts to these raptors are discussed along with other migratory birds in section 3.5.2, above.

Western Burrowing Owl. Burrowing owls typically use burrows made by prairie dogs and other small mammals. Destruction of burrows could result in displacement of owls into less suitable habitats, potentially increasing susceptibility to predation, reducing cover or forage habitat, or reducing reproductive success. Displacement, injury, or direct mortality could result if active burrows are occupied at the time of destruction.

WIC observed one active burrowing owl nest at approximate MP 54 during its 2004 habitat surveys. Burrowing owls were observed at MP 80.5 (within ROW) and MP 93.3 (east of ROW) during the 2005 biological survey. WIC proposes to construct its pipeline outside the burrowing owl nesting season (February 1 to August 31), which would avoid impacts on nesting owls. Should construction extend into the breeding season, the BLM would require WIC to adhere to seasonal and spatial buffers for burrowing owls on BLM land. For example, the BLM typically requires a 0.75-yard protection zone around an active nest between February 1 and July 31. Any such restrictions would be included as a part of a BLM ROW grant issued for the project. To minimize potential impacts to the burrowing owl, WIC has committed to adhering to the BLM requirements established for burrowing owls for the entire Piceance Project, regardless of land ownership.

Thus, we believe that the Piceance Project may impact individual burrowing owls but is not likely to cause a trend to federal listing or loss of viability to this species.

Greater Sage Grouse. The greater sage grouse is designated as a sensitive species by the BLM and has been petitioned for federal listing consideration. In April 2004, the FWS determined that listing the sage grouse under the ESA may be warranted and initiated a status review. However, based on a 12-month finding for petitions to list the greater sage grouse as threatened or endangered, the FWS has subsequently determined that the listing is not warranted (70 FR 2244).

Sage grouse are highly dependent on sagebrush for cover and food. Sagebrush also serves as the critical component in leks (breeding grounds), nesting, feeding sites, rearing sites, and wintering grounds. Although the sage grouse typically prefers taller sagebrush plants and stands for nesting and roosting cover, lekking grounds are generally open areas with low, sparse sagebrush, such as swales, meadows, and burned areas. Lekking grounds are generally surrounded by areas of 20 to 50 percent low-height, sagebrush cover. Secondary to sagebrush habitat, sage grouse require moist wetland and wet meadows to aid in brood rearing.

Potential direct impacts of construction on sage grouse may include the loss of lekking grounds and other sage grouse habitat. Although the Piceance Project would not result in a permanent loss of habitat along the pipeline ROW, the regeneration of sagebrush would likely be slow. A 30-year interval represents the approximate recovery period for a stand of Wyoming big sagebrush. A 20-year interval represents the approximate recovery time for a stand of mountain sagebrush (Connelly et al. 2000). However, potential impacts on sage grouse habitat would be minimized by locating the proposed ROW within previously disturbed areas (i.e., adjacent to existing pipelines and/or roads) to the extent possible. Given the abundant suitable habitat in the general area, it is not likely that the minor, yet long-term loss of habitat along the pipeline ROW would affect sage grouse populations in the vicinity of the proposed project.

Depending on the timing of construction, the proposed project could potentially impact sage grouse during lekking activities or brood rearing, and could cause displacement, injury, or direct mortality of individuals. Sage grouse are particularly sensitive to disturbances while they gather on lekking grounds each morning and evening from early March to early May. Construction activities and associated noise occurring in early morning and late evening in the vicinity of lekking grounds could disrupt and potentially displace sage grouse that have gathered for breeding activities. In addition, once breeding activities have concluded, sage grouse hens create their nests on the ground underneath sagebrush plants in proximity to the lekking grounds. The proposed project could potentially impact nesting sage grouse by destroying nests, causing nest abandonment, or causing injury or direct mortality to the young.

A total of 26 current and historic sage grouse lek sites have been identified as occurring within 2 miles of the project ROW in Colorado (22 sites) and Wyoming (4 sites) based on WIC's 2005 breeding season surveys and historic data. Five lek sites are within 0.25 mile of the project ROW (MP 31.3, MP 56.9, MP 77.2, MP 78.4, and MP 94.9). The lek site at MP 31.3 is located within the BLM Rawlins FO (Wyoming) district, and the four remaining lek sites within 0.25 of the ROW are located within the BLM Little Snake FO (Colorado) district.

For suitable nesting habitat associated with an active lek within 2 miles of the construction ROW, WIC would minimize direct impacts to sage grouse nesting/habitat by constructing outside the breeding season (no construction would occur between March 1 and July 15) and reducing the width of the ROW as practical, or as otherwise permitted by the appropriate resource agency. Timing restrictions associated with the sage grouse breeding season also would apply to access roads that bisect suitable nesting habitats. No permanent aboveground facilities would be constructed within 0.25 mile of a known lek site along the project route.

In order to minimize impacts on sage grouse habitat, WIC has committed to brush-hogging the ROW through the nesting grounds and leks while leaving the base of sage shrubs intact. On side-slopes or hilly terrain, a maintainer can be used to smooth the working side. This would aid in re-establishing shrubs in the nesting ground within the ROW. This procedure would not be used in the leks. A broadcast seeder mounted on a tractor would be used to seed the grouse nesting grounds with sagebrush seed during reclamation. WIC would broadcast Wyoming big sagebrush seeds that are from regional sources (i.e., the Intermountain West). No seeding with sagebrush would occur in the leks. It has been suggested by the CDOW, and more recently by the BLM, that the perimeters of the leks directly affected be planted with sagebrush transplants to form a vegetation boundary to the lek. The suggestion by the BLM was to place plants 5 feet apart on five rows located 5 feet apart that would be selected by CDOW, BLM, and WIC biologists during a site visit to each lek affected. WIC agrees with this proposal for Leks 3A, 9, and 11 in Moffat County. However, Lek 13 which also is located in Moffat County, is situated in grassy pasture and has not been delimited by sagebrush. Accordingly, WIC would inspect the aforementioned three leks and would plan for reclamation at these three sites prior to construction in October. For leks in Wyoming, the local WGFD Biologist would be contacted for guidance on Wyoming sage grouse leks, and restoration/reclamation seed mixes that would be appropriate in sage grouse habitat.

To further minimize potential impacts on the sage grouse, if low-intensity preconstruction (e.g., surveying and staking) work is necessary within 2 miles of known sage grouse leks between March 1 and June 30, WIC has committed to conducting construction activities between 9:00 a.m. and 4:00 p.m.

Two sage grouse lek sites have been documented within 2 miles of the CIG Greasewood Compressor Station, in Rio Blanco County. These sites are located 6,148 feet and 7,950 feet east of the compressor station. We do not anticipate that noise levels from operation of the proposed CIG Greasewood Compressor Station modifications would result in a significant impact on sage grouse. We note that the CIG Greasewood Compressor Station is an existing facility already contributing to local noise conditions. According to WIC's noise measurements (conducted 1,700 feet from the CIG Greasewood Compressor Station); with the compressor addition operated at full load, noise levels would increase by only 1.0 decibel on the A-weighted scale (dBA). This would represent a minimal noise level increase at the distance of the sage grouse leks.

Mountain Plover. The mountain plover is a migratory species whose breeding habitat includes prairie grasslands, shrub-steppe communities, agricultural land, and prairie dog towns. Plovers usually nest on level terrain occupied by sparse, short vegetation (typically 4 inches or less in height). The sparse vegetation is commonly caused by herbivore grazing (domestic livestock and prairie dogs) and surface disturbance from human activities (e.g., well pads, bladed lay down areas) (FWS 2002).

The primary mountain plover nesting period in the project area is from May 1 through June 15. Young chicks commonly stay on the nest or freeze in place to avoid detection from about June 15 through July 10, resulting in a higher potential for losses from excavation equipment traversing over nest sites. After July 10, the chicks are usually sufficiently mobile to move away from construction equipment.

Approximately 10 miles of potentially suitable mountain plover habitat (including 1 active nest at MP 15.1) was identified during the 2004 surveys along the project ROW. Suitable habitat for mountain plover (including prairie dog town locations) is scattered along the ROW in the following areas: MP 0.0 to MP 25.5, MP 49.6 to MP 49.7, MP 53.8 to MP 53.9, and MP 93.5 to MP 94.1. Additional habitat for mountain plover was along three access roads (MP 50.3, MP 83.0, and MP 93.1) during the 2005 surveys. WIC does not propose additional pre-construction surveys for this species because construction would occur outside the breeding season.

If construction were to begin in or extend into the breeding season (mid-April through early July), direct (e.g., ground disturbance) or indirect (e.g., noise, human presence) impacts to nesting mountain plover could result in abandonment of breeding territory or a nest site, or the loss of eggs or young. WIC has committed to avoiding construction activities in suitable mountain plover habitat between April 10 and July 10. However, if the construction and/or reclamation activities are delayed until this time period, **we recommend that WIC:**

a. **conduct agency-approved surveys for the mountain plover;**

b. **develop a mitigation plan, including agency-approved buffer zones or other protection measures for nests and chicks; and**

c. **file this information with the Secretary for review and written approval of the Director of the OEP before construction or use of mitigation may begin.**

Based on proposed construction outside the nesting season and our recommendation accounting for construction within the mountain plover breeding season, we believe the Piceance Project may impact individuals but is not likely to cause a trend to federal listing or loss of viability.

Loggerhead Shrike, Sage Thrasher, Sage Sparrow, and Brewer's Sparrow. Potential impacts to these migratory bird species would be the same as discussed for other migratory bird species in section 3.5.2, above.

Great Basin Spadefoot, Northern Leopard Frog, and Midget Faded Rattlesnake. Potential impacts to amphibian and reptile species include direct mortalities of individuals from construction activities, ground compaction, and vehicle traffic within suitable habitat. Impacts also would result from the incremental long-term reduction of potential habitat until reclamation is completed and native vegetation has become reestablished.

The potential for these species to occur within the project area is considered low. No further preconstruction surveys are proposed. However, WIC proposes to monitor for the Great Basin spadefoot during construction. The biological monitor and/or EI would work with the ditching machine or track hoe and look for amphibian and reptile species in their appropriate habitat. If an individual spadefoot is observed, it would be removed from the ROW by the monitor, and a report submitted to the CDOW and Colorado and Wyoming Natural Heritage Programs. If these species are observed during construction, WIC has committed to installing exclusion fencing to a depth of 6 inches into the ground in the area of suitable habitat containing the population to keep individuals from entering the construction ROW.

We believe the proposed project may impact individual amphibians and reptiles but is not likely to cause a trend to federal listing or loss of viability.

3.6.3 Fish Species

Eight sensitive fish species were originally identified as potentially occurring within the project area. These species, their associated habitats, and their potential for occurrence along the project route are summarized in appendix J. The potential for occurrence at stream crossings and downstream reaches was evaluated for each species based on its habitat requirements and/or known distribution. The federally listed bonytail chub, humpback chub, and razorback sucker do not occur in the project area but are included in our detailed analysis based on the project's potential water depletion activities (i.e., hydrostatic testing) in the Colorado River Drainage (FWS 1994). The closest occupied or Critical Habitat for these three species is located at the following approximate distances downstream of the proposed crossings: 30 to 40 miles downstream of the Yampa River crossing (razorback sucker, humpback chub, and bonytail chub); 70 miles downstream of the White River crossing (razorback sucker); and at least 30 miles downstream of the Little Snake River crossing (razorback sucker). Consequently, project effects to these fish species would be limited to potential water depletions from hydrostatic testing within the Colorado River drainage (see discussion below).

The Colorado pikeminnow likewise occurs downstream of the proposed White and Yampa River crossings and could be affected by water depletions; however, this species also could occur at the location of the proposed Yampa River crossing (which also is designated as Critical Habitat for this species). Direct effects to this species and its Critical Habitat are discussed below.

The remaining four fishes (bluehead sucker, flannelmouth sucker, mountain sucker, and roundtail chub) are BLM sensitive species that potentially occur in the White, Little Snake, and Yampa Rivers.

An accidental release of drilling mud (called "frac-out") and potential effects of this release during the HDD crossing method at the Little Snake, White, and Yampa Rivers is discussed in sections 3.3.2 and 3.5.1.

<u>Federally Listed Species</u>

Bonytail Chub, Humpback Chub, Razorback Sucker, Colorado Pikeminnow (impacts from water depletions). The FWS has expressed concern about the potential downstream impacts on federally listed species resulting from hydrostatic test water withdrawals from the Upper Colorado River Basin. The federally endangered bonytail chub, humpback chub, razorback sucker, and Colorado pikeminnow are known to occur in downstream portions of the White, Yampa, and Little Snake Rivers, which are part of the Upper Colorado River Basin.

Water depletion impacts resulting from the withdrawal of approximately 53 acre-feet for hydrostatic testing and approximately 3.3 acre-feet for dust abatement could include a slight temporary reduction of potential spawning and rearing habitat in the Upper Colorado River Basin due to changes in downstream water flow. No changes in water temperature or dissolved oxygen would be anticipated as a result of the relatively small water volume used for project activity. Potential impacts would be greatest during the spawning periods for these species in spring and early summer, which would likely be avoided based on WIC's proposed schedule. The FWS defines a "depletion" as consumptive loss plus evaporative loss of surface or groundwater within the affected basin. Any water depletion would represent an adverse impact on the Colorado pikeminnow, razorback sucker, humpback chub, and bonytail, and would need to be considered in formal Section 7 consultation.

However, if water is returned to the source waterbody within a certain amount of time after withdrawal, the threshold for "depletion" and formal consultation may not be reached. Factors to consider in determining downstream effects to listed fishes include what time of the year water is withdrawn, whether the water has been treated, other water uses at the time of withdrawal (cumulative impact), and how close to the withdrawal source the water is returned (i.e., a source location return vs. a "basin return").

The Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Plan) was established in 1988 to mitigate for water depletion impacts to for Colorado River federally endangered fish species. To ensure the survival and recovery of the listed species, water users are required to make a one-time payment to the Recovery Program. The current depletion fee (through September 2005) is $15.93/acre-foot. In 1995, an intra-FWS Opinion determined that the fee for depletions less than 100 acre-feet (annual average) would no longer be required (FWS 1995).

WIC proposes withdrawing approximately 53 acre-feet of water from three locations along the White, Yampa, and Little Snake Rivers (15.9, 8.7, and 28.0 acre-feet, respectively) between October 15 and December 31 for hydrostatic testing (see **table 3.3-3**). WIC has indicated in the Hydrostatic Test Plan (appendix E) that any withdrawals from the Little Snake River would not exceed 5 percent of stream flow at the time of the withdrawal. Hydrostatic testing for the various test sections is currently planned to occur over a multiple-day period. The actual duration of hydrostatic testing for a given test section would be dependent on the rate of withdrawal and the section of pipe that would be tested, but would not exceed 90 days. WIC's hydrostatic testing plan is included as appendix E of this EIS, and FERC recommendations to the plan are discussed in section 3.3.2. In order to avoid or minimize potential impacts to Colorado River endangered fish species from water withdrawal in the Colorado River Basin, the FWS would prefer that water withdrawal activities occur between October 1 and June 30. WIC's proposed withdrawal plan would conform to the FWS recommendation.

WIC proposes to discharge hydrostatic test water withdrawn from surface waters onto upland areas immediately following hydrostatic testing. WIC has committed to discharging water within the same basin from which it was taken. Discharges would be completed as quickly as possible, but would be governed by the volume of water in a test section and the discharge rate. Potential impacts from water discharge could include erosion of the upland soils at the point of discharge. WIC would minimize the potential for upland erosion by using energy-dissipating devices and appropriate dewatering structures that would disperse and slow the velocity of any discharges. We do not anticipate the introduction of contaminants because WIC would test only new pipe and would not chemically treat the water.

Colorado Pikeminnow (impacts from waterbody crossings). The Colorado pikeminnow inhabits medium to large rivers in the Upper Colorado River Basin including the Colorado, Gunnison, Green, White, and Yampa Rivers. The adults use deep, turbid, strongly flowing eddies, runs, flooded bottoms, or backwaters (especially during high flow), while juveniles prefer small, quiet backwaters.

Due to the location of bore pits, drilling equipment, and pipe strings associated with the Yampa River HDD, surface disturbing activities would occur within the 100 year floodplain of the Yampa River. However, the HDD work areas would be located outside of the water level of the river, and thus would avoid instream impacts. Construction techniques and reclamation would be designed to minimize potential increased sedimentation during future high water events. Since construction equipment would be refueled and lubricated outside of the 100-year floodplain, no fuel spills or leaks would affect the Colorado pikeminnow Critical Habitat at this location. We do not anticipate any impacts to designated Critical Habitat for the Colorado pikeminnow in the White River, which is about 10 miles downstream from WIC's proposed crossing location.

WIC's proposed HDD crossings of the White and Yampa Rivers would avoid instream impacts and thus would have little to no effect on the Colorado pikeminnow or its designated Critical Habitat. If a rupture or leak occurred during drilling, short-term sedimentation and bottom disturbance could occur at the crossing, as described above for the other endangered fish species. By implementing the measures in its HDD Plan, potential impacts to Colorado pikeminnow would be minimized and short-term in duration. Inadvertent release of drill muds ("frac-outs") are discussed above in sections 3.3.2 and 3.5.1.

However, if an HDD crossing could not be completed at the Yampa or White Rivers, WIC has stated that its alternate plan is to cross using an open-cut technique. A non-HDD crossing of the Yampa River and, to a lesser extent, the White River, would have the potential for greater impact on the Colorado pikeminnow.

Our determination of effect for the Colorado pikeminnow is dependent on the Yampa and White River crossings being completed by HDD. If WIC is not able to complete an HDD crossing at these rivers, WIC has proposed to use an open-cut crossing. We note that WIC provided a brief analysis of environmental impacts from an open-cut crossing at these locations; however, we would still need to evaluate a non-HDD crossing and consult further with the FWS in order to fulfill our ESA Section 7 obligations. WIC has indicated that they would not proceed with a non-HDD crossing of the Yampa or White Rivers until it has filed a site-specific alternate crossing plan with the Secretary for review. This plan would identify measures that would minimize instream impacts and avoid or minimize potential impacts on federally listed fishes. WIC would not begin a non-HDD crossing of the Yampa or White Rivers until the FERC completes any necessary ESA Section 7 consultation with the FWS, and the Director of OEP notifies WIC in writing that it may proceed with the alternate river crossing method. This commitment is stated in WIC's revised Procedures (appendix C), and also appears in its response to recommendations contained in the draft EIS.

Determination Statement

Colorado Pikeminnow (impacts from waterbody crossings)

Effect on the Species and Critical Habitat: WIC's crossing of the Yampa and White Rivers, as proposed, *may affect, but is not likely to adversely affect* the Colorado pikeminnow and is *not likely to adversely modify* its Critical Habitat. This determination is based on WIC's proposed HDD crossings of the White and Yampa Rivers and the commitments presented in WIC's Procedures and other documents. In addition, WIC would adhere to the fisheries construction timing window identified by the FWS (i.e., constructing the White and Yampa River crossings between October 1 and March 1) to avoid or minimize potential sedimentation and turbidity impacts during the Colorado pikeminnow spawning season. Thus, even if a frac-out was to occur, we anticipate little to no direct impact to this species or its Critical Habitat.

Colorado Pikeminnow, Razorback Sucker, Humpback Chub, and Bonytail Chub (impacts from water depletions)

Effect on the Species and Critical Habitat: WIC's withdrawal of approximately 53 acre-feet of water for hydrostatic testing and approximately 3.3 acre-feet for dust abatement from the Upper Colorado River Drainage *may affect, but is not likely to adversely affect* the Colorado pikeminnow, razorback sucker, humpback chub, and bonytail chub, and is *not likely to adversely modify* their Critical Habitats. By adhering to the recommendations of the Recovery Plan, the effects of water withdrawal on habitat for these species would be mitigated. However, we recognize that WIC's use of about 56.3 acre-feet of water may be considered a "depletion" by the FWS, particularly if the water were not returned directly to the waterbody from which it was withdrawn. Our May 4, 2005, letter to the FWS requesting Section 7 consultation acknowledged that WIC's proposed water withdrawals may be considered a depletion, in which case we would enter formal consultation for the bonytail chub, humpback chub, razorback sucker, and Colorado pikeminnow. WIC would not be authorized to contribute to a depletion in the Colorado River basin until any necessary consultation is completed.

BLM Sensitive Species

Bluehead Sucker, Flannelmouth Sucker, and Mountain Sucker. These native species occur in the Yampa and White Rivers and Dry Fork Piceance Creek. They utilize a variety of habitats that include riffles, pools, runs, and backwater areas in larger streams and rivers. Spawning occurs in the spring or early summer at lower elevations (Woodling 1985).

Roundtail Chub. This species also inhabits a variety of habitats in the White and Yampa Rivers. Adults prefer pools associated with undercut banks and other types of cover, while young fish occur in shallower water with lower velocities. All age groups prefer cobble-rubble, sand-cobble, or sand-gravel substrates (Woodling 1985). Runs and riffles are used primarily during feeding. Spawning occurs in the spring or early summer.

Since these species potentially occur at and downstream of the proposed crossings, impacts of water withdrawal and stream crossing construction would be the same as described for the Colorado pikeminnow.

We believe the Piceance Project may impact individual fish but is not likely to cause a trend toward federal listing or loss of viability for these species.

3.7 Land Use, Recreation, Visual Resources

3.7.1 Land Use

Land Ownership

About 54 percent (76.6 miles) of the land crossed by the proposed Piceance Project route and aboveground facilities is managed or owned by public entities. Of the public land total, the majority is managed by the BLM, while 8 percent is managed or owned by the State of Colorado (CDOW and CSLB). The proposed project would not cross lands managed or owned by the State of Wyoming or local government entities such as municipalities. **Table 3.7-1** summarizes land ownership that would be crossed by the proposed pipeline route.

Table 3.7-1
Summary of Federal, State, and Local Government Owned Lands Crossed by the Proposed Pipeline Route

State/Ownership	Approximate Crossing Length (miles)	Percent of Total Length
WYOMING		
Federal	41	29
State	0.0	0
Local	0.0	0
Wyoming Subtotal	41	29
COLORADO		
Federal	24	17
State	11	8
Local	0.0	0
Colorado Subtotal	35	25
Project Total	**76**	**54**

The remaining 46 percent (about 65 miles) of the proposed pipeline route would cross privately owned land.

Land Use Plans and Policies

The proposed project would cross approximately 66 miles of land managed by three BLM FOs: the White River FO in Meeker, Colorado; the Little Snake FO in Craig, Colorado; and the Rawlins FO in Rawlins, Wyoming. BLM land accounts for about 46 percent of the total pipeline route. In general, the BLM manages these lands for multiple uses, including recreation, wildlife management, livestock grazing, wild horses, and mineral resources under guidelines set forth in the three RMPs that BLM uses for management direction (BLM 1997, 1990, 1986).

Construction of the proposed project would be consistent with the existing BLM RMPs and would not preclude the management objectives set forth for BLM offices. WIC's POD is being developed in coordination with BLM FOs. The POD is a construction plan that includes procedures for the use of BLM roads, soil and water protection measures, revegetation and weed control/management standards, biological and cultural resource protection measures, livestock and wild horse management measures, and post-construction monitoring requirements (see section 2.3, Construction Procedures).

Land owned by the state of Colorado that would be crossed by the proposed pipeline route is managed for wildlife habitat, recreational uses, or leased to private tenants for livestock grazing. Some state lands are special interest areas and are shown in **table 3.7-2**. The remaining scattered portions of state owned or managed lands not identified as special interest areas are leased to private entities for livestock grazing and ranching. WIC would acquire the necessary permits and approvals for construction on state lands. Environmental protection measures attached to lease agreements would be similar to those described for the BLM above.

Table 3.7-2
Recreation and Special Interest Areas Crossed by and Within 0.25 Mile of the Proposed Piceance Project Pipeline Route

State/County	Start/End MP	Crossing Length (miles)	Acres Affected[1]	Name	Managing Agency
Wyoming					
Sweetwater	19.7	NA	<0.1	Overland Trail	BLM
Sweetwater	47.0	NA	<0.1	Cherokee Trail	BLM
Colorado					
Moffat	86.0-88.4	2.4	24.7	Natural Conservation Area Middle Yampa River Megasite	State of Colorado
Moffat	Adjacent to 88.8-90.5	1.7	17.5	Natural Conservation Area Juniper Mountain	BLM
Moffat	89.2-91.9	3	27.8	Bitter Brush SWA	CDOW
Moffat	95.8-97.7	2.5	25.8	Natural Conservation Area Deception Creek	State of Colorado
Rio Blanco	131.7-134.3	2.5	26.8	Little Hills Game Experiment Station - Piceance Creek SWA	CDOW
Rio Blanco	134.7-135.4	0.7	7.2	Little Hills Game Experiment Station - Piceance Creek SWA	CDOW

1 Calculated based on a 85-foot construction ROW except in wetlands where a 75-foot ROW would be used. Disturbance for additional temporary workspace areas is included.

Project Land Requirements

The Piceance Project would require land for the construction ROW, permanent ROW, additional temporary workspace areas, access roads, pipe and contractor yards, and construction and operation of aboveground facilities. Land use calculations were based on an 85-foot-wide construction ROW, except in wetlands where the construction ROW would be reduced to 75 feet. As outlined in chapter 2.0, a 50-foot-wide permanent ROW easement would be acquired by WIC. The permanent ROW would be maintained in an open condition (i.e., generally free of trees and aboveground structures) for the life of the pipeline facilities. Impacts on land use for operation of the pipeline facilities were calculated based on the 50-foot ROW width. Land use calculations for additional temporary workspace areas were based on typical requirements. Pipe and contractor yards and aboveground facilities were based on each feature's dimensions.

The principal land use that would be affected by the proposed pipeline route and its associated facilities is rangeland (123.7 miles, or 87 percent of the total pipeline length). Other land uses that would be crossed by the proposed pipeline include forest land (11.9 miles; about 8 percent) and agricultural land (6.2 miles; about 4 percent).

Construction of the proposed Piceance Project would temporarily disturb 1,884 acres. Of that total, 860 acres would be retained by WIC as permanently maintained pipeline ROW and for operation of the proposed aboveground facilities (**table 3.7-3**). The predominant land use that would be affected by construction is rangeland (1,606 acres), followed by forest land (178 acres), and agricultural land (100 acres). Operation of the proposed project would affect 750 acres of rangeland, 72 acres of forest land, and 38 acres of agricultural land.

Rangeland. In areas where rangeland is used for grazing, construction activities could temporarily reduce the carrying capacity of BLM grazing allotment and privately held pastures, and could hinder the movement of livestock, horses, and/or wildlife across those allotments. To minimize impacts on grazing areas, WIC would implement the following BLM-approved mitigation measures:

- fences crossed by the proposed pipeline route would be cut in a manner to prevent slack, and gates would be installed across the opening to prevent livestock, horses, and wildlife passage, if required;
- temporary fencing would be installed to prevent livestock, horses, and wildlife from entering the construction area; and
- natural barriers removed during pipeline activities would be repaired or restored to pre-construction condition or if repair is not feasible, a fence would be installed in its place.

Following construction, temporary fences would be removed, the ROW restored to its pre-construction condition, and livestock would be allowed to graze and roam freely over the permanent ROW. Given the narrow, linear nature of the project, livestock forage reductions would be minor in comparison to the forage available on large BLM allotments and large private ranches that would be crossed. Any loss of forage

Table 3.7-3
Acres of Land Uses Affected by Construction and Operation of the Piceance Project

State/ Facilities	Rangeland		Forest Land		Agricultural Land		Total	
	Const	Oper	Const	Oper	Const	Oper	Const	Oper
WYOMING								
Pipeline (main) [1]	518	305	16	10	0	0	534	315
Additional Temporary Workspace Areas	97	0	6	0	0	0	103	0
Pipe Storage and Contractor Yards [2]	38	0	0	0	0	0	38	0
Pipeline Interconnections [3]	0	0	0	0	0	0	0	0
Access Roads	3	0	0	0	0	0	3	0
Aboveground Facilities [4]	11	0	0	0	0	0	11	0
Wyoming Subtotal [5]	667	305	22	10	0	0	689	315
COLORADO								
Pipeline (main) [1]	756	445	106	62	64	38	926	545
Additional Temporary Workspace Areas	158	0	50	0	16	0	224	0
Pipe Storage and Contractor Yards [2]	0	0	0	0	20	0	20	0
Pipeline Interconnections [3]	0	0	0	0	0	0	0	0
Access Roads	7	0	0	0	0	0	7	0
Aboveground Facilities [4]	18	<1	0	0	0	0	18	<1
Colorado Subtotal [5]	939	445	156	62	100	38	1,195	545
Project Total [5]	**1,606**	**750**	**178**	**72**	**100**	**38**	**1,884**	**860**

[1] Const. – Construction. Oper. – Operation. Construction ROW based on an 85-foot-wide construction ROW, except in wetlands where a 75-foot-wide construction ROW would be used. Operation acreage was estimated based on a 50-foot-wide permanently maintained ROW in all areas and does not include access roads.

[2] This total represents offline pipe yards only. Staging areas are proposed for use as contractor yards; land requirements are previously accounted for in additional temporary workspace areas row.

[3] The pipeline interconnect construction acreage is previously accounted for under the additional temporary workspace areas row (associated with the staging areas located at the Wamsutter and CIG Greasewood Compressor Stations). Operation acreage is previously accounted for under the pipeline ROW.

[4] Facilities proposed for installation at the existing CIG Wamsutter Compressor Station include two interconnections, two metering stations, a MLV, and a pigging facility. Approximately 1,650 horsepower of new compression would be installed at existing CIG Greasewood Compressor Station. Concurrent with this installation would be the installation of two interconnections, two metering stations, a MLV, and a pigging facility. Operation of the proposed new facilities at the existing compressor stations would not require any additional land. Nine MLVs and one pigging facility would be constructed within the 85-foot-wide construction ROW; therefore, disturbance acreage is previously accounted for under the pipeline ROW. Each MLV would be operated within the permanently maintained 50-foot-wide ROW with one exception. At MP 54, an additional 0.1 acre would be required to operate the combined MLV/pigging facility at this location.

[5] The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the exact sum of the addends in all cases.

would be temporary and BLM will not reduce the grazing preference or animal unit months on any BLM grazing permit because of the pipeline project. Pre- and post-construction weed management programs, and reseeding with mixtures approved by the BLM and state agencies would be applied. Although easement agreements may vary among landowners, similar weed control and revegetation measures would likely be included in private landowner easement agreements. The BLM and the FERC would conduct post-construction monitoring to verify revegetation success, and to identify any areas along the post-construction ROW that require further stabilization.

Operation of aboveground facilities would require the permanent conversion of about 1 acre of rangeland to industrial use for the County Road 4 Pigging Facility at MP 54 and MLV located along the pipeline ROW.

Agricultural Land. Agricultural land crossed by the Piceance Project consists of dryland pastures. No aboveground facilities would be located within agricultural lands.

Forest Land. The primary forest land types are pinyon-juniper woodland in western Colorado. About 178 acres of forested land would be temporarily disturbed during construction of the Piceance Project; about 72 acres of forested land would be within the permanent ROW. The primary effect of construction on forest land would be the temporary removal of trees and shrubs from the construction ROW and additional temporary workspace areas, where required. Following construction, trees and shrubs would be allowed to regenerate within the areas that would not be retained as part of the 50-foot-wide permanently maintained ROW. In riparian woodlands, the permanent ROW would be limited to a 10-foot-wide strip centered over the pipeline. The permanent ROW would be maintained to support primarily herbaceous- or shrub-dominated communities. The rate of forest reestablishment would vary depending on species and weather conditions, but would generally exceed 50 years.

Residential and Commercial Areas. No existing residential and commercial areas would be affected by the construction and operation of the proposed Piceance Project.

WIC has consulted with the counties crossed by the proposed pipeline route and towns located near the proposed project to request information about planned future residential and commercial developments. In the future, WIC would continue to coordinate with local planning and zoning offices to reduce the potential cumulative impacts that may result from concurrent pipeline and residential or commercial development. If sufficient development occurred adjacent to the pipeline, the class location could change as described in section 3.11.1.

Recreational and Public Interest Areas. The proposed pipeline route would cross a total of seven recreation and special interest areas (one area would be crossed twice) (**table 3.7-2**). The route does not cross any ACEC, Wilderness or Wilderness Study Areas, or Wild and Scenic Rivers. Of the seven recreation and special interest areas that would be crossed by the proposed route, five are located in Colorado. Two of the seven recreation and special interest areas that would be crossed by the proposed route are located in Wyoming. The pipeline would not cross any developed recreation areas (i.e., campgrounds, picnic grounds, or organized recreation areas, such as baseball fields).

Pipeline construction would have temporary impacts on recreational traffic and use patterns. Sightseers, hikers, wildlife viewers, hunters, off-highway vehicle users, and mountain bikers would be displaced from the immediate area during construction. Issues in common to all these recreational and special interest areas are soil disturbance and revegetation, repair and maintenance of public access roads, and WIC coordination with the agency managers to minimize conflicts between construction activities and the recreational uses for which these special areas were established. It is anticipated that lease agreements between WIC and the BLM and state land managers would include measures to ensure that the ecological functions of these areas are maintained, and recreational conflicts are avoided or minimized. Of most concern are:

1. Natural Areas: The pipeline would traverse three natural areas in the State of Colorado, the Juniper Mountain Conservation Area, the Middle Yampa River Megasite, and the Deception Creek Conservation area. These areas are listed by the Colorado Natural Heritage Program as a fair to good occurrence of a plant community that is imperiled on a global scale.

2. Piceance Creek SWA, Bitter Brush SWA, and Little Hills Game Experiment Station: Potential conflicts could occur between hunter use and pipeline construction if the Piceance Project constructs across these areas during hunting seasons. WIC would coordinate with the wildlife managers in both states to ensure continued hunter access during hunting seasons. Research occurs on big game species at the Little Hills Game Experiment Station and CDOW personnel reside in homes on the property. The station provides big and small game hunting opportunities, as well as fishing opportunities. The Piceance Creek SWA was purchased by the CDOW to provide hunting opportunities and winter range for deer and elk. This area was purchased with Federal Aid in Wildlife Restoration Act grant funds administered by the FWS's Division of Federal Assistance and as such the FWS must grant approval through amendments prior to state approval of easements.

3. Overland and Cherokee Trails: There are no historic interpretation signs or areas at the proposed WIC Overland Trail or Cherokee Trail crossings, and no well-preserved wagon ruts are evident.

Visual Resources

Visual impacts associated with the construction ROW and additional temporary workspace areas would include the removal of existing vegetation and the exposure of bare soils, as well as earthwork and grading scars associated with heavy equipment tracks, trenching, blasting, rock formation alteration or removal, and machinery and tool storage. Other visual effects may result from the removal of large individual trees that have intrinsic aesthetic value; the removal or alteration of vegetation that may currently provide a visual barrier; or landform changes that introduce contrasts in visual scale, spatial characteristics, form, line, color, or texture.

Visual impacts would be greatest where the proposed pipeline route parallels or crosses roads or trails, is in proximity to Key Observation Points, or is otherwise visible to recreationists. The impact of vegetation removal would be shortest on rangeland consisting of short grasses and hayfields, where the reestablishment of vegetation following construction would be relatively fast (generally less than 5 years). The impact would be greater on shrub rangeland, which may take more than 20 years to regenerate. The greatest potential visual impact would result from the removal of mature pinyon pine, Utah juniper, ponderosa pine, and cottonwood trees, which would take longer than other vegetation types to regenerate and would be prevented from reestablishing on the permanently maintained 50-foot-wide ROW. Topographic alterations such as sidehill cuts that may be necessary to construct the pipeline would be restored during ROW restoration. The visibility of such alterations would diminish over time as the affected areas age and begin to blend with the surrounding landscape.

Visual Resource Management (VRM) classes are assigned to the various landscapes managed by BLM. The BLM VRM classes range from Class I to Class IV, with Class I being the most restrictive and Class IV being the least restrictive. In general, the proposed project would cross lands designated as Class III or Class IV. A Class III designation allows for changes in the visual landscape caused by a management activity, but should remain an insignificant portion of the visual strength of the existing landscape. VRM Class IV lands may undergo management activities that significantly alter the characteristic landscape and dominate the view. **Table 3.7-4** shows the VRM classes for BLM lands crossed by the proposed Piceance Project.

To minimize construction impacts on visual resources, the proposed pipeline route would be located, where feasible, adjacent to existing utility corridors to minimize construction impacts on visual resources. This alignment would minimize impacts to viewsheds with existing linear disturbance. In areas where collocation of the pipeline is not possible, for engineering and/or construction reasons, WIC aligned the pipeline to avoid aesthetic features to the extent possible. Following construction, topographical contours would be returned to their preconstruction condition. Therefore, construction and operation of the proposed Piceance Project pipeline facilities would be consistent with the objectives and definitions of VRM Class III and VRM Class IV designations. WIC has consulted with the BLM to ensure that the proposed project would not conflict with the VRM designations.

For aboveground facilities, the impacts on visual resources from each individual facility would depend on the pre-construction condition and the visibility from the surrounding area. The following discussions provide the landscape context for each compressor station, which are the major project aboveground structures.

1. <u>Greasewood and Wamsutter Compressor Stations</u>. Both of these stations are existing facilities. At the CIG Greasewood Compressor Station, the Piceance Project would require the addition of a single new compressor within a new building within the existing fenced commercial area. The Piceance Project does not include any construction at the CIG Wamsutter Compressor Station. Therefore, the project would not change any existing visual resource at these locations.

2. <u>Other aboveground facilities</u>: Many of the other aboveground facilities (metering station sites, pigging facilities, and some block valves) are located at or adjacent to compressor stations. Aboveground facilities proposed within existing compressor station sites would be located within a fenced, previously disturbed area. Installation of new aboveground facilities within the existing compressor stations would help to minimize impacts. One pigging facility (MP 54) and all but one of the remaining block valves would be located within the permanent pipeline ROW next to lightly traveled roads that would generally be out of public view.

Site-specific information obtained during field reconnaissance of the two proposed microwave communication towers indicate that both sites are located on previously disturbed lands currently in use for commercial purposes. The Magnetic Mountain Microwave Tower site (Magnetic Mountain Microwave Tower and related facilities on privately owned land in Rio Blanco County, Colorado) consists of an existing communication building and tower-managed communications site facility. New construction that will impact visual resources will be limited to installation of a new propane tank, addition of gravel substrate 3-inch-deep to cover the area, and the erection of a security fence to surround the 50-foot x 50-foot site. No new powerlines or access roads are required at this location since commercial power is available and an existing road is in place. Use of this pre-existing communication site minimizes impacts to visual resources; new construction activities are expected to produce negligible impacts to visual resources at the Magnetic Mountain Microwave Tower site.

The Juniper Mountain Microwave Tower site (Juniper Mountain Microwave Tower and related facilities on BLM lands in Moffat County, Colorado) consists of an existing tower-managed communications site facility. New construction would be limited to installation of foundations required for an additional tower (three leg communications tower approximately 40 feet tall), one self-contained concrete building (outside dimension 11 feet x 21 feet x 9 feet), one propane tank, gravel 3 inches deep to cover the 40-foot x 60-foot area, and security fencing to surround the site. The galvanized steel tower is expected to quickly weather to a neutral light grey color. No new power lines or access roads are required at this location since commercial power is available and an existing road is in place. Use of the existing tower was considered and was determined to be infeasible. The proposed manufactured building is faced with natural aggregate gravel and any painted surfaces are colored to match the natural gravel. Location of the new tower and building next to an existing tower facility site minimizes impacts to visual resources; new construction activities as planned with mitigating surfaces and paint are expected to produce negligible impacts to visual resources at the Juniper Mountain Microwave Tower site.

Table 3.7-4
Visual Resource Management Classification for BLM Lands Crossed by the Piceance Project

State/County	Resource Area	Milepost From	Milepost To	VRM Classification[1]
WYOMING				
Sweetwater County	Rawlins	0.3	1.3	IV
	Rawlins	1.4	2.3	IV
	Rawlins	3.5	4.5	IV
	Rawlins	5.5	6.5	III
	Rawlins	7.5	8.5	III
	Rawlins	9.5	10.5	III
	Rawlins	11.6	12.6	III
	Rawlins	13.6	13.8	III
	Rawlins	14.6	15.6	III
	Rawlins	16.7	17.5	III
	Rawlins	17.9	19.0	III
	Rawlins	19.6	20.1	III
	Rawlins	21.1	23.0	III
	Rawlins	23.5	25.4	III
	Rawlins	25.4	29.8	IV
	Rawlins	29.8	51.9	III
COLORADO				
Moffat County	Little Snake	51.9	52.9	III
	Little Snake	54.4	58.1	III
	Little Snake	59.9	60.4	III
	Little Snake	61.4	61.6	III
	Little Snake	62.7	63.2	III
	Little Snake	63.7	64.2	III
	Little Snake	66.0	66.8	III
	Little Snake	67.3	67.6	III
	Little Snake	70.0	70.5	III
	Little Snake	72.0	73.1	III
	Little Snake	76.0	76.6	III
	Little Snake	77.7	77.7	III
	Little Snake	78.5	79.4	III
	Little Snake	79.6	80.1	III
	Little Snake	80.1	80.4	III
	Little Snake	80.9	81.1	III
	Little Snake	83.5	85.1	III
	Little Snake	88.8	89.2	III
	Little Snake	94.7	94.7	III
	Little Snake	95.0	95.2	III
	Little Snake	96.3	96.7	III
	Little Snake	98.1	98.1	III
	Little Snake	98.5	99.0	III
	White River	104.1	104.5	n/a
	White River	104.9	105.1	III
Rio Blanco County	White River	110.6	110.8	III
	White River	116.6	116.9	III
	White River	122.8	123.1	III
	White River	123.4	123.8	III
	White River	128.3	128.5	III
	White River	129.4	130.0	III

Table 3.7-4 (Continued)

State/County	Resource Area	Milepost From	Milepost To	VRM Classification[1]
	White River	130.2	130.5	III
	White River	130.9	130.9	n/a
	White River	131.6	131.7	III
	White River	134.2	134.7	III
	White River	135.4	141.7	III

[1] Key to VRM Classes:

- Class I Objective: To preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention.
- Class II Objective: To retain the existing character of the landscape. The level of change to the characteristic landscape should be low.
- Class III Objective: To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.
- Class IV Objective: To provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.

3.8 Cultural Resources

Section 106 of the NHPA of 1966, as amended, requires that the Commission take into account the effects of its undertakings (including the issuance of permits or Certificates) on historic properties listed on or eligible for listing on the NRHP, and afford the ACHP an opportunity to comment on the undertaking. The FERC is using the services of the applicant (WIC) to prepare information, analyses, and recommendations necessary to meet our responsibilities under Section 106 and the ACHP's implementing regulations at 36 CFR 800. The FERC also consults with SHPOs pursuant to section 101(b)(iii) of the NHPA and 36 CFR 800.3 through 800.6.

3.8.1 Results of Cultural Resources Survey

As part of its application, WIC provided the FERC with its inventory report and initial consultations with the Colorado and Wyoming SHPOs, the BLM, and Native American tribes. The inventory report documents the results of literature reviews, site file searches, cultural resources inventory, and test excavations for WIC's proposed facilities in Colorado and Wyoming (Metcalf and Slaughter 2005). In addition, the inventory report included WIC's Monitoring and Open Trench Inspection Plan and proposed Treatment Plan. WIC also provided a plan for unanticipated discoveries during construction. The inventory report is currently being reviewed by the FERC and the BLM.

The Colorado portion of the proposed pipeline route measures 89.8 miles in length, of which 59.3 miles parallel existing pipelines and powerline ROWs. Approximately 53 miles of the proposed route parallels and is adjacent to a previously inventoried pipeline. Where the proposed pipeline route parallels and is adjacent to a previously inventoried pipeline, WIC surveyed a 200-foot-wide corridor. The edge of the 200-foot-wide corridor was located 50 feet from the proposed centerline on the side with the existing pipeline and 150 feet from the centerline on the other side. Where the proposed pipeline route is not adjacent to a previously inventoried pipeline, WIC surveyed a 300-foot-wide corridor centered on the staked centerline of the pipeline route. Approximately 14.7 miles of the proposed pipeline is entirely within previously inventoried corridors (MP 81.6 to MP 87.1, MP 90.0 to MP 96.4, and MP 99.0 to MP 101.8); therefore, no new inventory was conducted in these areas. In addition to the proposed pipeline route, WIC surveyed 40 acres of extra workspaces that extend beyond the 200- to 300-foot-wide centerline inventory corridor, 1.6 miles (19 acres) of access roads, and 13 acres for aboveground facilities including pipeyards and contractor yards.

The Wyoming portion of the proposed pipeline route measures 51.9 miles in length, all of which parallels existing pipeline ROWs. Approximately 49.2 miles of the proposed route parallels and is adjacent to a previously inventoried pipeline. Where the proposed pipeline route parallels and is adjacent to a previously inventoried pipeline, WIC surveyed a 200-foot-wide corridor. The edge of the 200-foot-wide corridor was located 50 feet from the proposed centerline on the side with the existing pipeline and 200 feet from the centerline on the other side. Where the proposed pipeline route is not adjacent to a previously inventoried pipeline, a 300-foot-wide corridor centered on the staked centerline of the pipeline route was surveyed. In addition to the proposed pipeline route, WIC surveyed 2 acres of extra workspaces that extend beyond the 200- to 300-foot-wide centerline inventory corridor, 5.2 miles (63 acres) of access roads, and 10 acres for aboveground facilities including pipeyards and contractor yards.

For both Colorado and Wyoming, a 100-foot-wide corridor was surveyed along each access road that may require blading and filling as a result of use by construction equipment and vehicles. For block facilities, WIC surveyed the area as staked in the field. One extra workspace in and adjacent to a compressor station, two reroutes, and approximately 0.4 mile of access road remain to be surveyed in Wyoming. Additional access roads requiring survey may be identified. Two approximately 10-acre staging areas, two reroutes, and one extra workspace in Colorado remain to be surveyed. As of June 2005, these areas are now inventoried and will be reported on separately in an addendum report.

Colorado

To date, surveys in Colorado have located 123 cultural resource sites and 30 isolated finds. Of these, 114 sites are in, or presumed to be in, the pipeline construction corridor or area of potential effects (APE). Of the 114 sites, 93 are prehistoric, 19 are historic, and two are multicomponent sites containing both prehistoric and historic components. The prehistoric sites include open camps, habitation sites, and lithic scatters. The historic sites include roads, ditches, and debris scatters. Twenty-two of these sites are newly recorded and 92 are previously recorded sites identified during the site file searches. Of the 92 previously recorded sites, 51 are assumed buried. The isolated finds and 45 of the 114 sites are recommended or have been officially determined not eligible for listing on the NRHP. No additional investigation of these resources is recommended. Thirty-five of the sites are recommended or have been officially determined eligible for the NRHP. Thirty-four of the 51 buried sites will need additional evaluation for a conclusive recommendation of eligibility. These 34 sites are presumed eligible until the evaluation has been completed. No Traditional Cultural Properties have been identified to date.

Proposed treatment options for the 35 recommended or determined eligible sites and 34 buried sites needing additional data include avoidance through reroutes or construction restrictions, data recovery prior to and after construction, monitoring, and open trench inspection (OTI). A limitation on the construction ROW width or technique is recommended for one of the eligible sites in the APE, which straddles the Colorado and Wyoming state line (this site was counted as a separate site for each state). One of the eligible sites is recommended for pre-construction data recovery. Thirteen of the eligible sites are recommended for pre-construction testing to assess their information potential. Nineteen of the eligible sites are recommended for monitoring and OTI, which is proposed along 35.8 miles of the pipeline route in Colorado. The remaining eligible site is the historic Maybell Canal. The segment of the canal crossed by the pipeline route is a non-contributing segment of the site's overall NRHP eligibility. No additional investigation of this resource is recommended. The number of sites recommended for post-construction data recovery would be determined during monitoring and OTI. Protective fencing and limiting the construction ROW width is recommended for an eligible site located outside of the current APE, but within an area where WIC has requested extra ROW width.

Wyoming

To date, surveys in Wyoming have located 60 cultural resource sites and 24 isolated finds. Fifty-six of the 60 sites are in located in the APE. Of these 56 sites, 47 are prehistoric, eight are historic, and one is a multicomponent site. The prehistoric sites include open camps, lithic procurement sites, and lithic scatters. The historic sites include trails, roads, structures, and debris scatters. Nineteen of these sites are newly recorded and 37 are previously recorded sites identified during the site file searches. Thirty-nine of the 56 sites are recommended or have been officially determined not eligible for listing on the NRHP. No additional investigation of these resources is recommended. One site is in the SHPO database as not eligible, but has been recommended as eligible in past inventories. Sixteen of the sites are recommended or have been officially determined eligible for the NRHP. No Traditional Cultural Properties have been identified to date.

Proposed treatment options which would be appropriate for each site type for the 16 sites recommended or determined eligible include avoidance through reroutes or construction restrictions, data recovery prior to and after construction, monitoring, and OTI. Reroutes and/or limitations on construction ROW widths or techniques are recommended for three of the 16 eligible sites, including one site that straddles the Colorado and Wyoming state line and the historic Cherokee Trail. The pipeline route crosses a non-contributing segment of one eligible site (Overland Trail); however, a limitation on the construction ROW width is recommended for this site. One of the eligible sites is recommended for pre-construction data recovery. A restricted construction ROW width, as well as pre-construction data recovery is recommended for one of the eligible sites. Five of the sites are recommended for pre-construction testing to assess their information potential (reroutes may be feasible for two of these sites). Five of the eligible sites are recommended for monitoring and OTI, which is proposed along 19.3 miles of the pipeline route in Wyoming. One additional site, which is listed in the SHPO database as not eligible for the NRHP, also is recommended for monitoring and OTI based on the potential for subsurface cultural deposits. The number of sites recommended for post-construction data recovery would be determined during monitoring and OTI.

3.8.2 Native American Consultation

Section 101(d)(6) of the NHPA requires federal agencies, as part of their responsibilities under Section 106, to consult with Indian tribes to identify properties of traditional, religious, and cultural importance that may be affected by a project. To assist the Commission in complying with this requirement, WIC sent initial consultation letters to eight Native American tribes on December 13, 2004. The letters described the project and provided the tribes with the opportunity to comment on the project and identify sites or places that might be of religious or cultural significance to the tribes. WIC will conduct follow-up telephone calls to the tribes in February 2005. To date, one of the tribes has responded to WIC. **Table 3.8-1** lists the Native American tribes that have been contacted and summarizes concerns they have raised. To assist the Commission, WIC has indicated that they are working with the various Native American tribes and intend to continue consultation (including consultation on treatment plans as necessary) throughout the environmental review and construction phase of the project. In addition, the FERC sent the NOI to these same tribes. To date, only the Southern Ute Indian Tribe has responded to our NOI (July 21, 2004).

3.8.3 Construction and Operational Impacts

Project impact or effects include not only the physical disturbance of a historic property, but also may include the introduction, removal, or alteration of various visual or auditory elements, which could alter the traditional setting or ambience of the property. In consultation with the Colorado and Wyoming SHPOs and the BLM, the FERC would determine whether construction of the proposed project would affect any

Table 3.8-1
Native American Consultations for the Piceance Project

Tribe	Response Date	Status
Eastern Shoshone Tribe	January 4, 2005	The tribe is interested in the project. WIC will send the tribe a copy of the survey report and will follow up with tribe regarding a possible field visit in spring or summer.
Northern Arapaho Tribe	None[1]	
Northern Ute Tribe	None[1]	
Northwestern Band of the Shoshone Nation	None[1]	
Shoshone-Bannock Tribe	None[1]	
Southern Ute Tribe	July 21, 2004	The tribe does not object to the proposed project, but requests notification of inadvertent discoveries.
Ute Mountain Ute Tribe	None[1]	
White Mesa Ute Tribe	None[1]	

[1] To date, no response has been received.

properties listed on, or eligible for listing on, the NRHP. If a property would be adversely affected, mitigation would be proposed. Mitigation may include, but not be limited to, one or more of the following measures: 1) avoidance through the use of realignment of the pipeline route, relocation of temporary extra workspace, or changes in the construction and/or operational design; 2) data recovery, which may include the systematic professional excavation of an archaeological site or the preparation of photographic and/or measured drawings documenting standing structures; and 3) the use of landscaping or other techniques that would minimize or eliminate effects on the historic setting or ambience of standing structures or historic trails.

In Colorado, cultural resources surveys still need to be completed for two 10-acre staging areas, two reroutes, and one extra workspace. As of June 2005, these areas are now inventoried and will be reported on separately in an addendum report. To date, 35 sites within the APE are recommended or have been officially determined eligible for the NRHP and 34 buried sites need additional evaluation for a conclusive recommendation of eligibility. A limitation on the construction ROW width is recommended for one of the eligible sites. One of the eligible sites is recommended for pre-construction data recovery, 13 are recommended for pre-construction testing, and 19 are recommended for monitoring and OTI. No additional investigation is recommended for the remaining eligible site because the pipeline route crosses a non-contributing segment of the site. The number of sites recommended for post-construction data recovery would be determined during monitoring and OTI. Protective fencing and limiting the construction ROW width is recommended for an eligible site located outside of the current APE, but within an area where WIC has requested extra ROW width.

In Wyoming, cultural resources surveys still need to be completed for one extra workspace in and adjacent to a compressor station, two reroutes, and approximately 0.4 mile of access road. Additional access roads requiring survey may be identified. As of June 2005, these areas are now inventoried and will be reported on separately in an addendum report. To date, 16 sites within the APE are recommended or have been officially determined eligible for the NRHP. Reroutes and/or limitations on construction ROW widths or techniques are recommended for three of the eligible sites. The pipeline route crosses a non-contributing segment of one eligible site; however, a limitation on the construction ROW width is recommended for this site. One of the eligible sites is recommended for pre-construction data recovery, five are recommended for pre-construction testing, and five are recommended for monitoring and OTI. A limitation on the construction ROW width and pre-construction data recovery is recommended for the remaining eligible site. One additional site, which is listed in the SHPO database as not eligible for the NRHP, also is recommended for monitoring and OTI based on the potential for subsurface cultural deposits. The number of sites recommended for post-construction data recovery would be determined during monitoring and OTI.

The process of fully complying with Section 106 of the NHPA has not yet been completed for the Piceance Project. Surveys and evaluative testing have not been completed and reroutes to avoid eligible sites have not been finalized. Once evaluations are complete and it has been determined which sites can or cannot be avoided, the FERC, in consultation with the BLM and SHPOs, would make final determinations of NRHP eligibility and project effects. For historic properties that would be adversely affected, the FERC and the BLM, in consultation with the SHPOs, would review the adequacy of WIC's proposed Treatment Plan. Once the Treatment Plan is approved, WIC would implement the specified treatment measures before notice to proceed with project construction is authorized in any given area. Implementation of treatment would occur only after approval of the proposed project by both the FERC and the BLM. The FERC would ensure that treatment is carried out.

To ensure that the FERC's responsibilities under the NHPA and its implementing regulations are met, **we recommend that WIC defer construction and use of facilities and staging, storage, and extra workspaces, and access roads until:**

a. WIC files with the Secretary all remaining cultural resource inventory and evaluation reports, and necessary avoidance or treatment plans;

b. WIC files with the Secretary the BLM's and the Colorado and Wyoming SHPOs' comments, as applicable, on all reports and plans; and

c. the Director of OEP reviews and approves all reports and plans and notifies WIC in writing that it may proceed.

All material filed with the Commission containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE."

3.9 Socioeconomics

3.9.1 Population

In 2000, the population of Colorado was 4,301,261 and the population of Wyoming was 493,782. In part due to energy development activities, Colorado's population climbed by 5.8 percent to 4,550,688 in 2003. Wyoming's population increased by 1.5 percent to 501,242 over the same period (U.S. Census Bureau 2004). The three counties in which the proposed pipeline route lies, Sweetwater, Wyoming, and Moffat and Rio Blanco, Colorado, are largely rural, generally with a single population center in proximity to the route. Carbon County in south-central Wyoming and Garfield and Routt Counties in northwestern Colorado, although not directly affected by the proposed route, border those directly affected counties, and thus may experience indirect or secondary effects from the proposed project and are included in the analysis where appropriate.

The least populous county crossed by the proposed pipeline corridor is Rio Blanco County, Colorado, which had a population of 5,938 in 2003. The most populated county directly affected by the proposed pipeline route is Sweetwater County, Wyoming, which had a population of 37,018 in 2003. A majority of the population in Sweetwater County is centered around Rock Springs, Wyoming, which is about 70 miles west of the proposed northern terminus at the Wamsutter Compressor Station. **Table 3.9-1** describes recent population change for the proposed project area.

Table 3.9-1
Population Change in Project Region

			Change, 2000 to 2003	
	2000	2003	Absolute	Percent
Carbon, WY	15,639	15,302	(337)	-2.2
Sweetwater, WY	37,613	37,018	(595)	-1.6
Garfield, CO	43,791	47,611	3,820	8.7
Moffat, CO	13,181	13,527	346	2.6
Rio Blanco, CO	5,986	5,938	(48)	-0.8
Routt, CO	19,690	20,788	1,098	5.6

Source: U.S. Census Bureau, Population Division 2004.

Of the counties potentially affected by the proposed pipeline, either directly or indirectly, only Routt and Garfield have experienced substantial population growth over the past 3 years. Moffat County realized moderate population gains. Much of the growth in northwestern Colorado has been tied to the substantial energy exploration and development activity in recent years. Population changes in Wyoming have been relatively limited in scale, with both potentially affected counties losing population between 2000 and 2003.

Potential impacts to the existing socioeconomic environment of the proposed project area would result primarily from the temporary influx of a relatively higher number of construction workers. Little long-term impact would result because WIC anticipates adding only one permanent position to its existing workforce.

WIC anticipates a peak of about 600 construction personnel employed on the project during the latter months of 2005, potentially extending into 2006. Construction personnel would consist of WIC employees, contractor employees, construction inspection staff, and environmental inspection staff. WIC is planning to construct the pipeline in two spreads, with construction activity occurring simultaneously on each spread. The applicant anticipates up to 300 construction and inspection personnel associated with each pipeline spread. Construction of additional compression at the CIG Greasewood Compressor Station would require a construction workforce of 50 to 100 personnel. WIC has proposed to commence construction of the pipeline and metering stations in October 2005. Construction would continue for 16 weeks, such that pipeline completion would be anticipated to occur by February 1, 2006. The construction schedule for the compressor has not been finalized; however, WIC has targeted completion by April 2006. Some follow-up restoration may be required in the spring of 2006.

Construction workforce requirements for the two spreads would ramp up quickly from 50 the first week to 600 within the first month. Assuming construction would begin in October, the size of the construction workforce would remain at about 600 workers through October and much of November, before scaling back below 200 workers during the last month of construction (**figure 3.9 1**). WIC's proposed construction plan is for activity to begin at the southern ends of each spread and proceed northward.

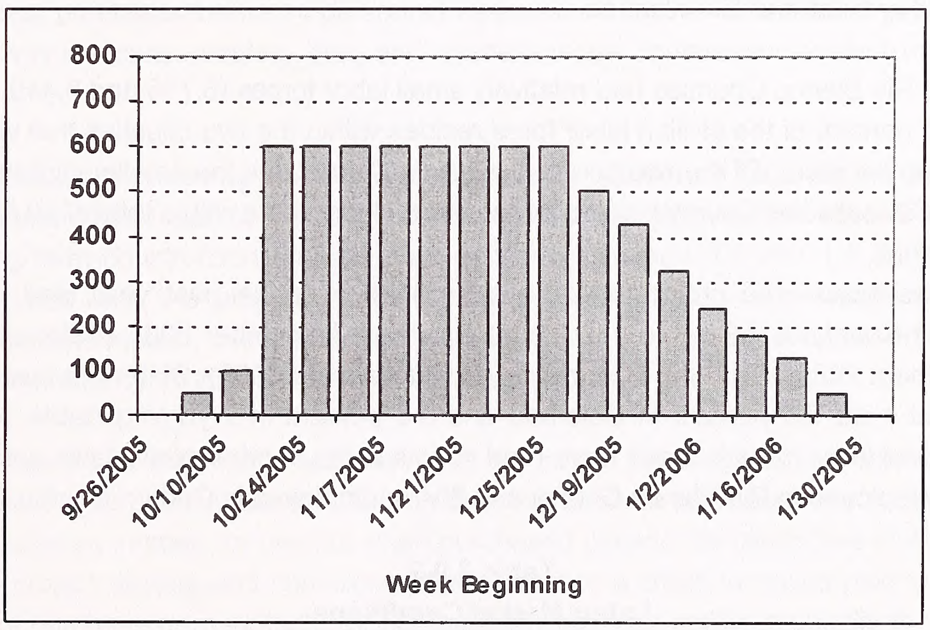


Figure 3.9-1. Projected Construction Workforce – Piceance Project

WIC, through its construction contractors and subcontractors, would attempt to hire temporary construction staff from the local population (i.e., currently residing in nearby areas of Colorado and Wyoming) to minimize additional demands on housing. With competing demands from oil and gas development and other projects, as well as the skills required for many project related positions, we anticipate that no more than 8 percent of the total construction workforce could be hired locally. The remaining workers (approximately 550 at the peak) would be non-local personnel. Note that the local/non-local status could change for some workers as the specific location changes. For example, residents of Rock Springs employed on Spread 2 may temporarily relocate to Craig, but then resume residency in Rock Springs as project construction moves northward.

Environmental inspection staff would likely consist entirely of non-local employees based on the specialized skills and experience required for the job.

Population impacts from the influx of temporary construction and inspection personnel would be temporary and dispersed along the proposed route. Due to the temporary and transitory nature of the work, most non-local workers would not be accompanied by spouses, other family members or non-family partners. Thus, the overall population impact would be only moderately higher than the number of workers (i.e., 20 to 40 percent). Nevertheless, the temporary population impacts in the smaller communities would be moderate. Any specific operation and maintenance task which cannot be completed by WIC's staff would be completed on a contractual and as-needed basis.

Given the limited impact on its permanent workforce, secondary employment effects would be limited. Thus, the project would not have a significant long-term impact on the permanent population.

3.9.2 Employment and Economics

In 2004, Moffat and Rio Blanco Counties had relatively small labor forces (6,715 and 3,449, respectively). In Wyoming, about 10 percent of the civilian labor force resides within the two counties that would be affected by the proposed pipeline route. Of the two counties, Carbon County has the smaller civilian labor force with 7,940 persons, and Sweetwater County has the larger civilian labor force with a total of 20,855 persons.

Unemployment rates across the project area have declined over the past year, and now range from 2.1 percent in Routt County to 4.9 percent in Moffat County in December 2004 (Colorado Department of Labor and Employment 2005; Wyoming Department of Employment 2005). Statewide unemployment rates for the same period were 5.0 percent in Colorado and 3.6 percent in Wyoming (**table 3.9-2**). Given the limited size of the local labor force in these more rural counties, the number of available workers is very low, for example, 94 unemployed in Rio Blanco County and 264 unemployed in Carbon County.

Table 3.9-2
Labor Market Conditions

	December 2004				Average Annual Unemployment Rate - 2004
	Labor Force	Employed	Unemployed	Unemployment Rate	
Carbon, WY	7,636	7,371	264	3.5%	3.9%
Sweetwater, WY	21,440	20,791	649	3.0%	3.1%
Garfield, CO	27,032	26,125	907	3.4%	3.3%
Moffat, CO	6,582	6,260	322	4.9%	5.6%
Rio Blanco, CO	3,237	3,143	94	2.9%	3.7%
Routt, CO	12,957	12,688	269	2.1%	3.2%

Sources: Colorado Department of Labor and Employment 2005; Wyoming Department of Employment 2005.

In northwestern Colorado, the primary employment sectors of the counties crossed by the proposed pipeline route are agriculture, oil and gas development, trade and construction, while mining (both mineral and oil and gas development), public administration, and trade and tourism/travel also are important employment sectors in Wyoming. The latter is due in part to the I-80 corridor across southern Wyoming.

In 2002, per capita personal income was $33,723 in Colorado and $31,021 in Wyoming. The three counties traversed by the proposed pipeline route have per capita incomes ranging from $24,136 in Moffat County to $30,400 in Sweetwater County, all below their respective statewide averages (U.S. Bureau of Economic Analysis 2004).

Local businesses would benefit from demands for goods and services generated by the temporary construction workforce. Benefits in the form of higher business volume would accrue to many retail, lodging, eating and drinking, convenience stores/fueling stations, and other business establishments across the entire proposed route and in nearby communities. Estimated spending for such goods and services, based on WIC's workforce estimates and daily spending assumptions, would total about $5.0 million during the construction period.

In addition, local purchases for materials necessary with the Piceance Project would be made. WIC estimates that local purchases made by personnel associated with the construction of the Piceance Project would primarily include consumables, fuel, and miscellaneous construction-related materials (e.g., office supplies).

The economic stimulus provided by the project would result in temporary secondary impacts on employment as local establishments add staff or increase hours worked by existing staff to accommodate the increases in demand. Long-term construction projects may generate between 0.7 and 1.1 additional jobs for each direct job associated with the project. However, given the temporary and rapidly moving pace of the Piceance Project construction, the secondary impacts would be expected to be on the order of about 0.35 jobs, a peak of about 210 jobs across the entire region.

Of greater significance to state and local revenues would be the sales or use taxes on pipe and other materials and installed equipment associated with the project. Such purchases are subject to sales tax if the items are manufactured in-state, or use tax when purchased outside the respective states and imported into state. Typically, project owners and contractors are entitled to a credit for taxes paid in another jurisdiction (e.g., the point of purchase or manufacture), but generally have an option to specify the point of delivery as the location for purposes of taxation. Sweetwater County imposes a use tax, as does Rio Blanco County. Moffat County does not impose a use tax. WIC's estimated sales/use tax obligation, based on current tax rates and assuming it exercises the option for local taxation, is $632,000 in Wyoming and $1.31 million in Colorado. In Wyoming about 80 percent of the total would accrue to the state, the remainder distributed among the counties based on the value of installed materials and equipment. The distribution in Colorado would be about 75 percent to the state and 25 percent to Rio Blanco County.

WIC estimates total labor costs, including direct compensation and fringe benefits, of $48 million during construction (about one-third in Wyoming and two-thirds in Colorado). Individual workers who are Colorado residents, or who work in Colorado on a temporary basis would incur an income tax liability on those earnings. This would temporarily increase the tax revenue for the state, although the increase would be relatively small.

Long-term income associated with WIC operations would be negligible due to the limited direct employment impact, although additional income may be realized by contractors servicing the pipeline.

3.9.3 Housing

Housing availability within the project area is a function of the housing stock, recent economic and population growth, the inventory of short-term accommodations, such as recreational vehicle (RV) parks and hotel and motel rooms, and demand for housing from other sources. In 2000, the total housing supply ranged from 2,855 units in Rio Blanco County to 17,336 units in Garfield County. Carbon County registered a total housing supply of 8,307 units (**table 3.9-3**).

Table 3.9-3
Housing Inventory

	Total Units – 2000	Available Rental Units – 2000	Building Permits 2000 – 2003
Carbon, WY	8,307	360	131
Sweetwater, WY	15,921	680	190
Garfield, CO	17,336	217	1,876
Moffat, CO	5,635	189	180
Rio Blanco, CO	2,855	127	60
Routt, CO	11,217	956	1,359

Sources: U.S. Census Bureau 2004; Colorado Division of Local Government 2004; Wyoming Department of Administration and Information 2004.

A key indicator of housing availability to meet short-term needs is the number of available rental units. Among the rural counties in the western portion of the project area the number of such units recorded in the 2000 Census ranged from 127 units in Rio Blanco to 680 units in Sweetwater County. In the case of the latter, most of those units were in Rock Springs or Green River, a considerable distance from the proposed route.

A combined 561 new units have been issued permits in Rio Blanco, Moffat, Carbon, and Sweetwater Counties since the 2000 Census (U.S. Census Bureau 2004; Colorado Division of Local Government 2004; Wyoming Department of Administration and Information 2004). Significant new construction has occurred in Routt and Garfield Counties, although many of the new housing units were single-family residences.

A second, more critical component of local housing markets is the inventory of short-term accommodations. Such accommodations include RV spaces, motel and hotel rooms and mobile home spaces. In some instances, recreational cabins and seasonal housing for migratory workers also may be available. With the exception of Rio Blanco County with 404 units, the inventory of such accommodations is relatively larger in most of the counties because tourism, travel, and outdoor recreation play major roles in the local economies (**table 3.9-4**).

Table 3.9-4
Estimated Temporary Housing Inventory, Winter 2004

	RV Spaces	Motel/Hotel Rooms	Mobile Home Spaces	Total	Temporary Housing Availability
Carbon, WY	395	1,367	2,583	4,345	Limited
Sweetwater, WY	215	1,718	3,696	5,629	Limited
Garfield, CO	196	>1,000	NA	>1,196	Very Limited
Moffat, CO	221	600	858	1,679	Fair to Good
Rio Blanco, CO	108	143	153	404	Very Limited
Routt, CO	105	>1,000	NA	>1,105	Good
Total	**1,140**	**>5,828**	**7,290**	**>14,358**	

Note: RV spaces exclude some or all spaces in national forest and state park campgrounds. Only some, unknown number, of the mobile home spaces are available at any one time and may not be available for short term use.

Sources: Appendix 5A – Entrega Pipeline Project and Sammons/Dutton 2004.

The short-term accommodations tend to be geographically concentrated in the largest communities in each county, although there are some RV parks and smaller motels in outlying communities, particularly along the I-80 corridor in Sweetwater County and in southwestern Carbon County.

Vacancy surveys of rental housing in Wyoming indicate limited availability across the study area, with estimated vacancy rates of under 1.0 percent in Sweetwater County and 8.4 percent in Carbon County. However, the latter represents only about 50 units. (Wyoming Housing Database Partnership 2004). Vacancy rates for rental housing are not reported for rural Colorado, but anecdotal reports suggest limited availability in many communities, although housing is reportedly more available in the Craig area following the recent completion of a major retrofit project at the nearby powerplant. Anecdotal information also indicates limited availability of short-term lodging across most of the western portion of the study area, particularly in Sweetwater and Rio Blanco Counties, due to ongoing energy resource development and seasonal tourism and hunting demand. Given the above, housing availability can be characterized as limited to very limited in most counties.

The project construction period would be relatively short and most non-local workers likely would be unaccompanied during their work tenure on the project. Consequently, it is expected that most project workers would use temporary housing, such as hotels/motels, RV parks, and campgrounds. Some workers would likely resort to renting furnished apartments and homes, due to availability constraints of other accommodations, though this is generally less preferable due to landlord and property management company preferences for extended term commitments. Most of the temporary workers would seek housing in the more populated, service-oriented towns located within a reasonable commuting distance to the work site. Furthermore, some individuals may desire to relocate during the term of the project as the active area in each spread moves along the corridor. As the more convenient options fill, workers would drive further, seeking alternatives in smaller communities, even using campgrounds on the national forest or at state parks or camping on public lands despite the fact that those locations have 14-day stay limits. As stated in the POD, construction personnel would be restricted from camping on public lands during construction of the project except in designated campgrounds. However, WIC does not specify what measures it or its contractors would take to ensure that these unauthorized camping activities do not occur. WIC's contractor for Spread 1 is providing technical and monetary assistance to several property owners in the Meeker area to reopen several camp grounds and trailer parks, to help address the temporary housing needs.

The net effect of these factors is that the temporary housing demand would be dynamic. An assessment of the temporary housing demands, based on a 15 percent assumed local hiring, the locations and driving distances involved and the availability of temporary housing yielded the temporary housing demand profile shown in **table 3.9-5**.

Table 3.9-5
Projected Temporary Housing Demand Requirements, Selected Months, 2005/2006

	Projected Non-Resident Workers				Percent Distribution, By Month			
	October	November	December	January	October	November	December	January
Carbon, WY	54	93	75	21	19%	18%	17%	13%
Sweetwater, WY	48	88	70	21	17%	17%	15%	13%
Garfield, CO	42	75	71	29	15%	15%	16%	18%
Moffat, CO	77	138	121	43	27%	27%	27%	26%
Rio Blanco, CO	54	93	96	43	19%	18%	21%	26%
Routt, CO	14	25	20	6	5%	5%	4%	4%
Total	289	512	453	163	100%	100%	100%	100%

Source: Sammons/Dutton 2005.

Temporary housing demand, assuming a worst-case of one worker per unit, is projected at 289 units in October, rising to 512 units in November when construction on Spreads 1 and 2 is proceeding at full pace. Demand would moderate slightly in December, easing substantially by the end of January 2006. These estimates do not include as many as 85 additional workers associated with the addition of compression at the Greasewood Compressor Station, if that schedule overlaps with that on Spread 1. Housing demand would be heaviest in Moffat and Rio Blanco Counties, but only slightly lower in Carbon and Sweetwater Counties. Availability constraints in the two former counties are likely to result in commuting from nearby locations in Routt and Garfield Counties. Consequently, for a relatively short duration, Craig, Meeker, and other communities could experience extremely tight market conditions for temporary housing.

The temporary housing demands associated with the project would compete with summer tourism and fall hunting demands across much of the region, resulting in higher nightly lodging rates, more limited availability and displacement of demand to other locations when local motels and RV campgrounds are full. To the extent that such displacement occurs, it would diminish the economic benefits associated with construction worker spending.

Housing requirements for the continuing operation and maintenance of the pipeline would be negligible to nonexistent.

3.9.4 Public Services and Facilities

Table 3.9-6 outlines selected public services and facilities serving the proposed project area. In general, public service availability is a function of overall county population and size of the largest community in the county. Law enforcement is provided by multiple providers including the respective state patrols, county sheriffs and local police departments. In many instances, mutual aid/cooperative agreements among agencies allow members of one agency to provide support or backup to the other agencies in emergency situations.

Table 3.9-6
Existing Public Services and Facilities

	Police/Sheriff Departments[1]	Fire Departments[2]	Medical Facilities[3]
COLORADO			
Rio Blanco	3	2	2 Hospitals
Moffat	2	2	1 Hospital
WYOMING			
Sweetwater	4	9	1 Hospital

[1] Capitolimpact.com. http://www.captiolimpact.com, accessed 10/08/03. Does not include special law enforcement units for universities.
[2] Firehouse Network. http://www.fire-ems.net, accessed 10/13/03. Includes volunteer, district, city, and town departments, but does not include departments and services offered by the BLM or the Department of Defense.
[3] Colorado Health and Hospital Association. http://www.cha.com/Hospitals/hospitals.shtml, accessed 10/13/03. Wyoming Hospital Association. http://www.wyohospitals.com/find.html, accessed 10/13/03.

A network of fire departments and districts provide fire protection and suppression services across the region. Many of the fire districts across the region are staffed by volunteers and are housed in stations located in the larger communities. This can increase response time to incidents. Federal land management agencies also maintain wild land and forest fire suppression capabilities in the region, though these capabilities are not generally staffed for quick response dispatch.

There is at least one acute care hospital operating in each county crossed by the proposed route. Those facilities provide emergency medical care and in several cases are the bases for local emergency medical response and transport services. As in the case of fire suppression, response times to highway or construction-related accidents in parts of the proposed route may be lengthy given communication, dispatch, and travel time considerations.

A higher level trauma center capable of treating serious injuries requiring more specialized or intensive care is located in Rock Springs. The most serious injuries may require transport to regional trauma centers in Grand Junction, Colorado and Casper, Wyoming or even to Denver or Salt Lake City. The regional trauma centers all provide emergency medical air transport, usually via helicopter, with airports capable of accommodating fixed-wing aircraft located in Rifle, Meeker, Craig, Hayden, Rawlins, and Rock Springs.

Construction of the pipeline could result in minor, temporary impacts on local facilities and services, including law enforcement, fire and medical services. A concern raised during public scoping was the potentially lengthy emergency medical response times in the more remote stretches of the proposed pipeline route. To address these concerns, WIC has drafted an on-site ERP which includes the formation of emergency response teams for the project (WIC 2005g). The ERP would be provided to the BLM, Colorado and Wyoming DOT and to the FERC upon completion.

Other construction-related impacts on local services may include increased demand for permits for vehicle load and width limits and local police assistance during construction at road crossings to facilitate traffic flow. WIC would work with the local law enforcement, fire departments, and emergency medical services to coordinate effective emergency response. The degree of impact would vary from community to community depending on the number of non-local workers and accompanying family members that temporarily reside in each community, the duration of their stay, and the size of the community. Although these factors are too indeterminate and variable to accurately predict the magnitude of impact, the effects would be short term and are not expected to be significant.

The limited number of permanent employees associated with the proposed project would result in negligible long-term impacts on public services.

3.9.5 Public Sector Fiscal Resources

Local municipal governments, school districts and some other government-funded entities rely heavily on property and sales tax revenues to fund their ongoing operations. **Table 3.9-7** lists the 2003 total assessed valuation from all sources and estimated gross retail sales of all establishments for the three directly

Table 3.9-7
County Property and Sales Tax Base

	Assessed Valuation 2003	Gross Retail Sales (Estimated)
Carbon, WY	$382,269,728	$344,978,000
Sweetwater, WY	$1,160,741,992	$1,073,949,000
Moffat, CO	$298,876,180	$226,378,000
Rio Blanco, CO	$304,607,460	$169,443,000

Note: Retail sales for Wyoming are Fiscal year 2004, those for Colorado are for calendar year 2003.

Sources: Wyoming Department of Administration and Information 2004; Wyoming Taxpayers Association 2004; Colorado Department of Local Affairs, Division of Property Taxation 2004.

affected counties and Carbon County where many non-local workers are expected to reside. Note that the values for Wyoming and Colorado counties are not directly comparable due to differences in property assessment practices, but comparisons between counties within a state reflect differences in the scale of development and natural resource wealth. For instance, assessments on mineral production account for about 63 percent of the total assessed valuation in Sweetwater County and 76 percent of Rio Blanco County's total. Other state-assessed property, including utilities and oil and gas transmission systems, account for 48 percent of the total valuation in Moffat County and between 10 and 13 percent of the total in

Sweetwater and Rio Blanco Counties. Statewide total assessed valuation on gas transmission pipelines in 2003 was $121.7 million in Wyoming and $255.6 million in Colorado.

Gross annual retail sales reflect a locality's population, income, the level of travel and tourism in the region, the presence of special populations such as a college or university, and the economic stimulus provided by special activities such as construction projects and energy and mineral resource development. In both states, all of the counties and many of the communities within the counties levy sales taxes on retail purchases. Based on total annual gross retail sales, Rio Blanco and Moffat Counties have the smallest trade and service sectors of all the counties crossed by the proposed project while Sweetwater County has the largest.

During operation of the pipeline, WIC would pay property/ad valorem taxes to local governments crossed by the proposed pipeline. In Wyoming, those payments would include taxes associated with a mandatory statewide levy to help support public education. Transmission lines are centrally assessed by the state, with the total valuation then allocated among the local counties based on their respective shares of the installed pipelines and facilities. Initially the cost of construction provides a reasonable proxy for the market valuation of gas transmission systems. Over time, the assessment focuses more on the respective facility's contribution to system-wide income and depreciated value, generally resulting in lower assessment. For example, the aggregate assessed valuation of gas transmission systems (141.7 miles of pipeline and corresponding compressors and other equipment) in Colorado and Wyoming in 2003 was just over $47.6 million, with a corresponding original construction cost of $120.1 million. For this analysis, it is assumed that the long-term assessment would decline to 40 percent of the initial construction cost-based assessment. **Table 3.9-8** summarizes the projected assessed valuation and corresponding annual property taxes, by county, directly associated with WIC's proposed pipeline.

Table 3.9-8
Projected Assessed Value and Annual Property Taxes, by County

	Assessed Valuation		Property Tax Mill Levy[3]	Annual Property Tax	
	Initial Construction[1]	Long-term[2]		Initial Construction	Long-term
Sweetwater, WY	$4,642,200	$1,856,880	61.823	$286,995	$114,798
Moffat, CO	$12,445,500	$4,978,200	60.720	$755,691	$302,276
Rio Blanco, CO	$10,678,100	$4,271,240	37.764	$403,248	$161,299
Total	**$27,765,800**	**$11,106,320**		**$1,445,933**	**$578,373**

[1] Initial valuations based on 11.5 percent assessment rate in Wyoming and 29 percent in Colorado.
[2] Assumes assessed valuation at 40 percent of construction cost after the pipeline has been operational for several years and is centrally assessed based on its contribution to annual corporate income.
[3] Average mill levies for real property in unincorporated areas of each county.

Source: ENSR, based on data from WIC; local county assessors; the Colorado Department of Local Affairs, Division of Property Taxation 2004; Wyoming Department of Revenue 2004.

Estimated valuation for the pipeline and additional compression would be about $27.8 million. Of that sum, 17 percent would be in Wyoming and 83 percent in Colorado. Total annual property taxes levied on those assessments are projected at about $1.45 million. Over time, the total assessed value is anticipated to decline to $11.1 million and annual property taxes paid would decline to $0.58 million. The ongoing revenues, given the relatively low demands on public services and facilities would represent a substantial economic benefit associated with the project.

Tax revenues are typically used by local and state governments for infrastructure improvements such as roads, schools, and health facilities, and to meet other needs of the community.

Retail sales, property, income (in Colorado) and other taxes collected from the permanent employees associated with the continuing operations and maintenance would have a negligible effect on state, county, and local tax revenues.

3.9.6 Transportation

The major transportation routes that would be crossed by the proposed pipeline project include U.S. Interstate 80 (I-80), U.S. Highway 40, and Colorado State Highway 64.

Another significant transportation feature in the region is the Union Pacific Railroad's mainline route across southern Wyoming. The railroad and I-80 corridors generally parallel each other across Sweetwater and Carbon Counties.

Construction across roads, highways, and railroads would result in short-term impacts on public travel while construction activities pass through the project area. WIC has developed a draft TTMP to assist in mitigating potential impacts of project-related road use and construction activity (WIC 2005h).

WIC has stated that major paved roads, highways, and railroads would generally be crossed by boring beneath the road or railroad. These crossings would require the approval and appropriate permits from railroad companies, as well as state and local agencies. Boring typically requires extra workspaces on either side of the crossing for excavating bore pits to the depth of the pipeline while the roadway or railroad is allowed to remain open. There would be little or no disruption of traffic at road or railroad crossings that are bored.

Smaller or unpaved roads would typically be open cut where permitted by local authorities or landowners. The open-cut crossing method may require temporary closure of a road and establishment of detours. If no reasonable detour is feasible, at least one lane of a road would be kept open to traffic, except for brief periods when it is essential to close the road to install the pipeline. WIC would avoid closing roads during peak traffic hours.

To maintain safe conditions, WIC would direct its construction contractors to ensure enforcement of local weight restrictions and limitations by their vehicles and to remove any soil left on the road surface by the crossing of construction equipment. When it is necessary for equipment to cross roads, mats or other appropriate measures (e.g., sweeping) would be used to reduce deposition of mud.

Movement of construction equipment, materials, and crew members would result in an additional short-term impact on the transportation network. Much of the proposed project area is readily accessible by state primary and secondary highways, county roads, and private roads. Impacts on local traffic levels would be temporary given the linear and dispersed nature of the project as construction would move sequentially along the proposed pipeline route. Construction workers would commute to and from the project area from temporary housing in local towns and cities, although this would typically begin before sunrise and end after sunset, times of the day when daily local traffic tends to be light. Consequently, short duration congestion is likely to occur in some locations, affecting residents and other travelers as well.

Minimal traffic is anticipated to be associated with operation and maintenance of the new pipeline as only one additional permanent worker would be required to operate the pipeline and ongoing contract maintenance would not generate substantial traffic on a consistent or long-term basis. Therefore, no impacts on transportation networks would be expected to occur during operation of the proposed pipeline.

3.9.7 Property Values

About 54 percent of the land affected by construction and operation of the proposed project would be on public lands managed by the BLM (46 percent) and the State of Colorado (8 percent). The remainder of the land that would be affected (46 percent) is privately owned. A detailed description of land ownership is presented in section 3.7.

On both public and private lands, WIC would acquire an easement for both the temporary (for construction) and permanent ROWs. The easement would provide WIC the right to construct, operate, and maintain the pipeline, and establish a permanent ROW. In return, WIC would compensate the landowner for use of the land and the temporary loss of crops or forage. Where the proposed pipeline route would cross BLM land, WIC would acquire a ROW grant for construction and operation of the proposed facilities. The ROW grant essentially allows WIC to lease the land from the BLM.

The potential effect that a pipeline easement may have on private property values or property income is an issue that would be negotiated between the parties during the easement acquisition process. The easement acquisition process is designed to compensate a landowner for the right to use the property for pipeline construction and operation. The impact a pipeline may have on the value of a tract of land depends on many factors, including the size of the tract, the values of adjacent properties, the presence of other utilities, the current value of the land, and the current land use. Construction of the proposed pipeline would not change the general use of the land, but would preclude construction of aboveground structures on the permanent ROW and might interfere with other current uses, e.g., irrigation and raising crops, on a short-term or long-term basis, or the loss of non renewable resources or destruction of other improvements such as fences.

Prior to initiating any construction activities on non-federal lands, an easement would be pursued by the pipeline company to convey ROW from the landowner to the pipeline company. The easement negotiations between the company and the landowner also would include compensation for loss of use during construction, loss of nonrenewable or other resources, damage done to property during construction, and allowable uses of the ROW after construction. Because the easement acquisition process is conducted with the landowner, it is possible that tenants or lessees could be adversely impacted, though it is not known whether any instances of such impacts would occur in conjunction with the Piceance Project.

If an easement cannot be negotiated with the landowner and the project has been certificated by the Commission, the company may use the right of eminent domain granted to it under Section 7(h) of the NGA to obtain the ROW and extra work areas identified in the Certificate. Section 7(h) implies that eminent domain is a remedy of last resort, to be used "when any holder of a certificate of public convenience and necessity cannot acquire by contract, or is unable to agree with the owner of property to the compensation to be paid for, the necessary right-of-way..." There are a number of options available, short of eminent domain, to secure the property:

- negotiate to buy the land;
- negotiate to lease the land; or
- negotiate a "restrictive easement" arrangement with the landowner.

The company would still be required to compensate the landowner for the ROW and for any damages incurred during construction. The level of compensation would be determined by a court according to state law. Special permits would be obtained as needed for pipeline ROW through town, state, or federal lands.

WIC is currently working to obtain the necessary easements for the proposed facilities. Through negotiations with landowners, WIC would be able to make minor route adjustments to accommodate landowner needs and requirements as long as those changes would not affect any environmentally sensitive areas, or affect other landowners without their approval. If easements are acquired through the use of eminent domain, it would be more difficult to make adjustments to the route.

3.9.8 Environmental Justice

A description of the population types (i.e., races) residing within the three counties crossed by the proposed pipeline route based on U.S. Census Bureau data from 2000 is presented in **table 3.9-9**. In Colorado, the proposed pipeline route would cross counties that contain a smaller proportion of minorities than are found statewide in Colorado. In Wyoming, demographics for Sweetwater County show a slightly larger proportion of minorities compared to Wyoming's statewide average.

The percent of population with incomes below the poverty level also are summarized in **table 3.9-9**. In Colorado, Rio Blanco County has poverty rates higher than the statewide average, while poverty rates in Moffat County are less than the statewide average. In Wyoming, the poverty rate in Sweetwater County has a smaller percentage of people living in poverty than the statewide average.

WIC's proposed pipeline route effectively bypasses all concentrations or clusters of residential and commercial development, and for the most part is located on public lands or collocated with other utilities or near highway corridors. Furthermore, no residential or commercial displacements are anticipated. Thus, the potential for adverse impacts on minorities or low-income populations, much less disproportionate impacts, is remote.

Table 3.9-9
Race and Poverty

	Race as a Percent of Total Population[1]						Persons Below Poverty Level, percent (1999)
	White	Black or African American	American Indian and Alaska Native	Other Races	Two or More Races	Hispanic or Latino Origin, percent (2000)[2]	
COLORADO	82.8	3.8	1.0	9.6	2.8	17.1	9.3
Rio Blanco	95.0	0.2	0.8	2.3	1.7	4.9	9.6
Moffat	93.6	0.2	0.9	3.5	1.8	9.5	8.3
WYOMING	92.1	0.8	2.3	3.0	1.8	6.4	11.4
Sweetwater	91.6	0.7	1.0	4.3	2.4	9.4	7.8

[1] U.S. Department of Commerce, Bureau of the Census, Census 2000: Demographic Profiles.

[2] People who identify their origin as Hispanic or Latino may be of any race. Thus, the percent Hispanic or Latino should not be added to the race as percentage of population categories.

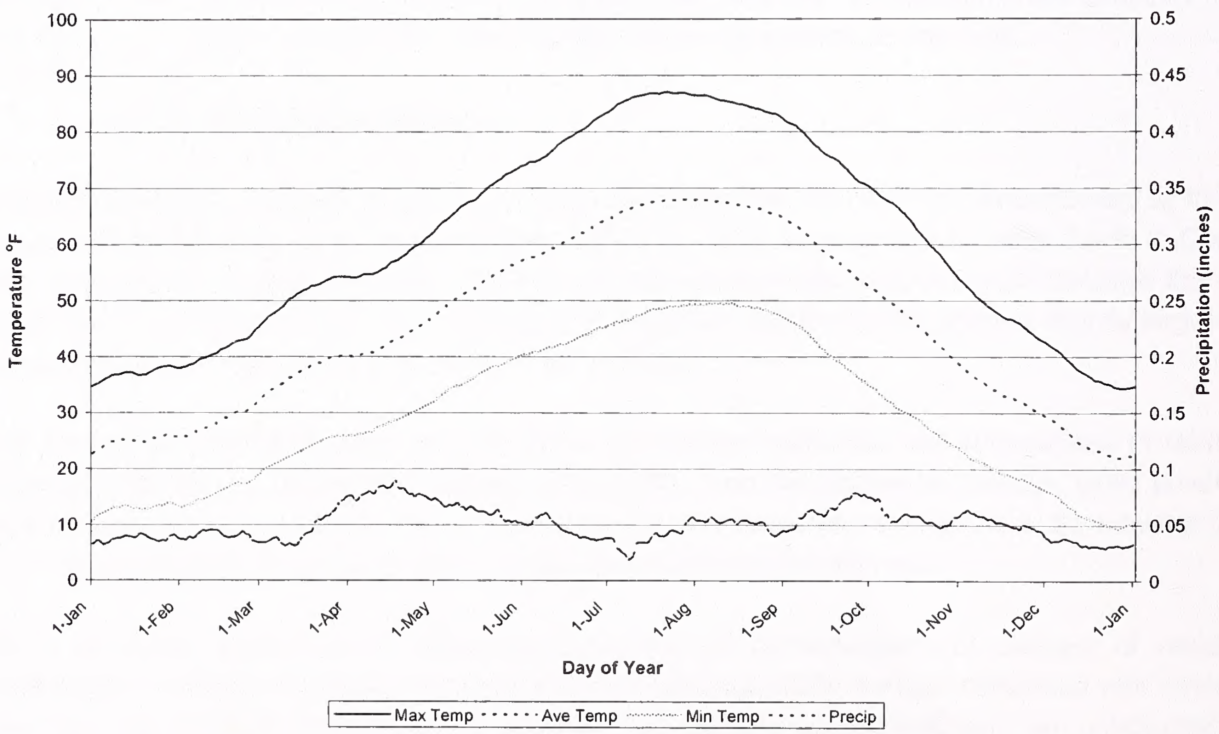
3.10 Air and Noise Quality

3.10.1 Air Quality

Climate

The regional climate of the proposed project area is predominantly classified as continental with some areas in Wyoming classified as temperate semi-arid. Surface wind direction and precipitation vary in the proposed project area due to significant geographical features. However, the specific characterization of the local weather based on data from Meeker, Colorado indicates an average annual maximum temperature of 60.8 degrees Fahrenheit (°F) and an average annual minimum temperature of 29.9°F with an average annual precipitation of 18.5 inches.

The plotted data curves in **figure 3.10-1** are smoothed using a 29-day running average. The maximum temperature (Max. Temp.) is the average of all daily maximum temperatures recorded for the day of the year between the years 1971 and 2000. The average temperature (Ave. Temp.) is the average of all daily average temperatures recorded for the day of the year between the years 1971 and 2000. The minimum temperature curve (Min. Temp.) is the average of all daily minimum temperatures recorded for the day of the year between the years 1971 and 2000. Precipitation is the average of all daily total precipitation recorded for the day of the year between the years 1971 and 2000.



Source: Western Region Climate Center website http://www.wrcc.dri.edu.

Figure 3.10-1. Average Temperature and Precipitation at Meeker, Colorado 30-Year Average 1971-2000

The average annual snowfall in Meeker from January 1899 through December 2004 was 72.2 inches. A representative station in Cheyenne, Wyoming, with wind observations from 1930 to 1996 indicates an annual average wind speed of 13 miles per hour and a predominant wind direction of west-northwest.

The climate of the west slope in western Colorado is primarily influenced by Pacific air masses which flow over the Sierra Nevada and Cascade Mountains. As the air masses pass over these mountains they lose much of the moisture that is typical of maritime air. This produces the arid environment of the intermountain region. In fact, the overwhelming characteristic of the intermountain portion of the west slope climate at lower elevations is arid. Typically, lower elevations in this area receive less than 10 inches (25.5 centimeters) of precipitation annually. The higher elevations in the mountains receive much greater amounts of precipitation, often 4 to 5 times as much as the valleys.

Existing Air Quality

Federal and state air regulations are designed to ensure that ambient air quality, including background, existing, and new sources are in compliance with the ambient standards. The EPA has designated areas of the U.S. as "attainment," "non-attainment," or "unclassified" with respect to ambient air quality standards.

The EPA has established National Ambient Air Quality Standards (NAAQS) for seven pollutants: sulfur dioxide (SO_2), carbon monoxide (CO), nitrogen dioxide (NO_2), ozone, particulate matter (PM_{10} and $PM_{2.5}$), and lead. The NAAQS were set at levels the EPA believed were necessary to protect human health (primary standards) and human welfare (secondary standards). The federal NAAQS for criteria pollutants are the same as the state standards established by the CDPHE and Wyoming Department of Environmental Quality (WDEQ), except the WDEQ regulates sulfur oxides (SO_x) instead of SO_2 (CDPHE 2004; WDEQ 2004). All parts of Colorado and Wyoming through which the proposed project would be located are classified as attainment for all criteria pollutants.

Regulatory Requirements for Air Quality

The proposed pipeline project would generate air emissions through both short-term construction activities and long-term operation of the stationary emission units at the compressor stations. Emissions from all phases of construction and operation of the emission units would be subject to applicable state and federal air regulations.

Air emission sources in Colorado and Wyoming are regulated at the federal level by the CAA, as amended, and at the state level by the Colorado Air Quality Control Commission (AQCC) Regulations and the Wyoming Air Quality Standards and Regulations (WAQS&R) (CDPHE 2004; WDEQ 2004). The significant federal regulations established as a result of the CAA and incorporated in the AQCC Regulations and WAQS&R that are potentially applicable to the project include:

- New Source Performance Standards (NSPS);
- New Source Review/PSD review;
- Title V operating permits;

- National Emission Standards for Hazardous Air Pollutants (NESHAPs);
- Federal Class I area protection; and
- State regulations.

New Source Performance Standards

NSPS, codified in 40 CFR 60, establish pollutant emission limits and monitoring, reporting, and recordkeeping requirements for various emission sources based on source type and size. The NSPS apply to new, modified, or reconstructed sources. The federal NSPS have been incorporated into AQCC Regulation 6 and WAQS&R chapter 5.0 (CDPHE 2004; WDEQ 2004). The potentially applicable NSPS are described below.

Subpart GG of the NSPS applies to new, modified, or reconstructed stationary gas turbines with a heat input at peak load of greater than or equal to 10 million British thermal units per hour (MMBtu/hr). The new turbine that would be installed as a part of the project is greater than 10 MMBtu/hr and is, therefore, subject to NSPS subpart GG. Subpart GG establishes oxides of nitrogen (NO_x) emission limits and fuel sulfur content limits. The proposed gas turbine would meet the requirements of subpart GG by burning only pipeline quality natural gas.

NSPS subpart KKK applies to volatile organic compound (VOC) emissions from equipment leaks at onshore natural gas processing plants. Natural gas processing plants are defined under subpart KKK as any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids, or both. The proposed Piceance Project compressor does not meet the definition of onshore natural gas processing plants; therefore, subpart KKK does not apply.

NSPS subpart LLL applies to sweetening units and sulfur recovery units at onshore natural gas processing plants. Sweetening units are defined by subpart LLL as process devices that separate the hydrogen sulfide (H_2S) and carbon dioxide (CO_2) contents from the sour natural gas. Sulfur recovery units are defined as process devices that recover elemental sulfur from the H_2S and CO_2 generated by a sweetening unit. No control equipment would be installed for the proposed modification to Piceance Project compressor station to remove CO_2 or H_2S from the gas; therefore, subpart LLL does not apply.

Prevention of Significant Deterioration

Title I of the CAA establishes guidelines for the preconstruction/modification review of large air emission sources. Construction of sources in attainment areas must be reviewed in accordance with the PSD regulations. To be classified as a new major PSD source, the potential emissions from the source must either be greater than 100 tons per year (tpy) for any pollutant regulated by the EPA under the CAA for sources that are among the 28 source categories listed in section 169 of the CAA, or greater than 250 tpy for any pollutant regulated by the EPA under the CAA for sources that are not among the 28 source categories listed in section 169 of the CAA. Best Available Control Technology analyses and detailed dispersion modeling are required if a new source is classified as a major PSD source.

Natural gas compressor stations are not identified in the list of 28 source categories in section 169 of the CAA; therefore, the applicability threshold for PSD review for the proposed compressor station modification is 250 tpy.

Title V Operating Permits

Title V of the CAA requires states to establish an air operating permit program. The requirements of Title V are outlined in 40 CFR 70 and the permits required by these regulations are often referred to as Part 70 permits. Colorado and Wyoming have incorporated this program in Regulation 3 of the AQCC and chapter 6.0 of the WAQS&R.

If a facility's potential to emit exceeds the criteria pollutant or hazardous air pollutant (HAP) thresholds, the facility is considered a major source. The major source threshold level for an air emission source is 100 tpy for criteria pollutants.

The potential emissions for NO_x and CO at the CIG Greasewood Compressor Station exceed the Title V threshold of 100 tpy. The Greasewood Compressor Station is a major source of air emissions and has a Part 70 permit. WIC would apply for a permit modification from the CDPHE to include the additional proposed compressor.

The major source HAP thresholds for a source are 10 tpy of any single HAP or 25 tpy of all HAPs in aggregate. Potential HAP emissions from the CIG Greasewood Compressor Station following the proposed modifications are less than 3 tpy. Therefore, the station would not be a major source of HAPs.

National Emission Standards for Hazardous Air Pollutants

The NESHAPs, codified in 40 CFR Parts 61 and 63, regulate HAP emissions. The proposed modification of the CIG Greasewood Compressor Station is not classified as one of the source categories regulated by Part 61. Therefore, the requirements of Part 61 are not applicable to the CIG Greasewood Compressor Station. Part 63, also known as the Maximum Achievable Control Technology (MACT) standards, regulates HAP emissions from major sources of HAP emissions and specific source categories that emit HAPs. Part 63 defines a major source of HAPs as any source that has the potential to emit 10 tpy of any single HAP or 25 tpy of HAPs in aggregate. A MACT standard exists for natural gas transmission and storage facilities (subpart HHH) and standards have been proposed for reciprocating engines (subpart YYYY), combustion turbines (subpart ZZZZ), and boilers (subpart DDDDD). All of these MACT standards apply to major sources of HAPs. The potential HAP emissions (in aggregate) from each of the existing and modified (as proposed) compressor stations are less than 3 tpy. Therefore, the CIG Greasewood Compressor Station and proposed modification is not a major source of HAPs and would not be subject to NESHAP.

Federal Class I Area Protection

As determined previously, the proposed modifications to the CIG Greasewood Compressor Station would not be subject to the PSD regulations. Therefore, the federal Class I area protection provisions would not apply to this project. Cumulative potential impacts to federal Class I areas were evaluated based on dispersion modeling performed for the Vernal and Roan Plateau RMP EIS. Air quality impacts would be within NAAQS and PSD Class I increments and visibility impacts to federal Class I areas also would be well within guidelines as shown by the RMP modeling studies.

State Regulations

Colorado air emissions are regulated by the AQCC per AQCC-1001. Regulation 1 of AQCC-1001 addresses emissions of particulates, smoke, CO, and SO_x. Specific requirements in this regulation can potentially apply to the operation and construction of the proposed WIC compressor stations. The proposed compressor stations would require construction permits under Regulation 3 of the Colorado AQCC. Therefore, Piceance Project would be required to submit a fugitive particulate dust control plan as part of the construction permit application. Compliance with the emission limits set by the Colorado regulations for operational emissions would be demonstrated during the construction permitting process.

Wyoming air emissions are regulated by the WAQS&R. Chapter 2.0 of the WAQS&R establishes ambient air quality standards for H_2S, suspended sulfates, fluorides, and odor. There would be no quantifiable sulfates, fluoride, or odor emitted during normal operation. Emissions of H_2S would be extremely small and would only occur during unpredictable blowdown of pipeline sections for maintenance. No additional compression facilities are proposed at the Wamsutter Compressor Station for the Piceance Project.

Chapter 3.0 of the WAQS&R mandates specific emissions requirements that can potentially apply to the operation of pipeline facilities. Such requirements address opacity emissions, PM_{10} and $PM_{2.5}$, NO_x, SO_x, CO, VOCs, and H_2S. The specific requirements and the limitations of these regulations would be addressed when obtaining construction permits.

CIG Greasewood Compressor Station

WIC would install additional compression at the existing CIG Greasewood Compressor Station (MP 141.7). The facility currently consists of two separate natural gas compressor facilities: 1) the Greasewood Compressor, and 2) the Parachute Compressor. The Parachute Compressor facility consists of three reciprocating compressor units located within a single insulated metal building. The Greasewood Compressor currently consists of a separate building that houses a gas turbine which drives a centrifugal compressor. The Greasewood Compressor addition would consist of another single turbine-driven centrifugal compressor unit within the existing CIG Greasewood Compressor Station. The turbine driven compressor addition would have an ISO rating of 2,890 horsepower. New auxiliary equipment associated with the proposed turbine-driven compressor unit would include:

- outdoor lube oil cooler;
- outdoor gas after cooler;
- turbine exhaust/stack muffler located outside of the building for the new unit;
- a turbine air intake filter system consisting of an in-duct dissipative-type silencer; and
- aboveground gas piping and piping system components.

The new compressor would be equipped with dry, low NO_x combusters in order to limit NO_x emissions. The pipeline entering and exiting the compressor facilities would be below grade as practicable, but would be aboveground prior to entering and exiting the buildings. The facility would not include any belowground vaults, basements, or crawl spaces. The station location would be fenced and contain external lighting.

TransColorado Northern Expansion Project

TransColorado would install additional compression to support the Piceance Project at their TransColorado Greasewood Compressor Station. This project is being reviewed by the FERC in a separate filing and is not discussed further here.

Construction Impacts

Construction of the proposed pipeline and additional compression at the CIG Greasewood Compressor Station would result in intermittent and short-term fugitive emissions. These emissions would include dust from soil disruption and combustion emissions from the construction equipment. Emissions from construction are not expected to cause or significantly contribute to a violation of an applicable ambient air quality standard because the construction equipment would be operated on an as-needed basis during daylight hours only. Additionally, WIC would implement a TTMP to prevent fugitive dust from becoming a public nuisance or compromising safety via the use of this plan. WIC also would implement dust control requirements during certain construction activities such as blasting, transporting soil or rock, trenching, and use of access roads. WIC would implement several dust control measures as stated in the POD, including the application of water and the potential use of tackifiers. The BLM would require approval for application of any dust extinguishers other than water to the ROW or access roads.

Air pollutants from construction equipment internal combustion engines would be limited to the immediate vicinity of the project area and would be short-term, resulting in an insignificant impact on air quality.

Operational Impacts

Air quality would be affected by operation of the modified compressor station as proposed by WIC in Rio Blanco County, Colorado.

During operation, the existing compressor stations would emit varying quantities of regulated air pollutants, including NO_x, CO, PM_{10} and $PM_{2.5}$, VOCs, and SO_2. Of these, the pollutants emitted in greatest quantities would be CO and NO_x, the primary component of which is NO_2. Emissions of hydrocarbons, a type of VOC, would be below major source quantity thresholds established by the EPA. Emissions of SO_2 would be proportional to the amount of sulfur in the fuel. Because the fuel would be natural gas containing very little sulfur, the amount of SO_2 emitted would be low. Additionally, HAPs would not be emitted in significant amounts, and would not result in Title V applicability. Because the compressor station potential emissions would be less than the PSD major source thresholds, dispersion modeling would not be required under the federal construction permitting program.

Table 3.10-1 provides the anticipated proposed emissions of NO_x, CO, VOC, PM_{10}, $PM_{2.5}$, SO_2, and HAPs from the modified compressor station. Our site-specific analysis of operational impacts on air quality is presented below.

Table 3.10-1
Air Quality Emissions Analysis for the CIG Greasewood Compressor Station

Compressor Make & Model	Rated horsepower	Emissions horsepower	NO_x tpy	CO tpy	VOC tpy	SO_x tpy	PM tpy	HAPs tpy
Proposed Compressor Solar Centaur 40	2,890[1] 1,650[2]	3,190[3]	87.8	16.2	0.93	0.46	0.89	0.52
Existing Compressors (1)Allison 501-KC5		3,304	84.1	12	0.9	0.57	1.1	0.54
(2) Waukesha 5108GL		787	12.9	22.9	8.6	0.016	0.003	1.45
(1) Caterpillar G3516		1,013	14.7	17.6	5.3	0.02	0.003	1.87

1 ISO horsepower, sea level and 59°F.
2 Design case based on site elevation and 90°F.
3 Maximum available horsepower, site elevation and 0°F – provides worst-case emissions estimate.

Assumes 8,760 hours per year of operation for all units

Emissions from a blowdown of the pipeline or compressor station could occur on a very rare basis, in emergency or maintenance operations. Such a blowdown would generate emissions of VOCs, consisting primarily of propane. Due to the infrequent occurrence, we conclude that there would be no significant air quality impacts from blowdowns.

If WIC complies with Colorado and Wyoming regulations concerning the mitigation of fugitive dust emissions, we believe that the proposed project would incorporate sufficient measures to ensure adequate levels of air quality during construction at the compressor stations. Operational impacts would be mitigated by the state permitting process, which may include mitigative measures. The proposed compressor station modification is not expected to have significant adverse impacts on local or regional air quality.

3.10.2 Noise

Construction, modification, and operation of the proposed project facilities would impact the local noise environment. The ambient sound level of a region is defined by the total noise generated within the specific environment, and is usually comprised of sounds emanating from natural and artificial sources. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of a day and throughout the week. This variation is caused in part by changing weather conditions and the effect of seasonal vegetation cover.

Two measurements commonly used by federal agencies to relate the time-varying quality of environmental noise to its known effects on people are the equivalent sound level (L_{eq}) and the day-night sound level (L_{dn}). The L_{eq} is an A-weighted sound level containing the same sound energy as the instantaneous sound levels measured over a specific time period. Noise levels are perceived differently, depending on length of exposure and time of day. The L_{dn} takes into account the duration and time the noise is encountered. Late night and early morning (10:00 p.m. to 7:00 a.m.) noise exposures are penalized +10 decibels, to account for people's greater sensitivity to sound during the nighttime hours.

In 1974, the EPA published its Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (EPA 1974). This document provides information for state and local governments to use in developing their own ambient noise standards. The EPA has indicated that an L_{dn} of 55 dBA protects the public from indoor and outdoor activity interference. We have adopted this criterion and have used it to evaluate the potential noise impact from operation of the compressor facilities.

The state of Colorado regulates noise pollution at the state level under Colorado Statute Title 25, Article 12 (CS 25-12). An exemption exists under the state law for any facility that is permitted under a federal action.

The State of Wyoming and the counties of Rio Blanco, Moffat, and Sweetwater do not have any quantitative noise regulations.

Existing Noise Levels

The existing CIG Greasewood Compressor Station is located in an area (Greasewood Hub) containing multiple compression facilities. The Greasewood Hub area is rural with few other noise sources in the immediate vicinity. Existing ambient noise measurements were taken at the nearest noise-sensitive area (NSA) and are summarized in **table 3.10-2**.

Table 3.10-2
Existing Noise Levels[1]

Location	Distance and Direction[2]	Daytime Equivalent Sound Level (L_{eq}(d))	Nighttime Equivalent Sound Level (L_{eq}(n))	24-Hour Equivalent Sound Level (L_{eq})	Day–Night Sound Level (L_{dn})[3]
CIG Greasewood Compressor Station (MP 141.7)					
NSA #1	1,700 feet NW	45.6	45.6	52.0	52.0

[1] All noise levels are in dBA.
[2] All distances are based on the NSAs location relative to closest boundary.
[3] L_{dn} noise levels are calculated assuming that the measured levels are representative of the day and night sound levels in the area.

Construction Noise Impacts

The modification of the CIG Greasewood Compressor Station would cause temporary increases in the ambient sound environment in the immediate vicinity of the station. Construction of the pipeline would last for approximately 6 months and modification of the compressor station would last for about 3 months. During construction, WIC would be required to comply with any local construction noise requirements. In addition, WIC has agreed to limit construction activities primarily to daylight hours. Nighttime noise levels would normally be unaffected by construction activities, as most construction is typically restricted to daylight hours. With construction restricted to daytime hours, and given the temporal and axial nature of construction, we do not believe that adjacent landowners would be adversely affected.

Operational Noise Impacts

During operation of the pipeline the noise impact associated with the proposed compressor station modification would be limited to the vicinity of the facility. Primary operational noise sources at the proposed compressor station modification would be the turbine intakes, turbine exhausts, oil coolers, gas aftercooler, and turbine-compressor package. The noise from the auxiliary power units is not included in the noise assessment due to the temporary and rare operation of these units.

The compressor station modifications would be constructed in a manner that would minimize potential impacts from noise. WIC states that the new compressors would be installed within a acoustically designed building with acoustically rated doors, acoustical insulation, silenced ventilation systems, muffler systems on exhaust systems of new turbines, intake silencer, and may include covering of exposed metal pipe supports and aboveground piping.

WIC also proposes to install blowdowns at the CIG Greasewood Compressor Station to evacuate natural gas from the facility in the event of an emergency, accident or maintenance. Noise from a typical unsilenced blowdown event can be upwards of 100 dBA and WIC has stated that each blowdown stack would be equipped with an appropriately designed silencer to reduce this noise. While we do not have good data on the resultant noise from a blowdown event, due to the rarity and short duration of each blowdown but WIC estimates 5 blowdowns over a 12-year period. We do not expect the resultant noise to be a significant annoyance or impact to local residents.

WIC performed a noise assessment for the proposed compressor station modification. The acoustical analysis estimated noise reduction over distance via the SPM 9613 noise modeling program. **Table 3.10-3** shows the estimated noise resulting from the operation of the compressor station modification at the nearest NSA (presumed to be an office).

Table 3.10-3
Estimated Noise Levels from the CIG Greasewood Compressor Station

NSA	Distance/ Direction	Current Ambient Noise, L_{dn} (dBA)[1]	Est'd L_{dn} of Existing Station (dBA)	Est'd L_{dn} of Existing Station + New Unit (dBA)	Noise Increase at NSA (dBA)
CIG Greasewood Compressor Station (MP 141.7)					
NSA #1	1,700 feet NW	64.6	52.0	53.0	1.0

[1] dBA: decibels of the A-weighted scale.

The estimated noise increase of 1.0 dBA at the NSA as a result of additional compression installed at the CIG Greasewood Compressor Station would be difficult to detect from current noise levels at the site. The closest residence is approximately 4 miles from the CIG Greasewood Compressor Station. Noise from the CIG Greasewood Compressor Stations is estimated to comply with our 55 dBA L_{dn} noise limit and should not have an adverse noise increase at any NSA. To ensure that the noise from the CIG Greasewood Compressor Station modification does not exceed 55 dBA at the nearest NSAs, **we recommend that WIC file a noise survey with the Secretary no later than 60 days after placing the authorized unit(s) at the CIG Greasewood Compressor Station in service. If the noise attributable to the operation of the compressor station at full load exceeds an L_{dn} of 55 dBA at any nearby noise-sensitive area, WIC shall install additional noise controls to meet that level within 1 year of the in-service date. WIC shall confirm compliance with the L_{dn} of 55 dBA requirement by filing a second noise survey with the Secretary no later than 60 days after WIC installs the additional noise controls.**

WIC has agreed to implement the action items specified in this recommendation. Once WIC verifies that noise impacts have been mitigated, as indicated by the recommendation, we believe that project-operation noise levels at the nearest NSAs would not be significant.

3.11 Reliability and Safety

The transportation of natural gas by pipeline involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a major pipeline rupture.

Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death.

Methane has an ignition temperature of 1,000°F and is flammable at concentrations between 5.0 percent and 15.0 percent in air. Unconfined mixtures of methane in air are not explosive. However, a flammable concentration within an enclosed space in the presence of an ignition source can explode. It is buoyant at atmospheric temperatures and disperses rapidly in air.

3.11.1 Safety Standards

The DOT is mandated to provide pipeline safety under Title 49, USC Chapter 601. The Research and Special Programs Administration's (RSPA), Office of Pipeline Safety (OPS), administers the national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. It develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. Many of the regulations are written as performance standards which set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety. RSPA ensures that people and the environment are protected from the risk of pipeline incidents. This work is shared with state agency partners and others at the federal, state, and local level. Section 5(a) of the Natural Gas Pipeline Safety Act provides for a state agency to assume all aspects of the safety program for intrastate facilities by adopting and enforcing the federal standards, while Section 5(b) permits a state agency that does not qualify under Section 5(a) to perform certain inspection and monitoring functions. A state also may act as DOT's agent to inspect interstate facilities within its boundaries; however, the DOT is responsible for enforcement action. The majority of the states have either 5(a) certifications or 5(b) agreements, while nine states act as interstate agents.

The DOT pipeline standards are published in Parts 190-199 of Title 49 of the CFR. Part 192 of 49 CFR specifically addresses natural gas pipeline safety issues.

Under a Memorandum of Understanding on Natural Gas Transportation Facilities (Memorandum) dated January 15, 1993, between the DOT and the FERC, the DOT has the exclusive authority to promulgate federal safety standards used in the transportation of natural gas. Section 157.14(a)(9)(vi) of the FERC's regulations require that an applicant certify that it will design, install, inspect, test, construct, operate, replace, and maintain the facility for which a certificate is requested in accordance with federal safety standards and plans for maintenance and inspection, or shall certify that it has been granted a waiver of the requirements of the safety standards by the DOT in accordance with section 3(e) of the Natural Gas Pipeline Safety Act. The FERC accepts this certification and does not impose additional safety standards other than the DOT standards. If the Commission becomes aware of an existing or potential safety problem, there is a provision in the Memorandum to promptly alert DOT. The Memorandum also provides for referring complaints and inquiries made by state and local governments and the general public involving safety matters related to pipeline under the Commission's jurisdiction.

The FERC also participates as a member of the DOT's Technical Pipeline Safety Standards Committee which determines if proposed safety regulations are reasonable, feasible, and practicable.

The pipeline and aboveground facilities associated with the Piceance Project must be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR Part 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. Part 192 specifies material selection and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion.

Part 192 also defines area classifications, based on population density in the vicinity of the pipeline, and specifies more rigorous safety requirements for populated areas. The class location unit is an area that extends 220 yards on either side of the centerline of any continuous 1 mile length of pipeline. The four area classifications are defined as follows:

Class 1 Location with 10 or fewer buildings intended for human occupancy.

Class 2 Location with more than 10 but less than 46 buildings intended for human occupancy.

Class 3 Location with 46 or more buildings intended for human occupancy or where the pipeline lies within 100 yards of any building, or small well-defined outside area occupied by 20 or more people on at least 5 days a week for 10 weeks in any 12-month period.

Class 4 Location where buildings with four or more stories aboveground are prevalent.

Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operation. Pipelines constructed on land in Class 1 locations must be installed with a minimum depth of cover of 30 inches in normal soil and 18 inches in consolidated rock. Class 2, 3, and 4 locations, as well as drainage ditches of public roads and railroad crossings, require a minimum cover of 36 inches in normal soil and 24 inches in consolidated rock.

Class locations also specify the maximum distance to a sectionalizing block valve (e.g., 10.0 miles in Class 1, 7.5 miles in Class 2, 4.0 miles in Class 3, and 2.5 miles in Class 4). Pipe wall thickness and pipeline design pressures, hydrostatic test pressures, maximum allowable operating pressure, inspection and testing of welds, and frequency of pipeline patrols and leak surveys also must conform to higher standards in more populated areas. Preliminary class locations for the Piceance Project have been developed based on the relationship of the pipeline centerline to other nearby structures and manmade features. The entire route (141.7 miles) is classified as Class 1.

If a subsequent increase in population density adjacent to the ROW indicates a change in class location for the pipeline, WIC would reduce the MAOP or replace the segment with pipe of sufficient grade and wall thickness, if required to comply with the DOT code of regulations for the new class location.

In 2002, congress passed an act to strengthen the Nation's pipeline safety laws. The Pipeline Safety Improvement Act of 2002 (HR 3609) was passed by Congress on November 15, 2002, and signed into law by the President in December, 2002. No later than December 17, 2004, gas transmission operators must develop and follow a written integrity management program that contains all the elements described in §192.911 and addresses the risks on each covered transmission pipeline segment. Specifically, the law establishes an integrity management program which applies to all high consequence areas (HCAs). The DOT (68 FR 69778, 69 FR 18228, and 69 FR 29903) defines HCAs as they relate to the different class zones, potential impact circles, or areas containing an identified site as defined in §192.903 of the DOT regulations.

OPS published a series of rules from August 6, 2002 to May 26, 2004 (69 FR 29903), that defines HCAs where a gas pipeline accident could do considerable harm to people and their property and requires an integrity management program to minimize the potential for an accident. This definition satisfies, in part, the Congressional mandate in 49 USC 60109 for OPS to prescribe standards that establish criteria for identifying each gas pipeline facility in a high density population area.

The HCAs may be defined in one of two ways. In the first method an HCA includes

- current Class 3 and 4 locations;
- any area in Class 1 or 2 where the potential impact radius[17] is greater than 660 feet and there are 20 or more buildings intended for human occupancy within the potential impact circle[18]; or
- any area in Class 1 or 2 where the potential impact circle includes an identified site.[19]

In the second method an HCA includes any area within a potential impact circle which contains

- 20 or more buildings intended for human occupancy; or
- an identified site.

Once a pipeline operator has determined the HCAs on its pipeline, it must apply the elements of its integrity management program to those segments of the pipeline within HCAs. The DOT regulations specify the requirements for the integrity management plan at § section 192.911. HCAs for the Piceance Project have been determined based on the relationship of the pipeline centerline to other nearby structures and identified sites. WIC has identified one HCA along the proposed route, a parking lot at the LUVS Truck Stop near the Wamsutter Compressor Station in Wyoming. Upon obtaining the necessary permits for its project,

17 The potential impact radius is calculated as the product of 0.69 and the square root of the MAOP of the pipeline in psi multiplied by the pipeline diameter in inches.

18 The potential impact circle is a circle of radius equal to the potential impact radius.

19 An identified site is an outside area or open structure that is occupied by 20 or more persons on at least 50 days in any 12-month period; a building that is occupied by 20 or more persons on at least 5 days a week for any 10 weeks in any 12-month period; or a facility that is occupied by persons who are confined, are of impaired mobility, or would be difficult to evacuate.

finalizing its route, and prior to construction, WIC would determine if its proposed pipeline could affect this, or other potential locations. If appropriate, locations would be incorporated into an Integrity Management Plan developed specifically for the Piceance Project as required by the DOT to ensure pipeline safety.

The pipeline integrity management rule for HCAs requires inspection of the entire pipeline in HCAs every 7 years.

Part 192 prescribes the minimum standards for operating and maintaining pipeline facilities, including the requirement to establish a written plan governing these activities. Under section 192.615, each pipeline operator also must establish an emergency plan that includes procedures to minimize the hazards in a natural gas pipeline emergency. Key elements of the plan include procedures for:

- receiving, identifying, and classifying emergency events, gas leakage, fires, explosions, and natural disasters;
- establishing and maintaining communications with local fire, police, and public officials, and coordinating emergency response;
- emergency shutdown of system and safe restoration of service;
- making personnel, equipment, tools, and materials available at the scene of an emergency; and
- protecting people first and then property, and making them safe from actual or potential hazards.

Part 192 requires that each operator must establish and maintain liaison with appropriate fire, police, and public officials to learn the resources and responsibilities of each organization that may respond to a natural gas pipeline emergency, and to coordinate mutual assistance. The operator also must establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency and report it to appropriate public officials. WIC would provide the appropriate training to local emergency service personnel before the pipeline is placed in service. No additional specialized local fire protection equipment would be required to handle pipeline emergencies.

WIC intends to control and monitor the pipeline using a SCADA system. The SCADA system would allow WIC to monitor volumes, pressures, and temperatures as well as the operating status of its pipeline facilities. The SCADA system would allow WIC to quickly identify and react to equipment malfunctions. The SCADA system also would provide WIC with the capability to remotely start or stop certain compressors, thereby changing flow volumes to meet changes in customer demand for natural gas.

3.11.2 Pipeline Accident Data

Since February 9, 1970, 49 CFR Part 191 has required all operators of transmission and gathering systems to notify the DOT of any reportable incident and to submit a report on form F7100.2 within 20 days. Reportable incidents are defined as any leaks that:

- caused a death or personal injury requiring hospitalization;
- required taking any segment of transmission line out of service;
- resulted in gas ignition;
- caused estimated damage to the property of the operator, or others, or both, of a total of $5,000 or more;
- required immediate repair on a transmission line;
- occurred while testing with gas or another medium; or
- in the judgment of the operator was significant, even though it did not meet the above criteria.

The DOT changed reporting requirements after June 1984 to reduce the amount of data collected. Since that date, operators must only report incidents that involve property damage of more than $50,000, injury, death, release of gas, or that are otherwise considered significant by the operator. **Table 3.11-1** presents a summary of incident data for the 1970 to 1984 period, as well as more recent incident data for 1986 through 2003, recognizing the difference in reporting requirements. The 14.5-year period from 1970 through June 1984, which provides a larger universe of data and more basic report information than subsequent years, has been subject to detailed analysis, as discussed in the following sections.[20]

Table 3.11-1
Natural Gas Service Incidents by Cause

Cause	Incidents per 1,000 miles of Pipeline (percentage) 1970-1984	1986-2003
Outside force	0.70 (53.8)	0.10 (38.4)
Corrosion	0.22 (16.9)	0.06 (23.1)
Construction or material defect	0.27 (20.8)	0.04 (15.4)
Other	0.11 (8.5)	0.06 (23.1)
Total	**1.30**	**0.26**

[20] Jones et al. 1986.

During the 14.5-year period, 5,862 service incidents were reported over the more than 300,000 total miles of natural gas transmission and gathering systems nationwide. Service incidents, defined as failures that occur during pipeline operation, have remained fairly constant over this period with no clear upward or downward trend in annual totals. In addition, 2,013 test failures were reported. Correction of test failures removed defects from the pipeline before operation.

Additional insight into the nature of service incidents may be found by examining the primary factors that caused the failures. **Table 3.11-1** provides a percentage distribution of the causal factors as well as the annual frequency of each factor per 1,000 miles of pipeline in service.

The dominant incident cause is outside forces, constituting 53.8 percent of all service incidents. Outside forces incidents result from the encroachment of mechanical equipment such as bulldozers and backhoes; earth movements due to soil settlement, washouts, or geologic hazards; weather effects such as winds, storms, and thermal strains; and willful damage. **Table 3.11-2** shows that human error in equipment usage was responsible for approximately 75 percent of outside forces incidents. Since April 1982, operators have been required to participate in "One Call" public utility programs in populated areas to minimize unauthorized excavation activities in the vicinity of pipelines. The "One Call" program is a service used by public utilities and some private sector companies (e.g., oil pipelines and cable television) to provide preconstruction information to contractors or other maintenance workers on the underground location of pipes, cables, and culverts. The 1986 through 2003 data show that the portion of incidents caused by outside forces has decreased to 38.4 percent.

Table 3.11-2
Outside Forces Incidents by Cause (1970-1984)

Cause	Percent
Equipment operated by outside party	67.1
Equipment operated by or for operator	7.3
Earth movement	13.3
Weather	10.8
Other	1.5

The pipelines included in the data set in **table 3.11-1** vary widely in terms of age, pipe diameter, and level of corrosion control. Each variable influences the incident frequency that may be expected for a specific segment of pipeline.

The frequency of service incidents is strongly dependent on pipeline age. While pipelines installed since 1950 exhibit a fairly constant level of service incident frequency, pipelines installed before that time have a significantly higher rate, partially due to corrosion. Older pipelines have a higher frequency of corrosion incidents, since corrosion is a time-dependent process. Further, new pipe generally uses more advanced coatings and cathodic protection to reduce corrosion potential.

Older pipelines have a higher frequency of outside forces incidents partly because their location may be less well known and less well marked than newer lines. In addition, the older pipelines contain a disproportionate number of smaller diameter pipelines, which have a greater rate of outside forces incidents. Small diameter pipelines are more easily crushed or broken by mechanical equipment or earth movements.

Table 3.11-3 clearly demonstrates the effectiveness of corrosion control in reducing the incidence of failures caused by external corrosion. The use of both an external protective coating and a cathodic protection system, required on all pipelines installed after July 1971, significantly reduces the rate of failure compared to unprotected or partially protected pipe. The data shows that bare, cathodically protected pipe actually has a higher corrosion rate than unprotected pipe. This anomaly reflects the retrofitting of cathodic protection to actively corroding spots on pipes.

Table 3.11-3
External Corrosion by Level of Control (1970-1984)

Corrosion Control	Incidents per 1,000 miles per Year
None-bare pipe	0.42
Cathodic protection only	0.97
Coated only	0.40
Coated and cathodic protection	0.11

3.11.3 Impact on Public Safety

The service incident data summarized in **table 3.11-4** include pipeline failures of all magnitudes with widely varying consequences. Approximately two-thirds of the incidents were classified as leaks, and the remaining third classified as ruptures, implying a more serious failure.

Table 3.11-4 presents the average annual fatalities that occurred on natural gas transmission and gathering lines from 1970 to 2003. Fatalities between 1970 and June 1984 have been separated into employees and nonemployees, to better identify a fatality rate experienced by the general public. Of the total 5.0 nationwide average, fatalities among the public averaged 2.6 per year over this period. The simplified reporting requirements in effect after June 1984 do not differentiate between employees and nonemployees. However, the data show that the total annual average for the period 1984 through 2003 decreased to 3.8 fatalities per year. Subtracting two major offshore incidents in 1989, which do not reflect the risk to the onshore public, yields a total annual rate of 2.9 fatalities per year for this period.

The nationwide totals of accidental fatalities from various manmade and natural hazards are listed in **table 3.11-5** in order to provide a relative measure of the industry-wide safety of natural gas pipelines. Direct comparisons between accident categories should be made cautiously, however, because individual exposures to hazards are not uniform among all categories. Nevertheless, the average 2.6 public fatalities per year is relatively small considering the more than 300,000 miles of transmission and gathering lines in service nationwide. Furthermore, the fatality rate is approximately two orders of magnitude (100 times) lower than the fatalities from natural hazards such as lightning, tornados, floods, earthquakes, etc.

The available data show that natural gas pipelines continue to be a safe, reliable means of energy transportation. Based on approximately 302,000 miles in service, the rate of public fatalities for the nationwide mix of transmission and gathering lines in service is 0.01 per year per 1,000 miles of pipeline. Using this rate, the Piceance Project might result in a public fatality every 706 plus years. This would represent a slight increase in risk to the nearby public.

Table 3.11-4
Annual Average Fatalities - Natural Gas Transmission and Gathering Systems[1,2]

Year	Employees	Nonemployees	Total
1970-June 1984	2.4	2.6	5.0
1984-2003[3]	-	-	3.8
1984-2003[3]	-	-	2.9[4]

[1] 1970 through June 1984 - American Gas Association 1986.
[2] DOT Hazardous Materials Information System.
[3] Employee/nonemployee breakdown not available after June 1984.
[4] Without 18 offshore fatalities occurring in 1989 -- 11 fatalities resulted from a fishing vessel striking an offshore pipeline and 7 fatalities resulted from explosion on an offshore production platform.

Table 3.11-5
Nationwide Accidental Deaths[1]

Type of Accident	Fatalities
All accidents	90,523
Motor vehicles	43,649
Falls	14,985
Drowning	3,488
Poisoning	9,510
Fires and burns	3,791
Suffocation by ingested object	3,206
Tornado, flood, earthquake, etc. (1984 93 average)	181
All liquid and gas pipelines (1978 87 average)[2]	27
Gas transmission and gathering lines Nonemployees only (1970 84 average)[3]	2.6

[1] All data, unless otherwise noted, reflects 1996 statistics from the U.S. Department of Commerce, Bureau of the Census, "Statistical Abstract of the United States 118th Edition."
[2] DOT, "Annual Report on Pipeline Safety - Calendar Year 1987."
[3] American Gas Association 1986.

3.12 Cumulative Impacts

NEPA requires federal agencies to consider the cumulative impacts of proposals under their review. Cumulative impacts are defined in the CEQ regulations 40 CFR 1508.7 as "...the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency... or person undertakes such other actions." These actions include current and projected area development (e.g., oil and gas); management activities and authorizations on public lands (e.g., range conversion and forestry programs); land use trends; and applicable industrial/infrastructure components (e.g., utility corridors). Although the individual impacts of each separate project might not be significant, the additive effects of multiple projects could be.

Existing projects were determined from review of WIC photo-alignment sheets, Wyoming oil and gas facility maps (DeBruin 2002), field reconnaissance, and WIC's FERC application. The proposed and reasonably foreseeable projects were based on ROW and well field development applications submitted to the BLM and FERC application information (Entrega Project, EnCana Meeker Pipeline and Gas Plant Project [EnCana Meeker Gas Plant], North Expansion Project). Construction timeframes for individual projects were compiled to estimate peak workforce numbers at various locations; however, the actual construction schedules for these projects would depend on factors such as economic conditions, the availability of financing, and the issuance of permits.

Projects and activities included in this analysis are generally those located within the same counties directly affected by construction of the Piceance Project. Most effects of more distant projects are not assessed because their impact would generally be localized and not contribute significantly to cumulative impact in the proposed project area. However, the air quality study area consists of the regional air sheds.

Figure 3.12-1 provides a simplified representation of the existing and proposed gas processing facilities and interconnecting pipelines near the existing Greasewood Hub and the proposed Entrega Meeker Hub Compressor Station. **Table 3.12-1** provides additional details about the facilities illustrated in **figure 3.12-1**. **Figure 3.12-2** is a schematic drawing illustrating the number of gas pipelines included in the existing utility corridor where the Piceance Project would be located, as well as sensitive resources encountered along the entire route. The majority of the pipelines in this utility corridor were constructed in the last 30 years, and the revegetation of the ROW has varied with local climate and soil type. From Wamsutter and south to the Piceance Basin, existing pipeline ROWs have only partially recovered former shrub cover and height. We assumed that an average of 50 feet of ROW remains partially revegetated for each pipeline in the corridor.

Compressor stations are often located at major interconnection points within the interstate gas pipeline system. Compression would be added at the existing CIG compressor station at the Greasewood Hub, and at a nearby site by TransColorado. The Piceance Project would pass by the proposed Entrega Project compressor station at Bighole (WIC MP 62). The Piceance Project would terminate at an existing compressor station at Wamsutter, but no additional compression would be required at that location.

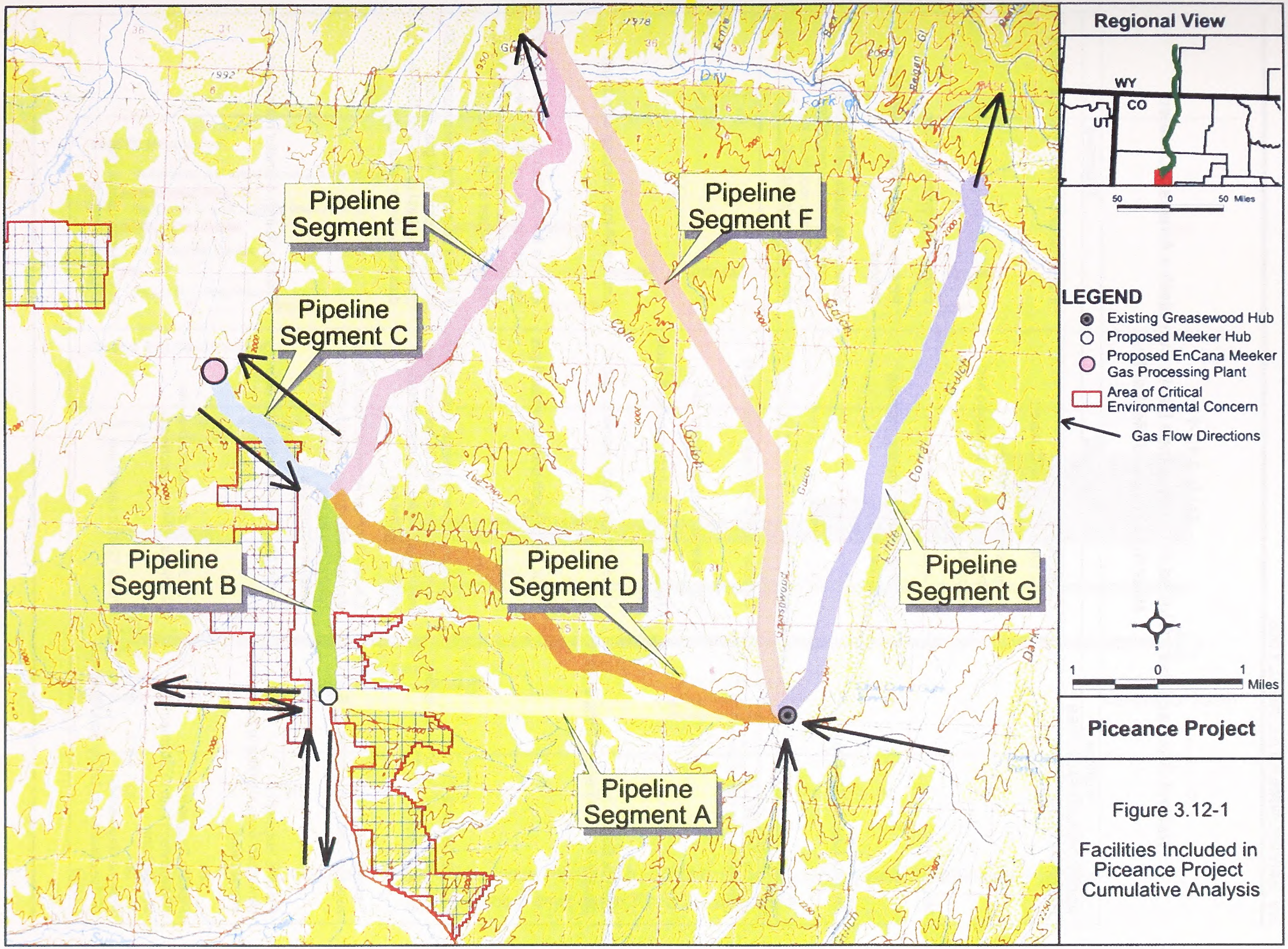


Figure 3.12-1

Facilities Included in Piceance Project Cumulative Analysis

Table 3.12-1
Natural Gas Facilities Included in the Piceance Basin Cumulative Analysis Located Near the Proposed Meeker Hub

Facilities	Existing	Proposed
ABOVEGROUND FACILITIES		
Greasewood Hub	Compressor Stations (CIG, Kinder Morgan, Questar) Pipeline interconnections, metering stations, pig launchers and receivers	TransColorado North Expansion Project
Meeker Hub	EnCana Compressor Station Pipeline interconnections, metering stations	Entrega Compressor Station Pipeline interconnections, metering stations
EnCana Meeker Gas Plant		Natural gas liquids separation from natural gas; natural gas dehydration; carbon dioxide reduction; gas compression (electrical).
PIPELINES		
Pipeline Segment A (Meeker Hub to Greasewood)	Questar 14-inch-diameter natural gas CIG 20-inch-diameter natural gas TransColorado 22-inch-diameter natural gas	
Pipeline Segment B (Meeker Hub to American Soda Corridor)	Kinder Morgan 4-inch-diameter natural gas	Entrega 36-inch-diameter natural gas
	Exxon Mobil 6-inch-diameter natural gas	EnCana 36-inch-diameter natural gas; 30-inch-diameter natural gas; 10-inch-diameter natural gas liquids; 12-inch-diameter water or natural gas
Pipeline Segment C (American Soda Corridor to Proposed EnCana Meeker Gas Plant)	EnCana (Former American Soda) 8-inch-diameter natural gas; 10-inch-diameter natural gas liquids; 12-inch-diameter water or natural gas	EnCana 36-inch-diameter natural gas; 30-inch-diameter natural gas; 10-inch-diameter natural gas liquids; 12-inch-diameter water or natural gas
Pipeline Segment D (Greasewood Hub to Segment B)	EnCana (Former American Soda) 8-inch-diameter natural gas; 10-inch-diameter natural gas liquids; 12-inch-diameter water or natural gas	
Pipeline Segment E (American Soda Corridor to Segment F intersection)	Kinder Morgan 4-inch-diameter natural gas	Entrega 36-inch-diameter natural gas
Pipeline Segment F (Greasewood Hub to Segment C Intersection)	CIG 20-inch-diameter natural gas Northwest 10-inch natural gas	
Pipeline Segment G (Greasewood Hub to Dry Fork Piceance Creek)	PSCo 12-inch natural gas	WIC 24-inch natural gas (Piceance Project)

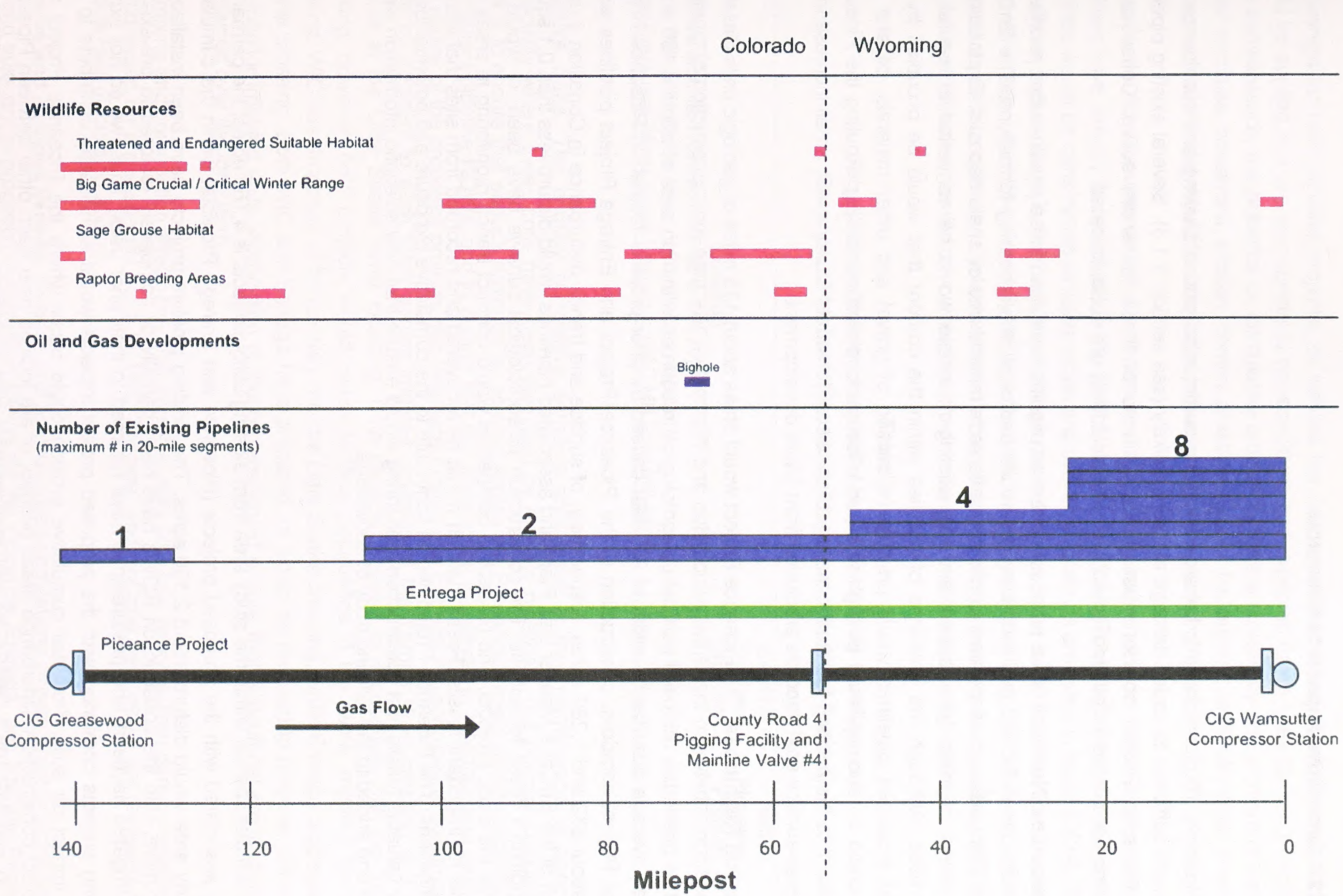


Figure 3.12-2. Location of the Piceance Project in Relation to Existing and Proposed Parallel Pipelines and Sensitive Resources

3.12.1 Cumulative Impacts to Resources

Geology

Geologic Hazards. Regional seismic hazards, including earthquake ground shaking and subsidence and fault movement sufficient to cause damage are very unlikely (see section 3.1.3). Several existing pipelines within the Piceance Project corridor cross faults but none of these faults are active. Consequently, cumulative impacts related to fault movement and seismic activity are not anticipated.

Mineral Resources. Nearly all of the proposed Piceance pipeline route, and those pipelines that parallel the proposed route, cross oil and gas producing reservoirs and/or oil shale-bearing formations. The EnCana Meeker Gas Plant site and associated pipelines overlie soda mineral and oil shale deposits. Exploitation of the soda mineral deposits has ceased, and the existing mine site would be converted to natural gas processing uses. Although the presence of facilities within the corridor that would be occupied by the existing and proposed pipelines would preclude extraction of gravel and other minerals, oil and gas production could be accomplished through well pad offsets and directional drilling. Routing the Piceance Project adjacent to the existing facilities in the established corridor would cause a very small increase in the amount of near-surface coal deposits precluded from future development.

Paleontological Resources. The Piceance Project would cross about 115 miles of geologic units classified as BLM Condition 1 between the Greasewood Hub and Wamsutter. We note that construction of pipelines and roads has previously removed surficial paleontological resources within an area of about 4,160 acres. Assuming an average disturbance width of 200 feet caused by prior projects located in Piceance Project and Entrega Project corridors, construction of the Piceance Project and Entrega Project pipelines would contribute about 832 and 1,280 acres, respectively, of surface and trench disturbance in Condition 1 units. Construction of the EnCana Meeker Gas Plant and associated pipelines would disturb less than 0.1 square mile of Condition 1 fossil formations. Pre-construction paleontological surveys have been, or would be, completed for the three projects. The respective companies would conduct trench monitoring in areas with high potential for important fossils. Fossil material would be recovered and recorded from sites that warrant these investigations. The Piceance Project would contribute to the cumulative exposure and potential loss of scientifically valuable fossils, but construction monitoring would ensure that new scientific information would be collected and added to the existing body of knowledge.

Soils

Cumulative soil disturbance within the study area from existing utility projects is 4,160 acres; the permanent disturbance associated with the proposed projects (Piceance and Entrega Projects) within the cumulative pipeline study area would disturb about 2,130 acres. The existing pipeline projects have been installed for 10 years or more, and the construction ROWs have been partially or completely restored to pre-existing conditions. Irrigated hayfields and pasturelands have returned to their prior uses. Thus, we do not expect these existing projects combined with the proposed project impacts would significantly contribute to the cumulative impact on soils. Potential cumulative erosion could occur where the Piceance Project and Entrega Project construction disturbance areas overlap, or are located near each other between Piceance Project MP 0 and MP 105.1. BMPs for soil management and protection would be applied across all ownerships for both pipeline projects, as well as the EnCana Meeker Gas Plant. Revegetation mixtures would be applied that are appropriate to soil conditions and expected future uses (grazing, wildlife habitat). As a consequence, the potential for cumulative erosion increases caused by one or more of these projects is low because consistent erosion control practices would be applied, and structural erosion control measures (water bars) would be integrated between adjacent pipeline projects.

The potential for cumulative impacts occurs in dissected drainages and on steep slopes where existing pipelines have already been located in the most favorable locations. Example areas where one or more new pipelines would be constructed at steep slope and drainage locations are listed in **table 3.12-2**. The primary cumulative impact issue is that surface drainage controls (e.g., water bars) installed for the new pipelines could adversely affect the existing drainage controls on adjacent pipelines. The Piceance Project would integrate its surface drainage system with that of any adjacent pipeline during final grading, thereby avoiding excessive stormwater runoff from cumulative pipeline sources in the same utility corridor.

Table 3.12-2
Steep Slope/Incised Channel Areas Crossed by Existing and Proposed Pipelines (Piceance Project and Entrega Project)

Location	Existing Pipelines (Number)	WIC Piceance Project	Entrega Project
Colorow Mountain (Entrega MP 20 to MP 21)	3		
North Side Little Snake River (WIC MP 51 to MP 53)	2	X	X
Sand Creek and Willow Creek Drainages (WIC MP 38 to MP 43)	4	X	X

Sensitive Soils. The primary cumulative sensitive soils issue is the maintenance of agricultural soil productivity where these soils have been disturbed by multiple pipelines. The primary cumulative impact issue is to ensure that surface drainage is restored across the Piceance Project construction ROW as well as adjacent pipeline ROWs, and to ensure that soil compaction is relieved in haylands and pasture. Based on a review of the proposed projects, the Piceance Project and Entrega Project pipeline construction ROWs would be adjacent to each other across irrigated pastures at the Yampa River crossing and across dry pasture at the Little Snake River crossing. Both projects propose to directionally drill the Yampa River crossing; however, both projects would cause surface disturbance in the same irrigated pasture at this crossing. WIC has proposed to horizontally drill the Little Snake crossing, while Entrega proposes an open-cut this crossing. Both WIC and Entrega have prepared, or would be required to prepare, plans to restore and monitor irrigated soils. Application of these plans would ensure that agricultural productivity would be maintained over the long term.

Soil mixing and compaction effects on other sensitive soils (shallow, rocky, saline) during construction would be addressed on a site-specific basis by WIC, Entrega, and EnCana, and would not represent cumulative impacts (see discussion above).

Invasive and Noxious Weeds. Invasive and noxious weed populations already exist or potentially exist on the land adjacent to proposed construction ROWs for the Piceance, Entrega, and EnCana Projects, based on information from local NRCS offices and the BLM. The three projects would apply invasive and noxious weed controls prior to and during construction, including pre-construction weed control and equipment cleaning. The three projects would be responsible for monitoring and controlling weed invasions on federal lands; comparable programs have been recommended on private lands, subject to landowner agreements. Based on proposed weed control measures, and equipment cleaning, the three projects would not cumulatively contribute to new weed infestations.

Water Resources

Groundwater. Existing pipeline and other utility projects do not consume groundwater. WIC and Entrega do not propose to consume groundwater for construction or operation. Both projects would implement spill containment and control plans as required by the BLM and state agencies. No cumulative impacts on groundwater volume or quality from the Piceance and Entrega Projects are expected. Potable and process water requirements and sources for EnCana Meeker Gas Plant are not currently known. Produced water associated with EnCana's natural gas production sites would be separated at the processing plant; a portion of this produced water may be treated to make it suitable for other project purposes.

Surface Water. Both the Piceance and Entrega Projects would cross the White and Yampa Rivers using an HDD and, consequently, there would be no cumulative sediment increases at these crossings. Based on currently available schedules, the two projects would not simultaneously construct across the Little Snake River, resulting in no cumulative suspended sediment increase. WIC proposes to directionally drill the Little Snake River. **Table 3.12-3** lists the expected hydrostatic test water withdrawals for both the Piceance and Entrega Projects from the Yampa, White, and Little Snake Rivers. Both projects may withdraw hydrostatic test water during the fall and early winter of 2005, depending upon pipeline construction completion. WIC has committed to withdraw no more than 10 percent of the average August/September flow; we have recommended that WIC coordinate with appropriate fisheries agencies and the Colorado State Engineer to determine suitable flow conditions and locations at the time of hydrostatic testing. To reduce potential cumulative dewatering effects on the Little Snake River (approximately double the volume required compared to the other rivers) during the low flow fall season, **we recommend that WIC coordinate their hydrostatic testing and dust control withdrawals with Entrega such that no Piceance and Entrega Project water withdrawals occur simultaneously from the Little Snake River.**

Table 3.12-3
Hydrostatic Test Water Withdrawal Volume
Estimates from Surface Water Sources
(gallons)

Waterbody	Piceance Project	Entrega Project	Total
Little Snake River	9,125,395	7,400,000	16,525,395
Yampa River	2,850,000	9,695,000	12,545,000
White River	5,177,600	6,800,000	11,977,600

EnCana has provided a preliminary estimate of 21.8 acre-feet of water for hydrostatic testing of its entire pipeline associated with its Meeker Gas Plant Project. The sources of this water are not presently known. As stated previously, potable and process water requirements for EnCana's Meeker Gas Plant are not currently known. Disposal of produced water could include evaporation ponds or injection into an approved deep geologic formation.

Both WIC and Entrega would follow the FERC Procedures for crossing smaller perennial streams and intermittently flowing waterbodies, and site-specific erosion control and bank stabilization measures would be used to prevent cumulative sedimentation increases where both projects cross the same stream channel at the same location.

The proposed Piceance Project alignment parallels numerous pipelines and other linear features that cross alluvial floodplains and fans that are subject to periodic flooding and scour. Although WIC has taken steps to avoid or limit the effects of scour, should an event occur it could affect one or more other pipelines, in addition to the Piceance Project pipeline. Potential cumulative damage interactions among pipelines as result of a major channel scouring event are not expected.

Vegetation

The total amount of vegetation that may be affected by all of the proposed projects is substantial but still relatively small compared to the abundance of similar habitat in the project area. While these projects could potentially fragment vegetation habitat, this effect would be minimal because no densely forested areas would be crossed by the proposed pipelines. This effect would be further reduced by the collocation of many of these projects with existing and proposed ROWs. All of the projects would involve mitigation measures designed to minimize the potential for long-term erosion, increase the stabilization of site conditions, and in many cases control the spread of noxious weeds, thereby minimizing the degree and duration of the cumulative impact of these projects.

Wetlands. The locations where cumulative impacts to wetlands would occur are where the Piceance Project and Entrega Project would be collocated between Piceance Project MP 0 and MP 105.1. The majority of this disturbance would be in palustrine emergent wetlands, dominated by grasses and sedges. The Piceance Project would disturb a total of 8.7 acres (8.5 acres of wet meadow and marsh and 0.2 acre of scrub shrub wetlands), and Entrega Project 14.6 acres (14.3 acres of hayfields and 0.3 acre of palustrine emergent wetlands), for a cumulative total of 23.3 acres of wetlands. The majority of this cumulative disturbance would be located at the Yampa River crossing. The total area of wetlands disturbed in the collocation area is 9.5 acres. The EnCana pipelines would disturb about 7 acres of wetlands (irrigated pasturelands) along Pipeline Segment C (**figure 3.12-1**). WIC and Entrega would apply FERC Procedures and would be subject to conditions contained in COE 404 permits and state water quality permits. None of the wetlands crossed would be permanently filled or drained. Therefore, cumulative effects to wetlands would be minor and short-term following construction because of rapid recovery by grasses, sedges, and other herbaceous species.

Fish and Wildlife

Fisheries. The locations where cumulative impacts to fisheries could occur from stream channel disturbance, and hydrostatic water withdrawals, are crossings of the White, Yampa, and the Little Snake Rivers, where the Piceance and Entrega Projects would cross these waterbodies in the same year (late 2005). Both the Piceance and Entrega Projects would directionally drill the White and Yampa Rivers, which would avoid increased sedimentation and channel disturbance in these two rivers. Cumulative impacts from construction by both projects across the Little Snake River are not expected because of differing construction schedules, and because WIC proposes to directionally drill this crossing. Four EnCana pipelines would cross Piceance Creek at the same location (Pipeline Segment C, **figure 3.12-1**) resulting in increased sedimentation downstream of the open-cut crossings. The Entrega Project pipeline would not be collocated with the EnCana pipelines at this crossing location, and therefore would not incrementally add to the channel and aquatic habitat disturbance at this location. However, the Entrega Project could contribute to incremental sedimentation impacts in Piceance Creek and, depending upon the location and timing of other pipeline projects in the same drainage, could create cumulative sedimentation impacts to the creek.

Wildlife Habitat. The removal of woodlands and shrublands would result in a long-term habitat reduction because the regeneration of woody species is slow in the project region. Construction and operation of the Piceance Project would incrementally add to the width of habitat discontinuities within an existing utility corridor, which may affect the movement of species dependent on these habitats and could cumulatively reduce carrying capacity for woodland- and shrubland-dependent species.

Big Game. The Piceance Project would cross elk, mule deer, and pronghorn critical or crucial winter habitats in both Colorado and Wyoming, respectively. Winter big game habitats that would be affected by the Piceance and Entrega Projects, the proposed EnCana Project, and existing pipelines and other utilities are summarized in **table 3.12-4**. The incremental surface disturbance contributed by the Piceance Project to

Table 3.12-4
Overall Big Game Habitat Disturbance (Acres) for Existing and Reasonably Foreseeable Projects within the Piceance Project Pipeline Cumulative Study Area

State/Habitat Type	Existing Pipe and Compressor Stations	Proposed Piceance Project	Proposed EnCana Meeker Gas Plant Project	Proposed Entrega Project
COLORADO				
Elk, Mule Deer, and Pronghorn Critical Winter Habitat	768	206	128	212
WYOMING				
Mule Deer Crucial/Yearlong Habitat	128	42		65
Pronghorn Crucial/Yearlong Habitat	128	89		189
Total	**1,024**	**337**	**128**	**456**

the cumulative projects would represent a small fraction (less than 1 percent) of the individual big game ranges crossed. Both WIC and Entrega have coordinated with the CDOW, BLM, and WGFD to develop revegetation seeding mixtures that include shrub, forb, and grass species that are used by big game, as well as other target species. The application of these mixtures, followed by ROW monitoring after construction (see appendix D) would ensure that there is a long-term effort to restore big game forage in designated critical (Colorado) and crucial (Wyoming) winter habitats. Big game habitat rehabilitation measures are being determined for the EnCana Meeker Gas Plant Project by the BLM in consultation with the CDOW.

Both the Piceance and Entrega Projects would cross big game winter ranges in relatively remote areas of Colorado and southern Wyoming. WIC is currently proposing to construct a portion of its project during the winter (November through January). WIC (as well as Entrega) would be subject to winter construction closures as outlined in Wildlife Resources, section 3.5.2. Authorization of a winter construction plan in critical and crucial big game winter ranges would be required from the CDOW, WGFD, and BLM, depending on the ownership of the land where work is proposed. Big game winter range closures are being determined for the EnCana Meeker Gas Plant Project by the BLM in consultation with the CDOW.

Special Status Species

With the exception of occasional foraging by bald eagles, none of the species discussed below would be affected by the portion of the EnCana Meeker Gas Plant Project within the Piceance Project cumulative study area.

Bald Eagle. Bald eagles use winter roosts and occasionally nest along the White, Yampa, and Little Snake Rivers in Colorado. Both the Piceance and Entrega Projects would be subject to construction timing restrictions during critical bald eagle use seasons and would be requested to implement measures to avoid the loss of roost or nest trees. No other known projects are scheduled for work locations at these crossings that might coincide with either of these pipeline projects. Therefore, the Piceance and Entrega Projects would not contribute to cumulative impacts to bald eagle winter or nesting habitat, nor would construction activities coincide with bald eagle critical use periods along these rivers.

Black-footed Ferret and Other Prairie Dog Colony Inhabitants (Burrowing Owl, Mountain Plover). Both the Piceance and Entrega Project alignments would cross prairie dog colonies between the Yampa River and Wamsutter. The construction of both projects would cumulatively cause surface disturbance in prairie dog colonies and potential loss of prairie dog individuals, which are black-footed ferret prey. Both projects would be subject to pre-construction surveys. If ferrets were sighted, construction would not be authorized until the FERC had completed any required consultation with the FWS. If mountain plovers or burrowing owls were sighted during pre-construction surveys, construction constraint periods would be established to ensure that fledglings leave the areas before construction begins. Based on these measures, no cumulative impacts to these species are expected, with the exception of the short-term surface disturbance within prairie dog colonies during construction.

Sage Grouse. The Piceance and Entrega Projects would be located parallel to each other where both routes cross important sage grouse habitat from the north side of the Yampa River to the vicinity of Wamsutter, a distance of about 85 miles. Both projects would be subject to seasonal construction restrictions to avoid critical sage grouse breeding and brooding periods. Both projects would contribute to incremental increases in the width of the existing pipeline corridor, which is currently about 150 feet wide in this area. The combined Piceance and Entrega Project construction ROWs through this segment could be as much as 185 feet, which would more than double the pipeline corridor width in sagebrush habitats. While there has been natural sagebrush reestablishment on the existing Uinta Basin Lateral and Rocky Mountain Natural Gas Pipeline ROWs between the White River and Wamsutter, the sagebrush density and height in the existing corridor is not yet comparable to adjacent undisturbed areas. Reduction in sagebrush cover exposes grouse to higher predation rates and may limit bird movement across these discontinuities. Reduction in sage grouse populations and reductions in use of traditional lek sites have been documented in oil and gas well fields in Alberta, Wyoming, and Colorado (Connelly et al. 2000). Other factors, such as wildfires, periodic drought, invasion by cheatgrass, and intensive livestock grazing also adversely affect sage grouse habitat suitability (Connelly et al. 2004). In summary, the Piceance and Entrega Projects would contribute to the cumulative long-term reduction in, and fragmentation of sage grouse habitat in Colorado and Wyoming by expanding an existing utility ROW. Both projects would adhere to seasonal restrictions during sage grouse breeding and brooding periods and therefore cumulative indirect effects from increased human activity and noise during construction would not occur. Both projects have indicated that they will coordinate with the appropriate agencies (BLM FOs, CDOW, WGFD) to determine the most affective methods for restoring sagebrush habitat. WIC's proposed reclamation efforts are included in section 3.6 of the EIS.

WIC originally proposed to offset its pipeline from the existing Uinta Basin Lateral by 50 feet between MP 0 and MP 98. If the WIC pipeline were constructed with an offset of 40 feet from the adjacent pipeline, the construction ROW would reduce impact to undisturbed sagebrush habitat by 10 feet in width. As a result of this overlap, WIC's new permanent ROW along this segment also would be reduced to a width of 40 feet. We have estimated that WIC could reduce sagebrush habitat disturbance by 45 acres (of which 28 acres is sage grouse habitat) by increasing the existing permanent ROW overlap between the two pipelines. The result of this increased overlap would be less sage grouse habitat disturbance, as well as a reduction in cumulative impacts on soils, land use, and visual resources. In its comments on the draft EIS, WIC agreed to reduce the Piceance Project pipeline offset to 40 feet at select locations where its pipeline is adjacent to the Uinta Basin Lateral between MP 0 and MP 98. The collocation with the Uinta Basin Lateral is further discussed in section 2.2. The result of this increased overlap would be less sage grouse habitat disturbance, as well as a reduction in cumulative impacts on soils, land use, and visual resources.

Colorado River Fish (Colorado Pikeminnow). Both the WIC and Entrega pipelines would be directionally drilled under the White and Yampa Rivers, which contain listed fish species. Both projects would be subject to hydrostatic test water volume and timing constraints for withdrawals from these rivers. Based on these construction requirements, no cumulative water quality or channel habitat impacts on populations to this listed fish are expected.

Dudley Bluffs Twinpod (also known as Piceance Twinpod) and Dudley Bluffs Bladderpod. These two plants occupy a very small area within the Piceance Basin near the proposed Entrega Meeker Hub Compressor Station. Populations of both species are currently protected within the Dudley Bluffs ACEC, where no new surface occupancy by oil and gas facilities has been allowed by the BLM. Any future development activities on federal lands in the vicinity of the known populations would be subject to pre-construction surveys, avoidance requirements if plants are found, and FWS consultation. The Piceance and Entrega Projects would not contribute cumulative surface disturbance impacts to populations of these plants, based on the projects' location.

Land Use

Land Use Conversion and Construction Effects. The TransColorado North Expansion, Entrega and EnCana Projects would incrementally add to the acreage of aboveground oil and gas facilities in Colorado and Wyoming. The Piceance Project would add additional compression within the existing CIG Greasewood Compressor Station. Entrega's proposed aboveground facilities would affect 69 acres in Colorado and 28 acres in Wyoming. The TransColorado North Expansion Project would require approximately 9 acres for new aboveground facilities (compressor station at Greasewood, MLVs, and interconnections), and EnCana would require about 50 acres for its Meeker Gas Plant.

While installation of new pipelines in an existing corridor would incrementally reduce the area available for future development, use of established utility corridors concentrates cumulative land use impacts. The Piceance Project would not cumulatively affect residential land uses because the Piceance Project would not pass through any residential areas where the pipeline would be located in an existing utility corridor.

Special Management Areas. The Piceance Project route would cross 3.4 miles of the Piceance Creek SWA in pinyon-juniper and sagebrush habitats between the Greasewood Hub and the White River. The Entrega Project pipeline route would cross 5.2 miles of the same SWA in the irrigated meadows along Piceance Creek. The two projects would cause cumulative habitat reductions on these state-owned lands. We anticipate that the irrigated meadow lands can be restored in the short term, and restoration in upland sagebrush and pinyon juniper dominated areas would be longer term. Both projects would parallel each other across 2.6 miles of CDOWs Bitter Brush SWA south of the Yampa River. Both projects would coordinate with the CDOW to maintain access for recreational users (primarily hunters) during the construction period. Both pipeline routes would cross the Overland Trail near MP 20. This crossing is in a remote location, and has not been developed for public access and education about the trail.

Visual Resources

The route segments where the Piceance Project and Entrega Project pipelines would be collocated are classified as BLM VRM Class III (partial retention of existing characteristics of the landscape) by the Little Snake and Rawlins FOs. The areas where the cumulative contrast of the two pipeline construction ROWs would be most apparent to public observers would be along Moffat County Road 57 at WIC MP 101, where the Entrega Project pipeline would ascend a steep ridge and the Piceance Project pipeline would parallel the existing drainage channel, and again along County Road 57 between WIC MP 94 and MP 105.1 where the two ROWs would be about 0.25 mile west of the road on low sagebrush and grass slopes. The two ROWs would be briefly visible to travelers along U.S. Highway 40 where the pipelines would make a perpendicular crossing of the Yampa River. The remainder of the collocated pipeline segment between the Yampa River and Wamsutter is very remote, and accessible only by improved and unimproved secondary roads. Both pipelines would cross I-80 in Wyoming in an area that has already been highly modified by existing pipeline ROWs and commercial and industrial developments in the vicinity of Wamsutter.

New surface disturbance associated with the construction of the EnCana gathering pipelines and the Entrega Project pipeline would be most evident to public viewers driving along Rio Blanco County Road 5 between the proposed Entrega Meeker Hub Compressor Station and the intersection with an existing pipeline ROW (Segment B, **figure 3.12-1**). Construction of additional pipelines in the Segment C existing pipeline corridor also would be viewed by travelers along County Road 5. These areas are classified as BLM VRM Class III. This classification would likely be maintained with post-construction slope recontouring and revegetation. The proposed EnCana Meeker Gas Plant probably could not be seen from County Road 5 because of setbacks from the bluff above the Piceance Creek drainage. No plant facility height information is available.

Cultural Resources

Both the Piceance and Entrega Projects have completed or are completing pedestrian surveys that would be followed by treatment of sites that cannot be avoided. A currently unquantifiable number of both eligible and ineligible cultural resource sites between Piceance Project MP 0 and MP 105.1 may experience cumulative surface disturbance from these projects. A more specific number of affected sites will be determined upon analysis of both project proposals for site avoidance. Both routes intercept the Overland Trail near Piceance Project MP 20. A plan to mitigate impacts to any intact portions of the trail would be required for both projects. If the combined ROW corridor is widened to previously undisturbed areas, visual impacts to eligible historic sites (such as the Cherokee Trail) may occur.

The EnCana gathering pipelines (Segment B, **figure 3.12-1**) would be collocated with the Entrega Project pipeline over a distance of about 2 miles along Piceance Creek. Insufficient information is currently available to evaluate potential cumulative project effects on eligible sites.

Socioeconomics

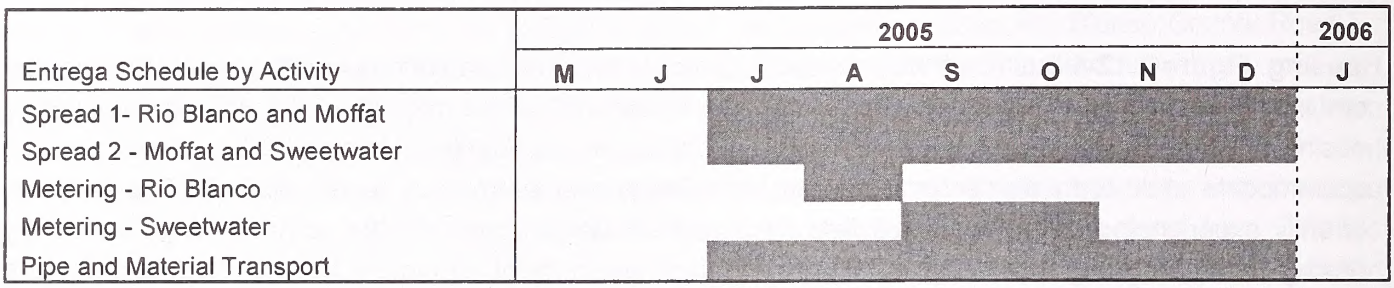
The socioeconomic discussion is focused on the potential interactions between the Piceance and Entrega Projects. As discussed previously, the EnCana Meeker Gas Plant and pipeline project construction could overlap with the Piceance and Entrega Project pipeline construction periods during the second half of 2005. Because specific EnCana Meeker Gas Plant construction timeframes have not been established, this analysis acknowledges a risk of construction period overlaps, but does not attempt to quantify the effects on temporary housing availability or fiscal costs and benefits.

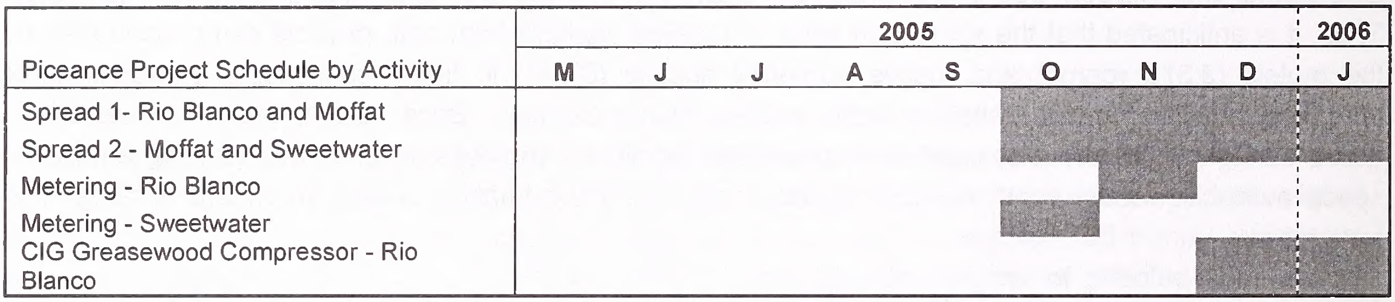
Employment. Cumulative workforce impacts between the Piceance and Entrega Projects could occur in Carbon and Sweetwater Counties, Wyoming and Moffat and Rio Blanco Counties, Colorado. Entrega proposes to construct its Meeker Hub Compressor Station – Wamsutter pipeline segment from north to south. WIC proposes to construct the Greasewood – Wamsutter pipeline segment from south to north. As a consequence, there is the potential for the peak cumulative workforce to coincide in time and space in the vicinity of U.S. Highway 40, west of Craig. Smaller scale overlaps could occur in conjunction with the construction of additional compression, other ancillary facilities, or in the event of changes in scheduling by one or the other of these projects. We examined the proposed schedules for both projects to estimate the time and location of greatest workforce overlap between the two projects. **Figure 3.12-3** illustrates the construction activities and the expected distribution of the workforce along both pipeline routes.

Housing. **Figure 3.12-4** illustrates the potential housing demands within various nearby communities for the combined Piceance and Entrega Project workforces in late 2005. The majority of the available temporary housing to serve these spreads is located in Craig, Colorado, and Rawlins, Wyoming. The infrastructure to accommodate short-term worker increases in both Baggs and Wamsutter is very limited. This region is currently experiencing oil and gas well field development, which increases the competition for temporary housing on an on-going basis. Over the years, a large inventory of temporary housing has developed in Sweetwater and Carbon Counties to meet demands from the oil, gas, and mineral extraction industries. Thus, it is anticipated that the short-term influx of pipeline workers from both projects can be absorbed by the motels (3,375 rooms) and mobile home/RV spaces (6,832) in those counties. The availability of temporary housing is more limited in Moffat and Rio Blanco Counties. Because both projects would still be active during the fall months, short-term, potentially significant shortfalls in temporary housing and camp space availability could occur in Meeker and Craig during the hunting season months of October and November.

Public Services and Facilities. Oil and gas industry workforces typically consist of a large fraction of non-residents who leave the region as drilling and construction projects are completed if other job opportunities in the oil and gas industry are not available. As a consequence, there may be short-term demands for public services from this population, but major investments in public infrastructure (e.g., new schools, hospitals) would not be required. The oil and gas workforce is dispersed over a wide area at long distances from emergency services (e.g., hospitals, fire fighting). During public scoping, Rio Blanco County law enforcement and public safety officials expressed concern about the long distances for emergency response (the nearest major hospital is in Grand Junction) and insufficient local staff to respond to potential simultaneous emergencies. This input suggests that investment is needed at the county level to expand service capabilities, at least temporarily, or the oil and gas industry needs to provide short-term additional support for these services in the form of staff, equipment, service fees, and planning and communications with service providers to address the cumulative impacts of multiple projects occurring in the same timeframe.

Public Sector Fiscal Resources. Both the Piceance and Entrega Projects would cumulatively contribute revenues to Rio Blanco and Moffat Counties in Colorado, and Sweetwater County in Wyoming during the construction period from local purchases by the companies and construction personnel, sales taxes on materials and equipment, and housing rentals. Long-term revenues would accrue to these counties from additional property taxes on improvements located within their respective boundaries. **Table 3.12-5** presents an estimate of the cumulative effects of the Piceance and Entrega Projects on ad valorem taxes in the counties where both projects would be constructed. The counties that would be most benefited are Rio Blanco and Moffat Counties (about a 6 percent and 9 percent increase in the assessed valuation, respectively). The effects in Carbon and Sweetwater Counties, Wyoming would be relatively lower because of a relatively higher existing assessed property valuation on other improvements and natural resource production.





Entrega Workforce by Activity	2005								2006
	M	J	J	A	S	O	N	D	J
Spread 1			350	475	475	475	475	475	
Spread 2			325	425	425	425	425	425	
Metering 1				65					
Metering 2 thru 3					65	65			
Pipe and Material Transport			100	100	100	100	100	100	
Total			775	1,065	1,065	1,065	1,000	1,000	

Piceance Project Workforce by Activity	2005								2006
	M	J	J	A	S	O	N	D	J
Spread 1- Rio Blanco and Moffat						137	268	240	70
Spread 2 - Moffat and Sweetwater						136	267	240	70
Metering - Rio Blanco							65		
Metering - Sweetwater						65			
CIG Greasewood Compressor - Rio Blanco								50	50
Total						338	600	530	190

Combined Totals			775	1,065	1,065	1,403	1,600	1,530	190

Figure 3.12-3 Piceance Project and Entrega Project 2005 and 2006 Construction Schedule and Workforce Estimates

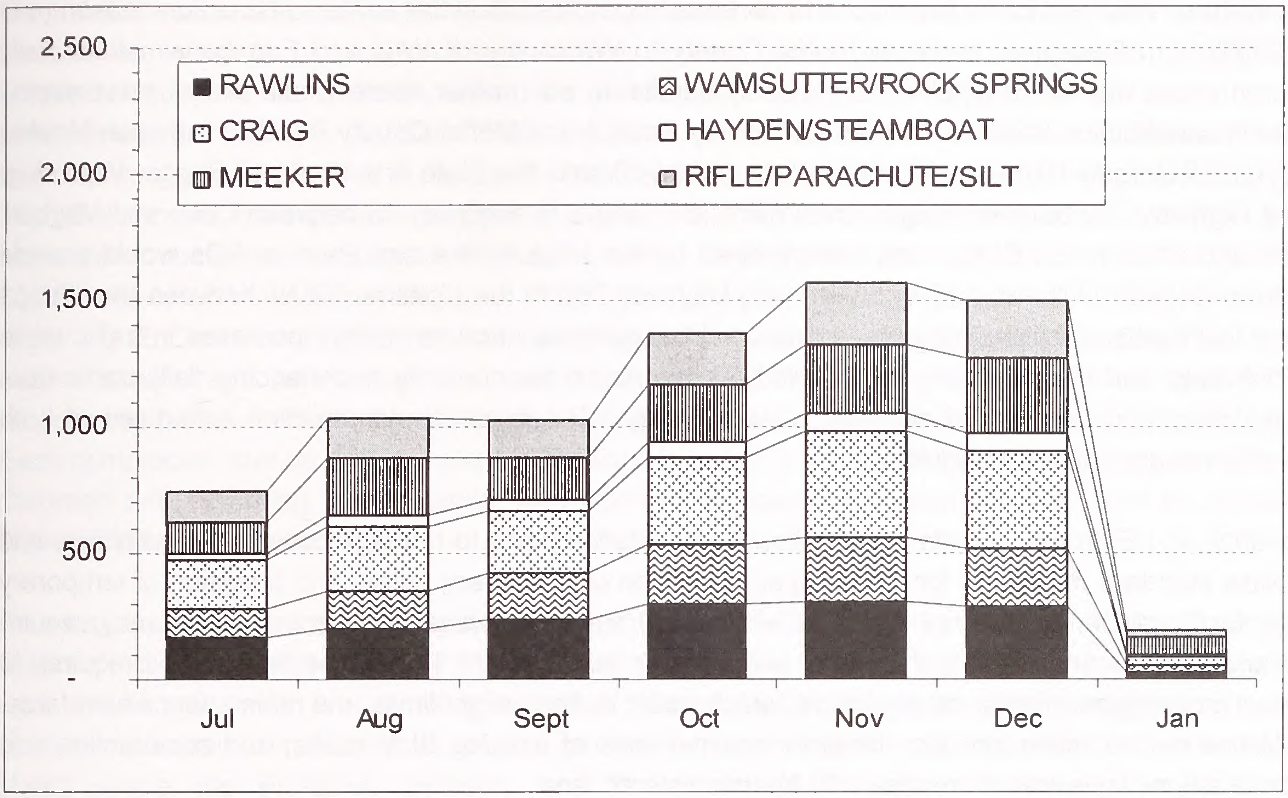


Figure 3.12-4. Combined Piceance and Entrega Project Workforce Estimates, Projected Place of Residence

Table 3.12-5
Cumulative County Ad Valorem Tax Increases - WIC Piceance and Entrega Projects

		Entrega Pipeline	
County	**2003 Assessed Valuation**	**Assessed Valuation**	**Percent Increase**
Carbon County	$382,269,728	$7,412,000	1.94%
Sweetwater County	$11,607,419,952	$6,043,000	0.05%
Moffat County	$298,876,180	$14,068,000	4.71%
Rio Blanco County	$304,607,460	$6,192,000	2.03%
		Piceance Project Pipeline	
County	**2003 Assessed Valuation**	**Assessed Valuation**	**Percent Increase**
Carbon County	$382,269,728	NA	NA
Sweetwater County	$11,607,419,952	$4,642,186	0.04%
Moffat County	$298,876,180	$12,445,476	4.16%
Rio Blanco County	$304,607,460	$10,672,096	3.50%
		Combined	
County	**2003 Assessed Valuation**	**Assessed Valuation**	**Percent Increase**
Carbon County	$382,269,728	$7,412,000	1.94%
Sweetwater County	$11,607,419,952	$10,685,186	0.09%
Moffat County	$298,876,180	$26,513,476	8.87%
Rio Blanco County	$304,607,460	$16,864,096	5.54%

Transportation. WIC and Entrega propose to construct their projects in the same construction season (mid to late 2005) from Deception Creek in Moffat County to Wamsutter. If WIC and Entrega simultaneously construct in areas where the pipelines are closely parallel to each other, there would likely be substantial increases in construction traffic on Rio Blanco County Road 7 and Moffat County Road 57 between Meeker and Maybell; Colorado Highway 13 between Interstate-70 and the state line south of Baggs, Wyoming; Wyoming Highway 789 between Baggs and Wamsutter; and U.S. Highway 40 between Craig and Maybell. Improved and unimproved BLM roads administered by the Little Snake and Rawlins FOs would provide access from Colorado Highway 13 and Wyoming Highway 789 to the pipeline ROWs between the Yampa River and Wamsutter. These secondary roads would experience short-term high increases in traffic while pipe is delivered and the pipelines are installed. These roads are currently experiencing daily traffic from well field drilling and operational activities west of Baggs. The accurate construction schedules of both pipeline projects are not currently known.

The Piceance and Entrega Projects would follow transportation plans to manage construction vehicles, and would follow standard measures for fence repair, provision of temporary gates, and provision of temporary crossings for livestock. Equipment turning onto and off state highways and access roads may require flagmen and other controls to limit the risk of accidents on public roads. Both projects would be required to obtain local crossing permits for county roads, which would define weight limits and maintenance standards. The BLM has defined minimum standards for maintenance of existing BLM roads, and construction and operation of any new permanent roads on BLM-administered land.

EnCana has stated that it expects to employ 250 workers to construct the initial phase of the Meeker Gas Plant Project over a period of 6 months. A proposed construction start date is not known. If construction were to begin in the third or fourth quarter of 2005, there is potential for overlap among the WIC, Entrega, and EnCana workforces and material deliveries on Rio Blanco County Road 5 that parallels Piceance Creek. This county road also could be used by EnCana's gathering pipeline construction workforces during the same period.

In summary, the Piceance and Entrega Projects overlapping pipeline construction periods could result in short-term (1 to 2 months) cumulative increases in traffic on secondary BLM and county roads between U.S. Highway 40 in Colorado and I-80 in Wyoming. Roads used by construction equipment would be maintained, and any damage repaired after construction is completed. Consequently, long-term cumulative impacts to roads and traffic flow are not expected. Potential overlaps between the Entrega Project pipeline and EnCana processing plant and gathering pipeline construction workforces in the second half of 2005 are possible along Rio Blanco County Road 5, but cannot be confirmed based on available information.

Air Quality and Noise

Cumulative fugitive dust (particulate) increases may occur where the Piceance and Entrega Projects are using the same access road system to construct their projects (see Transportation above). Both projects would follow state and local requirements for dust control on roads and excavated surfaces.

On a local scale, cumulative increases in air pollutant emissions could occur where new compressor stations are sited at or near existing stations. A new natural gas-fired compressor (1,650 site-rated

On a local scale, cumulative increases in air pollutant emissions could occur where new compressor stations are sited at or near existing stations. A new natural gas-fired compressor (1,650 site-rated horsepower) would be installed within the existing CIG Greasewood Compressor Station to provide compression for the WIC Piceance Project pipeline. TransColorado's new station at Greasewood would include three natural gas-fired compressors totaling 4,670 site-rated horsepower. Entrega would construct a 15,400 site-rated horsepower compressor station near the proposed Meeker Hub, a 30,000 site-rated horsepower compressor station at Bighole in Moffat County (near Piceance Project MP 71), and a third 20,620 site-rated horsepower station at Wamsutter (near Piceance Project MP 0) in Sweetwater County, Wyoming. EnCana would install several natural gas combustion heaters at its Meeker Gas Plant to remove carbon dioxide and water from the natural gas received from the gathering pipeline system. EnCana proposes to power its natural gas compressors with electricity provided from an existing transmission line. Each compressor station and gas plant is required to obtain a construction and operation permit from either Colorado and Wyoming, and potential interactions with nearby emission sources must be considered in these permit applications.

On a regional scale, the gas-fired combustion turbines at the CIG and proposed TransColorado Compressor Stations providing compression for the Piceance Project and the three Entrega compressor stations would emit criteria pollutants, and small quantities of hazardous air pollutants. Recent regional air cumulative studies have been completed that address multiple pollutant emission sources within the same regional air sheds where the Piceance, Entrega, and TransColorado Projects compression would be located (BLM 2004a,b). The Piceance, Entrega, and TransColorado compressor stations are included as a type of foreseeable source in these analyses. The following paragraphs summarize the major conclusions of these regional studies.

Ambient Air Quality and Air Quality Related Values. The CALPUFF model was applied to estimate the far-field (50 kilometer [km] to over 200 km) ambient air quality and Air Quality Related Values (AQRV) impacts from the Desolation Flats project (BLM 2004a). The far-field analysis estimates the total impacts due to the existing background and foreseeable project sources. Impacts on air quality were estimated at nearby Class I and Class II areas. The sensitive areas include:

- Bridger Wilderness (Class I);
- Fitzpatrick Wilderness (Class I);
- Popo Agie Wilderness (Class II);
- Wind River Roadless Area (Class II);
- Dinosaur National Monument (Class II);
- Savage Run Wilderness (Class I);
- Mount Zirkel Wilderness (Class I); and
- Rawah Wilderness (Class I).

The protocol for the Desolation Flats assessment was to perform an impact analysis for 592 gas wells that would be developed at 555 locations, with a forecasted success rate of 65 percent resulting in 385 producing wells. The producing wells would be supported with six compressor stations and two gas processing plants. Compression and processing requirements are estimated at 32,000 horsepower. The

CALPUFF model was used to estimate ambient NO_2, SO_2, PM_{10}, and $PM_{2.5}$ concentrations for comparison with federal and state ambient air quality standards and PSD Class I increments and to address potential AQRV impacts. The estimated concentrations for all pollutants are far below the applicable federal and state ambient air quality standards and are less than one percent of the Class I PSD increments (BLM 2004a).

The Roan Plateau CALPUFF studies (BLM 2004b) found similar results at Class I areas with respect to the reasonably foreseeable development in the region. The number of new wells in the maximum development scenario for the Roan Plateau was 3,055. It was calculated that this level of development would require up to 67 new 1,000 horsepower compressors and 1 new glycol dehydrator per gas well.

NAAQS were not exceeded for any pollutant or averaging period, and all concentrations include background. The PSD Increments were not exceeded for any pollutant or averaging period. Although these results are compared to the PSD increment consumption thresholds, they do not, nor are they intended to, represent a true PSD increment consumption analysis.

Visibility Impacts. There are two thresholds of visibility change that are used for determining the significance of potential impacts: the number of days in which the visibility is 1 deciview or greater; and the number of days in which the change is 0.5 deciview or greater. A deciview is a 10 percent reduction in visibility as compared to background concentrations of atmospheric haze components, as measured by a specialized instrument called a nepholometer. The FS uses the 0.5 deciview change as a threshold to protect visibility in sensitive areas. The 1.0 decivew change threshold is used in the Regional Haze Regulations as a small but just noticeable change in haziness and has been used by other agencies as a management threshold. The 0.5 and 1.0 deciview change thresholds are neither standards nor regulatory limits. Rather, they are used to alert the affected land managers that potential adverse visibility impacts may exist and the land manager may wish to look at the magnitude, duration, frequency, and source of the impacts in more detail in order to make a significance determination.

The Desolation Flats EIS analyzed far field impacts on visibility degradation at the sensitive receptor areas using the Interagency Workshop on Air Quality Modeling/Federal Land Managers' Air Quality Related Values Workgroup-recommended method (BLM 2004a) and found that visibility impacts do not exceed the thresholds of 0.5 or 1.0 deciview change levels. Therefore, it is not expected that visibility impacts from the proposed pipeline compressors would cumulatively contribute to atmospheric conditions that would exceed these thresholds. The Roan Plateau study found that visibility at three Class I areas in Colorado may be reduced on a few days due to existing sources. However, construction and operation of the proposed pipeline would not materially contribute to cumulative visibility impacts because the reasonably foreseeable development studied for the Roan Plateau EIS included future emissions estimates that encompass the proposed compression at the Greasewood Hub and the proposed Meeker Hub for the Piceance, Entrega, and TransColorado Projects.

Noise. WIC does not currently propose to construct new compressor stations for its project, but a new compressor inside the existing CIG Greasewood Compressor Station is proposed. This new compression along with the proposed TransColorado compressor station at the Greasewood Hub would provide the necessary compression for WIC's proposed delivery volumes. These combined facilities will contribute to the overall noise in the immediate area. However, the noise from these combined facilities is not anticipated to impact permanent residences, since the closest residence is located approximately 4 miles from the CIG Greasewood Compressor Station.[21]

System Safety and Reliability

As discussed previously, we conclude that no cumulative operational safety impacts are expected among pipelines and other facilities located in the same general utility corridor because of the spacing between pipelines, the depth of soil cover, and requirements to meet DOT Minimum Federal Safety Standards in Title 49 CFR Part 192.

[21] The TransColorado Greasewood Compressor Station noise impacts will be addressed in the forthcoming EA (FERC Docket No. CP05-45).

ALTERNATIVES

CHAPTER 4

4.0 ALTERNATIVES

Several project alternatives have been identified and evaluated to determine if they would be reasonable and provide environmental benefits when compared to the proposed action. The range of alternatives includes the No Action Alternative, System Alternatives, Route Alternatives, Route Variations, and Aboveground Facility Location Alternatives.

The evaluation criteria used for developing and reviewing alternatives were:

- technical feasibility and practicality;
- significant environmental advantage over the proposed action; and
- ability to meet the project's stated objective of transporting natural gas from supply basins in the central Rocky Mountains to interstate shippers at Wamsutter, Wyoming, who would carry the gas to markets in both the western and central U.S.

The development and analysis of alternatives were shaped by the public and agency interactions that occurred during the scoping portion of the FERC's NEPA Pre-filing Process. WIC established a preliminary pipeline centerline prior to initiating the Pre-filing Process. This was followed by scoping meetings and agency field reviews to obtain feedback on the proposed routing. WIC developed new route segments to respond to specific issues, and then followed up with landowners and agencies to confirm proposed changes. The route alignment that WIC filed on January 24, 2005, represents the proposed action analyzed in this EIS.

The alternatives that are carried forward in this analysis are those that:

- offer potential environmental impact reduction benefits relative to the proposed action; and
- represent deviations from an existing pipeline corridor where we believe the potential environmental costs/benefits favor locating the proposed pipeline segment outside the corridor. Several short route variations have already been evaluated and the preferred variations have been incorporated into the WIC proposed action. The reasons for incorporating these route variations are explained in WIC's Resource Report 10 (available on the FERC website), and therefore, are not further discussed here.

4.1 No Action

The actions triggering this environmental review were WIC's applications to the FERC for a Certificate and to the BLM for new or amended ROW grants across public (federal) lands. The FERC and the BLM have three courses of action in processing these applications. They may:

1. grant the approvals with conditions;
2. grant the approvals without conditions; or
3. deny the approvals.

If the FERC and the BLM deny WIC's applications, the environmental impacts identified in this EIS would not occur and the stated objectives of WIC's proposal would not be met. Specifically, customers in the western and central U.S. would not have access to the 350 Dthd (341 MMcfd) of natural gas that would be transported by the Piceance Project. Additionally, producers in the Piceance and neighboring production basins (as well as the Central Rocky Mountains supply region) would be denied up to 350 Dthd of new regional transportation capacity.

If the Entrega Project were approved and constructed, the capacity of this new 36-inch-diameter pipeline could be sufficient to transport WIC gas volumes to WIC's interconnections with the interstate pipeline system at Wamsutter, Wyoming over the short term (estimated to be less than 5 years). Entrega proposes to initially convey about 750 MMcfd out of a capacity of 1,500 MMcfd from the Piceance Basin to Wamsutter. However, as Entrega's shippers increase volumes through the Entrega pipeline, the WIC volumes would likely be displaced. As a consequence of this displacement, an alternate gas transportation system, or modifications of the Entrega Project system (e.g., additional compression) would be required to accommodate the WIC gas volumes (see section 4.2, System Alternatives).

As gas production increases in the Piceance Basin and surrounding gas supply basins, the need for a new pipeline that provides a similar level of service as the WIC system also would increase. If other natural gas pipelines and associated facilities are constructed in the future instead of the proposed Piceance Project, each future project would result in its own specific impacts that could be less or greater than the Piceance Project.

Alternative energy sources (e.g., solar, hydroelectric, geothermal, fuel cells) are not physically or commercially available in the market area to meet project objectives.

Denying authorization of the proposed project also could result in more expensive and less reliable natural gas supplies for the end-users and/or greater reliance on alternative fossil fuels, such as coal or fuel oil. Increased use of alternative fossil fuels would likely result in greater emissions of SO_2, NO_x, and PM_{10} compared to other fossil fuels (**table 4.1-1**). If coal were used in lieu of natural gas (assuming 341 MMcfd for 365 days), annual emissions of SO_2, NO_x, and PM_{10} would be 10,800, 8,795 and 400 tons higher, respectively.

4.2 System Alternatives

System alternatives are those that use other pipeline systems to achieve the objectives of the proposed action. A system alternative would make it unnecessary to construct all or part of the Piceance Project. One type of system alternative would require modifications or additions to another existing pipeline system in order to increase its capacity. Another type of system alternative would require that a new pipeline system be constructed. Such modifications or additions would result in some measure of environmental impact; the impact could be less than, similar to, or greater than that associated with construction of the proposed project.

Table 4.1-1
Comparison of Controlled Emission of Criteria Pollutants for Three Boiler Types
(Tons Per Year)

Boiler Type	SO_2 [1]	NO_x [2]	PM_{10}
Coal-fired	10,800	8,800	400
Oil-fired[3]	7,000	7,100	1,800
Natural Gas-fired	0	4.6	100

Assumptions:
1 Assumes 1.2 percent sulfur coal, 1 percent sulfur oil, pipeline quality gas.
2 Assumes low NO_x burners on all units, which is the standard burner design for new installations.
3 Fuel oil-fired boiler assumes Number 5 oil, tangentially fired.

Source: Calculated from EPA Compilation of Air Pollutant Emission Factors AP42 Fifth Edition based on typical standard configurations and assumptions. Individual boiler performance may be different from this example.

4.2.1 Other Existing Pipeline Systems

The major interstate pipelines that pass through the Greasewood Hub are the Williams' Northwest Pipeline Corporation (Northwest Pipeline) 26-inch-diameter pipeline (including a 10-inch-diameter lateral pipeline between the Piceance Basin and Rangely, Colorado), the CIG Uinta Basin Lateral 20-inch-diameter pipeline, Questar's Dragon Trail 14-inch-diameter line, and Kinder Morgan's TransColorado 22-inch-diameter pipeline. Entrega and WIC provided estimates of the subscribed capacity of these pipelines in relation to actual volumes transported. **Table 4.2-1** summarizes this investigation.

Table 4.2-1
Capacity and Subscription Status of Existing Interstate Pipelines Serving the Piceance Basin

Pipeline	Capacity (MMcfd)	Recent Gas Flow (MMcfd)	Firm Subscriptions (MMcfd)
CIG Uinta Basin Lateral	222	198	222
CIG to Northwest Pipeline	290	190	290[1]
Northwest Pipeline Lateral	40	26	4.7
Questar Dragon Trail	120	40	120
TransColorado	385	338	385
Total	1,057	792	1,021.7

1 WIC's and Entrega's estimates based on best available information.

In addition to capacity, **table 4.2-1** provides the recent gas flow and firm subscriptions for these existing systems. Information in **table 4.2-1** was compiled and extrapolated from interstate pipeline public websites, contacts with pipeline personnel, and recent industry presentations on the subject matter. The table includes a "CIG to Northwest Pipeline" category because CIG delivers significant quantities of gas to Northwest Pipeline at this point. However, since the Northwest Pipeline system transports gas from Utah's Uinta Basin, not all of the capacity or flows shown are necessarily from the Piceance Basin. This observation also generally applies to the CIG Uinta Basin Lateral, which transports gas from both the Uinta and Piceance Basins.

Assuming that these pipelines continue to carry the gas volumes recently transported (rather than their firm subscription volumes) for the immediate future, the combined existing systems would accommodate about 76 percent of WIC's proposed volumes. Given the diameters of these existing pipelines (the largest is the Northwest Pipeline at 26 inches), transport of WIC's remaining volumes would require either:

a) additional looping and additional compression on multiple systems or
b) looping one system in its entirety.

While option (a) might disperse the associated environmental impacts, it is unlikely that this option would substantially reduce impacts when compared to the Piceance Project. Furthermore, the use of multiple pipeline systems would not meet the Piceance Project's objective of gas deliveries to Wamsutter.

The fact that both WIC and Entrega have signed agreements with new shippers sufficient to finance and construct entirely new, large-diameter pipelines (24 and 36 inches in diameter, respectively) indicates that the amount of capacity needed exceeds that which could be obtained economically by adding looping and/or compression to the existing pipeline systems. In other words, we assume that at least one existing system would have to be completely looped to accommodate the proposed WIC volumes. This, in effect, is what WIC proposes (i.e., to loop CIG's 20-inch-diameter Uinta Basin Lateral between the Piceance Basin and Wamsutter). Given that the impacts associated with looping an entire pipeline system between the Piceance Basin and Wamsutter would be essentially equivalent to those associated with WIC's proposal, the use of existing systems would not provide a significant environmental advantage over the proposed action. Therefore, this alternative was eliminated from further consideration.

4.2.2 Proposed Pipeline Systems

Entrega's Project represents a new pipeline system that could potentially convey WIC's gas to Wamsutter by interconnecting with the Piceance Project's supplier at the proposed Meeker Hub, increasing the diameter of its pipeline, and/or adding compression.

Several commentors requested that we examine the alternative of transporting the Piceance Project's gas and the Entrega Project's gas in a single pipeline between the Piceance Basin and Wamsutter. **Table 4.2-2** presents the facilities proposed by WIC and Entrega individually, as well as the facilities required by a "one-pipe" alternative sized to carry the combined gas volumes (i.e., 1,850 MMcfd) to Wamsutter by either Entrega or WIC.

Table 4.2-2
Comparison of Facilities Required by Entrega and WIC Proposed Actions and "One-Pipe" Alternative[1]

Facilities and Location	WIC Piceance Project Proposed Action	Entrega Project Proposed Action	WIC "One-Pipe" Alternative	Entrega "One-Pipe" Alternative
Pipeline (miles @ diameter)				
Pipeline to Wamsutter	141.8 @ 24"	136 @ 36"	141.8 @ 42"[2]	136 @ 36"[2]
Compression (horsepower)				
Meeker Hub	---	15,400 (ISO)[3]	15,400 (ISO)[4]	31,150 (ISO)[5] (15,400 + 15,750)
CIG Greasewood Hub	2,820 (ISO)	---	28,120 (ISO) (2,820 + 25,300)	---
TransColorado North Expansion	4,670 (ISO)		4,670 (ISO)	
Bighole	---	30,000 (ISO)[3]	___	65,850 (ISO) (30,000 + 35,850)
Total Compression	**7,490 (ISO)**	**45,020 (ISO)**	**48,190 (ISO)**	**97,000 (ISO)**
Metering and Pressure Regulation Requirements				
Meeker Hub	---	one receipt meter		one receipt meter
CIG Greasewood Hub	one receipt meter	---	one receipt meter	one receipt meter
Wamsutter	two delivery meters	two receipt/delivery meters	two receipt/delivery meters	two receipt/delivery meters
Pressure Regulation	---	---	one/two regulators	one/two regulators

[1] Facilities needed to deliver Piceance Project and Entrega Project proposed gas volumes from the Piceance Basin to Wamsutter, Wyoming. Additional compression required by Entrega to transport gas to the Cheyenne Hub is not included.
[2] This mileage does not account for a "linking" pipeline between the Greasewood and Meeker Hubs. Delivery of WIC's 341 MMcfd to Entrega's proposed Meeker Hub Compressor Station would require about 7 miles of 24-inch-diameter pipeline. Delivery of Entrega's 1,500 MMcfd to WIC at the Greasewood Hub would require about 7 miles of 36-inch-diameter pipeline.
[3] Entrega's estimate of ISO horsepower. Entrega will finalize compression requirements after price negotiations are completed in mid-2005.
[4] This figure represents total compression available at the Meeker Hub, which is designed to transport gas over a distance of approximately 76 miles. Less compression would be required to transport gas over a distance of 7 miles from the Meeker Hub to the Greasewood Hub.
[5] Includes 12,600 (ISO) horsepower required to bring gas received from WIC up to Entrega's system inlet pressure requirements (1,280 psig).

Each company approached the one-pipe alternative differently. Entrega would increase compression at its proposed Meeker Hub and Bighole Compressor Stations, but would leave the pipeline diameter at 36 inches. As a consequence, Entrega's total horsepower (97,000 ISO) for transporting gas for both projects would be 44,490 horsepower more than if the two projects were constructed independently. WIC would increase the diameter of the shared pipeline to 42 inches, and the estimated total horsepower (48,190 ISO) would be 4,320 horsepower less than if the two projects were constructed independently. Based on these design differences, WIC's one-pipe alternative approach would reduce environmental impacts since the surface disturbance requirements between construction of a 36-inch and a 42-inch-diameter would be nearly the same, but the compressor operational emissions for the WIC alternative would be about half as much as Entrega's, based on the relatively smaller horsepower requirements.

While attractive in concept, this alternative would present a number of challenges. From an engineering standpoint, both companies plan on receiving natural gas from different producers at different delivery pressures. Also, WIC and Entrega have commitments with their shippers to deliver volumes at different pressures at their respective interconnections. While not impossible, melding the various factors and requirements together into a common system would be extremely difficult. As evidence of this fact, we note that Entrega and WIC attempted to resolve these differences and negotiate a common pipeline for several months before deciding to go forward as individual pipelines. For these reasons, we eliminated the one-pipe system alternative from further consideration. However, in recognition that a single pipeline would significantly reduce the surface disturbance caused by construction of two pipelines, we developed and analyzed a "Collocation Alternative" that examines the options for collocating the two projects in the same ROW to the extent technically feasible. This alternative is presented in section 4.3.2.

4.3 Route Alternatives

A route alternative is defined as a route deviation that extends over several miles and is designed to address a single major environmental constraint, or multiple environmental issues, associated with the proposed action. In examining route alternatives, we assumed the point of origin and the terminus would be the same as the proposed project. Route alternatives for the Piceance Project considered public and agency scoping input, as well as impacts to sensitive environmental resources.

In our evaluation of the Piceance Project route, we considered routing options (via other utility corridors) that would reduce overall environmental impacts associated with the proposed pipeline route between the Greasewood Hub and Wamsutter. These routing options would avoid or reduce environmentally sensitive resources such as waterbodies, wetlands, SWAs, and upland wildlife habitat. Wamsutter lies directly north of the Piceance Basin; existing pipelines have established the shortest routes with the least topographic constraints between these two points. Routing proposed pipelines with other utility corridors is generally preferred by land management agencies, land use planners, and other regulatory agencies and has several inherent engineering and environmental advantages. Perhaps the most important of the environmental advantages is that new land disturbance is minimized. By overlapping a proposed construction ROW with other previously disturbed existing ROWs, the amount of new land disturbance can be reduced significantly. This is particularly important in arid environments where revegetation is slow and where the evidence of construction impacts often persists for years. Because of these advantages, routes that deviate from the existing ROW are often driven by issues such as engineering constraints that make remaining adjacent to the existing ROW impractical and/or result in increased environmental impact.

For these reasons, the location where WIC has proposed a route deviation from the existing Uinta Basin Lateral between MP 105.1 and the CIG Greasewood Compressor Station is examined below in section 4.3.1. In addition, route alignment alternatives that would limit the overall disturbance of both the Piceance and Entrega Projects also were examined (section 4.3.2).

4.3.1 Uinta Basin Lateral Route Alternatives

Several route alternatives were considered along the final 36.7 miles of the Piceance Project where the proposed pipeline route deviates from the Uinta Basin Lateral. These route alternatives were considered because they could disturb less upland wildlife habitat and would parallel more miles of existing pipeline corridors. We examined existing pipeline corridors that extend northward or westward from the Greasewood Hub that could make further use of the existing Uinta Basin Lateral ROW south of MP 105.1. Because the proposed Entrega Project route makes use of the Uinta Basin Lateral ROW, our analysis also included a review of the proposed Entrega Project route along this same segment (**figure 4.3-1**). Three possible existing pipeline corridors were identified (Pipeline Segments A, F, and D) as route alternatives to the Piceance Project proposed action (Pipeline Segment G).

1. We concluded that Segment A would not be a feasible route because it would cross the BLM Dudley Bluffs ACEC and new surface disturbance in this designated area would not likely be approved by BLM if other route alternatives were available.

2. Segment F currently includes the 20-inch-diameter CIG Uinta Basin Lateral pipeline and the Northwest 10-inch-diameter natural gas pipeline. Aside from its descent down a steep slope into Greasewood Gulch, there are no apparent major physical constraints for routing an additional pipeline in this corridor. This route segment north to MP 105.1 has been designated the Uinta Basin Lateral Route Alternative A. This alternative route essentially follows the existing Uinta Basin Lateral between the Greasewood Hub and MP 105.1 (about 33.2 miles). This alternative also would parallel the Entrega Project proposed route over a distance of approximately 25 miles.

3. Segment D currently includes three 8- to 12-inch-diameter pipelines that were used by American Soda as water and soda ash slurry pipelines. These pipelines were purchased by EnCana and will be used for natural gas liquids or produced water service. We did not identify any major physical constraints that would preclude the use of this existing pipeline corridor for an additional pipeline. This route segment, plus the proposed Entrega Project route north to MP 105.1 (including in part pipeline segment F) has been designated the Uinta Basin Lateral Route Alternative B. From Greasewood, this route alternative follows the EnCana pipelines for about 5.5 miles, the Entrega Project route for about 7 miles, and then follows the existing Uinta Basin Lateral for about 25 miles (which also is followed by the Entrega Project route).

Figure 4.3-2 illustrates the geographical relationships of the Uinta Basin Lateral Route Alternatives. The results of our analysis are presented in **table 4.3-1**.

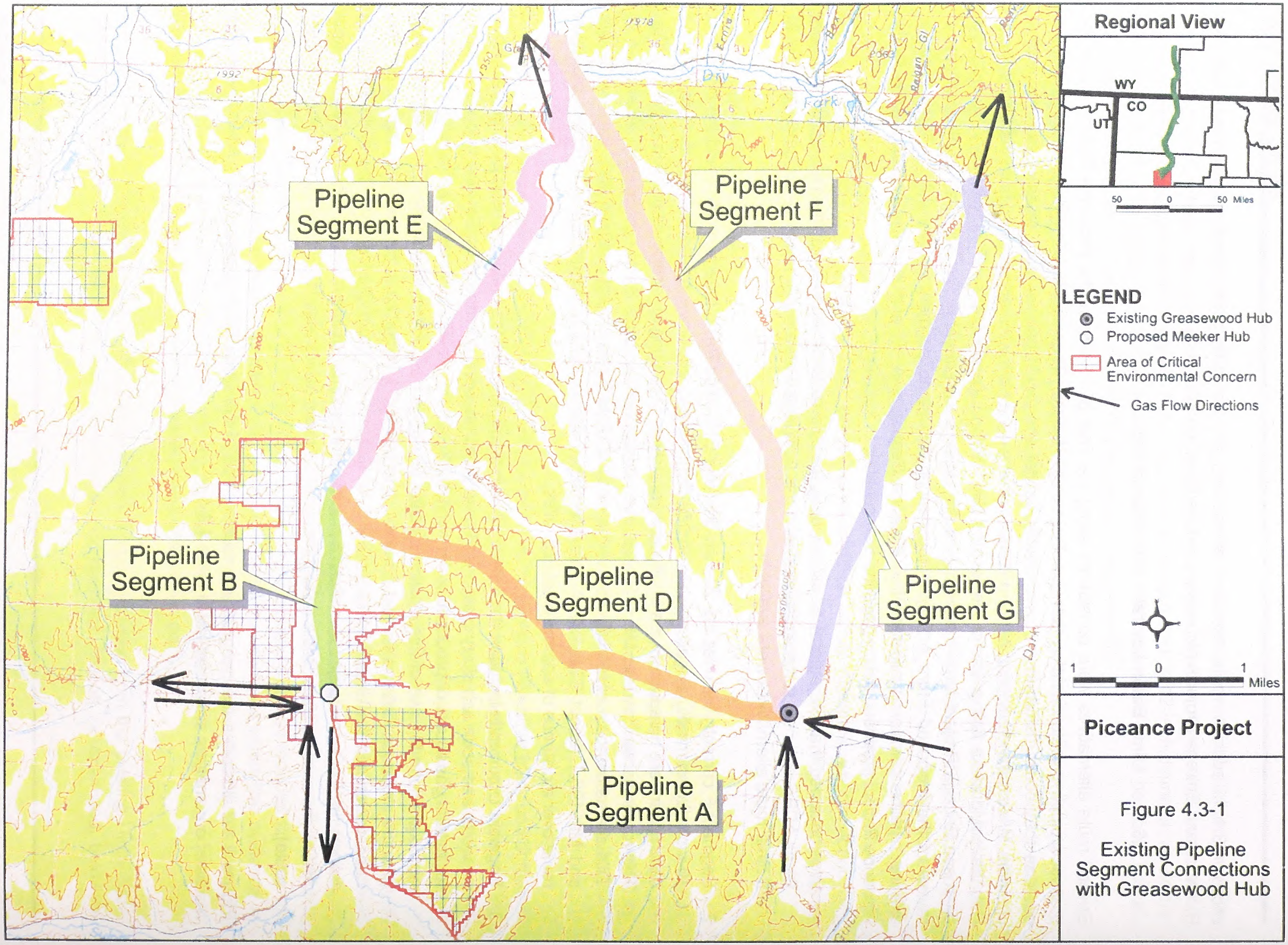


Figure 4.3-1

Existing Pipeline Segment Connections with Greasewood Hub

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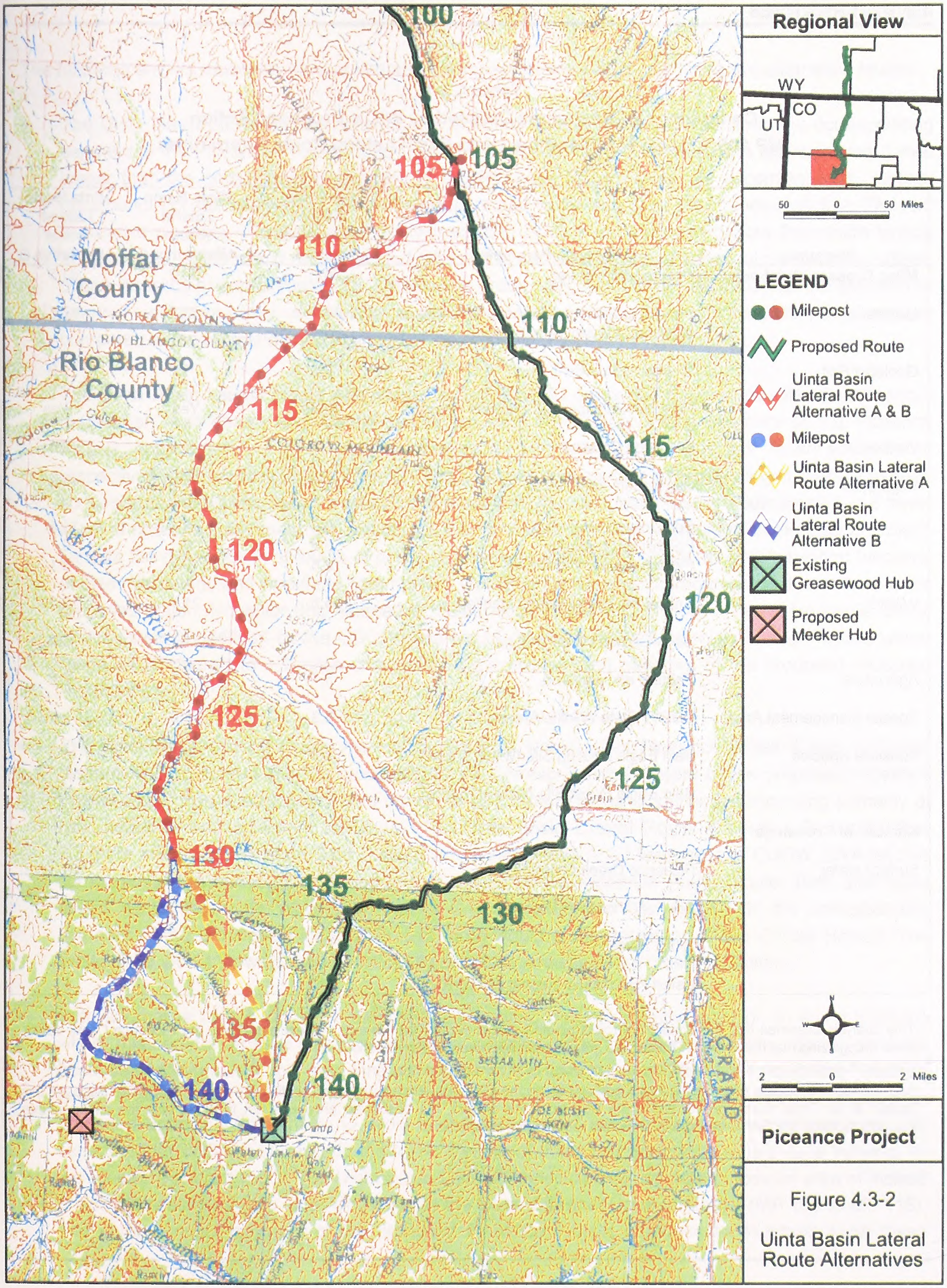


Figure 4.3-2

Uinta Basin Lateral Route Alternatives

Table 4.3-1
Comparison of Resources Crossed by WIC's Proposed Action (MP 105.1 to MP 141.7) and the Uinta Basin Lateral Route Alternatives

Resource	Analysis Parameter	Piceance Project Proposed Action	Uinta Basin Lateral Route Alternative A	Uinta Basin Lateral Route Alternative B
Miles Crossed (total miles per route alternative)		36.7	33.2	37.5
Utilities	Parallel to Existing Utilities (e.g., roads, pipelines, transmission lines).	11.1	33.2	37.5[1]
Geology/ Soil	Slopes >15 percent	2.3	1.8	1.9
	Potential Subsidence/Landslide Hazards	None	Yes	Yes
Wetlands	Wetlands Crossed[2]	0.3	0.8	2.6
Vegetation	Sagebrush scrub-shrub	18.1	12.8	10.4
	Salt Desert scrub-shrub	0	9.1	11.6
	Foothill scrub-shrub	3.4	0	0
	Pinyon-Juniper Woodland[3]	2.8	9.2	8.1
Wildlife	Critical Big Game Winter Habitat	15.8	21.7	19.2
	Sage Grouse Winter Range	1.7	1.1	0.8
Agriculture	Pasture and Hayland	5.7	2.1	7.5
Special Management Areas	CDOW State Wildlife Areas	3.3	1.9	5.6
Sensitive Species	Bald Eagle Nesting Site (within 1 mile)	3.6	0	0
	Bald Eagle Roost Site (within 0.5 mile)	5.7	2.3	2.3
Number of Crossings				
Surface water	Piceance Creek Crossings	0	4	10
	Dry Fork Piceance Creek	1	0	0
	White River	1	1	1
	Listed Fish Critical Habitat (White River)	0	1	1

1 This analysis assumes that the Piceance Project pipeline would parallel the Entrega Project pipeline in the Piceance Creek valley, while recognizing that the Entrega Project has not yet been approved for construction.

2 Wetland crossings based on field delineations provided by project proponents.

3 Approximately 6.7 miles of pinion-juniper woodland along the Piceance Project proposed route were destroyed by fire. Because this habitat is not likely to regenerate within the lifetime of this project, the destroyed area was not included with the pinion-juniper woodlands along the Piceance Project proposed route in this comparison.

The following are the most important environmental impact differences between the two alternative routes:

- The Uinta Basin Lateral Route Alternative A is approximately 4 miles shorter than the corresponding segment of the Piceance Project route; Uinta Basin Lateral Route Alternative B is approximately 1 mile longer than the corresponding segment of the Piceance Project route. As a consequence, surface disturbance for the alternatives would be nearly equal to, or less than the Proposed Action. The two alternative pipelines would be located within existing pipeline corridors throughout their entire length; the proposed action would not be located adjacent to existing pipeline or electrical transmission utilities over a distance of approximately 25.6 miles. The greater degree of utility collocation for the alternatives generally indicates better construction access and reduced requirements for temporary roadways as compared to the corresponding segment of the proposed Piceance Project route.

- The Uinta Basin Lateral Route Alternatives A and B would cross about 0.5 more mile of scrub-shrub (sagebrush, salt desert and foothill) vegetation than the corresponding segment of the Piceance Project; approximately 5 to 8 miles more sagebrush and 9 and 12 miles salt desert scrub-shrub, respectively, with no foothills scrub-shrub. The proposed line crosses approximately 3 miles of foothills scrub-shrub and no salt desert scrub-shrub. In addition, the alternative routes would cross 5 to 6 fewer miles of unburned pinyon-juniper woodlands than the corresponding segment of the Piceance Project. Despite the difference in amounts of pinyon-juniper woodlands, the long-term wildlife support functions of these shrubland and woodland communities would be similar when comparing the alternatives to the proposed action. However, the alternative routes would cross 4 to 6 more miles of big game critical winter range (as defined by the CDOW) and would cross 0.6 to 0.9 less miles of sage grouse winter range as compared to 1.7 miles crossed by the corresponding segment of the proposed Piceance Project route.

- The Uinta Basin Lateral Route Alternative A and B would cross Piceance Creek 4 and 10 times, respectively, compared with no crossings for the corresponding segment of the proposed Piceance Project route. The alternatives would cross 0.5 to 2.3 more miles of wetlands (consisting primarily of hay meadows and emergent wetlands). The Uinta Basin Lateral Route Alternative B would cross 2.3 more miles and the Uinta Basin Lateral Route Alternative A 1.4 less miles of CDOW SWA land as compared to the corresponding segment of the proposed Piceance Project route. Both alternative routes would cross the White River within Critical Habitat for FWS-listed fish; the corresponding segment of the proposed Piceance Project route would cross upstream of this Critical Habitat. The White River would, however, be directionally drilled, regardless of the crossing location.

- Both alternative routes would be located in an existing multiple pipeline corridor. In some locations where this corridor crosses steep terrain, there is limited width for construction of additional pipelines because of steep side slopes requiring cut-and-fill for the construction ROW (1.7 miles in the Piceance Creek drainage and 1.0 mile on Colorow Mountain north of the White River). Entrega modified its proposed Entrega Project route to avoid or reduce some of these topographic constraints, and it is expected that WIC would need do the same if either of these two alternative routes were followed by the Piceance Project route. The Uinta Basin Lateral Route Alternatives would cross an area of incised drainages, sinkholes, and local landslides in the Deep Channel Creek drainage (MP 105 to MP 115). The corresponding segment of the proposed Piceance Project proposed route would avoid these known topographic constraint areas and geologic hazards. The proposed route, however, would cross steep side slopes of the Dry Fork of Piceance Creek and Hay Gulch. The total length of steep slopes (greater than 15 percent) is slightly greater along the proposed route than the alternatives (0.4 to 0.5 mile).

In summary, the Uinta Basin Lateral Route Alternative A appears to reduce some environmental impact when compared to the corresponding segment of the proposed route because of: 1) less overall surface disturbance; 2) less disturbance of sage grouse winter range (a locally important issue); 3) less disturbance in CDOW state wildlife management areas; and 4) more miles parallel to existing pipelines. WIC, the operator of the Uinta Basin Lateral,[22] is very familiar with both the construction and operational history of this pipeline, which was constructed in 1993. In its filing to the FERC, WIC acknowledged that the Uinta Basin Lateral alignment represented the shortest distance to Wamsutter. WIC then stated that the Uinta Basin Lateral route "posed serious engineering and environmental problems through Piceance Creek and from the area north of the White River through Deception Creek Canyon. These problems included endangered fishes at the White River crossing, extreme erodible slopes and wetlands in the Piceance Creek drainage." Based on these identified concerns, WIC proposed to construct its Piceance Project along an alignment that is entirely different from the existing pipeline corridor through the Piceance Basin along Piceance Creek. The proposed route is consequently different from the Entrega Project, which does parallel the Uinta Basin Lateral pipeline from the Piceance Creek drainage to Wamsutter.

We observe that the endangered fish issue at the White River crossing has largely been mitigated by WIC's proposal to cross the White River using HDD method, and thereby avoid channel disturbance effects. There are other pipelines that have already been constructed parallel to the Uinta Basin Lateral through the areas considered to be major topographic constraints. We note that Entrega has modified its route in these constraint areas to meet its construction requirements; however, these constraints would further limit any additional pipeline alignments. Likewise, potential impacts to critical big game winter habitat could be avoided by the adhering to the proposed construction schedule.

In response to our inquiries, WIC identified areas of local geologic hazards (sinkholes, landslides) that have affected the Uinta Basin Lateral and required repairs. This information has been considered by Entrega in its proposed project design. Pipeline construction across wetlands, irrigated pastures, and streams is routinely required and best environmental practices would be applied to these crossings, consistent with WIC's Procedures and other measures included in the project's POD. Application of best management practices for soil management, stream crossings, and grading disturbed areas to maintain existing irrigation flow patterns would ensure that sediment increases in Piceance Creek (crossed multiple times by the alternatives) would be very short term, and that vegetation productivity in irrigated pasturelands could be restored in 1 to 2 years. However, we also recognize the regional importance of the Piceance Creek floodplain for livestock grazing, winter use by big game, and Piceance Creek instream aquatic resources.

We also recognize that the Entrega and Piceance Projects would be constructed in the same season and therefore, if both projects were to be constructed across the same steep terrain (e.g., Colorow Mountain), additional coordination would be required between the two projects so that construction spreads could pass

[22] The Uinta Basin Lateral is owned by CIG (an affiliate of WIC).

each other in the same steep terrain. Because both projects propose late season construction, the separation of the two projects in the southern portion of the project may allow both projects to achieve their construction goals with the least amount of interference.

Because of its familiarity with the Uinta Basin Lateral and knowledge of Entrega's proposed route, WIC made the decision to propose a new route alignment that would not parallel the Uinta Basin Lateral. We understand from filing statements that WIC made this decision based on construction and operational considerations, as well as their belief that an upland route that avoided the Piceance Creek wetlands would be more environmentally acceptable. Based on our preliminary analysis in the draft EIS, we concluded that the specific construction and operational constraints that WIC anticipates had not been adequately explained to justify the decision to route the proposed pipeline in a new alignment between MP 105.1 and the Greasewood Hub. Therefore, in the draft EIS, we recommended that WIC provide an updated rationale for selecting its proposed route between MP 105.1 and the Greasewood Hub. We asked that WIC include site-specific areas of construction and operational concerns and an engineering and environmental analysis of following the Uinta Basin Lateral between MP 105.1 and the Greasewood Hub. We further recommended that the additional engineering and environmental information should include potential route variations that would avoid conflicts with the Entrega Project where the two projects would be parallel to each other if WIC were to follow the Uinta Basin Lateral in its entirety.

In its comments on the draft EIS, WIC provided additional details regarding the constraints associated with collocating their pipeline with the Uinta Basin Lateral. WIC states that the hay pastures in the Piceance Creek Valley are very susceptible to subsidence, which has affected the flow irrigation in the fields along the Uinta Basin Lateral, and which required 2 to 3 years of post-construction mitigation. WIC further cited the Colorow Gulch area as a particular constraint area along the Uinta Basin Lateral due to extreme topography. WIC maintains that, due to extreme terrain and soil conditions, this alignment would not likely provide additional suitable construction locations. This is particularly true since the Entrega Project pipeline is collocated with the Uinta Basin Lateral, further reducing potential pipeline routing and work area. WIC asserts that adequate room would be lacking to allow installation of a third pipeline through the Colorow Gulch area.

WIC also contacted the CDOW requesting their preferred routing for this segment of the Piceance Project. The CDOW indicated that it would be willing to permit one new pipeline across its lands in the Little Hills Wildlife Management Area through the Piceance Creek Valley, but strongly prefers that there not be two (i.e., both Entrega's and WIC's pipelines). Furthermore, WIC states that the CDOW would allow the Piceance Project pipeline to cross parts of the Little Hills Wildlife Management Area that are not in the Piceance Creek Valley along WIC's currently proposed route.

Additionally, in their comments on the draft EIS, the BLM has indicated that their initial conclusion supports separating the proposed WIC and Entrega pipelines along different routes. The BLM listed several factors that would support WIC's proposed route, rather than collocation with the Uinta Basin Lateral route, including: minimizing impacts to riparian, wetland, and agricultural lands along Piceance Creek; the high likelihood that the alignment would have to be moved west of the existing corridor due to lack of constructible space across Colorow Gulch; the presence of highly erosive soils prone to undercutting and slumping in Indian Valley; and the new route would create a new utility corridor that could provide collocation opportunities for future linear projects in the area.

In addition to our analysis provided in **table 4.3-1**, we also have visited the alternative routes in the field and concur with the agencies' preferences and conclusions. Therefore, for all of the reasons listed above, we do not recommend use of either of the Uinta Basin Lateral Route Alternatives.

4.3.2 Collocation Alternative

WIC proposes to construct and operate its Piceance Project along an alignment that would closely parallel the Entrega Project route over the majority of the distance between the Piceance Project origin at Wamsutter, Wyoming and the CIG Greasewood Compressor Station. The Piceance and Entrega Project routes converge at MP 105.1 and follow similar routes adjacent to the Uinta Basin Lateral to Wamsutter. Rather than constructing both pipelines as separate and discrete facilities within a broader utility corridor, we considered a collocation alternative along this segment (termed the Danforth Hills North study area).[23] The collocation alternative examined the potential surface disturbance reduction advantages that could be obtained by collocating the Entrega and Piceance Project pipelines within overlapping construction ROWs (to the extent practical, considering technical and topographical constraints).

For purposes of this analysis, "collocation" is defined as constructing the two pipeline projects in the same construction ROW, with an offset of 25 to 50 feet from each other, and from other parallel pipelines. For the purpose of this analysis, we assumed that both projects could be constructed within the same 150-foot-wide construction ROW. As proposed by both WIC and Entrega, the pipelines would typically be within 90 feet of each other and the construction ROWs would be within a 300-foot-wide corridor, except in areas where precluded by terrain and other construction constraints. Where possible, the proposed pipeline would be constructed 40 feet east of the existing Uinta Basin Lateral in an 85-foot-wide ROW and the Entrega Project pipeline would typically be constructed 40 feet west of the existing Uinta Basin Lateral in a 100-foot-wide ROW.

The Danforth Hills North study area collocation analysis extends from Piceance Project MP 105.1 north to the Wamsutter, Wyoming, where the Piceance Project pipeline originates at the existing CIG Wamsutter Compressor Station at MP 0. North of the Danforth Hills in Moffat County, Colorado, the Entrega Project and Piceance Project pipelines are proposed for construction generally parallel to each other, but in separate ROWs adjacent to the existing CIG Uinta Basin Lateral and Rocky Mountain Natural Gas (a subsidiary of Kinder Morgan) pipelines.

The proposed Piceance and Entrega Projects would cross about 29 miles of important sage grouse breeding and brooding areas (as defined by the CDOW and WGFD) north of the Yampa River, where the proposed routes would be constructed in separate ROWs (see **table 4.3-2**). We received several comments during public scoping concerning sage grouse population effects from loss of sagebrush habitat, and sage grouse habitat fragmentation because of utility corridor expansion. We examined options for reducing the

[23] In addition to our analysis of alternatives south of MP 105.1 (Uinta Basin Lateral Alternatives in section 4.3.1), we note that several collocation alternatives along this segment were analyzed in the Entrega Project EIS which are not repeated here.

surface disturbance of important sage grouse breeding and brooding habitats by consolidating the two projects into a common construction ROW that was assumed to be 150 feet wide. The analysis was conducted as follows:

Table 4.3-2
Piceance Project Milepost Intervals Considered for Additional Piceance and Entrega Collocation to Reduce Sage Grouse Breeding and Brooding Habitat Impacts

Milepost Interval	Miles
MP 26 to MP 35	9
MP 55 to MP 69	14
MP 73 to MP 79	6
Total	**29**

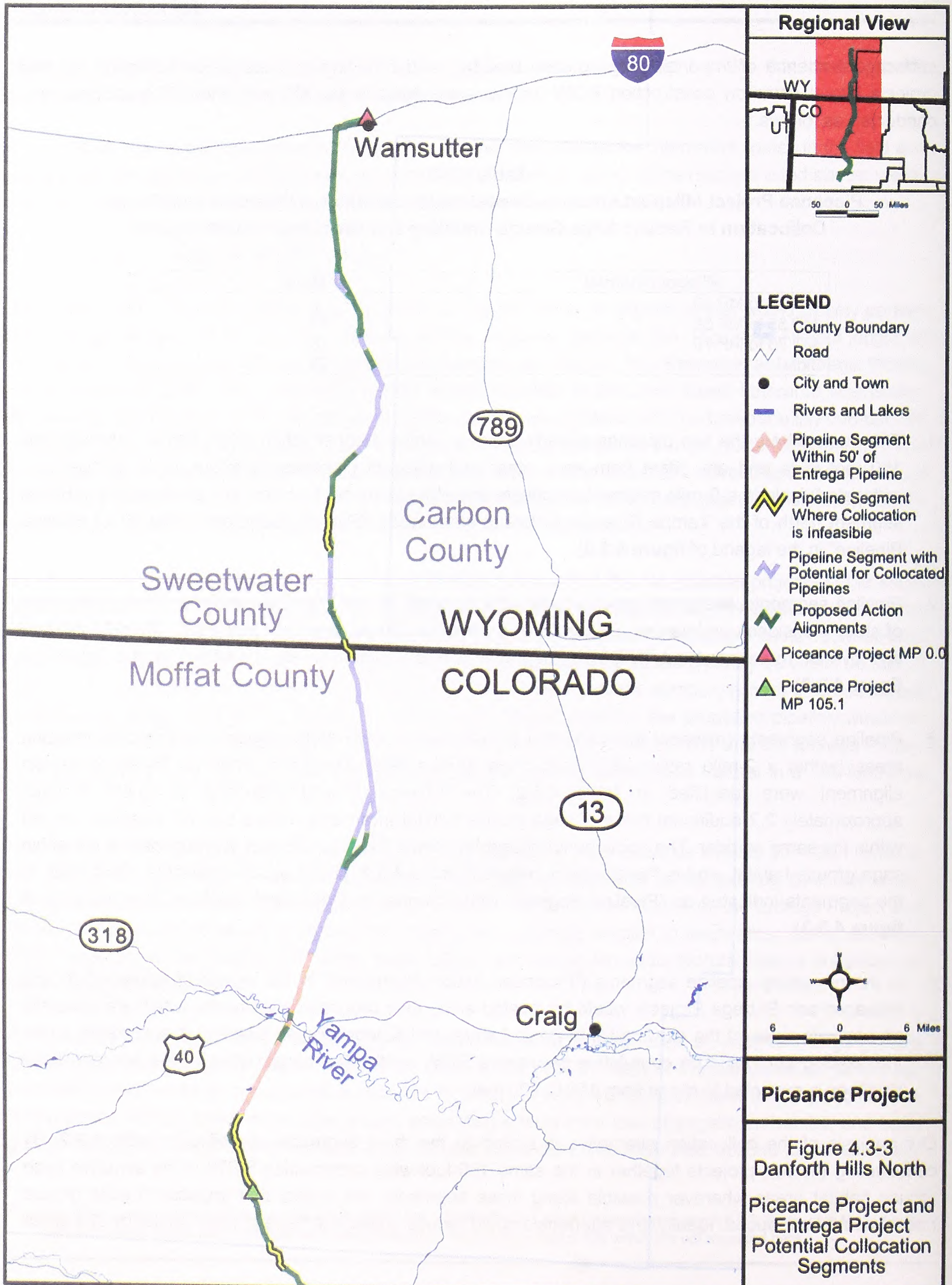
1. The areas where the two pipelines already share a common construction ROW that is approximately 150 feet wide and are offset from each other and adjacent pipelines by about 40 to 50 feet (i.e., collocated) include a 9-mile segment on private and state lands south of the Yampa River and a 6-mile segment north of the Yampa River on Colorado state lands ("Pipeline Segment within 50' of Entrega Pipeline" in the legend of **figure 4.3-3**).

2. Pipeline segments where new pipelines may not be easily constructed adjacent to each other because of steep sideslopes and narrow ridgelines were identified. These segments represent about 10 miles of this overall route segment ("Pipeline Segment where Collocation is Infeasible" in the legend of **figure 4.3-3**).

3. Pipeline segments (milepost intervals) that overlap with known sage grouse breeding and brooding areas (within a 2-mile radius of historic sage grouse leks) along the proposed Piceance Project alignment were identified in **table 4.3-2.** The Entrega Project proposed alignment includes approximately 2.2 additional miles of sage grouse habitat in an area where the two pipelines are not within the same corridor. The corresponding segment of the Piceance Project, as proposed, is not within sage grouse habitat, and is therefore not include in **table 4.3-2**. (Sage grouse habitat is within three of the segments indicated as "Pipeline Segment with Potential for Collocated Pipelines" in the legend of **figure 4.3-3**).

4. In the remaining pipeline segments ("Proposed Action Alignments" in the legend of **figure 4.3-3**), the Piceance and Entrega Projects would be located along their proposed alignments, which are generally on opposite sides of the existing Uinta Basin Lateral and Kinder Morgan pipelines that currently share the existing corridor. The cumulative permanent ROW width after construction of the two additional pipelines is expected to range from 150 to 200 feet.

Our analysis of the collocation alternative is limited to the three segments identified in **table 4.3-2**. By constructing the two projects together in the same 150-foot-wide construction ROW in the sensitive sage grouse habitat areas wherever possible along these segments, we expect that impacts to sage grouse habitat could be reduced. Ideally, this alternative could reduce impacts to sage grouse habitat by 264 acres



Piceance Project

Figure 4.3-3
Danforth Hills North

Piceance Project and Entrega Project Potential Collocation Segments or about 33 percent as compared to constructing the two projects along their currently proposed alignments. Sagebrush shrubs (on which the sage grouse depends) recover very slowly (15 to 50 years). Fragmentation of sage grouse habitat from multiple pipelines in the same utility corridor may adversely affect reproductive success and survival of this species over the long term. To continue our evaluation of the feasibility of collocating the two proposed pipelines within 40 to 50 feet of each other, where the two projects would cross up to 29 miles of sage grouse breeding and brooding habitat (areas along the Piceance Project proposed alignment where both projects either could potentially or are already planning construction within the same ROW), we requested additional information from WIC in the draft EIS. We recognize that collocation would require one or both projects to adjust their current alignments to achieve this result. We also recognize that other factors (e.g., cultural resource sites, local terrain, other pipelines in the corridor, and construction of both projects in the same construction season) exert a significant influence on the practicality of collocation in the intervals identified in **table 4.3-2**.

In its comments on the draft EIS, WIC provided an updated engineering and environmental analysis of collocating the proposed Piceance Project with the proposed Entrega Project pipeline north of the Yampa River (MP 87.6) to minimize impacts to sage grouse breeding and brooding habitat. WIC states in its analysis that collocating the pipeline with Entrega in the areas north of the Yampa River (as identified in **table 4.3.2**) is feasible in some areas but requires pull outs in selected areas or is not recommended in other areas. WIC asserts that swapping sides of a corridor or leaving the corridor for a new one as a result of the Collocation Alternative can lead to confusion in the field as to the identity and location of the pipelines. WIC identified the following constraints for the collocation alternative:

- Collocating with the Entrega pipeline in these areas would require two crossings of the pipeline corridor at each of the locations shown in **table 4.3-2** requiring over 20 separate pipeline crossings and adding over 36 crew days to the construction schedule;

- Depending on the actual time of construction and when the contractor's equipment gets to the area, the additional collocated areas could cause severe scheduling conflicts and would require skips and move backs for one contractor or both;

- If WIC were to construct in these areas first (a strong possibility for MP 55 to MP 69 and MP 73 to MP 79), Entrega would be caught between the corridor and the WIC Piceance Project pipeline. Constructing on the west side of the corridor places the construction side of WIC's ROW on the west side of Entrega's proposed line. This would require WIC's centerline to be offset 55 feet from the proposed Entrega pipeline. Assuming a 5-foot safety buffer from each line, this would reduce Entrega's construction ROW from 100 feet to 85 feet;

- WIC's alignment would have to pull out from Entrega's alignment between MP 27.6 to MP 28.3, between MP 33.2 to MP 33.5, between MP 55.6 to MP 56.2, and between MP 64.7 to MP 65.0 due to various crossings of severe washes;

- Beginning at MP 65.3 to MP 74.3, Entrega's alignment leaves the Uinta Basin Lateral corridor and follows a Kinder Morgan Pipeline. At MP 69, the lines are approximately 1 mile apart. This would require one mile of new disturbance to return to WIC's alignment;

- The lines are in separate corridors from MP 73 to MP 74.3 and would require 2,000 feet of new disturbance at MP 73. Additionally, the lines could not be collocated between MP 76.9 to MP 77.6 because of the undulating route of Spring Creek in this area; and

- WIC has already acquired ROW agreements from the private landowners in these areas. Moving the line will require renegotiation of these agreements before work could proceed. Similarly, Entrega would have to renegotiate their agreements in order to collocate along WIC's route.

Based on the engineering and environmental constraints associated with this alternative, we do not recommend use of the Collocation Alternative along the three segments identified in **table 4.3-2**. Although the Collocation Alternative would reduce impact to sage grouse habitat by 264 acres over the proposed route, the pipeline construction and operational constraints associated with this alternative do not warrant the use of this alternative. Furthermore, we note that WIC has committed to sagebrush habitat protection and restoration measures that include reducing the construction ROW to 75 feet in width where the ROW passes within 0.25 mile of a lek, reseeding the construction ROW with sagebrush in sage grouse habitat, and transplanting sagebrush to screen the ROW in the vicinity of leks. We also note that WIC has committed to reduce its pipeline offset from 50 feet to 40 feet in sage grouse habitat whenever practical (approximately 23 miles; approximately 6 miles of habitat occurs in areas where WIC cannot commit to an offset of 40 feet primarily due to geographical or engineering constraints) where it parallels an existing pipeline, further reducing the amount of disturbance to soils, vegetation and wildlife habitat by an additional 28 acres.

4.4 Route Variations

Route variations differ from system alternatives or major route alternatives in that they are identified to avoid or reduce impacts to site-specific resources or to resolve localized issues. Site-specific resources include cultural resource sites, wetland areas, and severe terrain conditions. Localized issues might include landowner requests. While route variations may be a number of miles long, most are short and are located in relative proximity to the proposed route. There are no currently unresolved location issues associated with the WIC centerline that require a detailed variation analysis. The Piceance Project proposed centerline incorporates several minor route alternatives which were modified during the planning process to minimize environmental impacts and landowner concerns. After publication of the draft EIS, WIC has incorporated eight minor realignments and route variations to address landowner concerns, avoid natural features, and avoid sensitive cultural resources. We have reviewed these realignments and route variations as part of the proposed project analyzed in chapter 3.0.

4.5 Alternative Locations for Aboveground Facilities

Since WIC would install the proposed additional compression at the existing CIG Greasewood Compressor Station, no compressor station alternatives were evaluated. Additional aboveground facilities for the proposed project include the installation of two communication towers, pigging and metering facilities, MLVs, and interconnections. As proposed, WIC would install two pigging facilities, four metering facilities, and two MLVs, at existing compressor station sites at either end of the pipeline, limiting consideration of alternative siting options. Since these facilities are proposed at or immediately adjacent to the existing, fenced and graveled CIG Wamsutter and CIG Greasewood Compressor Stations, environmental impacts would be minimized and no alternative locations were evaluated.

The remaining seven MLVs and one pigging facility are proposed at locations that satisfy engineering design requirements and meet DOT regulations (e.g., valve spacing requirements per CFR Part 192). Likewise, the proposed locations for these minor facilities consider ease of access for maintenance activities. As such, the MLVs for the proposed action are currently sited along the pipeline and next to existing roads, minimizing potential impacts associated with additional access roads. With the exception of one MLV, no environmental issues were identified for the MLV locations or for the combined pigging facility and MLV at County Road 4. One MLV at MP 19.7 was located within 0.25 mile of the Overland Trail. Since the proposed MLV would be collocated with an existing MLV on the adjacent Uinta Basin Lateral pipeline, we considered the location of the MLV to have minimal environmental impact. Consequently, no alternative locations were considered for the placement of these minor aboveground facilities.

No alternative locations were considered for the installation of the proposed two communication towers for the Piceance Project. The communication towers would be installed at the existing Magnetic Mountain and Juniper Mountain communication tower sites on previously disturbed land with existing road access. As such, environmental impacts would be minimal.

CONCLUSIONS AND RECOMMENDATIONS

CHAPTER 5

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions of the Environmental Analysis

The conclusions and recommendations presented in this section are those of the FERC environmental staff. Our conclusions and recommendations were developed with input from the BLM as a cooperating agency. The BLM will use the final EIS in its ROD for the Piceance Project.

Review of the information provided by WIC and further developed from responses to data requests; field investigations; scoping; literature research; alternatives analysis; and contacts with federal, state, and local agencies, and individual members of the public indicates that the proposed project would result in limited adverse environmental impact during construction and operation. We conclude that if the project is constructed and operated in accordance with applicable laws and regulations, WIC's proposed mitigation, and the additional mitigation recommendations presented below, the Piceance Project would be an environmentally acceptable action. Although many factors were considered in this determination, the principal reasons are:

- 82 percent of the proposed pipeline would be located adjacent to existing pipeline, utility, and road ROWs. Where WIC's proposed pipeline would parallel existing pipelines, it would generally be installed at a 40-foot offset from the nearest pipeline centerline;
- the project would be consistent with or in conformance with federal resource management plans;
- WIC would implement a number of resource- or activity-specific plans, procedures, and agreements to protect natural resources, avoid or limit environmental impact, and promote restoration of all disturbed areas during construction and operation of the project;
- the use of the HDD method would avoid disturbances to the beds and banks of the Little Snake, White, and Yampa Rivers;
- the appropriate consultations with the FWS, the SHPOs, the BLM, other affected land management agencies, and any appropriate pre-construction compliance actions resulting from these consultations, would be completed before WIC would be allowed to begin construction in any given area; and
- an environmental inspection program would be implemented to ensure compliance with all mitigation measures, Certificate conditions, and requirements contained in the POD.

In addition, we have developed specific mitigation measures to further reduce the environmental impact that would otherwise result from construction of the project. The additional studies or field investigations which we recommend typically result in site-specific mitigation and further reduction of impact; therefore, we are recommending that these mitigation measures be attached as conditions to any Certificate issued by the Commission. These mitigation measures are presented in section 5.5. We believe that the recommended mitigation measures would reduce potential environmental impacts from WIC's proposed action to less than significant levels.

5.2 Alternatives Considered

No Action

The No Action Alternative was considered. While the No Action Alternative would eliminate the environmental impacts identified in this draft EIS, U.S. markets would be denied access to the 350,000 Dthd (equivalent to 341 MMcfd) of natural gas that WIC proposes to transport to its system. Furthermore, natural gas development in the Piceance and neighboring basins could be hindered by a lack of future interstate pipeline transportation capacity options available to ship gas to markets. Consequently, new and existing natural gas users would need to obtain natural gas from other sources, use alternative energy sources, or use alternative fuels.

Providing natural gas from other sources would likely require the construction of additional compression on existing or planned pipelines and the construction of new pipeline or looping of existing pipelines to transport natural gas supplies currently being developed in the Piceance Basin or planned for development/production in the near future. This option is discussed below under System Alternatives. If modification of existing or approved natural gas projects are approved and constructed, each project would result in its own set of specific impacts that could be less or greater than those associated with the current proposal.

Alternative energy sources (e.g., solar, hydroelectric, geothermal, fuel cells) are not physically or commercially available in the market area to meet project objectives.

The use of alternative fuels is applicable primarily to large industrial or commercial users and would require natural gas customers to apply for and seek regulatory approval to use other fuels. Assuming regulatory approval to use alternative fuels could be obtained within the required timeframes, it could result in increased use of less clean-burning fuels (such as coal) and a corresponding increase in air pollutant emissions.

System Alternatives

Existing natural gas pipelines that pass through, or near the Greasewood Hub were evaluated for their ability to convey the proposed Piceance Project volumes. Assuming that these pipelines continue to carry the gas volumes recently transported for the immediate future, the existing systems combined would accommodate about 76 percent of WIC's proposed volumes. Given the diameters of these existing pipelines, transport of WIC's remaining volumes would require either 1) additional looping and additional compression on multiple systems or 2) the complete looping of a single pipeline. We determined that neither of these alternatives would provide a significant environmental advantage over the proposed action. Therefore, these alternatives were eliminated from further consideration.

With modification, the proposed Entrega Project could potentially convey WIC's gas volumes to Wamsutter by interconnecting with the Piceance Project's supplier at the Greasewood Hub and adding significant compression. While attractive in concept, this alternative would present a number of challenges. From an engineering standpoint, both companies plan on receiving natural gas from different producers and at different delivery pressures. Also, WIC and Entrega have commitments with the respective shippers to deliver volumes at different pressures at their respective interconnections. While not impossible, melding the various factors and requirements together into a common system would be extremely difficult. As a result, we eliminated the one-pipe system alternative from further consideration. We have concluded that no existing or proposed pipeline system would meet WIC's purpose and need.

Route Alternatives – Uinta Basin Lateral Alternatives

We evaluated the option of routing the Piceance Project pipeline along the existing Uinta Basin Lateral south of MP 105.1, where the proposed route follows a new greenfield route and is not generally parallel to any existing utility corridors. Along this segment, we reviewed two alternative routes that would make use of segments of both the Uinta Basin Lateral and the proposed Entrega Project ROW (Uinta Basin Lateral Alternative A and B). The Uinta Basin Lateral Alternative A would generally follow the existing Uinta Basin Lateral ROW from the Greasewood Hub (MP 141.7) to MP 105.1. The Uinta Basin Alternative B would require a linking pipeline from the Greasewood Hub to the Entrega Project route following the former American Soda pipelines (now owned by EnCana). The Uinta Basin Lateral Alternative B would then follow the Entrega Project route to its intersection with the Uinta Basin Lateral. From this intersection the alternative would follow the Uinta Basin Lateral route, which also is followed by the proposed Entrega Project, northward to MP 105.1.[24] These alternatives were evaluated to:

- reduce the amount of "greenfield" disturbance associated with the proposed action;
- avoid or minimize impacts to upland vegetation that have long recovery periods (e.g., shrublands, and pinyon–juniper woodland that require 10 to 50+ years for recovery); and
- reduce overall impacts to wildlife habitat.

After conducting the initial impact analysis, we sought further information from the agencies and WIC to determine whether these routes are feasible and would substantially reduce environmental impact. Our analysis identified different kinds of environmental impacts when comparing the proposed and the alternative pipeline routes. Overall, the Uinta Basin Lateral Route Alternative A is approximately 4 miles shorter than the proposed route, while the Uinta Basin Lateral Route Alternative B is approximately 1 mile longer than the proposed route. However, the alternative routes would reduce the amount of greenfield disturbance since they would be located parallel to existing utilities for their entire route. In contrast, the corresponding segment of the proposed route would not be collocated with any existing utilities for 25.6 miles of its length.

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[24] Entrega's currently proposed alignment generally follows the Uinta Basin Lateral between the proposed Meeker Hub and the area where the two proposed project routes intersect near the Piceance Project MP 105.1.

In its comments on the draft EIS, WIC provided additional details regarding the constraints associated with collocating their pipeline with the Uinta Basin Lateral. Additional environmental constraints identified with this alternative included: 1) subsidence issues associated with reclamation of hay pastures in the Piceance Creek Valley that required 2 to 3 years of post-construction mitigation; 2) extreme terrain and difficult soil reclamation conditions in the Colorow Gulch area and soil prone to slumping in the Indian Valley along the Uinta Basin Lateral; and 3) limited corridor space in the Colorow Gulch area due to the presence of the Uinta Basin Lateral and the proposed Entrega Project alignment.

The CDOW has indicated that it is opposed to two additional pipelines (i.e., both Entrega's and WIC's pipelines) in the Little Hills Wildlife Management Area through the Piceance Creek Valley, and it prefers WIC's proposed route over the Uinta Basin Lateral Alternatives. Additionally, the BLM has indicated its preference to separate the proposed WIC and Entrega pipelines along different routes, and it supports WIC's proposed route. We have visited the alternative routes in the field and concur with the agencies' preferences and conclusions. Therefore, for all of the reasons listed above, we do not recommend use of either of the Uinta Basin Lateral Route Alternatives.

Route Alternatives - Collocation Alternative

Because the Piceance Project would closely parallel the Entrega Project route over the majority of the distance between Wamsutter, Wyoming, and MP 105.1, we evaluated a collocation alternative. The purpose of the collocation alternative was to determine if there was a potential reduction in surface disturbance that could be obtained by collocating the Entrega and Piceance Project pipelines within overlapping construction ROWs, where practical, rather than constructing both pipelines as separate and discrete facilities within a broader utility corridor. For the purpose of our analysis, we assumed that where the pipes could be collocated, both projects could be constructed within the same 150-foot-wide construction ROW.

The collocation analysis was conducted within a study area (Danforth Hills North) which extends from Piceance Project MP 105.1 north to the Wamsutter, Wyoming, where the Piceance Project pipeline originates at the existing CIG Wamsutter Compressor Station. Within the study area both the Piceance and the Entrega Project routes are generally parallel to each other, but the construction ROWs rarely overlap. North of the Danforth Hills in Moffat County, Colorado, the proposed Entrega and Piceance Project pipelines would be constructed in separate ROWs adjacent to the existing Uinta Basin Lateral and Kinder Morgan pipelines from Piceance Project MP 0 to MP 105.1. The proposed projects are already collocated for about 15 miles within a segment near the Yampa River. We examined additional options for reducing the surface disturbance of important sage grouse breeding and brooding habitats by consolidating the two projects into a common construction ROW that was assumed to be 150 feet wide, where collocation was practical.

By constructing the two projects together in the same 150-foot-wide construction ROW in these sensitive habitat areas, we expect that removal of sage grouse habitat could be reduced up to 264 acres (about 33 percent) as compared to constructing the two projects along their currently proposed alignments. Sagebrush shrubs on which the sage grouse depends recover very slowly (15 to 50 years) and fragmentation of sage grouse habitat from multiple pipelines in the same utility corridor may adversely affect reproductive success and survival of this species over the long term.

In its comments on the draft EIS, WIC provided additional details regarding the engineering constraints associated with the Collocation Alternative that included: 1) at least 20 additional pipeline corridor crossings are required; 2) topographic constraints in the Spring Creek area; and 3) the crossings of several severe washes would require numerous pull-outs from the corridor.

Based on the engineering constraints associated with this alternative, we do not recommend use of the Collocation Alternative. Although the Collocation Alternative would reduce impact to sage grouse habitat by 264 acres over the proposed route, the pipeline construction and operational constraints associated with this alternative do not warrant the use of this alternative. Furthermore, we note that WIC has committed to sagebrush habitat protection and restoration measures that include reducing the construction ROW to 75 feet in width where the ROW passes within 0.25 mile of a lek, reseeding the construction ROW with sagebrush in sage grouse habitat, and transplanting sagebrush to screen the ROW in the vicinity of leks. We also note that WIC has committed to reduce its pipeline offset from 50 feet to 40 feet where it parallels an existing pipeline whenever possible along this segment, further reducing the amount of disturbance to soils, vegetation and wildlife habitat by 28 acres.

Route Variations

Route variations differ from system alternatives or major route alternatives in that they are identified to avoid or reduce impact on site-specific resources or to resolve localized issues (e.g., landowner requests, cultural resource sites, wetland areas, and severe terrain conditions). During planning and the Pre-Filing process, the Piceance Project proposed centerline was modified in several places to address site-specific resource issues. Eight minor centerline reroutes occurred after publication of the draft EIS to address additional site-specific resource issues. There are no currently unresolved location issues associated with the WIC centerline that require a detailed variation analysis. The Piceance Project proposed centerline incorporates several minor route alternatives which were modified during the planning process to minimize environmental impacts and landowner concerns. Further, after publication of the draft EIS, WIC proposed eight minor realignments and route variations to address landowner concerns, avoid natural features, and avoid sensitive cultural resources. We have reviewed these realignments and route variations and find them to be environmentally preferable to the previously proposed locations.

Aboveground Facilities

Both the CIG Wamsutter and CIG Greasewood Compressor Stations are existing facilities; therefore, no alternative locations were evaluated. No environmental issues were identified for the County Road 4 Pigging Facility and MLV #4 site. Because the two communication towers would be installed at existing sites, no environmental issues were identified which would warrant a review of alternative sites. Consequently, no alternative sites for aboveground facilities were analyzed.

5.3 Significant Unavoidable Impacts

The project would result in limited adverse environmental impact. Effects on all environmental resources were evaluated to determine any significant impact that would remain after application of the mitigation proposed by WIC. We then considered practical, appropriate, and reasonable measures which would further reduce potential project-related impacts. As a result, we developed additional mitigation which we are recommending be included as specific conditions to any Certificate issued by the Commission. Our analysis indicates that with the application of WIC's mitigation and implementation of our recommendations below, the proposal would result in no significant impact that is unavoidable. Further, we believe that all environmental impacts would be reduced to less than significant levels if the proposed and recommended mitigation is fully implemented.

5.4 Irreversible/Irretrievable Commitment of Resources; Short- and Long-Term Uses of the Environment

The major nonrenewable resources that would be consumed by the proposed project are fossil fuels used to power construction vehicles and, over the life of the project, fossil fuel and electricity to power the pipeline itself (the proposed compressor would be natural gas-powered). Theoretically, the pipeline components could be reclaimed at the end of the pipeline's operational life. However, there would be a number of irretrievable resources committed to the proposal if the necessary authorizations are granted. The primary resources irretrievably lost would include soils (resulting from water and wind erosion in disturbed areas); water (used for dust control); crop/rangeland production (lost or reduced for one season or more); land use (aboveground facilities would replace rangeland and agricultural land for the life of the project); and wildlife habitat (temporary to long-term loss). The loss of cultural and paleontological resources also would be irretrievable, if allowed to occur.

As discussed in section 3.11, the proposed project has been designed to meet or exceed all safety requirements, and the potential for irreversible damage to the environment during operation is slight.

The proposed project would transport significant volumes of natural gas to interconnections at the Wamsutter Hub where the gas could be distributed to customers in the western and central U.S. Its operation would be consistent with federal policies encouraging competitive natural gas transportation services. For these reasons, the limited irreversible and irretrievable resource commitments are acceptable.

5.5 Federal Energy Regulatory Commission Staff Recommended Mitigation

If the Federal Energy Regulatory Commission (FERC or Commission) approves the Piceance Basin Expansion Project (Piceance Project), we recommend that the following measures be included as specific conditions of the Certificate of Public Convenience and Necessity (Certificate). We believe that these measures would further mitigate the environmental impacts associated with the construction and operation of the proposed project.

1. Wyoming Interstate Company, Ltd. (WIC) shall follow the construction procedures and mitigation measures described in its application, supplemental filings (including responses to staff data requests), and as identified in the Environmental Impact Statement (EIS), unless modified by the Commission Order. WIC must:

   a. request any modification to these procedures, measures, or conditions in a filing with the Secretary of the Commission (Secretary);

   b. justify each modification relative to site-specific conditions;

   c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and

   d. receive approval in writing from the Director of the Office of Energy Projects (Director of OEP) **before using that modification**.

2. The Director of OEP has delegated authority to take what ever steps are necessary to ensure the protection of all environmental resources during construction and operation of the project. This authority shall allow:

   a. the modification of conditions of this Order; and

   b. the design and implementation of any additional measures deemed necessary (including stop-work authority) to ensure continued compliance with the intent of the environmental conditions as well as the avoidance or mitigation of adverse environmental impact resulting from project construction and operation.

3. **Prior to any construction**, WIC shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors (EIs), and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs before becoming involved with construction and restoration activities.

4. The authorized facility locations shall be as shown in the EIS, as supplemented by filed alignment sheets. **As soon as they are available and before the start of construction**, WIC shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by this Order. All requests for modifications of environmental conditions of this Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

   WIC's exercise of eminent domain authority granted under Natural Gas Act (NGA) Section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. WIC's right of eminent domain granted under NGA Section 7(h) does not authorize it to increase the size of its natural gas pipeline to accommodate future needs or to acquire a right-of-way (ROW) for a pipeline to transport a commodity other than natural gas.

5. WIC shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, staging areas, pipe storage yards, new access roads, and other areas that shall be used or disturbed and have not been previously

identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species shall be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction in or near that area**.

This requirement does not apply to route variations required herein, additional areas allowed by WIC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (WIC's Plan), or minor field realignments per landowner needs and requirements that do not affect other landowners or sensitive environmental areas such as wetlands.

Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

a. implementation of cultural resources mitigation measures;

b. implementation of endangered, threatened, or special concern species mitigation measures;

c. recommendations by state regulatory authorities; and

d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

6. **Within 60 days of the acceptance of this Certificate and before construction** begins, WIC shall file an initial Implementation Plan with the Secretary for the review and written approval of the Director of OEP describing how WIC will implement the mitigation measures required by this Order. WIC must file revisions to the plan as schedules change. The plan shall identify:

a. how WIC will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;

b. the number of EIs assigned per spread and a description of how WIC will ensure that sufficient personnel are available to implement the environmental mitigation;

c. company personnel, including EIs and contractors, who will receive copies of the appropriate material;

d. the training and instructions WIC will give to all personnel involved with construction and restoration (initial and refresher training as the project progresses and personnel change), with the opportunity for OEP staff to participate in the training session(s);

e. the company personnel (if known) and specific portion of WIC 's organization having responsibility for compliance;

f. the procedures (including use of contract penalties) WIC will follow if noncompliance occurs; and

g. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for the:

i. completion of all required surveys and reports;
ii. mitigation training of onsite personnel;
iii. start of construction; and
iv. start and completion of restoration.

7. WIC shall employ a team of EIs (i.e., three or more) on each construction spread. The EIs shall be:

a. responsible for monitoring and ensuring compliance with all mitigation measures required by this Order and other grants, permits, certificates, or other authorizing documents;

b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract and any other authorizing document;

c. empowered to order correction of acts that violate the environmental conditions of this Order, and any other authorizing document;

d. employed in a full-time position, separate from all other activity inspectors;

e. responsible for documenting compliance with the environmental conditions of this Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and

f. responsible for maintaining status reports. (p. 2-32)[25]

8. WIC shall file updated status reports prepared by the head EI with the Secretary on a weekly basis **until all construction-related activities, including restoration activities, are complete**. On request, these status reports also will be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:

a. the current construction status of each spread, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;

[25] The page numbers in parenthesis at the end of a recommended measure corresponds to the page or pages on which the measure and related resource impact analysis appears in the EIS.

b. a listing of all problems encountered and each instance of noncompliance observed by the EIs during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);

c. a description of corrective actions implemented in response to all instances of noncompliance, and their cost;

d. the effectiveness of all corrective actions implemented;

e. a description of any landowner/resident complaints that may relate to compliance with the requirements of the Commission Order, and the measures taken to satisfy their concerns; and

f. copies of any correspondence received by WIC from other federal, state, or local permitting agencies concerning instances of noncompliance, and WIC's response.

9. WIC must receive written authorization from the Director of OEP before commencing service from the project. Such authorization will only be granted following a determination that rehabilitation/ restoration of the ROW and other areas of project-related disturbance are proceeding satisfactorily.

10. **Within 30 days of placing the certificated facilities in service**, WIC shall file an affirmative statement with the Secretary, certified by a senior company official:

    a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or

    b. identifying which of the Certificate conditions WIC has complied with or will comply with. This statement also shall identify any areas affected by the project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.

11. In order to formalize the winter construction practices, WIC shall develop and file a Winter Construction Plan with the Secretary for review and written approval by the Director of OEP **prior to construction**. This plan shall include monitoring of temporary erosion controls monthly during the winter shut-down period as well as following any significant rain or snow melt-off events during this period. (p. 3-16)

12. To prevent vehicles from tracking noxious and invasive weeds along other parts of the ROW, WIC shall strip topsoil from the full width of the ROW in areas with known weed infestations. (p. 3-23)

13. WIC shall file an updated Weed Plan with the Secretary for review and written approval of the Director of the OEP **prior to construction**. This revised Weed Plan shall include all elements agreed to in WIC's June 20, 2005 filing, as well as milepost (MP) locations of wash stations that have been coordinated with the Bureau of Land Management (BLM) field offices (FOs), conservation districts, local governments, weed management areas, and the Wyoming Weed and Pest Council. At minimum these wash stations shall be located at the crossing of affected county lines. (p. 3-24)

14. To further reduce the spread of invasive and noxious weeds following construction activities, WIC shall conduct weed management surveys and control measures **at least once every 3 years** (following the initial 5 years of reclamation and weed control surveys) for the life of the project. (p. 3-24)

15. WIC shall revise its Blasting Plan to include the supplemental provisions from its June 20, 2005 filing. WIC shall file the revised Blasting Plan with the Secretary for review and written approval by the Director of OEP **prior to construction**. (p. 3-29)

16. WIC shall coordinate with Entrega Gas Pipeline, Inc. (Entrega) regarding the crossings of the Yampa and Little Snake Rivers. This coordination shall attempt to minimize in-stream and bank disturbances and shall consider the use of a shared crossing bridge at each location. WIC shall file the results of this coordination with the Secretary for the review and written approval of the Director of OEP **prior to constructing these crossings**. (p. 3-33)

17. WIC shall consult the appropriate state and federal fisheries agencies and the Colorado State Engineer to determine suitable flow conditions and locations for hydrostatic test water withdrawals and discharge locations. In addition, WIC shall coordinate with the U.S. Fish and Wildlife Service (FWS) and appropriate state agencies before and during construction to ensure that surface water withdrawals required for horizontal directional drill (HDD) purposes have minimal impacts on flows and fisheries. WIC shall incorporate the outcome of these consultations in its weekly status report **prior to any hydrostatic testing or HDDs**. (p. 3-36)

18. WIC shall file with the Secretary for review and written approval of the Director of the OEP data to characterize the quality of potential dust control water sources prior to their use. WIC also shall ensure that all water or water/chemical mixes applied to areas to be revegetated must meet state or federal water quality standards set for irrigated agricultural uses. (p. 3-39)

19. Should construction extend into the raptor nesting season, WIC shall conduct additional pre-construction raptor nest surveys in accordance with agency (BLM, state wildlife agency, and FWS) approved protocols. Results of the raptor nest surveys shall be reported to the appropriate BLM FO, state wildlife agency, and the FWS Western Colorado FO for review and reconsideration to appropriate protective buffers. Further, WIC shall report the results of any pertinent communications it has with the BLM, FWS, Colorado Division of Wildlife, and Wyoming Game and Fish Department with the Secretary and shall not begin construction **until** the FERC Staff has reviewed the information, completed any necessary consultations with the FWS, and the Director of OEP notifies WIC in writing that construction or use of mitigation may begin. (p. 3-59)

20. **Prior to construction**, WIC shall contact the FWS (and BLM on federal land) for guidance regarding mitigation measures that may be necessary to protect raptor nests, roost sites, or other wildlife concerns where blasting is anticipated along the Piceance Project ROW. The results of any such coordination shall be filed with the Secretary for the review and approval of the Director of OEP. The filing shall specify the specific locations (by MP) where blasting may occur, known raptor nest and

roost locations within the general vicinity of the blasting, and mitigation measures that shall be implemented to minimize impacts on nesting raptors, roost sites, or other wildlife concerns. (p. 3-60)

21. **Prior to conducting surveys** for the Dudley Bluffs bladderpod, Dudley Bluffs twinpod (also known as Piceance twinpod), and Ute ladies'-tresses, WIC shall coordinate with the FWS to ensure proper survey timing and protocols. WIC shall, **prior to the start of construction**, file the following information with the Secretary:

    a. name(s) and qualifications of the person(s) conducting the survey;

    b. method(s) used to conduct the survey;

    c. date(s) of the survey;

    d. area surveyed (include the MPs surveyed); and

    e. results of the surveys, to indicate species presence or absence. (p. 3-63)

22. If a federally listed plant species was found during preconstruction surveys, WIC shall notify the Commission staff, the FWS, and the BLM (for plants found on BLM-managed lands) **before commencing any project construction** activity in order for us to complete our Endangered Species Act Section 7 obligations. This notification shall contain WIC's evaluation of whether or not the plant(s) could be avoided by fencing, reroute, or by the use of a horizontal bore. Further, WIC shall not begin construction activities **until**:

    a. the staff receives comments from the FWS regarding the proposed action;

    b. the staff completes formal consultation with the FWS, if required; and

    c. WIC has received written notification from the Director of OEP that construction or use of mitigation may begin. (p. 3-64)

23. WIC shall submit the 2004 and 2005 survey results for Debris milkvetch to the FWS for review. **Prior to construction**, WIC shall file with the Secretary correspondence confirming that the FWS has received these survey results. (p. 3-64)

24. In order to determine if black-footed ferret surveys are required, WIC shall provide maps of all white-tailed prairie dog towns within 0.5 mile of the outside edge of the ROW to the FWS for review. If prairie dog survey results indicate the need for protocol ferret surveys, WIC shall not begin construction activities **until**:

a. the staff receives comments from the FWS regarding the proposed action;

b. the staff completes formal consultation with the FWS, if required; and

c. WIC has received written notification from the Director of OEP that construction or use of mitigation may begin. (p. 3-66, 3-67)

25. To minimize potential impacts on nesting bald eagles, WIC shall:

a. conduct pre-construction bald eagle nest surveys at known nest sites and within suitable nesting habitat during the appropriate period in accordance with approved BLM, state wildlife agency, and FWS protocols if construction were to occur during the breeding season. (p. 3-68)

b. **not construct within 1 mile** of active bald eagle nest sites in Wyoming during the nesting season (February 1 through August 15) and **within 0.5 mile** of active bald eagle nest sites in Colorado during the nesting season (November 15 through July 31). (p. 3-68)

c. stop work in the area and concurrently notify the Commission staff, the BLM (if on federal land), and the FWS, and file such information with the Secretary if WIC encounters a previously unidentified active bald eagle nest **within 1 mile of the construction ROW in Wyoming or within 0.5 mile of the construction ROW in Colorado**. WIC shall not continue with construction **until** the staff has reviewed the information, completed any necessary consultation with the FWS, and the Director of OEP notifies WIC in writing that construction may proceed or use of mitigation may begin. (p. 3-68)

26. If WIC's proposed bald eagle roost monitoring results provide evidence that eagles are being disturbed by construction activities, WIC shall coordinate with the FWS and/or BLM to determine appropriate actions necessary to ensure that bald eagles are not disturbed further. WIC shall report the results of the coordination in a filing with the Secretary, and shall not begin construction **until** the staff has reviewed the information, completed any necessary consultations with the FWS, and the Director of OEP notifies WIC in writing that construction or use of mitigation may begin. (p. 3-69)

27. If WIC believes that removal of a bald eagle roost tree is unavoidable, WIC shall not remove the identified tree **until**:

a. the staff receives comments from the FWS regarding the proposed action;

b. the staff completes formal consultation with the FWS, if required; and

c. WIC has received written notification from the Director of OEP that construction or use of mitigation may begin. (p. 3-69)

28. In order to minimize potential impacts on mountain plover from pipeline construction activities, WIC shall not construct and/or conduct reclamation activities in suitable mountain plover habitat during breeding season between April 10 and July 10 **until** WIC has:

    a. conducted agency-approved surveys for the mountain plover;

    b. developed a mitigation plan, including agency-approved buffer zones or other protection measures for nests and chicks; and

    c. filed this information with the Secretary for review and written approval of the Director of the OEP **before construction or use of mitigation may begin**. (p. 3-75)

29. WIC shall defer construction and use of facilities and staging, storage, and extra workspace areas, and access roads **until**:

    a. WIC files with the Secretary all remaining cultural resource inventory and evaluation reports, and necessary avoidance or treatment plans;

    b. WIC files with the Secretary the BLM's and the Colorado and Wyoming State Historic Preservation Offices' comments, as applicable, on all reports and plans; and

    c. the Director of OEP reviews and approves all reports and plans and notifies WIC in writing that it may proceed.

    All material filed with the Commission containing **location, character, and ownership** information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: **"CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE."** (p. 3-95)

30. To ensure that nearby noise-sensitive areas are protected from noise impacts resulting from the installation and operation of additional compression at the existing CIG Greasewood Compressor Station, WIC shall file a noise survey with the Secretary **no later than 60 days after placing the authorized unit at the CIG Greasewood Compressor Station in service**. If the noise attributable to the operation of the compressor station at full load exceeds an day-night equivalent sound level (L_{dn}) of 55 decibels on the A-weighted scale (dBA) at any nearby noise-sensitive area, WIC shall install additional noise controls to meet that level within 1 year of the in-service date. WIC shall confirm compliance with the L_{dn} of 55 dBA requirement by filing a second noise survey with the Secretary no later than 60 days after WIC installs the additional noise controls. (p. 3-119)

31. To reduce potential cumulative dewatering effects on the Little Snake River during the low flow fall season, WIC shall coordinate its hydrostatic testing and dust control withdrawals with Entrega such that no Piceance and Entrega Project water withdrawals occur simultaneously from the Little Snake River. (p. 3-134)

PUBLIC COMMENTS AND RESPONSES

CHAPTER 6

6.0 PUBLIC COMMENTS AND RESPONSES

The draft EIS was noticed by the Environmental Protection Agency (EPA) on May 6, 2005, in the Federal Register. The FERC mailed 511 copies of the draft EIS to interested parties, including federal, state, and local officials and agencies; special interest groups; parties to the proceeding; area libraries and newspapers; and individuals and affected landowners. The FERC's notice of availability of the draft EIS was issued on April 29, 2005, and announced the dates of the 45-day public comment period and the dates and locations of the public hearings. Public hearings were held Craig, Colorado, on June 7, 2005; Wamsutter, Wyoming, on June 8, 2005; and Meeker, Colorado on June 9, 2005. The official public comment period ended on June 20, 2005, but the FERC continued to accept comments beyond this date.

The FERC received nine comment letters on the draft EIS. In addition, one individual provided oral comments and statements at the public hearing in Meeker, Colorado. Each comment letter and comment from a public hearing was given an index number, which is listed in **table 6-1**, along with the affiliation and name of the commentor (if appropriate). The commentor index numbers are listed in one of the six categories: F-federal agencies or officials; S-state agencies or officials; L-local agencies or officials; N-Non-Governmental Organization; I-Industy/applicant (Wyoming Interstate Company, Ltd.); and PO-public hearing oral comments and statements.

All written and oral comments received during the public review period were reviewed and considered in preparation of this final EIS. A list of the individuals providing oral comments at the public hearings is presented in **table 6-2**. Copies of the letters received have been reprinted in this chapter, and our responses to comments are provided for those comments that specifically address the adequacy of the draft EIS. Our responses to comments also are provided in various sections of this EIS. As noted previously, substantive changes in the final EIS are indicated by vertical bars that appear in the margins. These changes were made both in response to comments received on the draft EIS and as a result of updated information that became available after issuance of the draft EIS.

We wish to thank all those who helped in our preparation of the EIS by submitting written comments or providing oral comments and statements at public hearings. Copies of all comment letters received and copies of the transcripts for the public hearings are part of the public record for the Piceance Basin Expansion Project. The comment letters and transcripts are available for viewing on the FERC Internet website (www.ferc.gov) using the eLibrary link. To review these comments, click on the "eLibrary" link, click on "General Search" and enter the docket number (CP05-54) excluding the last three digits in the Docket Number field. Be sure you have selected an appropriate date range. For assistance with eLibrary, the eLibrary helpline can be reached at 1-866-208-3676, TTY (202) 502-8659, or at FERCONLINESUPPORT@FERC.GOV.

Table 6-1
Public Comment Index Codes

Oral Commentor	
PO-1	Gerald Morris – local resident and businessman
Federal Agency Letters	
F-1	U.S. Department of the Interior – Bureau of Land Management; Fish and Wildlife Service
F-2	U.S. Department of the Interior – Bureau of Land Management; Fish and Wildlife Service
F-3	U.S. Environmental Protection Agency, Region 8
State Agency Letters	
S-1	Wyoming State Geological Survey
S-2	Wyoming Game and Fish Department
Local Government Letters	
L-1	Moffat County Commissioners
L-2	Rio Blanco County Board of Commissioners
Non-Government Organization Letter	
N-1	Colorado Environmental Coalition
Industry Letter	
I-1	Wyoming Interstate Company, Ltd.

Table 6-2
Oral Comment on the Piceance Basin Expansion Project Draft EIS

ID #	Location / Transcript Page(s)	Comment Summary	Response
PO1-1	Meeker / pp. 7-8	In support of the project.	Thank you for your comment.

Letter F-1

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Denver Federal Center, Building 56, Room 1003
Post Office Box 25007 (D-108)
Denver, Colorado 80225-0007

TAKE PRIDE IN AMERICA

June 15, 2005

ER 05/381

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

REFERENCE: OEP/DG2E/Gas Group 1; Wyoming Interstate Company, Ltd.; Docket No. CP05-54-000; BLM Reference No. WYW-160264

Dear Ms. Salas:

The Department of the Interior has completed its review of the Draft Environmental Impact Statement for the Piceance Basin Expansion Project (PBEP), FERC/EIS-0181D. As you are aware, the Bureau of Land Management requested cooperating agency status and is participating with the Federal Energy Regulatory Commission (FERC) in accordance with the terms of the Interagency Agreement (Agreement) on Early Coordination of Required Environmental and Historic Preservation Reviews Conducted in Conjunction with the Issuance of Authorizations to Construct and Operate Interstate Natural Gas Pipelines Certified by the Federal Energy Regulatory Commission, dated May 2002. Based on the Agreement, they have played an active role with FERC, scoping issues and recommending routing alternatives. They reviewed a preliminary Administrative Draft Environmental Impact Statement (DEIS) prior to the release of the DEIS, so many of their initial concerns and comments have already been included in the analysis. Nonetheless, we would like to take the opportunity to comment on several subjects analyzed in the DEIS.

In addition to the subjects discussed below, we have identified a number of editorial comments to correct mistakes and typographical errors. These minor corrections are not included with these formal comments and are being forwarded to FERC and the environmental contractor separately.

GENERAL COMMENTS

F1-1 Co-Location Alternative: In the comparison of alternatives presented in Chapter 4.0, FERC recommended that the Wyoming Interstate Company (WIC) provide updated rationale for selecting its proposed route between MP105.1 and the Greasewood Hub because WIC did not

Responses to Letter F-1

F1-1 Department of Interior — Co-location alternative

Thank you for your input. Wyoming Interstate Company (WIC) has provided additional rationale, including operational and construction constraints, that suggest it would be difficult to follow the Uinta Basin Lateral alternatives. The text in section 4.3.1 has been revised to reflect this supplemental information and to indicate that we do not recommend use of either of the Uinta Basin Lateral alternatives.

Letter F-1 Continued

F1-1 justify and explain the specific operational and construction constraints that would prevent them from following the Uinta Basin Lateral (UBL) alternative. We agree that WIC should provide detailed justification for all deviations from existing utility corridors, especially since the UBL corridor is operated by Colorado Interstate Gas, an El Paso Corporation affiliate. BLM has spent many hours on the ground looking at the proposed action and alternatives along the UBL corridor.

Our initial conclusion supports separating the proposed WIC and Entrega pipeline alignments along the different proposed routes. The factors supporting WIC's proposed route include the following:

1. WIC's proposed route avoids multiple crossings of Piceance Creek and thereby minimizes impacts to riparian, wetland and agricultural lands along Piceance Creek.

2. There are several severe steep slope segments along the UBL corridor in Piceance Creek and at the Colorow Gulch crossing. Colorow Gulch is a deep narrow canyon with 60% steep slopes and approximately 400 feet of elevation change. The existing corridor contains the UBL pipeline and two smaller gas gathering pipelines. Entrega has proposed a 36-inch diameter pipeline that snakes between existing pipelines and would utilize the little remaining constructible space across Colorow Gulch. Rough topography limits route variations in the Colorow Gulch vicinity such that any new route variation would need to move many miles west of the existing corridor.

3. Indian Valley contains highly erosive soils that are prone to undercutting and slumping. These erosive soil conditions during UBL construction made pipeline rehabilitation difficult. New pipeline disturbances will experience similar stabilization issues.

4. WIC's proposed route would create a new north-south corridor that could provide an alternative location for future utility project proposals.

We believe it would be challenging to locate two new large diameter pipelines through the Colorow Gulch/Indian Valley segment, (i.e., WIC and Entrega). We are very interested in any additional information or rationale that WIC has to offer on the constructability for the PBEP pipeline along the UBL corridor through this segment, prior to endorsing a final preferred alternative location.

F1-2 WIC Communication Facilities: WIC has proposed two microwave communication site facilities necessary to control remote valve locations using radio signals. One site is to be located on BLM-administered public land and one site is proposed on private property. These facilities were identified as part of the proposed action late in the application process and were not fully addressed in the DEIS. We request the impacts associated with the proposed facilities be addressed throughout the FEIS so that BLM would not have to complete a supplemental NEPA analysis to process a communication site application. The two communication facilities need to be added to Table 2.1-1 and the acreage and impacts associated with the facilities need to be carried throughout each resource evaluated in Chapter 3.0.

Responses to Letter F-1

F1-2 Department of Interior — WIC communication facilities

The two communication facilities have been added to tables 2.1-1 and 2.2-1. The discussion for the facilities has been moved from section 1.5 to the appropriate locations in sections 2.1, 2.2, and 2.3. The acreage and impacts associated with the tower sites have been carried through each resource evaluated in Chapter 3, as necessary and appropriate.

Letter F-1 Continued

F1-3 <u>Winter Construction Plan</u>: Because the construction schedule anticipated by WIC starts well into the fall season (2005), BLM asked WIC to prepare a winter construction plan to address how the project could be built without adversely impacting big game winter range timing restrictions, and how they would accomplish stabilization and reclamation actions dealing with saturated and frozen soils. In order to accurately estimate impacts, we recommend WIC supply this information prior to preparation of the FEIS for the project and the Winter Construction Plan be included in the FEIS as a separate appendix or a chapter in the Reclamation Plan.

F1-4 <u>Fish and Wildlife Resources</u>: Habitats, species composition, and regulatory status vary considerably over the 141.7-mile corridor. The affected lands are variously managed by State, Federal and private entities in western Colorado and southern Wyoming. As such, to ensure a streamlined review process, FERC and their non-Federal representatives should continue to coordinate with the U.S. Fish and Wildlife Service (USFWS) in developing site-specific surveys, impact minimization measures, and conservation measures for all USFWS trust resources, including those listed pursuant to the ESA. Avoidance and minimization measures should be incorporated into the project design to aid the conservation of these environmental resources and FERC should ensure that unavoidable project impacts are fully mitigated. Given the substantial overlap between this project and the Entrega Pipeline Project (FERC Docket No. CP04-413-000), FERC should ensure that construction efforts are fully coordinated.

<u>Endangered Species</u>: In a May 4, 2005 letter to Ralph Morgenweck (Regional Director, USFWS), FERC requested concurrence with their determinations that the proposed project "may affect but is not likely to adversely affect" the Dudley Bluffs bladderpod, Dudley Bluffs twinpod (Piceance twinpod), bald eagle, black-footed ferret, and Colorado pikeminnow or adversely modify critical habitat for the Colorado pikeminnow. In addition, FERC stated that they did not believe the proposed temporary withdrawal of 33 acre-feet of Colorado River water would constitute a depletion requiring formal consultation for the Colorado pikeminnow, razorback sucker, humpback chub, and bonytail chub although they requested initiation of formal consultation on these species if the USFWS did not concur.

The USFWS will be responding directly to FERC regarding appropriate consultation actions for these species. Based on their review of the DEIS, the following additional information would be necessary to complete the ESA consultation for this project:

F1-5
- Ute ladies'-tresses: Because suitable habitat for Ute ladies'-tresses was identified along the proposed pipeline right-of-way (ROW) in 2004 and the ROW will be surveyed again in 2005, the environmental analysis for this species should include the same kind of information and recommendations given for Dudley Bluffs bladderpod and Piceance twinpod, including items a. through e. on page 3-57 and a. through c. on page 3-58 (Section 3.6.1, Federally Listed Plants).

F1-6
- Bald eagle: Surveys of <u>all</u> suitable habitats should be conducted annually for nests and roosts (in addition to surveys of known nesting sites). Additionally, the nesting and roosting dates indicated in the DEIS may vary based on several factors and nesting may occur as early as February 1. Therefore, FERC should consider dates identified in the DEIS as general guidelines and require that the

Responses to Letter F-1

F1-3 Department of Interior — Winter construction plan

Additional information related to WIC's proposed winter construction techniques and proposed mitigation has been added to sections 3.2.2 and 3.5.2. To date, WIC has not prepared a winter construction plan, and the Environmental Impact Statement (EIS) includes a recommendation that would require WIC to develop such a plan prior to construction.

F1-4 Department of Interior — Fish and wildlife resources

The Federal Energy Regulatory Commission (FERC) would continue to consult with the U.S. Fish and Wildlife Service (FWS) in order to prevent or minimize impacts to special status species. WIC would not receive construction approval from the FERC until consultation under the Endangered Species Act of 1973, as amended, is completed. In addition, FERC would ensure that construction of the Piceance Project and the Entrega Pipeline Project are coordinated to the maximum extent practical.

F1-5 Department of Interior — Endangered species: Ute ladies'-tresses

Text in section 3.6.1 has been modified to address the comment.

F1-6 Department of Interior — Endangered species: Bald eagle

Text in section 3.6.2 has been modified to address the comment.

Letter F-1 Continued

F1-6 project proponent protect active nests until the chicks are fully fledged. Because the DEIS discusses two different protective buffers for bald eagles, FERC should clarify which measures would be implemented in Colorado and Wyoming (page 3-61, Section 3.6.2, Bald Eagle, Paragraph 4).

F1-7
- Black-footed ferret (BFF): The DEIS seems inconsistent regarding survey requirements for BFF, specifically in Wyoming. Although the USFWS recommends use of the Black-footed Ferret Survey Guidelines (USFWS 1989), surveys in Wyoming are only recommended on towns which meet the guideline specifications and are included on the February 2, 2004, list of non-block cleared white-tailed prairie dog towns. Page H-23, section 4.1.1 Black-footed ferret and page 3-60 should be consistent. To better understand the current status of white-tailed prairie dogs in the Wyoming portion of the project area, maps of all white-tailed prairie dog towns within 0.5-mile of the outside edge of the right of way should be provided. With this information the USFWS can assist in determining whether ferret surveys are warranted, and if so, on which towns (page 3-60, Section 3.6.2, Black-Footed Ferret, Paragraph 4).

F1-8
- Colorado River fishes (Colorado pikeminnow, razorback sucker, humpback chub, and bonytail chub): To simplify the consultation process, FERC should initiate formal consultation for water depletions to the Colorado River system for the entire amount of water likely to be used (i.e., for both hydrostatic testing and dust abatement). Under the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin, the USFWS issued a biological opinion on July 5, 1994, determining that the fee for depletions of 100 acre-feet or less would no longer be required. Consultation for depletions under 100 acre-feet, although formal, has been streamlined and can be included with informal consultations for other listed species (page 3-68, Fish Species).

F1-9 In addition to being included in the final Environmental Impact Statement (FEIS), this information and the applicable assurances should be provided to the USFWS Western Colorado Field Office as soon as possible so that the ESA consultation process can be completed expeditiously.

SPECIFIC COMMENTS

Executive Summary

F1-10 Page ES-4, Water Resources: The 500-foot setback for refueling activities on federal lands only applies to the storage of fuels, lubricants, and hazardous material on federal lands near water sources or wetlands. Refueling activities and overnight parking would follow the FERC guideline of a 100-foot setback from water sources and wetlands. If any of these setbacks are not sufficient at keeping contaminants away from any water body or wetland, WIC should notify FERC and the USFWS immediately and discuss additional precautions for all setbacks (including larger buffer areas).

Responses to Letter F-1

F1-7 Department of Interior — Endangered species: Black-footed ferret

Text in section 3.6.2 has been modified to be consistent with the Conservation Measures Plan. FERC recommends that mapping of white-tailed prairie dog towns be sent to FWS for review in order to determine if black-footed ferret surveys would be required.

F1-8 Department of Interior — Endangered species: Colorado River fishes

Formal consultation for water depletions to the Colorado River system was requested in FERC's May 4, 2005 letter to the FWS (and copies sent to the FWS Western Colorado Field Office). Text in section 3.6.3 of the EIS was modified to address the comment.

F1-9 Department of Interior — Endangered species: Final comment

See response to comment F1-8.

F1-10 Department of Interior — Water resources: Setback from water sources and wetlands

Text in the Executive Summary and sections 2.3.2.3 and 3.3 has been modified to reflect the agency's current preferred approach.

Letter F-1 Continued

Magalie R. Salas 5

F1-11 <u>Page ES-4, Water Resources</u>: WIC proposes upland sites for disposal of hydrostatic test waters. The Entrega project contemplates using a direct discharge into the source water stream to minimize impacts to endangered fish species. Because most of the water volume removed for hydrostatic testing is from the White and Yampa rivers that have Colorado River listed fish species, WIC should justify why they are not proposing direct in-stream discharge of hydrostatic test water.

F1-12 <u>Page ES-7, Socioeconomics and Transportation</u>: We recommend the EIS clarify it is Moffat County Road 8.

F1-13 <u>Page 1-15, Section 1.6, Related Actions</u>: Regarding EnCana's proposed gas processing plant and pipeline system, BLM released a preliminary Environmental Assessment (EA) in March 2005 and a final EA is expected in June 2005.

F1-14 <u>Page 1-15, Section 1.6, Related Actions</u>: There is another example of a broader shared utility corridor between WIC Mileposts 65 and 73 where WIC follows UBL and Entrega follows an existing Kinder Morgan pipeline. This means that there would be a total of approximately 15 miles where WIC and Entrega share a broader utility corridor, not the 7 miles as stated in the text.

F1-15 <u>Page 2-7, Section 2.2.2, Additional Temporary Workspace Areas</u>: In the Plan of Development submitted to BLM, WIC identified additional workspace necessary to plow and remove snow from the construction ROW given their anticipated late construction season. WIC identified a 15-foot wide strip on the working side of the trench that would be necessary to plow or blow snow onto. This area would not be bladed but could nonetheless receive vegetation damage that may require reclamation. Snow being plowed outside the construction ROW boundary could destroy vegetation or deposit excess soil or debris outside the construction ROW. BLM would need to authorize WIC via a variance and/or temporary use authorization (TUA) to allow snow stockpiling outside the normal 85 foot construction ROW on federal land. Therefore, this strip should be added to the acreage calculations of potentially affected lands so that supplemental NEPA analysis would not have to be completed to allow the activity. We prefer to address this need now, rather than after construction may have started and snow removal becomes necessary on the ROW.

F1-16 <u>Page 2-22, Section 2.3.2.3, Water body Crossings</u>: The text should note that BLM changed its position on requiring a 500-foot setback for refueling activities. The 500-foot setback from waterways and wetlands only applies to the storage of hazardous materials and fuels. The 100-foot refueling and overnight parking setback in the FERC procedures would also apply to refueling and overnight parking of equipment on federal land. If any of these setbacks are not sufficient at keeping contaminants away from any water body or wetland, WIC should notify FERC and the USFWS immediately and discuss additional precautions for all setbacks (including larger buffer areas).

F1-17 <u>Page 2-24, Section 2.3.2.5, Blasting</u>: The DEIS states that blasting in areas other than the ditch line would be limited but necessary if bedrock or boulders are encountered. In areas where blasting is proposed, blasting effects to avian species, particularly during nesting periods, should

Responses to Letter F-1

F1-11 Department of Interior — Water resources: Discharge of hydrostatic test water

Text in the Executive Summary and in section 3.3 has been modified to address the comment and to reflect the FERC's position on this issue.

F1-12 Department of Interior — Socioeconomics and transportation

Text in the Executive Summary has been modified to address the comment.

F1-13 Department of Interior — Related actions: EnCana's proposed gas processing plant and pipeline

Text in section 1.6 has been modified to address the comment.

F1-14 Department of Interior — Related actions: Length of shared utility corridor

Text in section 1.6 has been modified to address the comment.

F1-15 Department of Interior — Additional temporary workspace

A "Contingent Winter Workspace" section has been added to section 2.2.2 to recognize and address the comments and concerns. Additionally, potential impacts to vegetation related to snow storage have been accounted for in section 3.4 and table 3.4.2.

F1-16 Department of Interior — Water body crossings

Text in the Executive Summary and sections 2.3.2.3 and 3.3 has been modified to reflect the agency's current preferred approach.

F1-17 Department of Interior — Blasting

Text in sections 2.3.2.5 and 3.5.2 has been modified to add a recommendation for blasting effects on nesting raptors and avian species.

Letter F-1 Continued

F1-17 be analyzed in the FEIS. These analyses should also be provided to the USFWS for review and modifications of nest (or roost) buffers should be considered in coordination with the USFWS for particular species if necessary based on their potential reaction to sudden blasting noises.

F1-18 Page 2-31, Section 2.5, Environmental Inspection, Paragraph 3: The FEIS should clearly state that Environmental Inspectors would have the qualifications necessary to evaluate construction impacts on fish and wildlife resources, including knowledge of the ecology of the particular species that may be present within the action area.

F1-19 Page 3-10, Section 3.1.4, Paleontological Resources: In bullet number 1, monitoring of construction is necessary only at or near surface fossils found during inventories or at the locations designated for spot checking during construction. There is no need to monitor the entire 115 miles of condition 1 units. In bullet number 4, preparation of fossils is only necessary to the identification stage for this project.

F1-20 Page 3-22, Section 3.2.4, Noxious Weeds and other Invasive Plant Species: We recommend mitigation in the FEIS requiring WIC to monitor weeds for the life of their pipeline, not just for the initial reclamation monitoring period. After reclamation is determined to be satisfactory, WIC would inventory the entire ROW for weeds and invasive species on a three year interval for the life of the project or until two consecutive surveys indicate the areas where subsequent surveys should be focused.

F1-21 Page 3-31, Site-Specific Crossing Plans: WIC is requesting site-specific exceptions for 10 foot setbacks to eliminate repeated trips through riparian habitat to deposit spoil. FERC should require a 100-foot setback from waterbodies and wetlands for refueling activities, and the storage of fuels, lubricants or hazardous materials should be at least 500 feet from any water body or wetland. If any of these setbacks are not sufficient at keeping contaminants away from any water body or wetland, WIC should notify FERC and the USFWS immediately and discuss additional precautions for all setbacks (including larger buffer areas).

F1-22 Page 3-55, Raptors and Other Migratory Birds, Paragraph 7: Although WIC anticipates construction activities to occur outside of the nesting season, FERC recommends that they conduct pre-construction surveys in the event that construction extends into the nesting season. In addition to these survey results being provided to the BLM and State wildlife agencies, they should be forward to the USFWS Western Colorado Field Office for review and reconsideration of appropriate protective buffers. We also recommend adding text to the FERC recommendation stating that on federal lands, the BLM is the responsible agency for including any stipulations or conditions consistent with BLM Resource Management Plans for protecting nesting raptors.

F1-23 Page 3-56, Section 3.6, Special Status Species: The FEIS should discuss the pygmy rabbit (*Brachylagus idahoensis*) as a species of concern potentially occurring within the project area. As you may know, the USFWS received a petition (April 21, 2003), to list the pygmy rabbit under the Endangered Species Act. A negative 90-day finding on the petition was published on May 20, 2005, but the pygmy rabbit is still considered a species of concern. Field surveys in 2005 have produced new reports of pygmy rabbits within the project area in Wyoming and Colorado. The USFWS is therefore concerned that the project may impact this species.

Responses to Letter F-1

F1-18 Department of Interior — Environmental inspection

The environmental inspectors' (EI) responsibilities are outlined in section II.B of the Upland Erosion Control, Revegetation, and Maintenance Plan (WIC's Plan - appendix B). Expected and potential construction-related impacts on fish and wildlife resources are addressed in this EIS. The knowledge of the ecology of the particular species necessary to assess those impacts is provided herein by FERC staff, our third-party contractor's staff, and the Cooperating Agencies, including the FWS and the Bureau of Land Management (BLM).

F1-19 Department of Interior — Paleontological resources

Text in bullet 1 has been modified to address the comment.

F1-20 Department of Interior — Noxious weeds

Text in section 3.2.4 has been modified to address the comment.

F1-21 Department of Interior — Site-specific crossing plans

See responses to comments F1-10 and F1-16.

F1-22 Department of Interior — Raptors and other migratory birds

Text in section 3.5.2 has been modified to address the comment.

F1-23 Department of Interior — Special Status Species: Pygmy rabbit

Text in section 3.6.2 and the table in appendix J have been modified to address the comment.

F1-23 This smallest of the Leporidae family occurs in portions of many western states including southwestern Wyoming where they occur in a few isolated populations in Lincoln, Uinta, Sweetwater, Sublette and Fremont counties. Pygmy rabbits are sage-brush obligate species; primarily found in dense western big sagebrush (*Artemisia tridentata*) communities preferably where at least two other species of sagebrush and forbs occur as well. Conversion of sagebrush grasslands, habitat fragmentation and overgrazing are considered potential threats to pygmy rabbits. Project planning measures should be included to retain large tracts of suitable habitat and corridors to adjacent habitat to aid in the conservation of this species (see also Appendix H-24, Pygmy rabbit).

F1-24 Page 3-57, Section 3.6.1, Plant Species: The DEIS states that the Ute ladies'-tresses was eliminated from further analysis due to lack of known populations and habitat within the project area. Because very few known populations have been documented, surveys should be conducted in all suitable habitat regardless of the distance from a known population (please also note subsequent comment regarding Ute Ladies'-tresses, page H-24 paragraph 4).

F1-25 Page 3-61, Section 3.6.2, Bald Eagle: Add text that the BLM would be provided with the results of any bald eagle roost or nest information derived along the corridor. Again, we recommend stating that on federal lands, the BLM is the responsible agency for including BLM-approved land use stipulations or conditions consistent with Resource Management Plans for the area to mitigate impacts on nesting or roosting bald eagles.

F1-26 Page 3-64, Golden Eagle, Ferruginous Hawk, . . . Western Burrowing Owl: The DEIS states that an active burrowing owl nest was observed at mile post 54 (in Colorado) during the 2004 surveys and, in the event that construction would occur during the nesting season (currently not expected), active owl nests would be protected with a 0.75-mile buffer. For the Colorado portion of the project area, measures indicated in the Colorado Division of Wildlife's (CDOW) Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors (Craig 2002) should be implemented. These recommendations are based on CDOW and USFWS knowledge of local bird behaviors. However, there may be exceptions to the tolerance limits a given species is thought to exhibit, especially in wide open or remote country. Therefore, buffers may require modification to insure that raptors continue to occupy an area. Environmental Monitors, qualified in raptor ecology, should observe known nests for behavioral changes that may indicate possible abandonment and, after coordination with the USFWS, buffers should be adjusted accordingly.

For the Wyoming portion of the project area, FERC should require a 1-mile disturbance-free buffer zone for bald eagle nests and roosts and ferruginous hawk nests. This buffer should be maintained generally from February 1 through August 15 (or until chicks fledge) for nesting birds and from November 1 through April 15 for roosting birds. For all other raptor species, including burrowing owls, FERC should require a 0.5-mile disturbance-free buffer zone. For all other migratory birds, construction activities should occur outside of the nesting season, especially in important or unique habitats. Disturbance sensitivity of nesting birds may vary between individuals, topography and intensity of activities. Therefore, modification of buffer sizes can be considered in coordination with the USFWS.

F1-24 Department of Interior — Plant species

Text in section 3.6.1 has been modified to address the comment.

F1-25 Department of Interior — Bald eagle

Text in section 3.6.2 has been modified to address the comment.

F1-26 Department of Interior — Golden eagle, ferruginous hawk,...western burrowing owl

Text in sections 3.5.2 and 3.6.2 has been modified to address the comment.

Letter F-1 Continued

F1-27 Page 3-65, Greater Sage-grouse, Paragraph 6: The DEIS states that WIC would minimize direct impacts to greater sage-grouse nesting habitat by constructing outside of the nesting season. Although constructing outside of the nesting season would minimize impacts to leking birds, nests, and broods, construction in nesting habitat at any time of the year would cause direct and long-term impacts to nesting habitat through the loss of sagebrush. The FEIS should clarify that sage-grouse protective measures and conservation measures would be included pursuant to the 2000 Memorandum of Understanding (MOU) among the U.S. Forest Service, BLM, USFWS, and the Western Association of Fish and Wildlife Agencies (WAFWA). Also, seasonal restrictions alone, as indicated in the DEIS, may not adequately protect sage-grouse nesting and brood rearing habitat as the removal of sage brush from these areas results in long-term and perhaps permanent loss of such habitat. Greater sage-grouse habitat should be managed pursuant to Connelly et al. 2000 (also known as the WAFWA guidelines).

F1-28 Page 3-128, Sage-grouse: The DEIS discusses cumulative effects on greater sage-grouse from the Piceance Basin project combined with the Entrega project. It states that the projects would contribute to the cumulative long-term reduction and fragmentation of sage-grouse habitat, but that both projects would adhere to seasonal restrictions to avoid indirect effects from human activity and noise. As noted in our previous comment, seasonal restrictions alone may not adequately protect sage-grouse nesting and brood rearing habitat as the removal of sage brush from these areas results in long-term and perhaps permanent loss of such habitat. Greater sage-grouse habitat should be managed pursuant to Connelly et al. 2000 (also known as the WAFWA guidelines).

F1-29 Page 4-14, Section 4.3.2, para 1: Reference is made to Kinder Morgan's Transcolorado pipeline. The Transcolorado pipeline is not located north of Danforth Hills. It originates at Greasewood Hub and goes south. This must be a different Kinder Morgan pipeline than the Transcolorado Pipeline.

F1-30 Page 5-8, Item 7: The DEIS states that WIC shall employ Environmental Inspectors to ensure permit compliance. The FEIS should clearly state that Environmental Inspectors would have the qualifications necessary to evaluate construction impacts on fish and wildlife resources, including knowledge of the ecology of the particular species that may be present within the action area.

F1-31 Page 5-15, Items 30 and 31: As discussed previously, the Ute ladies'-tresses should be included in these recommended mitigation actions.

F1-32 Page H-23, Section 4.1.1 Black-footed Ferret, Paragraph 2: The DEIS states that, in Wyoming, surveys for ferrets on white-tailed prairie dog towns greater than 200 acres may be recommended. Table 11 indicates that four active prairie dog towns would be directly disturbed in Sweetwater County, Wyoming, but according to BLM information, only one town meets the USFWS criteria to be surveyed. The FEIS should describe the size of these towns and discuss whether they are associated with adjacent towns or complexes to insure compliance with the criteria.

Responses to Letter F-1

F1-27 Department of Interior — Greater sage grouse

Text has been added regarding protection of sage grouse. As stated in Section 3.6.2 of the EIS, the right-of-way (ROW) width would be reduced as practical within 2 miles of an active lek to minimize direct impacts to nesting sage grouse habitat. WIC's proposed reclamation efforts, as stated in their response to FERC Recommendation #47 (see response to I1-61, below), have also been added to Section 3.6.2.

F1-28 Department of Interior — Sage grouse

Text in section 3.12.1 has been modified to address the comment. WIC's proposed sagebrush reclamation efforts have been included in section 3.6.2.

F1-29 Department of Interior — Kinder-Morgan pipeline

The pipeline has been identified as a Rocky Mountain Natural Gas (a subsidiary of Kinder Morgan) pipeline. Text in section 4.3.2 has been modified to address the comment.

F1-30 Department of Interior — Environmental inspectors

See response to comment F1-18.

F1-31 Department of Interior — Ute ladies'-tresses

Text in section 5.5 has been modified to address the comment. However, only FERC Recommendation #30 changes as a result of text modifications to include the Ute ladies'-tresses. Recommendation #31 is an all-encompassing recommendation for all federally listed plant species and no text was modified.

NOTE: Recommendation numbers referenced here reflect numbering as it appeared in the draft EIS. Recommendation numbers in the final EIS differ due to changes made prior to final publication.

F1-32 Department of Interior — Black-footed ferret

See response to comment F1-7.

F1-33 Page H-26, Section 4.2.1, Bald Eagle: The DEIS states that a 0.5-mile disturbance-free buffer zone would be placed around active bald eagle nests and a 0.25-mile buffer would be placed around roost sites pursuant to CDOW guidance. However, page 3-61 states that FERC is recommending a 1-mile buffer zone for bald eagle nests and roosts. Please refer to our comment on page 3-64 regarding USFWS recommended raptor protective measures in Colorado and in Wyoming. Although the DEIS states that construction would occur outside of the nesting season, the FEIS should clarify protective buffers for bald eagles as well as other raptors in the event that construction is delayed and may occur during nesting.

F1-34 Page H-28, Section 4.2.4, Sage-grouse, Paragraphs 1-4: The DEIS indicates that the three sage-grouse leks in Wyoming are of unknown status and that these leks with avoidance areas are depicted on maps 1-18 in Appendix E. Additionally, the DEIS states that sage-grouse habitat would be treated according to direction from CDOW. Please refer to previous comments regarding USFWS concerns for sage-grouse protective measures. Also, Appendix E of the DEIS is titled Hydrostatic Test Plan and contains no maps (although a single page after H-43 shows a list of Appendices). The appendices should be clarified in the FEIS. For leks in Wyoming, the local Wyoming Game and Fish Biologist should be contacted for guidance on Wyoming sage-grouse leks.

F1-35 Page H-30, Section 4.2.5, Ferruginous Hawk: The DEIS states that no ferruginous hawk nests were located in Colorado or Wyoming and, based on fall construction, no impacts are expected to occur to this species. The USFWS commends WIC for scheduling construction outside of the nesting season. However, in the event that construction is delayed, we recommend you adhere to the USFWS raptor protective measures as discussed previously. Additionally, we recommend an annual raptor survey up to 1 mile from the ROW to ensure any nesting ferruginous hawks and bald eagles are afforded an appropriate buffer.

F1-36 Page H-40, Ute Ladies'-tresses, Impacts, Paragraph 4: The DEIS states that surveys for the plant would be initiated in late July of 2005 at river crossing and wetlands in Colorado. However, page 3-57 and page J-15 of the DEIS indicate that the plant was removed from further analysis due to lack of habitat and no known occurrences within or near the project area. Because very few known populations have been documented surveys should be conducted in all suitable habitat regardless of the distance from a known population. Please refer to the following information during project planning:

Ute ladies'-tresses (*Spiranthes diluvialis*) is a perennial, terrestrial orchid, 8 to 20 inches tall, with white or ivory flowers clustered into a spike arrangement at the top of the stem. It typically blooms from late July through August, however, depending on location and climatic conditions, it may bloom in early July or still be in flower as late as early October. *S. diluvialis* is endemic to moist soils near wetland meadows, springs, lakes, and perennial streams where it colonizes early successional point bars or sandy edges. The elevation range of known occurrences is 4,200 to 7,000 feet in alluvial substrates along riparian edges, gravel bars, old oxbows, and moist to wet meadows. Soils where *S. diluvialis* have been found typically range from fine silt/sand to gravels and cobbles, as well as to highly organic and peaty soil types. *S. diluvialis* is not found in heavy or tight clay soils or in extremely saline or alkaline soils and it seems intolerant of shade. Small scattered groups are found primarily in areas where vegetation is relatively open. Surveys should be conducted by knowledgeable botanists trained in conducting rare plant

F1-33 Department of Interior — Bald eagle

Text in section 3.6.2 has been modified to clarify buffers for bald eagle nests and roosts.

F1-34 Department of Interior — Sage grouse

Text in section 3.6.2 has been modified to address the comment.

F1-35 Department of Interior — Ferruginous hawk

Additional surveys are not required unless construction is proposed within the timing restriction. Recommendation #29 states that additional pre-construction raptor nest surveys shall be conducted in accordance with agency approved protocols if construction extends into the raptor nesting season.

NOTE: Recommendation numbers referenced here reflect numbering as it appeared in the draft EIS. Recommendation numbers in the final EIS differ due to changes made prior to final publication.

F1-36 Department of Interior — Ute ladies'-tresses: Impacts

Text in section 3.6.1 and the table in appendix J has been modified to address the comment.

Letter F-1 Continued

F1-36 surveys. *S. diluvialis* is difficult to survey given the unpredictable emergence of its flowering parts and subsequent rapid desiccation.

F1-37 Page H-41, Section 4.4.4: This section contains a reference to the Rare Plant Survey Report, Appendix F. The rare plant survey report was not included in the DEIS. Survey reports should encompass all suitable habitats, and the 2004 and 2005 reports should be provided to the USFWS for review.

F1-38 Appendix D-2.1, Clearing, Grading, Topsoiling: FERC should not allow surface skimming on the basis that seed banks could be destroyed. The number of seeds decreases with the depth of the soil. The smooth driving benefit to construction vehicles from removing 2 inches of uneven ground would not warrant the loss of seed bank.

F1-39

SUMMARY COMMENTS

Our recommendations reflect local differences in habitat and site specific knowledge of particular species and their needs or, alternatively, a lack of site specific knowledge which results in more conservative recommendations. As a result, there may be slight differences in the recommended conservation measures for a particular species in Colorado and Wyoming. There may also be exceptions to the tolerance limits a given species is thought to exhibit so our recommendations may require modification to insure that the species continues to occupy an area. Close coordination with the USFWS during construction would ensure that protection measures are appropriate at the time and location of the construction activities.

If you have any comments or questions regarding these comments, please contact Tom Hurshman, BLM Project Manager, at (970) 240-5345 or Ellen Mayo of the USFWS Western Colorado Field Office at (970) 243-2778 extension 14.

Sincerely,

Robert F. Stewart

Robert F. Stewart
Regional Environmental Officer

References

Connelly J.W., M.A. Schroeder, A.R. Sands, and C.E. Braun. 2000. Guidelines to manage sage grouse populations and their habitats. Wildlife Society Bulletin 28(4): 967 - 985.

U.S. Fish and Wildlife Service. 1989. Black-footed ferret survey guidelines for compliance with the Endangered Species Act, April 1989. U. S. Fish and Wildlife Service, Denver, Colorado and Albuquerque, New Mexico. 15pp.

Responses to Letter F-1

F1-37 Department of Interior — Reference to the Rare Plant Survey Report

Text in section 3.6.1 has been modified to address the comment. The survey report will not be included in the final EIS; the plant survey report was reviewed per the comment. The 2004 survey did encompass all suitable habitats. The 2005 report (submitted June 20, 2005) covered only areas where the plant was found in 2004. A recommendation has been added to the EIS stating that the 2004 and 2005 survey reports for the debris milkvetch be submitted to the FWS for review.

F1-38 Department of Interior — Clearing, grading, topsoiling

This practice would increase construction safety around brush, where accumulating soil and litter commonly create hummocks. The practice may disseminate such seed sources. Given that EI concurrence would be required before the practice would be implemented, no changes are believed warranted at present.

F1-39 Department of Interior — Summary comments

Comment noted.

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Denver Federal Center, Building 56, Room 1003
Post Office Box 25007 (D-108)
Denver, Colorado 80225-0007

TAKE PRIDE IN AMERICA

June 20, 2005

ER 05/381

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

REFERENCE: OEP/DG2E/Gas Group 1; Wyoming Interstate Company, Ltd.; Docket No. CP05-54-000; BLM Reference No. WYW-160264

Dear Ms. Salas:

The following were inadvertently omitted from Department of the Interior's June 15, 2005, comments on the Draft Environmental Impact Statement for the Piceance Basin Expansion Project (PBEP), FERC/EIS-0181D.

GENERAL COMMENTS

State Wildlife Management Areas

F2-1 The FEIS should note that the Piceance Creek State Wildlife Area (SWA) in Rio Blanco County, Colorado was purchased to provide hunting opportunities and winter range for deer and elk by the Colorado Division of Wildlife (CDOW) with Federal Aid in Wildlife Restoration Act grant funds. The CDOW will need to obtain the approval of the Regional Director, Region 6, U.S. Fish and Wildlife Service (USFWS), through grant amendments, prior to their approval of an easement for the construction of the pipeline through this area.

F2-2 In addition, the FEIS should be modified to include a detailed description of the affected resources, including federally-listed and candidate species, which occur at the Piceance Creek SWA; the impacts on the affected resources; and list the measures, including alternative routes, which could or will be utilized to avoid, minimize, and mitigate impacts to affected resources.

SPECIFIC COMMENTS

F2-3 Section 3.7.1, Land Use, Recreational and Public Interest Areas, Item 2: We suggest that you add the following at the end of item 2: "The Piceance Creek SWA was purchased by the Colorado Division of Wildlife (CDOW) with Federal Aid in Wildlife Restoration Act grant funds administered by the USFWS's Division of Federal Assistance. The CDOW will need to

F2-1 Department of Interior — Obtaining approval of FWS Region 6 Director regarding Piceance Creek State Wildlife Area (SWA)

Text in section 3.5.2 has been modified to address the comment.

F2-2 Department of Interior — Affected resources at Piceance Creek SWA

Text in section 3.5.2 has been modified to address the comment. However, no listed species have been documented within 2 miles of the Piceance Project ROW where it crosses Piceance Creek SWA.

F2-3 Department of Interior — Land Use: Recreational and public interest areas

Text in section 3.7.1 has been modified to address the comment.

Letter F-2 Continued

Magalie R. Salas 2

F2-3 obtain the approval of the Regional Director, Region 6, USFWS, through grant amendments, prior to their approval of an easement for the construction of the pipeline through this area."

Sincerely,

Robert F. Stewart
Regional Environmental Officer

Responses to Letter F-2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET- SUITE 300
DENVER, CO 80202-2466
Phone 800-227-8917
http://www.epa.gov/region08

June 23, 2005

Ref: 8EPR-N

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, NE, Room 1A
Washington, D.C. 20426

Re: Piceance Basin Expansion Pipeline, DEIS 20050082; FERC Docket No. CP05-54-000

Dear Ms. Salas:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, Region 8 of the Environmental Protection Agency (EPA) has reviewed and rated the *Draft Environmental Impact Statement (DEIS) for the Piceance Basin Expansion Project*, dated May 2005. The project is a 142 mile long natural gas pipeline from Meeker, Colorado to Wamsutter, Wyoming. The new 24-inch diameter pipeline proposed by Wyoming Interstate Company (WIC) will include increasing compression at the existing Colorado Interstate Gas (CIG) Greasewood Compressor Station, valve and metering facilities, and associated facilities.

Based on the procedures EPA uses to evaluate the potential effects of proposed actions and the adequacy of the information in the DEIS, the project will be listed in the Federal Register in the category EC-2 (EC - Environmental Concerns, 2 - Insufficient Information). This rating means that the review identified environmental impacts that should be avoided in order to fully protect the environment and the DEIS does not contain sufficient information to thoroughly assess environmental impacts that should be avoided to fully protect the environment.

F3-1

EPA's concerns with the project are the impacts to ecosystems in northwestern Colorado and northeastern Utah (Piceance and Uinta Basins) from actions connected to or induced by the WIC Pipeline. Of particular concern are:

- loss of wildlife habitat,
- habitat fragmentation,
- erosion reducing water quality,
- soil loss
- invasive and noxious weeds and
- air quality (regionally).

Increased gas transportation capacity will facilitate increased density and intensity of gas development. Increased transportation capacity will also increase the rate of gas development. The FEIS should examine the indirect environmental impacts associated with increasing capacity

F3-1 EPA **Impacts to ecosystem caused by increasing region-wide supply of natural gas**

Our rationale for the overall scope of the EIS is explained in section 1.5 (Non-jurisdictional Facilities). For the reasons listed therein, we do not believe that the scope of this EIS is improperly segmented. The scope of the cumulative analysis was also carefully considered, and the boundaries of the analysis are once again explained in section 3.12. It is unreasonable to expect the EIS to include analyses of impact associated with speculative oil and gas development.

We believe that an increasing nationwide demand for clean-burning natural gas is the primary driving force behind the growing level of exploration and development evident in the Rocky Mountain region during the last several years. Additional infrastructure to transport the gas into the interstate pipeline grid is a result, not a cause, of development.

Letter F-3 Continued

F3-1 for natural gas transportation and identify mitigation that will be implemented to reduce these impacts. Although the Piceance Basin DEIS did include a section on the cumulative impacts of oil and gas in the Piceance Basin, the analysis did not identify the indirect impacts that will be induced by increasing gas transportation capacity nor was any mitigation identified for impacts other than the impacts directly resulting from construction of the pipeline. Information is available on some of the indirect impacts from BLM's environmental analysis of oil and gas development. To date, the environmental impacts from oil and gas development have not been analyzed in a holistic manner for this area resulting in segmentation of the environmental analysis. The Roan Plateau DEIS is the most recent BLM environmental analysis for gas development. Unfortunately the Roan Plateau analysis only covers a small area that will be feeding into the proposed WIC pipeline and does not include increased leasing resulting from additional pipeline capacity. Similarly, the Vernal Utah Field office has completed a DEIS /Resource Management Plan which looks at some of the impacts of gas development in the Uinta Basin.

F3-2 We are concerned by the segmenting of several gas pipeline projects currently proposed in the Piceance Basin. Many of these pipelines and other facilities appear to be "interdependent parts of a larger action and depend on the larger action for their justification" as discussed in the CEQ regulations regarding connected actions at 40 CFR 1508.25 (a)(1)(iii). The overall need for the project appears to be to construct facilities to increase natural gas production and transportation from northeastern Utah and northwestern Colorado to national markets.

F3-3 In addition to the WIC and Entrega pipelines, there is a proposal by EnCana to build a 205 mile long pipeline from the Utah/Colorado border and southwest of the proposed Roan Plateau development to a new gas plant in Meeker near the termini of the Entrega pipeline (the Meeker Hub compression station). There is also a recent BLM Environmental Assessment for the "Meeker Pipeline and Gas Plant Project". Additional pipeline proposals are described in Table 3.12-1 and Figure 3.12-1 on pages 3-121 and 3-122 in the DEIS. It appears that the federal government has a major role in permitting/approving these pipelines and gas development. We recommend that the EIS be revised to look at all the interconnected natural gas transportation projects in the area and the additional natural gas development that will be induced by increasing pipeline capacity.

If you have any questions about these comments, please contact Dana Allen at (303) 312-6870. We appreciate your interest in our comments.

Sincerely,

Larry Svoboda, Director
NEPA Program
Ecosystem Protection and Remediation

Enclosure

cc: Gas Branch1, JPJ11.1, FERC

2

Responses to Letter F-3

The proposed project is a pipeline that interconnects an existing gas supply hub (Greasewood Hub) with existing interstate natural gas pipelines at Wamsutter, Wyoming. We have addressed those other projects that have, or would, interact directly or indirectly with the proposed project. We have defined geographic study areas where the direct or indirect cumulative effects of nearby projects can be specifically evaluated in relation to the Piceance Basin Expansion Project. The regional gas field developments that would supply gas to the WIC pipeline are located upstream from the proposed pipeline origin, and do not overlap with the existing pipeline utility corridor to be occupied by the Piceance Basin Expansion Project in Colorado and Wyoming. In summary, the upstream field development projects are outside the Piceance Basin Expansion Project cumulative analysis scope because they are: 1) geographically distant from the proposed project; and 2) their environmental effects are not additive to the Piceance Basin Expansion Project in the context of NEPA cumulative effects analysis.

F3-2 EPA — Concerned about segmenting of pipeline projects

As discussed in final EIS section 1, we do not believe that the Piceance Basin Expansion Project is an interdependent part of any large action or that we have segmented a larger action in any way. Further, the draft EIS disclosed all of the information available at the time the draft was issued regarding other pipeline projects proposed for the Piceance Basin. To the extent that additional information has become available since April 2005, we have included it in the cumulative impact discussion (see section 3.12).

F3-3 EPA — Revise EIS to look at all proposed natural gas transportation projects

The projects identified by the commenter are included in the Cumulative Impacts discussion in section 3.12 of the EIS.

The pipelines discussed in EIS figure 3.12-1, table 3.12-1, and section 3.12 are all part of either the EnCana Meeker Pipeline and Gas Plant Project (addressed in the BLM's environmental assessment), the Entrega Pipeline Project (addressed in a separate FERC EIS), or WIC's Piceance Basin Expansion proposal.

See response to comment F3-1 regarding the contention that constructing pipeline capacity would induce additional natural gas development.

Letter F-3 Continued

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements

Definitions and Follow-Up Action*

Environmental Impact of the Action

LO - - Lack of Objections: The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - - Environmental Concerns: The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - - Environmental Objections: The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU - - Environmentally Unsatisfactory: The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate: EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - - Insufficient Information: The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate: EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

Letter S-1

WYOMING STATE GEOLOGICAL SURVEY
P.O. BOX 1347 • LARAMIE, WYOMING 82073-1347
307/766-2286 • FAX 307/766-2605
E-MAIL: wsgs-info@uwyo.edu •WEB: www.wsgs.uwyo.edu

STATE GEOLOGIST – Ronald C. Surdam

Magalie R. Salas   June 6, 2005
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Room 1A
Washington, DC 20426

RE: Docket No. CP05-54-000
Draft Environmental Impact Statement for the Piceance Basin Expansion Project

Dear Magalie,

The Wyoming State Geological Survey would like to comment on Docket No. CP05-54-000, Draft Environmental Impact Statement for the Piceance Basin Expansion Project.

S1-1 Rod De Bruin's, Oil and Gas Geologist, main concern with this project (i.e. the construction of a pipeline from the Piceance Basin to Wamsutter) is that until an additional pipeline is completed from Wamsutter to the Cheyenne hub or any other point that will take the additional Piceance gas to markets outside Wyoming, Wyoming gas will compete with this gas for space in existing pipelines. Consequently, prices for Wyoming gas will suffer.

Sincerely,

Ronald C. Surdam
Director/State Geologist

Cc: Governor's Planning Office

Serving Wyoming Since 1933

Responses to Letter S-1

S1-1 Wyoming State Geological Survey — Gas transport capabilities

Comment noted.

Letter S-2

WYOMING
GAME AND FISH DEPARTMENT

"Conserving Wildlife - Serving People"

June 20, 2005

Docket No. CP05-54-000
WER 10938
Federal Energy Regulatory Commission
Piceance Basin Expansion Project-Scoping Notice
El Paso Pipeline Group, Western Pipelines

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, NE, Room 1A
Washington, DC 20426

Dear Ms. Salas:

The staff of the Wyoming Game and Fish Department has reviewed the scoping notice for the Piceance Basin Expansion Project. We offer the following comments.

Terrestrial Considerations:

S2-1 This project lies within pronghorn hunt area 57 and mule deer hunt area 100, and contains crucial winter and winter-yearlong ranges for both species, as well as winter-yearlong range for elk in hunt area 124.

S2-2 The nearest active sage-grouse lek is found in T18N, R94W, section 9 (Red Lakers), approximately two miles from the project area. Other nearby leks are approximately four miles from the project site and include Shallow Creek (T16N, R95W, section 24) and North Barrels Springs (T17N, R94W, section 2).

Our concerns and recommendations related to this draft EIS follow:

- S2-3 Avoid construction activities on big game crucial winter ranges between November 15-April 30. The current plan outlines construction during winter stipulation periods (page 3-127). If possible, construction should be completed on winter ranges before the stipulation period.
- S2-4 To increase safety, workers on foot away from the major construction areas should wear blaze-orange vests or shirts from September 20 to November 30 in Wyoming, which is during big game rifle seasons.

Headquarters: 5400 Bishop Boulevard, Cheyenne, WY 82006-0001
Fax: (307) 777-4610 Web Site: http://gf.state.wy.us

Responses to Letter S-2

S2-1 Wyoming Game and Fish Department — Crucial winter range within hunt areas

The crucial big game winter range areas in Wyoming have been outlined in Section 3.5.2 of the EIS.

S2-2 Wyoming Game and Fish Department — Location of sage grouse leks

WIC has conducted project specific surveys for sage grouse in 2004 and 2005, which identified leks (historic or new) within 2 miles of the ROW. Please see the June 13, 2005 survey report. The referenced material was filed with the Commission's Secretary on June 20, 2005 and is available for viewing on the FERC Internet website (http://www.ferc.gov). Using the "eLibrary" link, perform a general search using Docket No. CP05-54-000 and the material filing date.

S2-3 Wyoming Game and Fish Department — Construction activities on big game crucial winter ranges

WIC has indicated that a mini-crew would construct the northernmost 3.1 miles of Spread 2 in order to complete construction before November 15, 2005. The main spread is expected to pass through the second big game critical range in Wyoming before November 15 as well. WIC's proposed construction schedule through crucial big game winter range is further discussed in section 3.5.2 of the EIS. The referenced material was filed with the Commission's Secretary on July 11, 2005 and is available for viewing on the FERC Internet website (http://www.ferc.gov). Using the "eLibrary" link, perform a general search using Docket No. CP05-54-000 and the material filing date.

S2-4 Wyoming Game and Fish Department — Worker safety during hunting season

WIC agrees that workers on foot away from the construction areas should wear blaze orange during the hunting season. WIC has indicated they would require workers and contractors to do so.

Letter S-2 Continued

Docket No. CP05-54-000
Ms. Magalie R. Salas
June 20, 2005
Page 2 – WER 10938

S2-5
- Reclamation contractors should plant forb species that are beneficial to sage-grouse and/or big game (the Wyoming forb list is still under development, but may be completed prior to reclamation).

S2-6
- Avoid disturbance to sage-grouse nesting/early brood rearing habitat from March 15 until July 15.

S2-7
- Workers should not carry or possess firearms at the worksite or in camps.
- Workers should not "camp out" along or near the project area.
- Increased work traffic could have a slight increase in big game-vehicle accidents on roads between construction and living areas. Measures should be implemented to decrease the chance of accidents (e.g., speed limits, bussing workers).
- Contractors should keep all trash picked up along the route during and after construction.

S2-8
- The Cumulative Impacts Analysis section (page 3-144) does not include gas field impacts in the Continental Divide/Wamsutter II, Mulligan Draw, South Baggs, Desolation Flats, and other natural gas projects between I-80 and the Colorado state line. These projects are significant and should be included in the cumulative impacts analysis.

S2-9
- Open trenches are a wildlife hazard if left open for too long, and do not contain enough gaps for wildlife to escape. The longer a section is open, the greater the risk of animals falling in, especially during seasons when weather might influence movements.

S2-10
- Reclamation continues to be a problem with pipeline projects. If vegetation is not established soon enough, weed problems develop associated with soil loss that impacts the future productivity of the site. Protocols to control weeds should be in place during reclamation.

For additional specific information regarding wildlife issues, please contact our local wildlife biologist, Tim Woolley (383-6082).

Aquatic Considerations:

This proposed pipeline project is following the same right-of-way as the Entrega gas pipeline. To minimize impacts to the aquatic resources, we recommend the following considerations:

S2-11
- Riparian areas and flood plains should not be used as staging or refueling areas. All chemicals, solvents and fuels should be kept at least 150 feet away from streams and riparian areas.

S2-12
- Release of hydrostatic test waters during pipeline construction could result in alterations of stream channels, increased sediment loads and additions of potentially toxic chemicals into drainages, thereby resulting in adverse impacts to aquatic biota. Consequently, the direct discharge of hydrostatic test waters to streams should be avoided. Discharge should occur into a temporary sedimentation basin if total suspended solids concentrations are significantly higher in the test water than in the receiving water. Dewatering of temporary sedimentation basins should then be done in a manner that

Responses to Letter S-2

S2-5 Wyoming Game and Fish Department — Revegetation for wildlife

Text in sections 3.5.2 and 3.6.2 has been modified to address the comment.

S2-6 Wyoming Game and Fish Department — Sage grouse nesting habitat

Text in section 3.6.2 has been modified to address the comment.

S2-7 Wyoming Game and Fish Department — General safety concerns

BLM's Plan of Development (POD) addresses the prohibition of firearms (Section 3.5) and camping (Section 3.4.2) on the project site. The POD also restricts cross country travel (Section 3.4.2) and sets speed-limits for construction vehicles (Sections 6.1.2 and 6.3.8). Text in section 2.3 of the EIS has been modified to further address trash concerns.

S2-8 Wyoming Game and Fish Department — Cumulative Impacts Analysis

The appropriate scope for cumulative analysis was carefully considered. The proposed project is an interstate natural gas pipeline project that originates at the existing Greasewood Hub, and terminates at multiple interconnections with the existing interstate natural gas pipeline system at Wamsutter, Wyoming. In section 3.12 of the EIS we have addressed those other projects that have, or would, interact directly or indirectly with the proposed project. We have defined geographic study areas where the direct and indirect cumulative effects of nearby projects can be specifically evaluated in relation to the Piceance Basin Expansion Project. The regional oil and gas field developments in Wyoming are outside the Piceance Basin Expansion Project cumulative analysis scope because these field developments are independent from the proposed project. Gas produced from Wyoming would not be used as a source of supply for the Piceance Project. Gas field development in Wyoming that does not supply gas for the project does not represent a connected action that could not or would not proceed unless other actions are taken previously or simultaneously according to Council on Environmental Quality criteria contained in 40 CFR 1508.25.

S2-9 Wyoming Game and Fish Department — Wildlife and open trenches

As stated in section 3.5.2 of the EIS and in WIC's revised Plan (appendix B), WIC has committed to placing earthen trench plugs, with ramps on either side, at 1-mile intervals along the trench as well as at well-defined livestock and wildlife trails intersected by the trench to minimize potential impacts on wildlife, horses, and livestock.

S2-10 Wyoming Game and Fish Department — Weed control

As stated in section 3.2.4 of the EIS, WIC's Draft Noxious and Invasive Weed Plan (appendix G) and WIC's Plan (appendix B), WIC has committed to expeditiously revegetating disturbed areas and applying certified weed-free seed and mulch. WIC's Weed Plan outlines specific control and prevention measures to minimize the establishment and spread of noxious and invasive weed species.

S2-11 Wyoming Game and Fish Department — Refueling near aquatic resources

Appropriate set-backs for federal and non-federal lands have been addressed in section 3.3.2 of the EIS. No changes are necessary.

Letter S-2 Continued

Docket No. CP05-54-000
Ms. Magalie R. Salas
June 20, 2005
Page 3 – WER 10938

S2-12 precludes erosion. Furthermore, release of water into drainages other than the source drainage can result in an unacceptable risk of introducing aquatic nuisance species (New Zealand mud snail, European ear snail, whirling disease spores, etc.). Introduction of aquatic nuisance species can be devastating to the ecosystems of vast basins receiving the released waters.

S2-13
- Right-of-way widths should be minimized where the pipeline crosses riparian areas and streams.

Thank you for the opportunity to comment.

Sincerely,

Bill Wichers

BILL WICHERS
DEPUTY DIRECTOR

BW:VS:as
cc: Mary Flanderka-Governor's Planning Office
USFWS
Bio-Resources, Inc., 135 East Center, Logan, UT 84321

Responses to Letter S-2

S2-12 Wyoming Game and Fish Department — Release of hydrostatic test water

This has been addressed in section 3.3.2 of the EIS. No changes are necessary.

S2-13 Wyoming Game and Fish Department — ROW widths across riparian areas and streams

This has been addressed in section 3.3.3 of the EIS. No changes are necessary. WIC would limit the ROW width to 75 feet in all wetlands and riparian areas.

Letter L-1

MOFFAT COUNTY

April 20, 2005

Magalie Roman Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Room 1A
Washington, DC 20426

RE: Wyoming Interstate Company/Piceance Basin Expansion
Docket No. CP05-54-000

Dear Secretary Salas:

L1-1

We are writing to you today in support of the proposed Wyoming Interstate Company's (WIC) pipeline projact. Tha proposed project will consist of constructing and operating approximately 141.7 miles of 24 or 30-inch diameter pipeline extending from the Greasewood Hub in Rio Blanco County Colorado through Moffat County, Colorado and terminating at interconnects with WIC's mainline and the interstate pipeline facilities of Colorado Interstate Gas Company at Wamsutter in Sweetwater County Wyoming. This project will be constructed and operated in our county of Moffat County, Colorado.

WIC's investment in this project will provide a variety of economic benefits to Moffat County and the State of Colorado, including additional high paying skilled operating positions in our county. WIC is also expected to contribute substantial amount of tax revenues to the state, county and local school districts.

The WIC team has been very proactive in their outreach to the landowners and the state and county agencies on this project. Their desire and actions to involve the community early in the siting process has helped us understand the project and its impacts on our area. WIC has contributed up front funds to help Moffat County mitigate impacts such as roads and emergency medical services.

We believe the Wyoming Interstate Company's project creates an opportunity that will not only help our national economy but also will have a positive impact on the community and the economy of Moffat County, Colorado.

Sincerely,

Tom Gray

Tom Gray

Saed F. Tayyara

Darryl L. Steele

Darryl Steele

COMMISSIONERS

221 West Victory Way, Suite 130
Craig, Colorado 81625
(970) 824-5517
(970) 824-9191 Fax

Tom Gray
District 1

Saed F. Tayyara
District 2

Darryl L. Steele
District 3

Responses to Letter L-1

L1-1 Moffat County Commissioners — Expressed support for project

Comment noted.

Letter L-2

BOARD OF COUNTY COMMISSIONERS
RIO BLANCO COUNTY COURTHOUSE
POST OFFICE BOX i
MEEKER, COLORADO 81641

June 16, 2005

Magalie Roman Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Room 1A
Washington, DC 20426

RE: Docket No. CP05-54-000-Wyoming Interstate Company, Ltd.

Dear Secretary Salas:

L2-1 Rio Blanco County has reviewed WIC's plans for the proposed new interstate pipeline from the Piceance Basin to Wamsutter, Wyoming and the compressor facilities to be built within the County. We are satisfied that if WIC completes the project in accordance with all stipulated environmental protection measures and conditions of approval for the Special Use License the County intends to grant, that the short term impacts will be tolerable in view of the long-term economic benefits to the County. We therefore support FERC approval of this project.

Sincerely,

Forrest F. Nelson

Forrest F. Nelson,
Chairman
Rio Blanco County
Board of Commissioners

Forrest F. Nelson, Chairman   Kenneth C. Parsons   Kim A. Cook
Meeker (970) 878-9430 • Fax (970) 878-5796 ••• Rangely (970) 878-9435 • Fax (970) 675-8646
bocc@co.rio-blanco.co.us

Responses to Letter L-2

L2-1 **Rio Blanco County Board of Commissioners** — **Expressed support for project**

Comment noted.

Letter N-1

Colorado Environmental Coalition
Center for Native Ecosystems
Wilderness Workshop
Biodiversity Conservation Alliance

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, NE, Room 1A
Washington, D.C. 20426

June 20, 2005
Submitted via FERC website

RE: Piceance Basin Expansion Project Draft Environmental Impact Statement Docket No. CP05-54-000.

Dear Secretary Salas,

Please accept and fully consider these comments on behalf of Biodiversity Conservation Alliance, Center for Native Ecosystems, the Wilderness Workshop, and the Colorado Environmental Coalition.

LEGAL SUPPORT

N1-1

In determining the scope of the likely impacts of a project, the Council on Environmental Quality's regulations require that federal agencies consider "connected actions" and "cumulative actions" together with "direct" and "indirect" impacts. 40 CFR § 1508.25. Connected actions are those that

1. "automatically trigger other actions which may require environmental impact statements,"
2. actions that "cannot or will not proceed unless other actions are taken previously or simultaneously," and,
3. actions that are "interdependent parts" of a larger action and "depend on the larger action for their justification."

(emphasis added, 40 CFR § 1508.25(a)). The CEQ regulations define similar actions as those that "have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography." Id. The CEQ regulations also state when agencies ought to analyze such similar actions in a single impact statement. (Agencies "should do so when the best way to assess adequately the combined impacts of similar actions or reasonable alternatives is to treat them in a single impact statement." 40 CFR § 15.08.25.). This Draft EIS fails to address connected, related, and similar actions, which will have significant impacts.

While federal agencies have considerable discretion in determining the scope of a NEPA document, there are situations where an agency must consider several related actions in a single NEPA document. In Fritiofson v. Alexander, the U.S. Court of Appeals for the Fifth Circuit held

Responses to Letter N-1

N1-1 Colorado Environmental Coalition Scope of NEPA Analysis

The question of connected actions was carefully considered in developing the scope of the analysis for the Piceance Basin Expansion Project. This pipeline would interconnect with existing pipeline facilities (described in table 1.5-1) that deliver gas from existing oil and gas fields within western Colorado and eastern Utah.

After consideration of Council on Environmental Quality's criteria contained in 40 CFR 1508.25, we concluded that the construction and operation of an interstate pipeline does not represent a connected action with upstream production fields and processing facilities for the following reasons:

1) Construction and operation of this pipeline would not automatically trigger other actions because: a) the majority of the natural gas production and gathering pipeline infrastructure that would supply the WIC interstate pipeline already exists; and b) authorization of new oil and gas facilities may proceed under site-specific Environmental Assessment analyses conducted by the BLM on public lands, or by local agencies for facilities on private land without triggering an EIS process.

that in a cumulative impact analysis, an agency should consider "(1) past and present actions without regard to whether they themselves triggered NEPA responsibilities and (2) future actions that are 'reasonably foreseeable,' even if they are not yet proposals and may never trigger NEPA-review requirements. 772 F.2d 1225, 1245 (5th Cir. 1985). The court stated:

> Sections 1508.7 and 1508.27 require an analysis, when making the NEPA threshold decision, as opposed to the EIS-scoping decision, whether it is "reasonable to anticipate cumulatively significant impacts" from the specific impacts of the proposed project when added to the impacts from "past, present, and reasonably foreseeable future actions," which are "related" to the proposed project. The regulation does not limit the inquiry to the cumulative impacts that can be expected from proposed projects; rather; the inquiry also extends to the effects that can be anticipated from "reasonably foreseeable future actions.

Id. at 1243 (emphasis added). For this Draft EIS, FERC's obligation to analyze impacts extends beyond the immediate physical on-the-ground impacts of the pipeline to include the cumulative impacts of the project, taken together with the impacts of existing, proposed, or reasonably foreseeable projects, on the environment. In doing so, the FERC must describe and analyze impacts beyond the borders of the federal lands and beyond the list of known future gas development projects.

N1-1 To ensure that combined impacts of separate activities do not escape consideration, NEPA requires FERC to consider cumulative environmental impacts in its environmental analyses. See Davis v. Mineta, 302 F.3d 1104, 1125 (10th Cir. 2002); see also Grand Canyon Trust v. Federal Aviation Admin., 290 F.3d 339, 345-47 (D.C. Cir. 2002). NEPA's regulations provide that "effects" includes ecological, aesthetic, and historic impacts, "whether direct, indirect, or cumulative." 40 C.F.R. § 1508.8. "Cumulative impact," in turn, is defined as:

> the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Id. § 1508.7.

Based on these regulations, NEPA documents must provide useful analysis of past, present, and future actions. City of Carmel-By-The-Sea v. U.S. Dept. of Transp., 123 F.3d 1142, 1160 (9th Cir. 1997); Muckleshoot Indian Tribe v. U.S. Forest Serv., 177 F.3d 800, 809-810 (9th Cir.1999). As the D.C. Circuit has held, the fact that a project may result in even a small incremental increase in the overall impacts to a resource is meaningless if "there is no way to determine . . . whether [this small increase] in addition to the other [impacts], will 'significantly affect' the quality of the human environment." Grand Canyon Trust, 290 F.3d at 346. This Draft EIS fails to address reasonably foreseeable future actions with cumulatively significant impacts.

2) Construction and operation of upstream natural gas production and processing facilities proceed independently from the construction and operation of an interstate natural gas pipeline. Multiple existing interstate pipelines already exist (e.g. TransColorado, Uinta Basin Lateral, Northwest) that serve the same producing region as the proposed Piceance Basin Expansion Project. WIC must compete with these existing and proposed pipelines (such as the Entrega pipeline) to obtain contracts to ship the available natural gas. The natural gas shippers have options for shipping gas through other pipelines. Gas consumers may purchase gas from other sources.

   From a different perspective, an interstate pipeline can provide market access to a variety of shippers via interconnections among gas fields and gathering pipelines. The viability of a pipeline project is not dependent on a single natural gas field. Because the origin of the Piceance Basin Expansion Project pipeline is located at the Greasewood Hub, the project could obtain gas from alternative sources beyond those provided by Williams.

   In summary, neither the proposed pipeline nor the upstream gas fields represent connected actions that could not or would not proceed unless other actions are taken previously or simultaneously, nor are they interdependent parts of a larger action nor are they dependent on a larger action for their justification.

The appropriate scope for cumulative analysis was also carefully considered. The proposed project is an interstate natural gas pipeline project that originates at the existing Greasewood Hub, and terminates at multiple interconnections with the existing interstate natural gas pipeline system at Wamsutter, Wyoming. In section 3.12 of the EIS we have addressed those other projects that have, or would interact directly or indirectly with the proposed project. We have defined geographic study areas where the direct and indirect cumulative effects of nearby projects can be specifically evaluated in relation to the Piceance Basin Expansion Project. The regional oil and gas field developments in the Piceance and Uinta Basins occur upstream from the pipeline origin, and are outside the Piceance Basin Expansion Project cumulative analysis scope because these field developments are geographically distant from the proposed project.

Letter N-1 Continued

THIS EA FAILS TO CONSIDER SIGNIFICANT DIRECT AND INDIRECT ENVIRONMENTAL CONSEQUENCES RELATED TO CONNECTED, SIMILAR, AND CUMULATIVE ACTIONS.

N1-2

The "need" for the proposed action is described in the Draft EIS "increasing natural gas supply (production) in the Rocky Mountain Region without a concurrent increase in pipeline capacity to transport this gas to market." Draft EIS at 1-1. The Draft EIS's description of the "future" development of natural gas resources is unalterably vague and does not provide relevant information. The irony of FERC naming this project the Picenace Basin Expansion Project, yet using vague descriptions of the purpose and need of the project based on "Rocky Mountain Region" and avoid discussion of the Piceance Basin estimates only begins to highlight this Draft EIS's shortcomings. While we hold that this pipeline should be considered along with the Entrega Pipeline and Meeker Pipeline Projects in a single environmental document, it becomes immediately clear that the public cannot even comment on any of these project individually without searching through the other two outstanding environmental documents for relevant information. For example, one has to look at FERC's Entrega Pipeline DEIS, specifically Figure 1.2-2, we find relevant information on natural gas production within the Piceance Basin—the production center for which this project is named. The graphical representations of gas production in those counties most associated with the Piceance Basin—Garfield, Mesa, and Rio Blanco—highlights that drilling rates and production are increasing in these three counties. As these tables increase exiting production, they also highlight that this existing gas is being brought to market through existing infrastructure. Without describing what the increasing in drilling which will also occur prior to the stated purpose and need of production, FERC fails in meeting the requirements of NEPA.

FERC's Entrega Draft EIS describes the increase in capacity of that pipeline in terms of existing supply. See Entrega Pipeline DEIS at 1-3. The Piceance Basin Expansion Project DEIS provides no such information, and thus doesn't even begin to provide the public with relevant information related to the total impacts of this project and associated development. Again, looking at another related environmental document, the BLM's Draft EA on the Meeker Pipeline, we can start to gain picture of what type of exploration, drilling, and production the future holds to begin to fill these three interstate gas transmission facilities centered on the Piceance Basin. EnCana, one of the Piceance Basin's largest developers (see FERC Entrega Pipeline Project DEIS at 1-5), plans to "increase production in the Piceance Basin by approximately 100 to 200 million standard cubic feet per day (mscfd), each year, for the next several years." Meeker Pipeline EA at 3-1. This DEIS, by simply stating the increase in the volume of gas production that is reasonably foreseeable, does not provide information relevant to the actual production of natural gas and its direct, indirect, and cumulative environmental consequences. These impacts must be described in FERC's environmental analysis.

Here, the Draft EIS at 1-1 states that the capacity of this pipeline "would meet the needs of Williams Power Company, Inc. (Williams), a major Piceance Basin gas producer, to transport natural gas from the Piceance Basin to markets.." Draft EIS at 1-1. What are the "needs" of Williams? Is this statement based on existing, future, planned, proven, or expected facilities? This DEIS fails to answer other questions related to foreseeable upstream development and the purpose and need of the proposed project: Approximately how many more wells can be produced before existing pipeline capacities are at capacity out? How many more wells does FERC or BLM anticipate in relation to EnCana's two pipeline proposals (Meeker Pipeline and the Entrega

Responses to Letter N-1

N1-2 Colorado Environmental Coalition — Purpose and need: Consideration of the total impact of the project and associated development

As noted in the response N1-1 above, the need for the project is driven primarily by an increasing supply of natural gas produced from wells in western Colorado and eastern Utah, and elsewhere. WIC has reached an agreement to transport gas provided by Williams, a large natural gas producer. The project (if approved) would be financed, constructed, and operated on the expectation of a long-term gas supply. The number of existing and future wells needed to supply this pipeline and others is outside the scope of the analysis because: 1) upstream developments are not considered connected actions for the reasons outlined in N1-1; and 2) any answer to this gas supply question would be highly speculative.

Letter N-1 Continued

N1-2

Pipeline Project)? How many more wells does BLM or FERC anticipate being drilled from federal minerals based on the combined capacity of the El Paso, EnCana/Entrega, and the EnCana Meeker pipelines? These are basic questions related to upstream development that is reasonably foreseeable by both industry, BLM and FERC to find actual "needs" for this and the several other pipeline projects, and for industry to believe this project will be economically feasible. We note that FERC's DEIS for the Entrega Pipeline states "production must substantially increase within the existing shipper's fields, and additional gas would be neede from other shippers to reach Entrega's maximum design transportation capacity of 1.5 Bcfd between the proposed Meeker Hub and Wamsutter Compresion Stations." FERC Entrega DEIA at 1-3. How much, if any, will production need to increase before the design capacity of the pipeline analyzed in this DEIS is reached? In addressing these issues, BLM or FERC should analyze this project with (at a minimum) the Entrega pipeline project (Entrega). Entrega Pipeline Project (Docket No CP04-413-00, et al. FERC/EIS- 0175D). In taking this course, BLM and FERC would provide valuable information on whether it is beneficial to the public that two separate developers develop two interstate pipelines to transport natural gas from the same region and provide the public with information related to the purpose and need, upstream development and downstream markets related to these project.

One natural gas producer directly ties their ability to increase production to the availability of new downstream transmission infrastructure. In an official press release announcing the "Whitewater Project," which would increase production from 40 test wells to 500 wells on Whitewater Ranch near Grand Junction, Maverick Oil and Gas, LLC states "none of the wells were put into production because no pipeline to market was available at the time the wells were drilled. However, a pipeline was recently constructed and is now readily accessible to produce the gas in the project area."[1] Similarly, FERC should recognize, clearly state, and analyze the associated impacts of significant increases in development that will follow on the heels of increased downstream transmission capabilities provided in the proposed action and the several other pipelines currently undergoing environmental review. This example seems to clearly state that without the increase in transmission facilities, this proposed project could not go forward. See 40 CFR §1508.25 (a). Assuming demand and price constraints favor drilling, existing pipeline capacity plays a major role in production and development of future reserves. This fundamental truth needs to be addressed, and the federal agencies involved in permitting these three pipelines under environmental review not only avoid any descriptions of the environmental consequences, they avoid even disclosing the percentage of existing transportation facilities currently utilized or describe the increased capacity relative to current capacity and production.

N1-3

The Wyoming Game and Fish Department has recently pointed out FERC's failure to describe likely upstream development and associated impacts for a related pipeline concurrently undergoing its own environmental review. Commenting on the EnCana's Entrega DEIS's shortcomings on cumulative impacts to wildlife habitat, the Wyoming Game and Fish Department stated

> Cumulative Impacts Analysis (p. 3-144): This section does not include gas field impacts in the Continental Divide/Wamsutter IL Mulligan Draw, South Baggs, Desolation Flats, and other natural gas projects between 1-80 and the Colorado

[1] The Whitewater Project Initial Announcement 02/08/2005, February 8, 2005. Available at http://www.maverickoilandgas.com/projwhitewater.asp. Last visited June 17, 2005

Responses to Letter N-1

N1-3 Colorado Environmental Coalition

Cumulative impacts: Consideration of the potential for increased environmental impacts due to increased capacity for natural gas transportation

The cumulative effects study area defined in section 3.12 reflects an appropriate scale for estimating direct and indirect effects of the Piceance Basin Expansion Project combined with existing and foreseeable projects that lie within, or intersect the Piceance pipeline corridor.

We do not agree that construction of a new pipeline automatically induces a corresponding increase in well drilling. The rate and extent of new drilling is affected by a variety of factors, including the cost of drilling, well head gas prices, the well field gathering pipeline infrastructure, the shipping contracts that producers currently hold, and processing times for applications to drill. Interstate pipeline capacity is only one variable in a complex economic relationship among producers, shippers, and consumers. Therefore, we believe it is outside the scope of this analysis and highly speculative to pursue an investigation of the relationship between pipeline capacity and rates of gas field drilling.

Letter N-1 Continued

N1-3

state line. These projects are significant and should be included in the cumulative impacts analysis.

Cumulative Impacts (3-12 ff): The cumulative impacts discussion is rather incomplete and disjunct. Sage brush [sic] control, Coal Bed Methane development, coal mining, highways and associated fences, vegetative stand condition, wind power development, and the <u>potential for additional development with increased pipeline capacity</u>, are some areas that have not been disclosed in detail.

Wyoming Game and Fish Department to FERC dated April 15, 2005 at 3 (emphasis added). The Environmental Protection Agency's (EPA) comments on EnCana's Entrega pipeline echo Wyoming Game and Fish, stating the DEIS for this related project lacked any real discussion on future upstream development.

> <u>Increased gas transportation capacity will facilitate increased density and intensity of gas development. Increased transportation capacity will also increase the rate of gas development. The FEIS should examine the indirect environmental impacts associated with increasing capacity for natural gas transportation and identify mitigation that will be implemented to reduce these impacts.</u> Although the Entrega DEIS did include a section on the cumulative impacts of oil and gas in the Piceance Basin, <u>the analysis did not identify the indirect impacts that will be induced by increasing gas transportation capacity</u> nor was any mitigation identified for impacts other than the impacts directly resulting from construction of the pipeline. Information is available on some of the indirect impacts from BLM's environmental analysis of oil and gas development. However, it appears that the environmental impacts from oil and gas development have not been analyzed in a holistic manner for the area resulting in segmentation of the environmental analysis.

Environmental Protection Agency letter to FERC dated April 14, 2005, hereinafter "EPA Letter" at 1-2 (emphasis added). We agree with the EPA and the Wyoming Game and Fish Department, and believe that this DEIS is similarly flawed and must take into account the indirect environmental impacts associated with increasing the capacity for natural gas transportation as required by NEPA.

N1-4

The EPA's comments also request that FERC and BLM join the analysis of the Piceance Basin Expansion Project pipeline, EnCana's Entrega pipeline, and the EA for EnCana's Meeker Pipeline and Gas Plant Project (which was out for concurrent public review with this DEIS), stating

> The BLM is currently seeking public comment on an Environmental Assessment for the "Meeker Pipeline and Gas Plant Project". Encana/Entrega also have other pipeline proposals as described in Figure 3.12-1 and Table 3.12-1 in the DEIS on pages 3-137 and 3-138 of the EIS connecting the last few miles between the Meeker gas plant and the Meeker Hub compression station. It appears that the federal government has a major role in permitting/approving these pipelines. EnCana/Entrega pipelines are being routed through the Meeker area to use the

Responses to Letter N-1

N1-4 **Colorado Environmental Coalition** — **Reference to EPA request that FERC and BLM combine the analysis of the 3 pipeline projects in the region**

The Piceance and Entrega pipeline projects and the EnCana gas plant project are listed in section 1.6 Related Actions. The combined effects of these three projects, plus other pipelines within the same utility corridor have been addressed in section 3.12 Cumulative Effects. Each project was reviewed for conformance with existing BLM Resource Management Plans. Because Plan conformance is primarily related to facility compatibility with land uses and natural resources, the outcome of the review is the same for multiple pipelines in the same corridor as compared to a single pipeline. Stated differently, there are no specific criteria contained in the applicable resource management plans that control the number of pipelines and ancillary facilities in a particular corridor. Specific resource issues (such as the occurrence of listed plant species) may influence the routing of an individual project, or an adjacent project in the same corridor.

Letter N-1 Continued

N1-4

additional capacity that will be provided by the proposed Entrega and Wyoming Interstate Gas pipelines and to market gas from EnCana's recently acquired gas development properties (page 1-3, DEIS). We recommend that the EIS be revised to look at all the interconnected natural gas transportation projects in the area and the additional natural gas development that will be induced by increasing pipeline capacity.

EPA letter at 2 (emphasis added). We agree with the EPA, and believe that this DIES is similarly flawed in its scope. These interconnected actions are all, if not physically connected, closely related in time and space and interdependent on the rapidly expanding natural gas development in the Piceance Basin. The other proposed transmission projects (both Encana's Meeker Pipeline and the Entrega Pipeline) are related in timing, geography, and for 105 miles share a common utility corridor, and ought to be joined in a single impact statement instead of through this concurrent piecemeal analysis that fails to provide the public with reasonable alternatives and full analysis of their combined impacts. Moreover, this more "holistic approach," as described by the EPA, would provide better assurance that the combined impacts of these similar actions will be in conformity with the several BLM Resource Areas and various Resource Management Plans that cross the Piceance Basin. Without further analysis, we cannot determine whether the several existing RMPs and their amendments thoroughly analyzed such impacts.

N1-5

FERCs rational for not considering these to pipelines together suggests that providing the public with information as required by NEPA and its implementing regulations would somehow "penalize" WIC though forcing the company to endure a unnecessary NEPA "processing" delay. This rational is tantamount to FERC sacrificing themselves in preparation of a duplicative and "unnecessary NEPA processing" document at the expense of federal taxpayers. FERCs fundamental misconceptions of our federal agencies' role in analyzing environmental flies in the face of the plain language of NEPA's implementing regulations that define similar actions a as those that "have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography." 40 CFR § 1508.25(a).

N1-6

In a revised DEIS, FERC must analyze the associated impacts of increased upstream development. This should include impacts to Air Quality; Areas of Environmental Concern; Cultural Resources and Native American Religious Concerns; Soils and Farmlands, Prime and Unique; Split-Estate Surface Owner Impacts; Floodplains; Riparian Areas; Vegetation and Invasive, Non-native Species; Migratory Birds; Threatened, Endangered, and Sensitive Species; Wastes, Solids or Hazardous; Water Resources, Surface or Ground; Wetlands and Riparian Zones; Wildlife, Aquatic and Terrestrial. In analyzing the consequences of these actions, FERC must also fulfill their obligation to mitigate those impacts. FLMPA requires BLM (the cooperating agency) to "minimize adverse impacts on the natural, environmental, scientific, cultural, and other resources and values (including fish and wildlife habitat) of the public lands involved" 43 U.S.C. §1732(d)(2)(a), and NEPA requires the agency to consider alternatives that will lessen the environmental impact of proposed actions. City of Aurora v. Hunt, 749 F.2d 1457, 1466-67 (10th Cir. 1984).

Responses to Letter N-1

N1-5 Colorado Environmental Coalition — Considering pipelines together and the NEPA process

The primary reason for separate Entrega and Piceance EIS processes is that each project is independent of the other (different gas suppliers, different end markets, and different pipeline operating criteria). The two applicants were unwilling to join together into a single project. Although the construction schedules of these projects now appear to be converging, to combine them into one EIS still poses an unacceptable risk that one project would be penalized for any delays or major changes that affected the other project. However, the FERC and BLM have tracked the scope of these projects' construction plans to ensure similarity in construction methods and mitigation, ensuring common procedures where there is overlap in space and time.

We have addressed the cumulative effects of the two projects in section 3.12. We have also applied the same construction and environmental protection standards to the two projects so that an equivalent level of environmental protection would be applied to each project.

N1-6 Colorado Environmental Coalition — Need analysis of increased upstream development on resource programs per NEPA

See responses to comments N1-1 and N1-3.

Letter N-1 Continued

N1-7 CONCLUSION

After reviewing this Draft EIS, and considering it in the context of at least two additional interstate transmission pipelines concurrently undergoing environmental review, we conclude that additional environmental analysis is required. he shortcomings we see in relation to connected, related and cumulative actions (as well as the same or similar shortcomings in the Entrega and Meeker Pipeline and Gas Plant Project proposals) lead us to the conclusion that a single EIS is more appropriate for this level of development. Further environmental analysis must paint a realistic picture of foreseeable upstream development and its associated impacts. Such analysis should also address the cumulative impacts of upstream development including the full impacts of the three proposed interstate pipelines coming out of the Piceance Basin and a full range of alternatives. FERC with BLM as cooperating or lead agency on all three of these pipeline projects are in a unique position to provide a full assessment of these environmental impacts, and NEPA requires as much.

Sincerely,

Reed F. Morris
Colorado Wilderness Network
11 W. Victory, #208
Craig, Colorado 81625
(970) 824-5241

On behalf of,

Sloan Shoemaker
Executive Director
Wilderness Workshop
PO Box 1442
Carbondale, CO 81623

Jacob Smith
Executive Director
Center for Native Ecosystems
1536 Wynkoop, Suite 301
Denver, CO 80202

Erik Molvar
Executive Director
Biodiversity Conservation Alliance
P.O. Box 1512
Laramie, WY 82073

Pete Kolbenschlag
West Slope Field Director
Colorado Environmental Coalition
1000 N. 9th Street #40
Grand Junction, CO 81501

Responses to Letter N-1

N1-7 Colorado Environmental Coalition — Consideration of a single EIS combining the 3 regional pipeline projects

See responses to comments N1-1 and N1-3.

Letter I-1

Wyoming Interstate
an El Paso company

June 17, 2005

Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Attention: Ms. Magalie Roman Salas, Secretary

Re: Wyoming Interstate Company, Ltd.;
Docket No. CP05-54-000;
Comments on Draft Environmental Impact Statement

Commissioners:

Wyoming Interstate Company, Ltd. ("WIC") is hereby filing with the Federal Energy Regulatory Commission ("Commission") comments addressing the draft Environmental Impact Statement ("DEIS") prepared by the Commission for WIC's Piceance Basin Expansion Project.

Description of Proceeding

On January 24, 2005, WIC filed an application with the Commission, pursuant to Section 7(c) of the Natural Gas Act, requesting a certificate of public convenience and necessity to construct and operate its Piceance Basin Expansion Project consisting of approximately 141.7 miles of 24-inch diameter pipeline, a 1,650 site-rate horsepower compressor unit and metering facilities all located in Colorado and Wyoming. On February 2, 2005, the Commission issued its notice for the Piceance Basin Expansion Project and set an intervention deadline date of February 23, 2005.

Comments on DEIS

On April 29, 2005, the Commission issued a "Notice of Availability of the Draft Environmental Impact Statement for the Piceance Basin Expansion Project." In its notice, the Commission set a deadline for the submission of public comments of June 20, 2005. Attached hereto, WIC is submitting its comments on the DEIS.

Filing Information

WIC has organized the items being filed herein pursuant to the Commission's Critical Energy Infrastructure Information ("CEII") filing guidelines. Tabs 1 through 9 and 11 contain public information. However, Tabs 10 and 12 contain Non-Internet Public Information. WIC respectfully requests that the items being submitted under Tabs 10 and 12 not be placed on the internet.

Wyoming Interstate
Two North Nevada Colorado Springs, CO 80903
PO Box 1087 Colorado Springs, CO 80944
tel 719.473.2300

Letter I-1 Continued

WIC is filing with the Commission's Secretary the original and seven (7) copies of the transmittal letter with all the attachments. WIC is providing two complete copies of this filing to the Office of Energy Projects ("OEP").

Respectfully submitted,

WYOMING INTERSTATE COMPANY, LTD.
By: CIG Gas Supply Company,
General Partner

By Richard Derryberry
Richard Derryberry
Director
Regulatory Affairs Department

c: Mr. Rich McGuire, OEP

Letter I-1 Continued

Certificate of Service

I hereby certify that I have this day caused a copy of the foregoing document to be served upon each person designated on the official service list compiled by the Commission's Secretary in this proceeding in accordance with the requirements of Section 385.2010 of the Federal Energy Regulatory Commission's Rules of Practice and Procedures.

Dated at Colorado Springs, Colorado as of this 20th day of June 2005.

Richard Derryberry

P.O. Box 1087
Colorado Springs, Colorado 80944
(719) 520-3782

Letter I-1 Continued

Wyoming Interstate Company, Ltd.
Comments to the Piceance Basin Expansion Project
Draft Environmental Impact Statement
In Docket No. CP05-54-000

I1-1

WIC's Response to DEIS Section 5.5, Recommendation #1:
WIC will follow the construction procedures and mitigation measures described in its application and supplemental filings and as identified in the Order. WIC will incorporate the applicable material into the Contract Documents. In the event that additional modifications to the approved procedures and mitigation measures are determined to be necessary at a later date, WIC will submit a request for the modifications in a filing to the Commission Secretary with justification relative to site-specific conditions and an explanation of how the proposed modification provides an equal or greater level of environmental protection than the original measure. WIC will not use the proposed modification until written approval is received from the Director of OEP. Modifications to the construction plan that are approved will be conveyed to the Contractor by changes to drawings, specifications, or other contract documents prior to the implementation of the modified plan.

I1-2

WIC's Response to DEIS Section 5.5, Recommendation #2:
WIC recognizes that the Director of OEP has delegation authority to take whatever steps are necessary to ensure the protection of all environmental resources during construction and operation of this project. WIC acknowledges that the Director's authority shall allow the modification of conditions of this Order. WIC further acknowledges that the Director's authority shall allow for the design and implementation of any additional measures deemed necessary (including stop work authority) to assure continued compliance with the intent of the environmental conditions as well as the avoidance or mitigation of adverse environmental impact resulting from project construction and operation. WIC will file with the Director of OEP for any proposed modifications to the mitigation measures contained in the Order in this docket.

I1-3

WIC's Response to DEIS Section 5.5, Recommendation #3:
WIC agrees to this condition and will file an Affirmative Statement after the Commission issuance of a Certificate of Public Convenience and Necessity and the acceptance of such certificate by WIC. WIC will file the Affirmative Statement when it files its Implementation Plan.

I1-4

WIC's Response to DEIS Section 5.5, Recommendation #4:
WIC agrees to this condition. WIC will seek permission in writing from the Director of OEP for any future modifications to environmental conditions or site-specific clearances, referencing locations designated on the filed alignment sheets.

Furthermore, WIC acknowledges that exercise of eminent domain authority granted under Section 7(h) of the NGA in any condemnation proceedings related to the Order in this proceeding must be consistent with the authorized facilities and locations. WIC also understands that its right of eminent domain granted under NGA Section 7(h) does not authorize it to increase the size of its natural gas pipeline to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

-1-

Responses to Letter I-1

I1-1 **Wyoming Interstate Company, Ltd.** **FERC Recommendation 1: Construction procedures, mitigation measures, and requests for modifications**

Comment noted.

I1-2 **Wyoming Interstate Company, Ltd.** **FERC Recommendation 2: Delegation authority of the Director of the Office of Energy Projects**

Comment noted.

I1-3 **Wyoming Interstate Company, Ltd.** **FERC Recommendation 3: Filing of Affirmative Statement prior to construction**

Comment noted.

I1-4 **Wyoming Interstate Company, Ltd.** **FERC Recommendation 4: Filing revisions to survey alignment maps/sheets and exercising WIC's right of eminent domain authority**

Comment noted.

Letter I-1 Continued

Wyoming Interstate Company, Ltd.
Comments to the Piceance Basin Expansion Project
Draft Environmental Impact Statement
In Docket No. CP05-54-000

I1-5

WIC's Response to DEIS Section 5.5, Recommendation #5:
WIC agrees to file with the Secretary the specified detailed aerial photo alignment sheets identifying all future route realignments or facility relocations and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and that have not been previously identified. Accordingly, WIC is providing herein under Tab 10 updated Piceance Basin Expansion Project aerial alignment sheets that show the current route and includes any alignment rerouting WIC has identified thus far. Additionally, WIC is providing herein under Tab 11 updated typical drawings showing workspaces and/or construction techniques related WIC's Piceance Basin Expansion Project.

WIC understands that approval for each of these areas must be explicitly requested in writing, and for each area, the request must include a description of the existing land use/cover type and documentation of landowner approval, whether any cultural resources or federally-listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. WIC also acknowledges that each area shall be approved in writing by the Director of OEP before construction in or near that area may begin unless it applies to minor field realignments to accommodate landowner needs and requirements that do not affect other landowners or sensitive environmental areas such as wetlands. WIC shall obtain all appropriate clearances aside from the Commission prior to implementation of minor field realignments.

I1-6

WIC's Response to DEIS Section 5.5, Recommendation #6:
WIC agrees to file with the Commission an initial Implementation Plan for review and written approval by the Director of OEP describing how WIC will implement the mitigation measures described in the final Commission Order issued for this project. Furthermore, WIC will file revisions to the plan as schedules change. Note that the initial implementation will identify and address items 6.a through 6.g of this condition.

I1-7

With regard to the number of EIs to be used per spread, WIC proposes to assign three EIs to each construction spread along with a Project Lead EI over both spreads. The Project Lead EI along with Lead EIs for each construction spread will arrive approximately two weeks prior to the start of construction. A second EI for each spread will arrive immediately prior to environmental training for the contractor and for the other inspection staff. Finally, as construction activities ramp up, a third EI will be added for each spread, approximately two weeks after construction is started. Similarly, as tie-in crews complete their tasks, the third EI for each spread will be released. When the pipeline is placed in-service, the second EIs will be released. Finally, once clean up is complete, immediate reclamation activities are complete and a punch list of environmental items is complete, the Lead EIs for each spread, and the Project Lead EI will be released. Should there be persistent or redundant instances of environmental non-compliance, WIC will review staff requirements and add additional EIs as needed. This environmental inspection plan has been

-2-

Responses to Letter I-1

I1-5 Wyoming Interstate Company, Ltd. **FERC Recommendation 5: Filing details and obtaining approval for revisions to alignment maps/sheets**

Comment noted.

I1-6 Wyoming Interstate Company, Ltd. **FERC Recommendation 6: Filing details for initial Implementation Plan and its revisions**

Comment noted.

I1-7 Wyoming Interstate Company, Ltd. **FERC Recommendation 6: Staffing of Environmental Inspectors**

Comment noted.

Letter I-1 Continued

Wyoming Interstate Company, Ltd.
Comments to the Piceance Basin Expansion Project
Draft Environmental Impact Statement
In Docket No. CP05-54-000

I1-7 incorporated into WIC's Upland Erosion Control, Revegetation, and Maintenance Plan, a copy of which is attached hereto.

I1-8 Insofar as environmental training related to this project, such training will be developed upon issuance of the Order by the Commission and presented to both the construction contractor staff and inspection staff approximately one week prior to construction. WIC will advise OEP staff of training sessions and their locations at least one week prior to the sessions. In addition, WIC will provide a copy of the training program to OEP staff.

I1-9 **WIC's Response to DEIS Section 5.5, Recommendation #7:**
WIC agrees to this condition. The team of EIs will be responsible and empowered as described in this environmental condition. Further, WIC will include the environmental conditions outlined in the final Environmental Impact Statement and the Order Issuing Certificate for this project in the Environmental Construction Plan to be provided to the environmental inspectors and WIC's construction contractors. This requirement has been incorporated into WIC's Upland Erosion Control, Revegetation, and Maintenance Plan ("Plan"), Section II (POD Appendix L). A revised version of the Plan is provided herein under Tab 1.

I1-10 **WIC's Response to DEIS Section 5.5, Recommendation #8:**
Environmental status reports, containing the specified information, will be prepared by the head Environmental Inspector and filed with the Commission Secretary by WIC on a weekly basis. Reports will continue until all construction-related activities, including restoration and initial permanent seeding are complete. These status reports will be provided to other appropriate state and Federal agencies upon request. This requirement has been incorporated into WIC's Plan, Section II (POD Appendix L). A revised version of the Plan is provided herein under Tab 1.

I1-11 **WIC's Response to DEIS Section 5.5, Recommendation #9:**
WIC acknowledges that it must receive written authorization from the Director of OEP before commencing service on the project. Upon completion of construction, WIC will file with the Commission Secretary sufficient information to show that rehabilitation and restoration of the construction right-of-way is proceeding satisfactorily and a request for authority to place the facilities into service.

I1-12 **WIC's Response to DEIS Section 5.5, Recommendation #10:**
Within 30 days of placing the certificated facilities into service, WIC will file an affirmative statement with the Secretary, certified by a senior company official, describing WIC's performance in complying with the conditions of the certificate.

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I1-8 Wyoming Interstate Company, Ltd. **FERC Recommendation 6: Environmental training for construction and environmental staff**

Comment noted.

I1-9 Wyoming Interstate Company, Ltd. **FERC Recommendation 7: Responsibilities and empowerment of EIs**

Comment noted.

I1-10 Wyoming Interstate Company, Ltd. **FERC Recommendation 8: Filing details for weekly status reports**

Comment noted.

I1-11 Wyoming Interstate Company, Ltd. **FERC Recommendation 9: Obtaining authorization prior to commencing service**

Comment noted.

I1-12 Wyoming Interstate Company, Ltd. **FERC Recommendation 10: Filing an Affirmative Statement within 30 days of commencing service**

Comment noted.

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WIC's Response to DEIS Section 5.5, Recommendation #11:

I1-13

a. WIC has been offered proposed easement agreements from the CDOW to construct and operate the WIC Piceance Pipeline across CDOW lands. Copies of these agreements are being provided herein under Tab 2. These agreements exclude construction during the Big Game Hunting Season on CDOW lands in Moffat County (M.P. 89.2 to M.P 91.89) from October 15 through November 21, 2005. These agreements allow construction activities to take place on CDOW lands between November 22 and December 31, 2005 in Moffat County and from April 15th to December 31, 2005 in Rio Blanco County. WIC has scheduled its pipeline construction activities around these windows and the construction exclusion windows associated with the Crucial/Critical Big Game Habitats listed in Table 3.5-2, Pg. 3-51 in the DEIS.

WIC has scheduled its southern construction spread (Spread 1) to commence construction at the Yampa River (M.P. 87.6) and to proceed north to the spread break (M.P. 75.6). Spread 1 would also start construction simultaneously at Greasewood Compressor station (M.P. 141.7) and work north, completing the critical segment between M.P. 126.0 and M.P.141.7 before December 1, 2005. Currently, WIC is in the process of requesting an exemption from the BLM to extend the construction window to December 31, 2005 on the following six (6) short segments of pipeline located on BLM land in the vicinity of the Bitterbrush Wildlife Area:

M.P. 88.9 to M.P. 89.2
M.P. 94.67 to M.P.94.73
M.P. 94.9 to M.P. 95.2
M.P. 96.3 to M.P. 96.8
M.P. 98.06 to M.P. 98.1
M.P. 98.5 to M.P.99.0.

However, if an exemption cannot be obtained, this segment will be constructed by a separate crew before December 1, 2005.

Spread 2 will commence construction at M.P. 75.6 and work north. Construction located in crucial habitat between M.P. 47.5 to M.P. 51.9 will be completed before November 15, 2005. In order to eliminate the need for a test manifold at M.P. 50, WIC has added a hydrostatic test section at this location. WIC is also requesting an exemption from the BLM to extend the construction window to December 31, 2005 through the critical habitat area located between M.P. 0.0 to M.P. 3.1 and from M.P. 47.5 to M.P. 51.9. However, if an exemption cannot be obtained, these segments will be constructed by a separate crew before November 15, 2005.

I1-14

b. WIC proposes to utilize a 15-foot strip adjacent to the working side of the construction ROW for snow storage. (See Plan 2A thru 2E, Appendix A-4 in the POD). WIC's

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Responses to Letter I-1

I1-13 Wyoming Interstate Company, Ltd. FERC Recommendation 11a: Winter construction plan for big game habitat

See response to comment S2-3. WIC's proposed construction schedule in big game winter range is included in section 3.5.2.

I1-14 Wyoming Interstate Company, Ltd. FERC Recommendation 11b: Winter construction plan for soil management

See response to comment F1-3.

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I1-14

construction contractors are proposing two techniques for mitigating frozen spoil. The first technique would involve waiting until the pipe is welded before digging the ditch and then putting the pipe in the ditch and backfilling before the spoil has a chance to freeze. The second technique would be to use selective backfilling methods. In the early winter, the frozen soil will be limited to a shallow crust layer on the spoil and topsoil. The unfrozen material would be installed in the trench first with any frozen material then placed on top.

Nonetheless, WIC intends to closely monitor rutting conditions during construction. In areas where rutting or mixing of the topsoil becomes a problem, WIC proposes to topsoil the top 4-inches of the ditch and working side of the ROW. WIC recognizes that frozen soils resulting from an early winter could preclude immediate final cleanup and restoration. In this case, temporary erosion control measures would remain in place over winter. Some settling of the ditch can be expected (even with summer construction). WIC plans to correct any subsidence and perform any remaining final clean up and restoration at an appropriate time in the following spring or summer.

I1-15

c. WIC proposes to follow FERC's Plan and Procedures wherever feasible. If the ground is not frozen, WIC proposes to perform final cleanup and restoration, including the application of mulch, crimping and seeding where appropriate. If the ground is frozen, the temporary construction erosion control measures (i.e., temporary water bars, hay bales, silt fencing, etc.) will remain in place over winter. Any remaining final clean up and restoration will be performed at an appropriate time in the following spring/or summer. Such timing will be appropriate with any applicable environmental windows.

I1-16

d. WIC's proposed access roads are identified on the topographic maps and alignment sheets that have been already submitted to the Commission. WIC has worked with the various county road departments to facilitate pre-treating the major county roads prior to construction. Snow removal on county roads will be performed either by the counties or by the construction contractors in conjunction with the counties. Snow removal on private and BLM roads, if required, will be accomplished by grading or dumping the snow in a 15-foot strip along the edge of the road with permission from the BLM or landowner. Access roads will be maintained by the contractor during construction and restored after construction. If isolated spots become rutted, these areas will be repaired during construction by application of gravel or by use of wooden mats. If the roads are too wet, the road will not be used until it dries enough to allow passage without rutting.

I1-17

e. **Treatment of Cultural Resources Discovered Under Winter Conditions**
It is expected that significant cultural resources will be discovered under winter conditions because of the construction schedule. The treatment and monitoring plan for the project is designed to minimize winter conditions discoveries. The aspects of this program include:

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I1-15 Wyoming Interstate Company, Ltd. — FERC Recommendation 11c: Winter construction plan for erosion control

See response to comment F1-3.

I1-16 Wyoming Interstate Company, Ltd. — FERC Recommendation 11d: Winter construction plan for access roads

See response to comment F1-3.

I1-17 Wyoming Interstate Company, Ltd. — FERC Recommendation 11e: Winter construction plan for cultural resources

The acceptability of WIC's plan is currently under review.

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I1-17

1. The project treatment plan predicts the discovery of significant sites in the open trench during construction and provides for post-construction data recovery during the summer of 2006. Actual fieldwork at open trench discoveries will be short-term and limited in scope.

2. Site selection for pre-construction treatment is focused on sites with known shallow cultural materials. Treatment of these sites will occur in the fall prior to winter conditions.

3. Construction on Spread 1 will begin in the most sensitive area for site discoveries (north of Yampa River) in the fall of 2005 and will be completed prior to onset of harsh winter conditions. This has two benefits. First, discoveries that might occur in this area will occur before the onset of harsh winter conditions. And, second, construction will be completed through this big game critical winter range before such conditions as well.

4. Construction skips are planned for the locations of sites undergoing treatment, and a procedure for utilizing CIG's Uinta Basin Lateral right-of-way for construction equipment pass-through at cultural resource discovery skips will be implemented during construction, including installation of temporary fencing and constant monitoring of pass through activities by an assigned monitor. This will allow archaeological crews time to evaluate discoveries, perhaps with the aid of temporary shelters, without significant delays to construction.

5. In anticipation of the need to work in adverse winter weather, archaeological crews will be supplied with materials to construct temporary shelters, or with pre-fabricated shelters or tents depending on the discovery situation. Supplies on hand during construction will include shelters and shelter materials, propane heaters, electric generators, and lights to assist with work in poor-light conditions.

6. Archaeological monitors will have the authority to temporarily halt construction in sensitive areas where monitoring stipulations are in place if weather conditions preclude adequate visibility of freshly exposed sediments. This could occur during heavy snowfall or blizzard conditions, during periods of extreme cold or wind, and very early or late in the day from mid-November thru mid-January.

I1-18 **WIC's Response to DEIS Section 5.5, Recommendation #12:**
WIC agrees to this condition. This requirement has been incorporated into WIC's Plan, Section VII (POD Appendix L). A revised version of the Plan is provided herein under Tab 1.

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I1-18 Wyoming Interstate Company, Ltd. FERC Recommendation 12: Renewal of site restoration treatments and ongoing maintenance

Text in section 3.2 has been modified to indicate WIC's proposed approach as agreed upon and reflected in their revised Plan. The referenced material was filed with the Commission's Secretary on June 20, 2005 and is available for viewing on the FERC Internet website (http://www.ferc.gov). Using the "eLibrary" link, perform a general search using Docket No. CP05-54-000 and the material filing date.

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I1-19 **WIC's Response to DEIS Section 5.5, Recommendation #13:**
WIC agrees to this condition. WIC agrees that its EIs will monitor this condition in any case where topsoil becomes powdered or pulverized to a depth of 2 inches on BLM-managed lands and, if, in these circumstances topsoil is becoming mixed with subsoil and root base of vegetation is not being retained, WIC will then strip topsoil from both the ditch line and the working side and replace topsoil in the impacted areas, after the subsoil is replaced. This requirement has been incorporated into WIC's Plan, Section IV.B. (POD Appendix L). A revised version of the Plan is provided herein under Tab 1.

I1-20 **WIC's Response to DEIS Section 5.5, Recommendation #14:**
WIC agrees with this condition. WIC completed surveys for populations of noxious and invasive weeds along the pipeline route during the week of June 6, 2005. Based on the survey results and consultations with the BLM Field Offices and the affected counties, WIC will file with the Commission a revised Noxious and Invasive Weed Plan on or before July 15, 2005.

I1-21 **WIC's Response to DEIS Section 5.5, Recommendation #15:**
WIC agrees to this condition. Attached herein under Tab 3, WIC is providing a sample landowner letter describing this procedure that will be mailed out to each affected landowner following issuance by the Commission and acceptance by the Company of a Certificate of Public Convenience and Necessity. Weekly status reports will contain the specified information on each problem or concern identified by landowners during the reporting period.

Additionally, WIC is providing herein under Tab 3 an updated list of landowners affected by the Piceance Basin Expansion Project.

WIC's Response to DEIS Section 5.5, Recommendation #16:

I1-22 a. WIC agrees to this condition.

I1-23 b. WIC has moved the location of its proposed line so that there are no known structures, springs, or water supply wells within 150 feet of the line. Aerial alignment Sheet 233A-56 which is being provided as part of Tab 10 herein shows a reroute that WIC is proposing in order to avoid a spring located in that area. WIC notes that when CIG constructed its Uintah Basin Lateral pipeline in 1992 there were no impacts to known structures, springs, or water supply wells. However, should any unknown structures, springs, or water supply wells be discovered within 150 feet of the line, WIC agrees with this condition.

I1-24 c. There are no known water supply wells within 150 feet of WIC's proposed route. However, should any water supply wells be discovered, WIC agrees to this provision.

I1-25 d. WIC agrees to this condition.

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Responses to Letter I-1

I1-19 Wyoming Interstate Company, Ltd. — FERC Recommendation 13: Protection against topsoil loss

Text in section 3.2 has been modified to indicate WIC's proposed approach as agreed upon and reflected in their revised Plan. The referenced material was filed with the Commission's Secretary on June 20, 2005 and is available for viewing on the FERC Internet website (http://www.ferc.gov). Using the "eLibrary" link, perform a general search using Docket No. CP05-54-000 and the material filing date.

I1-20 Wyoming Interstate Company, Ltd. — FERC Recommendation 14: Revised Noxious and Invasive Weed Plan

The referenced material was filed with the Commission's Secretary on June 20, 2005 and is available for viewing on the FERC Internet website (http://www.ferc.gov). Using the "eLibrary" link, perform a general search using Docket No. CP05-54-000 and the material filing date. It can also be found as appendix G and in Chapters 3 and 5 in the EIS. Section 3.2 has been modified to reflect updates to WIC's revised Noxious and Invasive Weed Plan.

I1-21 Wyoming Interstate Company, Ltd. — FERC Recommendation 15: Addressing landowner concerns

Comment noted. The referenced material was filed with the Commission's Secretary on June 20, 2005 and is available for viewing on the FERC Internet website (http://www.ferc.gov). Using the "eLibrary" link, perform a general search using Docket No. CP05-54-000 and the material filing date. It can also be found in Chapter 5 of the EIS.

I1-22 Wyoming Interstate Company, Ltd. — FERC Recommendation 16a: Revised Blasting Plan

Text in section 3.3.1 has been modified to address the comment.

I1-23 Wyoming Interstate Company, Ltd. — FERC Recommendation 16b: Monitoring of ground vibrations during blasting activities

Text in section 3.3.1 has been modified to address the comment.

I1-24 Wyoming Interstate Company, Ltd. — FERC Recommendation 16c: Providing alternate sources of water where necessary due to blasting

Text in section 3.3.1 has been modified to address the comment.

I1-25 Wyoming Interstate Company, Ltd. — FERC Recommendation 16d: Coordination of blasting with other pipeline operator(s)

Text in section 3.3.1 has been modified to address the comment.

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I1-26 e. WIC agrees to this condition.

I1-27 **WIC's Response to DEIS Section 5.5, Recommendation #17:**
A bank stabilization plan was included in Plan 2F and Plan 8 that were part of WIC's environmental resource reports. A bank stabilization plan was also included in the BLM Plan of Development that was included Appendix 4, Report 1 of WIC's environmental resource reports.

I1-28 **WIC's Response to DEIS Section 5.5, Recommendation #18:**
WIC estimates that approximately 100,000 Gallons (0.31 Acre-Ft) would be required at each of the HDD river crossings. In regards to the possibility of a frac-out during the HDD Process, WIC is requiring a minimum cover in the rivers of 15 feet to minimize the chance of a frac-out. WIC has provided in the Site Specific Notes for the three Rivers (Drawings 233A-22A-1, -37A-1 and -53A-1) procedures to mitigate impacts of any potential frac-out as follows:

If a frac-out occurs in the river:
(A) Drilling will cease immediately.
(B) Contractor shall have containment booms or similar containment device available to contain drilling mud in the river.
(C) Contractor shall attempt to remove as much of the drilling mud as practical from the river bottom by suction hose or other devices.
(D) Contractor may attempt to resume drill with an alternate mud viscosity.
(E) If a frac-out cannot be stopped by changing the drilling fluid, a new pilot hole may be drilled at a deeper depth.
(F) Open cutting of the river will only be proposed if all attempts at drilling fail. Open cutting requires prior approval of the FERC, the FWS and other permitting agencies.

In addition, WIC will require a monitor on site to specifically look for any indication of a frac-out in the river as evidenced by drilling mud or increased siltation during the time that drilling activity is taking place under the river bottom. Should a frac-out occur, WIC will immediately notify the FERC Environmental Monitor and the FWS office. Additional drilling activity shall not resume without their concurrence.

I1-29 **WIC's Response to DEIS Section 5.5, Recommendation #19:**
The 50 feet restriction is acceptable for the horizontal directional drilling ("HDD") installation technique. WIC does not anticipate asking for additional work space within 50 feet of the river banks unless a frac-out occurs. In the event frac-out, additional work space within 10 (ten) feet of the bank may be required to convey material from the river directly onto upland soils or to facilitate cleanup with vacuum equipment.

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I1-26 Wyoming Interstate Company, Ltd. — FERC Recommendation 16e: Reporting of damaged water supply wells/systems

Text in section 3.3.1 has been modified to address the comment.

I1-27 Wyoming Interstate Company, Ltd. — FERC Recommendation 17: Bank Stabilization Plan

WIC's proposed approaches for bank stabilization have been reviewed and EIS text in section 3.3.2 has been revised to reflect the FERC's position on this issue.

I1-28 Wyoming Interstate Company, Ltd. — FERC Recommendation 18: Volume and source of water for horizontal directional drilling (HDD)

Text in section 3.3.2 has been modified to address the comment.

I1-29 Wyoming Interstate Company, Ltd. — FERC Recommendation 19: Site-specific construction plans for extra workspace within 50 feet of water's edge

Text in section 3.3.2 has been modified to address the comment.

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I1-30 **WIC's Response to DEIS Section 5.5, Recommendation #20:**
WIC agrees with this condition. However, because of physical terrain restraints between Milepost 100 and 101, it may not be practical to move the equipment more than 100 feet from the upper edge of the stream terrace. In this area WIC proposes to build temporary containment around the equipment if necessary to park the equipment overnight subject to approval by the Commission. This requirement has been incorporated into WIC's Wetland and Waterbody Construction and Mitigation Procedures ("Procedures"), Section IV (POD Appendix K). A revised version of the Procedures is provided herein under Tab 4.

WIC's Response to DEIS Section 5.5, Recommendation #21:
WIC agrees with this condition. Attached herein under Tab 5, WIC is providing a revised hydrostatic test plan.

I1-31 a. The proposed withdrawal and discharge locations are shown on the revised alignment sheets being provided herein under Tab 10. The locations are shown on a photo band at a scale of 1"= 500 FT. (1:6000).

I1-32 b. WIC's discharge locations will avoid all known cultural resource sites. Metcalf Archaeological Consultants ("MAC"), WIC's archaeological consultant, has reviewed all of the proposed sites and confirms that this is the case. One site is located approximately ¼ to ½ mile north of the Overland Trail. However, a site review indicates that water at this discharge location will flow away from the trail and should have no effect on the physical location of the trail, nor should the discharge location have an impact on the visual aspects of the trail. Two other sites are located near the proposed discharge locations near the White and Yampa Rivers. However, these discharge locations will be situated away from the actual cultural sites and will be situated to avoid any discharge flows across the sites. MAC staff on site during the discharge preparation will assure that these sites are avoided.

I1-33 c. WIC does not anticipate withdrawals greater than 5% of the surface for any of the proposed water sources. The monthly mean streamflow in the Little Snake River during October and November which is approximately 51,000 to 54,000 GPM appears to be sufficient. WIC's maximum withdrawal rate will be 2,500 GPM. WIC can reduce the withdrawal rate depending on the streamflow conditions at the time. However, this rate will be less than 5% of the monthly mean streamflow. As a secondary precaution, WIC has moved the starting point of its southern spread to the Yampa River. This will allow the Yampa River to serve as an alternative water source in the event that the streamflow in the Little Snake River is insufficient.

I1-34 d. WIC's pumps will be sized and monitored to control the rate of water withdrawal. Additionally, WIC will install intake screens to minimize the chance of impingement and entrainment of larval life-stages of native fish. The transport of larval fishes is usually

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I1-30 Wyoming Interstate Company, Ltd. — FERC Recommendation 20: Protection of Spring Creek and Deception Creek from potential spills

Text in section 3.3.2 has been modified to address the comment to reflect the FERC's position on this issue.

I1-31 Wyoming Interstate Company, Ltd. — FERC Recommendation 21a: Hydrostatic Test Plan – withdrawal and discharge locations

Text in section 3.3.2 has been modified to address the comment.

I1-32 Wyoming Interstate Company, Ltd. — FERC Recommendation 21b: Hydrostatic Test Plan – discharge locations and cultural resource sites

Thank you for this information.

I1-33 Wyoming Interstate Company, Ltd. — FERC Recommendation 21c: Hydrostatic Test Plan – rate of water withdrawal

Text in section 3.3.2 has been modified to address the comment.

I1-34 Wyoming Interstate Company, Ltd. — FERC Recommendation 21d: Hydrostatic Test Plan – water intake regulation devices

Text in section 3.3.2 has been modified to address the comment.

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I1-34 complete by September 15; nevertheless, the intake screens will protect those fishes that have not moved downstream.

I1-35 **WIC's Response to DEIS Section 5.5, Recommendation #22:**
WIC agrees to this condition. WIC has consulted with the Colorado State Engineer to receive preliminary approval for water withdrawal from the White, Yampa and Little Snake rivers. WIC is providing herein under Tab 6 a letter dated February 16, 2005 from the Colorado State Engineer regarding the availability of water for hydrostatic testing. WIC will further consult with the Colorado State Engineer to receive final approval for water withdrawal from the Little Snake River when the actual stream flow conditions are known in October 2005. WIC proposes to utilize the Yampa River as an alternative water source should flow in the Little Snake be insufficient at the time of construction.

I1-36 **WIC's Response to DEIS Section 5.5, Recommendation #23:**
WIC's construction plan and schedule is predicated on utilizing the fill pumps located at the water sources to completely fill the pipeline's 18 test sections. Compressed air will be used to allow each hydrostatic test section to be dewatered, dried and tied in as soon as possible after the hydrostatic test. This is particularly important during a winter construction timeframe as any water remaining in the pipe is subject to freezing. Ice in the pipe can cause extensive damage to the valves and instrument piping and would have to be removed by chemical injection or by use of time consuming heating equipment. Because of the elevation extremes along the route, the length of the segments to be dewatered should be minimized to prevent air from bypassing the dewatering pigs and forming air pockets in the line. Air pockets between water segments can cause "air locks" effectively stopping the dewatering pigs until a greater pressure can be achieved. These pressurized air pockets are released violently, unpredictably and uncontrollably at the discharge point, often destroying the discharge piping. Because the test segments associated with the White River and Yampa River are relatively short, WIC is proposing to dewater into a hay bale structure away from the banks at the manifold sites at these rivers. The test segments associated with the Little Snake River are much longer and due to the location of the high and low points in the test segments are more practical to dewater in upland locations. However, WIC is requesting the flexibility to dewater at all the manifold locations as shown in the maps and drawings. Having the ability to discharge at the ends of each test segment provides flexibility during the dewatering process and limits the effects of air locks to one segment should they occur.

Dewatering into upland vegetation within the same drainage basin is a standard procedure for dewatering of pipelines. The discharge water has the opportunity to be filtered and is recovered into the drainage basin. It allows for construction activities on each segment to be completed as water is discharged from the segment. Conversely, dewatering directly into a stream has seldom been considered to be good practice. Even with new pipe, there will be some rust component in the discharge water that should be filtered before it is returned to the stream.

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I1-35 **Wyoming Interstate Company, Ltd.** — **FERC Recommendation 22: Consultation with regulatory agencies and state engineers on flow conditions and locations**

Text in section 3.3.2 has been modified to address the comment.

I1-36 **Wyoming Interstate Company, Ltd.** — **FERC Recommendation 23: Rationale for release of hydrostatic test water to upland areas**

Text in section 3.3.2 has been modified to address the comment and to reflect the FERC's position on this issue.

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I1-37 **WIC's Response to DEIS Section 5.5, Recommendation #24:**
WIC agrees to this condition. WIC will coordinate its water withdrawals from the Little Snake River with Entrega. However, WIC does not anticipate any conflict with withdrawals from the Little Snake River because WIC's construction schedule is somewhat different than the Entrega schedule.

I1-38 **WIC's Response to DEIS Section 5.5, Recommendation #25:**
WIC is not proposing to use tackifiers or chemical mixes for dust control.

I1-39 **WIC's Response to DEIS Section 5.5, Recommendation #26:**
WIC agrees to this condition.

I1-40 **WIC's Response to DEIS Section 5.5, Recommendation #27:**
WIC agrees to this condition in areas where wildlife, horses, and livestock are present. This requirement has been incorporated into WIC's Plan, Section IV.A. (POD Appendix L). A revised version of the Plan is provided herein under Tab 1.

I1-41 **WIC's Response to DEIS Section 5.5, Recommendation #28:**
WIC agrees to this condition. However, WIC would request clarification as to the specific species of concern and their status. WIC is not aware of any less mobile species in this area and expects EIs to remove animals from open trenches during construction. This requirement has been incorporated into WIC's Plan, Section IV.A. (POD Appendix L). A revised version of the Plan is provided herein under Tab 1.

I1-42 **WIC's Response to DEIS Section 5.5, Recommendation #29:**
WIC does not expect construction to extend into the raptor nesting season. However, WIC is concluding a raptor survey of the route in Wyoming and Colorado. These results will be forwarded to the FERC, FWS, BLM, WGFD and CDOW on or before July 15, 2005.

I1-43 **WIC's Response to DEIS Section 5.5, Recommendation #30:**
Survey for the Dudley Bluffs bladderpod and Dudley Bluffs (Piceance) twinpod were completed in 2004. The Rare Plant Report and an Addendum are attached under Tab 7 herein. The survey was conducted by Frank J. Smith and Dr. Robert Dorn. Mr. Smith is a field botanist with 25 years experience. He has discovered six species of forbs plus new subspecies and varieties. Dr. Dorn is the author of Vascular Plants of Wyoming with numerous new species to his credit including *Penstemon gibbensii* Dorn, one of the sensitive plants in Wyoming. How and when the survey was conducted is presented in the referenced report. All the species that were searched for are listed in the Appendix 2 tables and include the two threatened species mentioned above. Only the species found were reported.

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I1-37 **Wyoming Interstate Company, Ltd.** **FERC Recommendation 24: Coordination of water withdrawals from the Little Snake River**

Text in section 3.3.2 has been modified as part of a recommendation to revise the Hydrostatic Test Plan.

I1-38 **Wyoming Interstate Company, Ltd.** **FERC Recommendation 25: Use of tackifiers or chemical mixes for dust control**

The text has been modified to delete the reference to tackifiers, based on WIC's comment. Per WIC's input, the FERC understands that no tackifiers would be used on the project.

I1-39 **Wyoming Interstate Company, Ltd.** **FERC Recommendation 26: Filing details for Wetland Restoration Plan**

Text in section 3.3.3 has been modified to address the comment.

I1-40 **Wyoming Interstate Company, Ltd.** **FERC Recommendation 27: Earthen trench plugs with ramps**

WIC has committed to this condition in their revised Plan (appendix B of the EIS). Text in section 3.5.2 has been modified to address the comment.

I1-41 **Wyoming Interstate Company, Ltd.** **FERC Recommendation 28: Capping pipes to protect smaller, less mobile species**

Text in section 3.5.2 has been modified to address the comment.

I1-42 **Wyoming Interstate Company, Ltd.** **FERC Recommendation 29: Raptor nesting season concerns**

Our Recommendation would remain in the event that construction extends into the raptor nesting season.

I1-43 **Wyoming Interstate Company, Ltd.** **FERC Recommendation 30: Survey timing and protocols for Dudley Bluffs bladderpod and Dudley Bluffs twinpod**

Our Recommendation would remain, but the wording has been changed to clarify that a 2005 survey is required. Our Recommendation also now includes Ute ladies'-tresses. The referenced material was filed with the Commission's Secretary on June 20, 2005 and is available for viewing on the FERC Internet website (http://www.ferc.gov). Using the "eLibrary" link, perform a general search using Docket No. CP05-54-000 and the material filing date. It can also be found in Chapters 3 and 5 of the EIS.

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I1-44

WIC's Response to DEIS Section 5.5, Recommendation #31:
WIC agrees to this condition. As part of WIC's ongoing environmental surveying of the area affected by the Piceance Basin Expansion Project, WIC is submitting herein under Tab 8 additional biological surveys of: (i) debris milkvetch, (ii) white-tailed prairie dog and sage grouse; and (iii) pygmy rabbit. Note that since no rare plants on the Federal list have been found, the rare plant report and addendum being submitted under Tab 7 should be submitted to FWS as part of the Draft EIS/Biological Assessment. WIC understands that FERC staff will be conducting this consultation.

I1-45

WIC's Response to DEIS Section 5.5, Recommendation #32:
In April 2005, Dr. C. Val Grant, Bio-Resources, Inc., WIC's biological contractor, conducted a prairie dog survey of the route. Dr. Grant has 31 years experience working with white-tailed and black-tailed prairie dogs in the western United States, as well as what conditions are required to require a ferret search. A report will be forthcoming on or before July 15, 2005. Based on the preliminary results, WIC believes that this report will demonstrate that black-footed ferret surveys are not necessary. In the first 12 miles of the route (MP 0.0-12.0), numerous burrows identified by aerial photography prompted BLM biologists to suggest a ferret search is needed. However, during the survey, WIC's biological contractor determined these burrows generally were either abandoned or occupied by ground squirrels (*Spermophilus* spp.). A small colony south of the Wamsutter Compressor Station (MP 0.0) and a total of three individual white-tailed prairie dogs were all that were found in the 12 mile reach. The remaining towns along the proposed route are exempt from ferret searches based on a decision by the FWS to consider these towns as potential ferret introduction sites.

Furthermore, WIC agrees with the stipulation that it will not begin construction activities until WIC has received written notification from the Director of OEP that construction or use of mitigation may begin.

I1-46

WIC's Response to DEIS Section 5.5, Recommendation #33:
The one-mile radius around active bald eagle nests exceeds the restriction recommended by the FWS, as well as appropriate state wildlife management agencies. Since all three river crossings where such nests are likely to be found occur on private or state lands, WIC recommends that the radius for this condition be reduced to 0.5 miles. Otherwise, WIC agrees to this provision on BLM lands. Please note that surveys indicated all potential bald eagle nests are located on private lands. Further, all construction in these areas is expected to occur outside the time window described.

I1-47

WIC's Response to DEIS Section 5.5, Recommendation #34:
WIC agrees to this condition. However, WIC notes that the one-mile radius around active bald eagle nests exceeds the restriction recommended by the FWS, as well as respective state wildlife management agencies. Since all three river crossings where such nests are likely to be found occur on private or state lands, WIC recommends that the radius for this

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I1-44 Wyoming Interstate Company, Ltd. FERC Recommendation 31: Federally listed plant species

No change required (applicable if target plants found in 2005). The referenced material was filed with the Commission's Secretary on June 20, 2005 and is available for viewing on the FERC Internet website (http://www.ferc.gov). Using the "eLibrary" link, perform a general search using Docket No. CP05-54-000 and the material filing date. It can also be found in Chapters 3 and 5 of the EIS.

I1-45 Wyoming Interstate Company, Ltd. FERC Recommendation 32: Need for ferret surveys

See response to comment F1-7.

I1-46 Wyoming Interstate Company, Ltd. FERC Recommendation 33: Buffers around previously identified bald eagle nest

Text in section 3.6.2 has been modified to address the comment. As indicated in the Department of Interior letter (see comment letter F1, above, dated June 15, 2005), the FWS protection zones and timing restrictions would be implemented for bald eagle nests and roosts in Wyoming, and Colorado Division of Wildlife (CDOW) protection zones and timing restrictions would be implemented in Colorado.

I1-47 Wyoming Interstate Company, Ltd. FERC Recommendation 34: Encountering previously unidentified bald eagle nest

See response to comment I1-46.

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I1-47 condition be reduced to 0.5 miles. Note that all of the identified roosting sites along the proposed route occur on private or state lands.

I1-48 **WIC's Response to DEIS Section 5.5, Recommendation #35:**
WIC will monitor activity in any roost site found along the route. The most conspicuous roosts are located along the White River. Construction will likely be completed prior to eagle use of these areas. Also, as noted above, the area of concern, particularly along the White River, is on private or state land. WIC believes that the 0.5-mile spatial buffer standard set by CDOW and FWS should be used for such locations.

Nonetheless, WIC agrees not to begin construction until the Commission staff has reviewed the eagle roosting information, completed any necessary consultations with the FWS, and the Director of OEP notifies WIC in writing that construction or use of mitigation may begin

I1-49 **WIC's Response to DEIS Section 5.5, Recommendation #36:**
WIC agrees with this condition. WIC will not remove any roosting trees along its proposed route.

I1-50 **WIC's Response to DEIS Section 5.5, Recommendation #37:**
WIC agrees with this condition. WIC notes that it expects to construct its pipeline outside the nesting time frame for burrowing owls.

However, WIC questions the BLM rationale for establishing a .75-mile avoidance area for burrowing owl active nests. This criterion is not consistent with either the FWS or the CDOW which require only a .75-mile avoidance area. WIC's experience with burrowing owl active nests on previous pipeline projects has been that the .75-mile avoidance is effective. WIC's experience has been that in no case have burrowing owl nesting pairs abandoned their nests and in all cases the nests were occupied until the young fledged.

I1-51 **WIC's Response to DEIS Section 5.5, Recommendation #38:**
WIC agrees with this condition. WIC notes it will not begin activity near a sage grouse lek until October, 2005 and does not anticipate any construction occurring in those areas between March 1 and June 30.

I1-52 **WIC's Response to DEIS Section 5.5, Recommendation #39:**
WIC agrees with this condition. WIC notes that it will not begin activity when mountain plovers are nesting or raising their young and does not anticipate any construction occurring in those areas between April 10 and July 10.

I1-48 Wyoming Interstate Company, Ltd. FERC Recommendation 35: Monitoring roost sites for bald eagles

The recommendation has been revised in order to clarify bald eagle roost restrictions and agency coordination requirements according to the Department of Interior letter dated June 15, 2005. Therefore, WIC's commitments do not correspond to the current recommendation.

I1-49 Wyoming Interstate Company, Ltd. FERC Recommendation 36: Roosting trees for bald eagles

Text in section 3.6.2 has been modified to address this comment.

I1-50 Wyoming Interstate Company, Ltd. FERC Recommendation 37: Potential impacts on burrowing owls

Protection zones for burrowing owl include 0.5-mile in Wyoming and 75-yards in Colorado. Text in section 3.6.2 has been modified to address this comment.

I1-51 Wyoming Interstate Company, Ltd. FERC Recommendation 38: Potential impacts on sage grouse

Text in section 3.6.2 has been modified to address this comment.

I1-52 Wyoming Interstate Company, Ltd. FERC Recommendation 39: Potential impacts on mountain plover

Text in section 3.6.2 has been modified to address this comment.

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I1-53 **WIC's Response to DEIS Section 5.5, Recommendation #40:**
WIC agrees with condition. Based on an October 2005 construction start date, activity by the Great Basin spadefoot, northern leopard frog and midget-faded rattlesnake is highly unlikely during this time.

I1-54 **WIC's Response to DEIS Section 5.5, Recommendation #41:**
WIC agrees to this condition. This requirement has been incorporated into WIC's Procedures, Section V.B.6.d. (POD Appendix L). A revised version of the Procedures is provided under Tab 4 herein.

I1-55 **WIC's Response to DEIS Section 5.5, Recommendation #42:**
WIC agrees to this condition. Additionally, to assist the Commission's review of the project's effects on cultural resources, WIC is providing herein under Tab 9 updates to its March 7, 2005 responses to the March 3, 2005 Office of Energy Projects' data request that addressed cultural resources.

I1-56 **WIC's Response to DEIS Section 5.5, Recommendation #43:**
WIC's construction contractors have been consulted and are aware of the housing shortage issue. Both contractors believe that the workers can be accommodated with existing or upgraded housing in the area and that a man camp will not be required. Both companies are actively securing housing locations for the workforce from private individuals at this time. Additionally, both of the contractors have received permission from the unions to allow workers to commute from 50 to 75 miles to the warehouse location.

WIC's Spread 1 (Southern Spread) contractor will be setting up a warehouse in Meeker. There are several old closed camp grounds and trailer parks in the area that the contractor is trying to assist with reopening. Some of the smaller campgrounds require the addition of sewage facilities. In this case the contractor is paying to have holding tanks installed and for a regular pumping service.

WIC's Spread 2 (Northern Spread) contractor will be setting up a warehouse in the Wamsutter Area and for a short time in Craig. Workers who do not stay in Wamsutter can stay in either Rawlins or Rock Springs. While construction is taking place in the Craig Area, workers can stay in Craig, Maybell or Hayden.

I1-57 **WIC's Response to DEIS Section 5.5, Recommendation #44:**
WIC agrees to this condition.

I1-58 **WIC's Response to DEIS Section 5.5, Recommendation #45:**
WIC requests that a 40-foot separation be allowed for both construction and pipeline operating reasons. Presently, WIC's nominal 85-foot wide construction right-of-way is configured to allow a south to north construction progress with a 35-foot area for placement

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I1-53 **Wyoming Interstate Company, Ltd.** — **FERC Recommendation 40: Potential impacts on the Great Basin spadefood, northern leopard frog, and midget faded rattlesnake**

Text in section 3.6.2 has been modified to address this comment.

I1-54 **Wyoming Interstate Company, Ltd.** — **FERC Recommendation 41: Crossing the Yampa and White Rivers**

Text in section 3.6.3 has been modified to address WIC's comment to file a site-specific alternate crossing plan for a non-HDD crossing of the Yampa and White Rivers.

I1-55 **Wyoming Interstate Company, Ltd.** — **FERC Recommendation 42: Filing details regarding cultural resources**

The information in tab 9 is currently under review for adequacy and acceptability.

I1-56 **Wyoming Interstate Company, Ltd.** — **FERC Recommendation 43: Accommodating construction workforce**

Text in section 3.9 has been modified to address the comment. Only the actions of WIC's construction contractor to help reopen closed facilities is a committed measure that actively addresses supply. The remainder of WIC's response simply acknowledges the tight housing conditions and the statements in the EIS regarding workers potentially having to commute longer distances.

I1-57 **Wyoming Interstate Company, Ltd.** — **FERC Recommendation 44: Noise impacts at the Greasewood Compressor Station**

Text in section 3.10.2 has been modified to address the comment.

I1-58 **Wyoming Interstate Company, Ltd.** — **FERC Recommendation 45: Offset reduction in sagebrush habitat adjacent to other existing pipelines**

Text in section 3.12.1 has been modified to address the comment.

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of topsoil and spoil on the west side of the pipeline centerline. The proposed pipeline centerline is offset from the existing high pressure gas pipelines by a nominal distance of 50 feet. This would have allowed for a 15-foot buffer between the construction ROW and the in-service pipelines. Any grading activity near a high pressure gas pipeline is extremely dangerous and could easily result in damage to the line or a pipeline rupture. Although pipelines appear to be straight on drawings, in reality the location often varies somewhat from side to side and are very difficult to locate in the field. For this reason, pipeline operating companies will not allow mechanical grading within 5 feet of existing pipelines. With a 35-foot offset, this grading restriction would reduce the usable portion of the spoil side of the ROW by approximately 6 feet (5 feet plus half the width of the existing pipe). The spoil side of the ROW would be insufficient for a 24-inch pipeline and for placement of separated topsoil on the spoil side. In addition, a 35-foot offset does not allow for additional workspace areas to be located on the spoil side of the ROW and forces the entire new disturbance to the working side of the ROW.

WIC is proposing to construct its line in winter conditions and, at the same time, avoid critical big game habitat windows. Grading restrictions and reduced workspace will slow construction progress. Moving the alignment in and out from 35 feet to 50 feet will require 280 additional side bends and tie-ins for the transitions. The ditch line could not be dug with ditching machines in these areas but would rather require track hoe equipment. Assuming that four tie-ins could be made in one day, it would take a separate construction crew 70 days just to complete the tie-ins.

From an operational standpoint, it is prudent practice to locate pipelines in a consistent location with respect to other pipelines, to the extent possible. One of the greatest risks to pipelines is damage from outside sources. Side bend in pipelines are very difficult to locate accurately once the pipeline is buried. An equipment operator digging in a safe location could easily dig into the line assuming that the offset is the same a few feet away. This possibility is greatly reduced if the offset does not change.

However, in keeping with the desire to reduce new disturbance, WIC is proposing to reduce the offset distance to 40 feet where feasible. A 40-foot offset will allow at least some grading of the spoil side of the construction ROW while maintaining a 5 feet separation from the existing high pressure natural gas pipeline. The new line could then be installed, keeping a consistent location in respect to the existing line.

In light of the proposed 40 feet offset, WIC has reexamined its route in the referenced area. The attached table details areas where a 40 feet offset is not feasible due to grading requirements or avoidance issues. Assuming favorable approval of this request, WIC will locate its line within 40 feet of the closest parallel pipeline in all other areas.

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WIC's Response to DEIS Section 5.5, Recommendation #46:
WIC has further considered the possibility of revising its route to follow the Uinta Basin Lateral line from Greasewood Station to approximately MP 105.1. However, this route has several drawbacks when compared to WIC's preferred route. As described in the DEIS, WIC will refer to its Preferred Route, to Alternative A and to Alternative B. Alternative A would follow the Uinta Basin Lateral route throughout its course and Alternative B would follow another existing pipeline to the Entrega Pipeline corridor, then follow the Entrega corridor to Uinta Basin Lateral, then follow Uinta Basin Lateral the remaining distance.

With this in mind, WIC contacted the CDOW to determine the preferred routing for this agency and was advised that the CDOW is willing to permit one new pipeline across its lands in the Little Hills Wildlife Management Area ("WMA") through the Piceance Creek valley (both Alternatives A and B) but strongly prefers that there not be two. Further, the CDOW is agreeable to allowing WIC's pipeline along WIC's Preferred Route where it crosses parts of the Little Hills WMA not in the Piceance Creek valley.

Additionally, in 1992 when CIG constructed its Uinta Basin Lateral pipeline along Alternative A and part of Alternative B, the hay pastures in the Piceance Valley proved very susceptible to subsidence along the pipeline trenchline. This subsidence affected the flow irrigation in these fields and required two to three years of post-construction mitigation. By using WIC's Preferred Route, WIC avoids these areas completely.

In addition, as noted in the DEIS, construction in the area designated as Colorow Gulch which is located north of the White River along both Alternatives A and B is extremely restricted due to topography. WIC believes that the Uinta Basin Lateral line and the Entrega Line already occupy or will occupy the best construction areas through this location and that locating suitable construction locations in this area would be impossible, given terrain and soil conditions.

Additionally, WIC has reviewed the criteria included in the DEIS and in Table 4.3.1 of the discussion on these alternatives. This table and the data included contain some errors. WIC is providing herein an explanation of the corrections and is also providing an updated corrected Table 1 below.

- First of all, after studies were completed last year, a fire swept through the area along a portion of WIC's Preferred Route. This fire destroyed a substantial portion of the Big Game Critical Winter Range and of the Sage Grouse Winter Range, reducing the impacts along WIC's Preferred Route, but not affecting those along Alternatives A and B. The amount of big game critical winter range along WIC's Preferred Route was reduced by the fire from 15.7 miles to 9 miles, again substantially less than Alternatives A and B.

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I1-59 **Wyoming Interstate Company, Ltd. FERC Recommendation 46: Re-route of line between MP 105.1 and the Greasewood Hub**

See response to comments F1-1 and I1-46.

Text in section 4.3 and table 4.3-1 have been modified according to the following statements:

> Subsidence hazards were changed and pinion juniper vegetation along the proposed line was reduced due to fire.
>
> Tall shrubland vegetation in Table 4.3-1 was split into the same categories identified in section 3.4 and appendix A.
>
> Locations of designated game ranges were not changed due to the fire. In fact, some aspects of the habitat may have improved. Removal of pinion-juniper due to fire can increase forage for big game, and while upper portions of shrubs may have burned, shrubs can quickly regenerated from undamaged rootstock in sage grouse habitat. Therefore, no changes were made to winter range crossing lengths.
>
> Restrictions for construction in bald eagle nesting and roosting sites were determined by CDOW and FWS (see response to comment I1-46). These criteria apply to all locations along the proposed pipeline, regardless of land ownership.
>
> Updated wetland information from Entrega includes field delineations. This information was incorporated and footnote 2 of Table 4.3-1 has been modified accordingly.

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- The DEIS indicates that WIC's Preferred Route would affect Sage Grouse Winter Range. However, again, this range area was destroyed by the fire. Hence, WIC's Preferred Route affects no range while Alternatives A and B affect 1.1 miles and 0.8 miles respectively.

- In addition, using data from wetland delineations conducted for the Uinta Basin Lateral project, the comparison of impacts to wetlands are greater than contained in the DEIS. WIC's Preferred Route would result in affecting 1.8 acres of wetlands. Alternative A would affect 12.8 acres, and Alternative B would affect considerably more than 12.8 acres. This is a large part of the reason that the CDOW expressed a preference for WIC's Preferred Route. Similarly, another correction relates to the amount of Pinyon-Juniper that would be crossed by WIC's Preferred Route. After the fire that occurred last summer, the 2.75 miles of Pinyon-Juniper that would be affected by the WIC Preferred Route is considerably less than what would be affected by either Alternative A or Alternative B.

- Regarding impacts to fisheries, WIC continues to feel that potential impacts from a horizontal directional drill in critical habitat for a threatened or endangered species would be greater than impacts outside such habitat, simply because of potential for an inadvertent release of drilling material. If such a release occurred in critical habitat, not only would the inadvertent release affect the habitat, the efforts to control and clean up the release would increase the potential effect.

- Regarding impacts to nesting and roosting for the Bald Eagle, the DEIS uses criteria specifications from the BLM even though the affected area is located on private lands. The FWS and CDOW require restrictions of .5 miles from active Bald Eagle nests and .25 miles from roosts. Using these criteria, the potential impact is reduced dramatically. Further, these criteria are generally moot since construction is projected to occur outside typical nesting timeframes and observation of CDOW and USFWS restricted areas eliminates effects upon roosting areas.

- WIC would have to question the inclusion of sagebrush in the data addressing Tall Shrublands. Through most of the proposed route and specifically through the 36.6 miles of the Piceance Project, sagebrush does not qualify as Tall Shrublands. Granted, there are areas in drainages that support tall sagebrush that is greater than 4 feet tall, and would account for 2 miles, perhaps 3 miles of Tall Shrublands. Add to this approximately 3 miles of Mountain Brush vegetation and the total Tall Shrublands that would be affected would be approximately 6 miles, not 21.5 miles. Since the exact mileage of tall sage is only an estimate, it is listed as <21.5 miles. WIC believes that the Tall Shrublands category for the Alternatives would also be significantly reduced.

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- Regarding paralleling existing utilities, Alternatives A and B have a 22 and 26 mile advantage, respectively.
- Regarding slopes greater than 15 percent, there are 0.5 and 0.4 miles less steep slopes on Alternatives A and B.
- There are no subsidences or landslide hazards on the Piceance Project as stated in the text but considered unknown in Table 4.3-1. This has been corrected to read "No".
- Suggesting that the Piceance Project will result in more environmental impacts is not supported by the corrected data in Table 1.

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Table 1
Comparison of Resources Crossed by WIC's Proposed Action MP 105.1 to MP 141.7) and the Uinta Basin Lateral Route Alternatives

Resources	Analysis Parameter	Corrected Piceance Project Proposed Action	Piceance Project Proposed Action	Uinta Basin Lateral Route Alternative A	Uinta Basin Lateral Route Alternative B
Miles Crossed (total miles per route alternative)		36.6	36.6	33.2	37.5[1]
Utilities	Parallel to Existing Utilities (e.g., roads pipelines, transmission lines	11.1	11.1	33.2	37.5[1]
Geology/Soil	Slopes >15 percent	2.3	2.3	1.8	1.9
	Potential Subsidence/Landslide Hazards	None	Unknown	Yes	Yes
Wetlands	Wetlands Crossed[2]	0.3-1.8 acre	0.3	1.4/12.8 acre	3.2/12.8 + acre
Vegetation	Tall Shrublands, (sagebrush greasewood, oak)	<21.5[3]	21.5	23	22.9
	Pinyon-Juniper Woodland	2.75[4]	9.4	8.1	7.1
Wildlife	Critical Big Game Winter Habitat	9.0[5]	15.7	21.6	19.2
	Sage Grouse Winter Range	0[5]	1.7	1.1	0.8
Agriculture	Pasture and Hayland	5.7	5.7	2.1	7.5
Special Management Areas	CDOW State Wildlife Areas	3.3	3.3	1.9	5.6
Sensitive Species	Bald Eagle Nesting Site (within 1 mile)	3.6[6]	3.6	0	0
	Bald Eagle Roost Site (within	5.7[6]	5.7	2.3	2.3

	0.5 mile)				
Number of Crossings					
Surface Water	Piceance Creek Crossings	0	0	4	10
	Dry Fork Piceance Creek	1	1	0	0
	White River	1	1	1	1
	Listed Fish Critical Habitat (White River)	0	0	1	1

[1] This analysis assumes that the Piceance Project pipeline would parallel the Entrega Project pipeline in the Piceance Creek valley, while recognizing that the Entrega Project has not yet been approved for construction.
[2] Entrega Project wetland crossings based on NWI mapping; Piceance Project wetland crossing based on field delineations.
[3] Upland sagebrush vegetation does not qualify as Tall Shrublands. There are 3.0 miles of Mountain Brush, no Oak, and no Greasewood on the proposed route. Tall sagebrush might cover 2 miles of the proposed route.
[4] Historically, there was 6.05 miles of pinyon-juniper woodland on the proposed route. 3.3 miles of Pinyon Juniper woodland were lost to fire north of the Greasewood Compressor Station and south of Dry Fork Piceance Creek.
[5] Historically there were 15.7 miles of Critical Big Game Winter Habitat. 6.7 miles of habitat were lost to fire between Greasewood Compressor Station and Dry Fork Piceance Creek. The 1.7 miles of sage grouse winter range is included in the habitat lost to fire.
[6] Construction will take place in the fall and not affect the bald eagle nest. Bald eagle roosts will be monitored for eagle presence.

In summary, the WIC believes that its Preferred Route has fewer environmental impacts than Alternatives A and B and it is also preferred by the CDOW and the BLM.* In addition, WIC has contacted all private landowners along the WIC Preferred Route and has received right-of -way from all these landowners. Based on this, WIC believes that shows public acceptance of the route. WIC is not aware of any public opposition to its Preferred Route.

* In its June 15, 2005 letter to the Commission that submitted comments on the Piceance Basin Expansion Project DEIS, the BLM favored WIC's currently proposed route that deviates from the Uinta Basin Lateral corridor between MP 105.1 and the CIG Greasewood Compressor Station.

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WIC's Response to DEIS Section 5.5, Recommendation 47:
Engineering Analysis:
From an operating standpoint, it is prudent practice to follow existing pipelines wherever feasible in a consistent manner. Swapping sides of the corridor (or leaving the corridor for a new one as discussed below) leads to confusion in the field as to the identity and location of the lines. WIC and CIG have experienced many instances where its pipelines have been damaged due to this very confusion. For this reason and those listed below, WIC desires to maintain its current alignment.

In light of the fact that WIC does not have detailed alignment information for Entrega, it assumes their route is located 40 feet west of the western most pipeline in the Uinta Basin Lateral corridor, except in the areas where they separate as indicated on their preliminary location maps. Collocating the pipeline with Entrega in the areas north of the Yampa River (as identified in Table 4.3.2) is feasible in some areas but requires pull outs in selected areas or is not recommended in other areas for the following reasons:

- WIC has already acquired ROW agreements from the private landowners in these areas. Moving the line will require renegotiation of these agreements before work could proceed. Similarly, Entrega would have to renegotiate their agreements in order to collocate along WIC's route.
- Collocating with Entrega in these areas would require two crossings of the pipeline corridor at each of the three locations. This amounts to a total of 20 separate pipeline crossings. Assuming six days for a crew to complete each corridor crossing, this would require 36 crew days to complete the crossings adding time to an already critical construction schedule.
- Depending on the actual time of construction and when the contractor's equipment gets to the area, the collocated areas could cause severe scheduling conflicts and would require skips and move backs for one contractor or both.
- If WIC were to construct in these areas first (a strong possibility for MP 55 to MP 69 and MP 73 to MP 79), Entrega would be sandwiched between the corridor and WIC Piceance. Constructing on the west side of the corridor places the construction side of WIC's ROW on the west side of Entrega's proposed line. This would require WIC's centerline to be offset 55 feet from the proposed Entrega pipeline. Assuming a 5-foot safety buffer from each line, this would reduce Entrega's construction ROW to 85 feet.
- WIC's alignment would have to pull out from Entrega's alignment between MP 27.6 to MP 28.3 and between MP 33.2 to MP 33.5 due to severe wash crossings.

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I1-60 Wyoming Interstate Company, Ltd. FERC Recommendation 47: Collocation with Entrega Project north of the Yampa River: Updated Engineering Analysis

Text in section 4.3.2 has been modified to address the comment.

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- WIC's alignment would have to pull out from Entrega's alignment from MP 55.6 to MP 56.2 and between MP 64.7 to 65.0 due to various severe wash crossings.
- Beginning at MP 65.3 to MP 74.3, Entrega's alignment leaves the Uinta Basin Lateral corridor and follows a Kinder Morgan Pipeline. At MP 69, the lines are approximately 1 mile apart. This would require one mile of new disturbance to return to WIC's alignment.
- In addition, switching corridors would create an unnecessary and dangerous operating hardship. In order to perform pipeline surveillance activities, over-flight patrols and aerial photography updates would require additional flight paths. Cathodic protection systems could not be linked requiring additional ground beds and rectifiers. Contractors would incorrectly assume that WIC's line would be located in the Uinta Basin Lateral corridor and would not be looking for it in another corridor, greatly increasing the possibility of damage to the line.
- The lines are in separate corridors from MP 73 to MP 74.3 and would require 2,000 feet of new disturbance at MP 73. Additionally, the lines could not be collocated between MP 76.9 to MP 77.6 because of the undulating route of Spring Creek in this area.

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Environmental Analysis:
WIC does recognize that collocating pipelines will reduce some loss of sage grouse habitat. However, WIC believes that a more aggressive reclamation effort will better serve the long term goals of sagebrush recovery in the disturbed ROWs. These reclamation efforts are:

- Brush-hogging the ROW through the nesting grounds and leks while leaving the base of sage shrubs intact. On side-slopes or hilly terrain, a maintainer can be used to smooth the working side. This may result in an increase in flat tires but will aid in re-establishing shrubs in the nesting ground ROW. This procedure will not be used in the leks.
- A broadcast seeder mounted on a tractor will be used to seed the grouse nesting grounds with sagebrush seed during reclamation. WIC will broadcast *Artemisia tridentata tridentata* and *A .t. wyomingensis* seeds which are from regional sources (i.e., the Intermountain West). No seeding with sagebrush will occur in the leks.
- It has been suggested by the CDOW and more recently by the BLM that the perimeters of the leks affected be planted with sagebrush transplants to form a vegetation limit to the lek. The suggestion by the BLM was to place plants five feet apart on five rows located five feet apart that would be selected by CDOW, BLM and WIC biologists during a site visit to each lek affected. WIC agrees with this proposal

I1-61 Wyoming Interstate Company, Ltd. FERC Recommendation 47: Collocation with Entrega Project north of the Yampa River: Updated Environmental Analysis

Text in sections 3.6.2 and 3.12.1 has been modified to address this comment.

Letter I-1 Continued

Wyoming Interstate Company, Ltd.
Comments to the Piceance Basin Expansion Project
Draft Environmental impact Statement
In Docket No. CP05-54-000

I1-61 for Leks 3A, 9 and 11 in Moffat County, Colorado. However, Lek 13 which is also located in Moffat County, Colorado is situated in grassy pasture and has not been delimited by sagebrush. Accordingly, WIC will inspect the aforementioned three leks and will plan for reclamation at these three sites prior to construction in October.

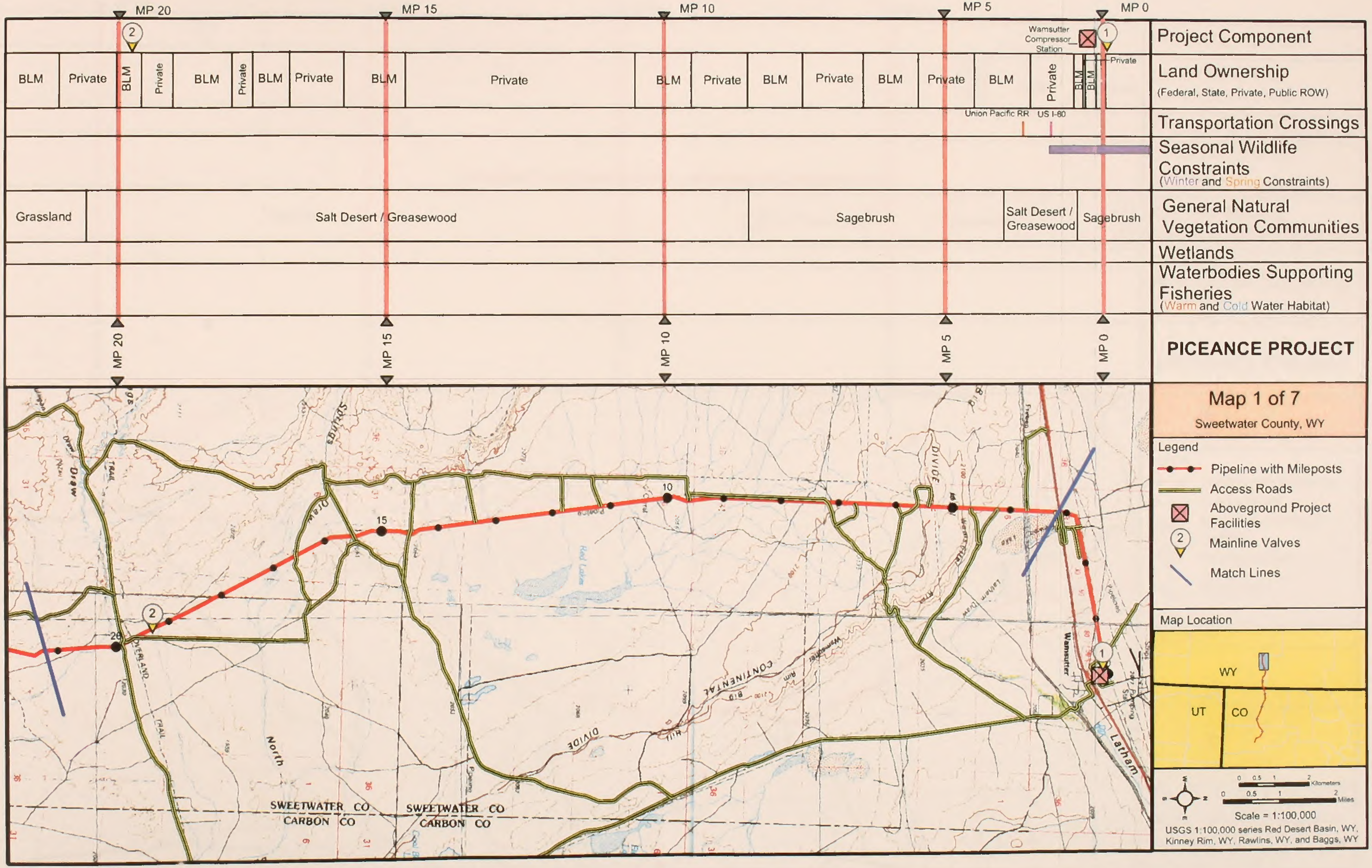
Responses to Letter I-1

APPENDICES

APPENDICES

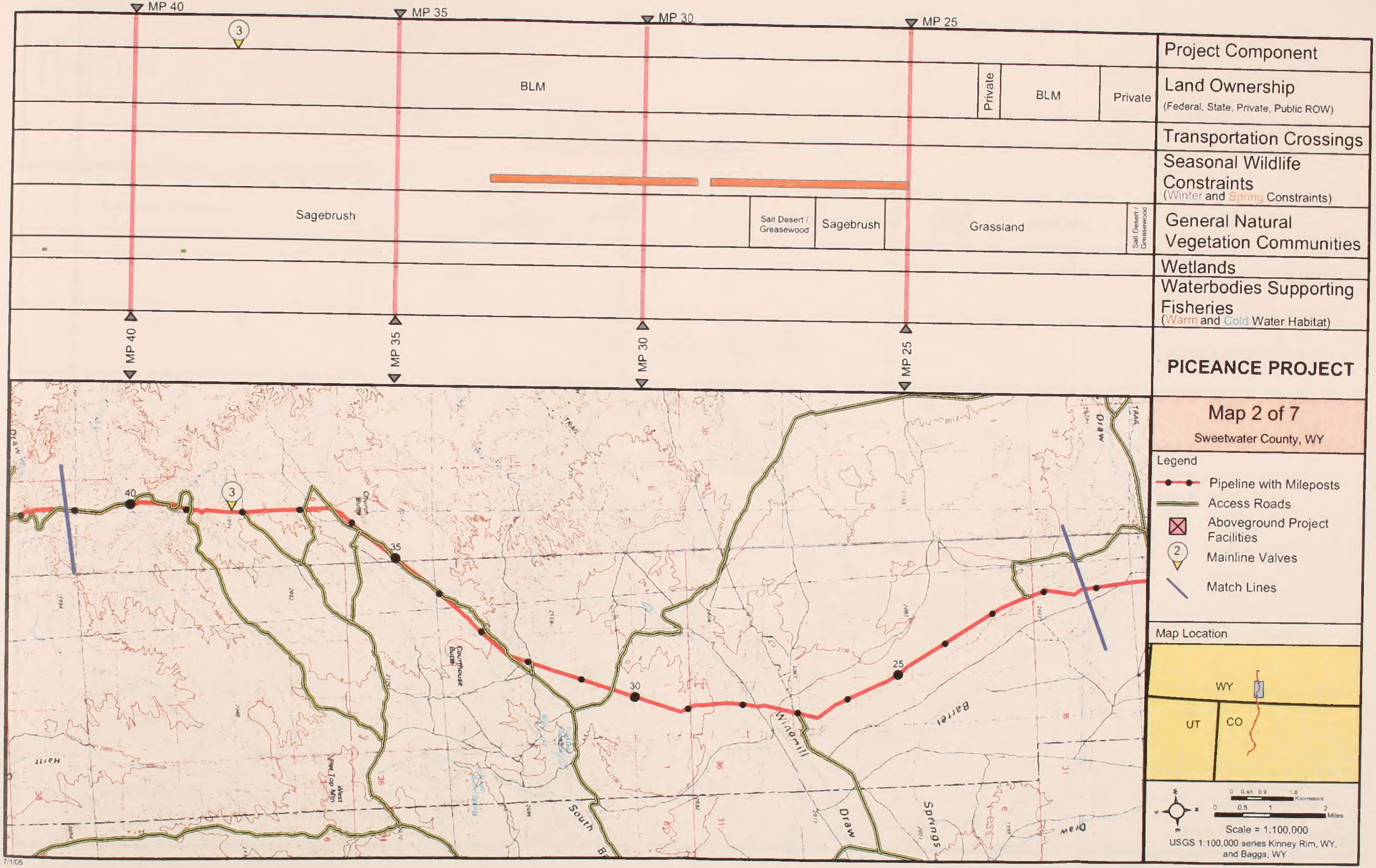
APPENDIX A

MAPS SHOWING PIPELINE ROUTE AND ABOVEGROUND FACILITIES

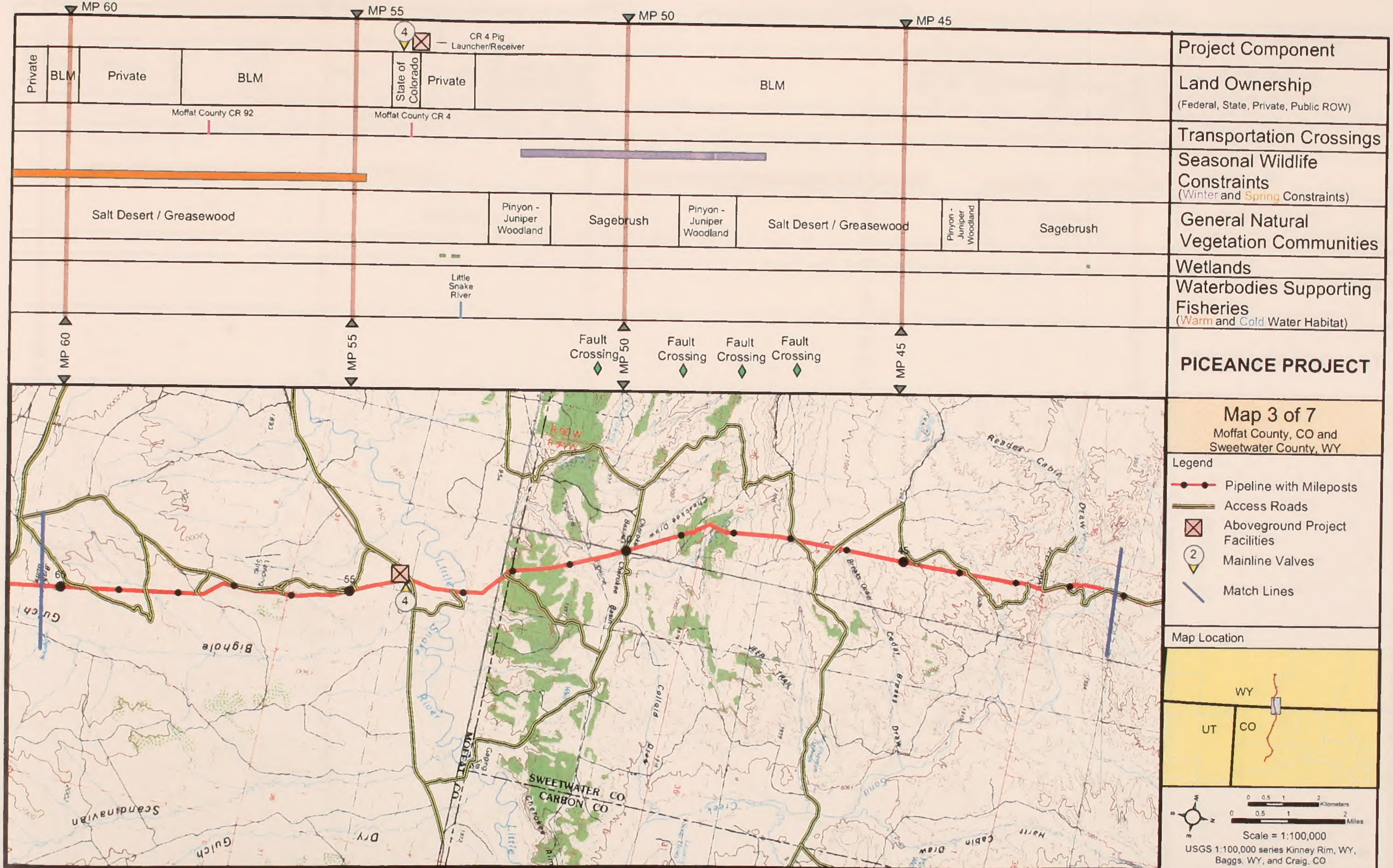


MP 20
MP 15
MP 10
MP 5
MP 0
Project Component
Wamsutter Compressor Station
Land Ownership
(Federal, State, Private, Public ROW)
BLM
Private
Transportation Crossings
Union Pacific RR
US I-80
Seasonal Wildlife Constraints
(Winter and Spring Constraints)
Grassland
Salt Desert / Greasewood
Sagebrush
General Natural Vegetation Communities
Wetlands
Waterbodies Supporting Fisheries
(Warm and Cold Water Habitat)
PICEANCE PROJECT
Map 1 of 7
Sweetwater County, WY
Legend
Pipeline with Mileposts
Access Roads
Aboveground Project Facilities
Mainline Valves
Match Lines
Map Location
WY
UT
CO
Kilometers
Miles
Scale = 1:100,000
USGS 1:100,000 series Red Desert Basin, WY, Kinney Rim, WY, Rawlins, WY, and Baggs, WY
SWEETWATER CO
CARBON CO
CONTINENTAL
DIVIDE
Wamsutter
Latham

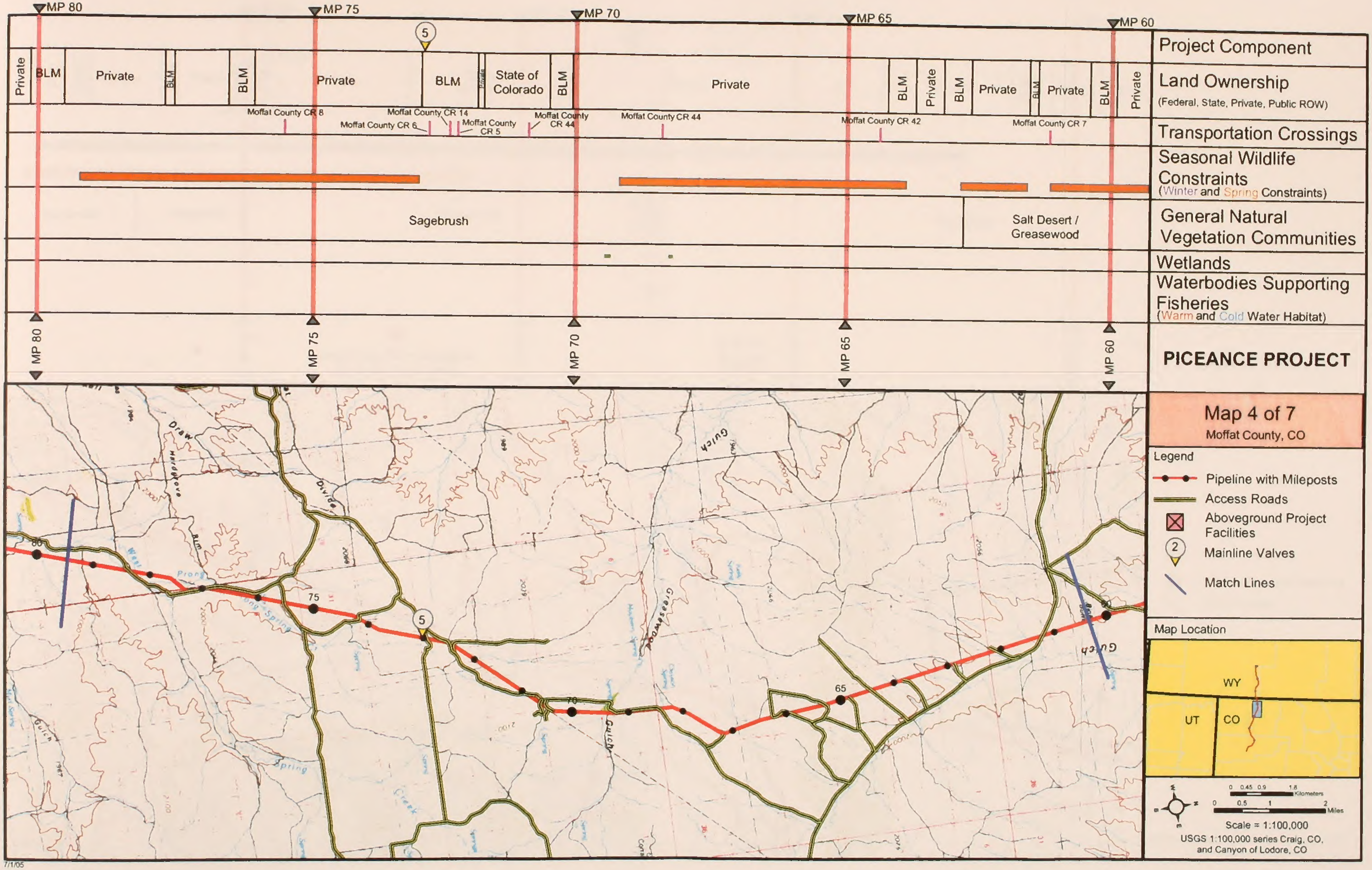
7/1/05



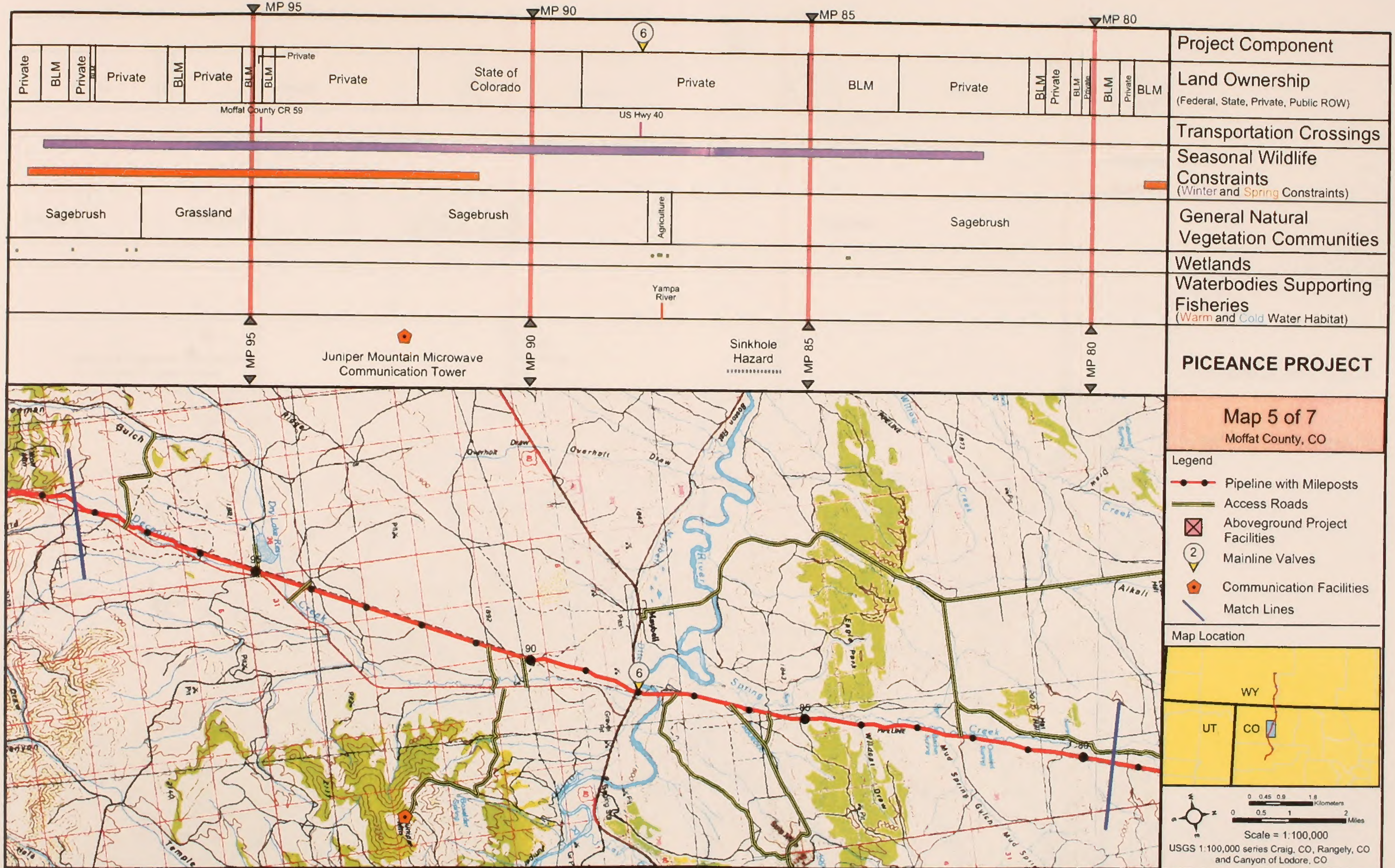
MP 40
MP 35
MP 30
MP 25
3
Project Component
BLM
Private
BLM
Private
Land Ownership
(Federal, State, Private, Public ROW)
Transportation Crossings
Seasonal Wildlife Constraints
(Winter and Spring Constraints)
Sagebrush
Salt Desert / Greasewood
Sagebrush
Grassland
Salt Desert / Greasewood
General Natural Vegetation Communities
Wetlands
Waterbodies Supporting Fisheries
(Warm and Cold Water Habitat)
PICEANCE PROJECT
Map 2 of 7
Sweetwater County, WY
Legend
Pipeline with Mileposts
Access Roads
Aboveground Project Facilities
Mainline Valves
Match Lines
Map Location
WY
UT
CO
40
35
30
25
Windmill
Barrel
Springs
Draw
South
Scale = 1:100,000
USGS 1:100,000 series Kinney Rim, WY, and Baggs, WY
7/1/05


MP 60
MP 55
MP 50
MP 45
CR 4 Pig Launcher/Receiver
4
Project Component
Land Ownership
(Federal, State, Private, Public ROW)
Private
BLM
Private
BLM
State of Colorado
Private
BLM
Transportation Crossings
Moffat County CR 92
Moffat County CR 4
Seasonal Wildlife Constraints
(Winter and Spring Constraints)
General Natural Vegetation Communities
Salt Desert / Greasewood
Pinyon - Juniper Woodland
Sagebrush
Pinyon - Juniper Woodland
Salt Desert / Greasewood
Pinyon - Juniper Woodland
Sagebrush
Wetlands
Waterbodies Supporting Fisheries
(Warm and Cold Water Habitat)
Little Snake River
Fault Crossing
Fault Crossing
Fault Crossing
Fault Crossing
PICEANCE PROJECT
Map 3 of 7
Moffat County, CO and Sweetwater County, WY
Legend
Pipeline with Mileposts
Access Roads
Aboveground Project Facilities
Mainline Valves
Match Lines
Map Location
WY
UT
CO
Scale = 1:100,000
USGS 1:100,000 series Kinney Rim, WY, Baggs, WY, and Craig, CO
SWEETWATER CO
CARBON CO
MOFFAT CO
Bighole
Scandinavian
Gulch
Dry
Little Snake River
Reader Cabin
Cabin Draw
Breaks Draw

7/1/05

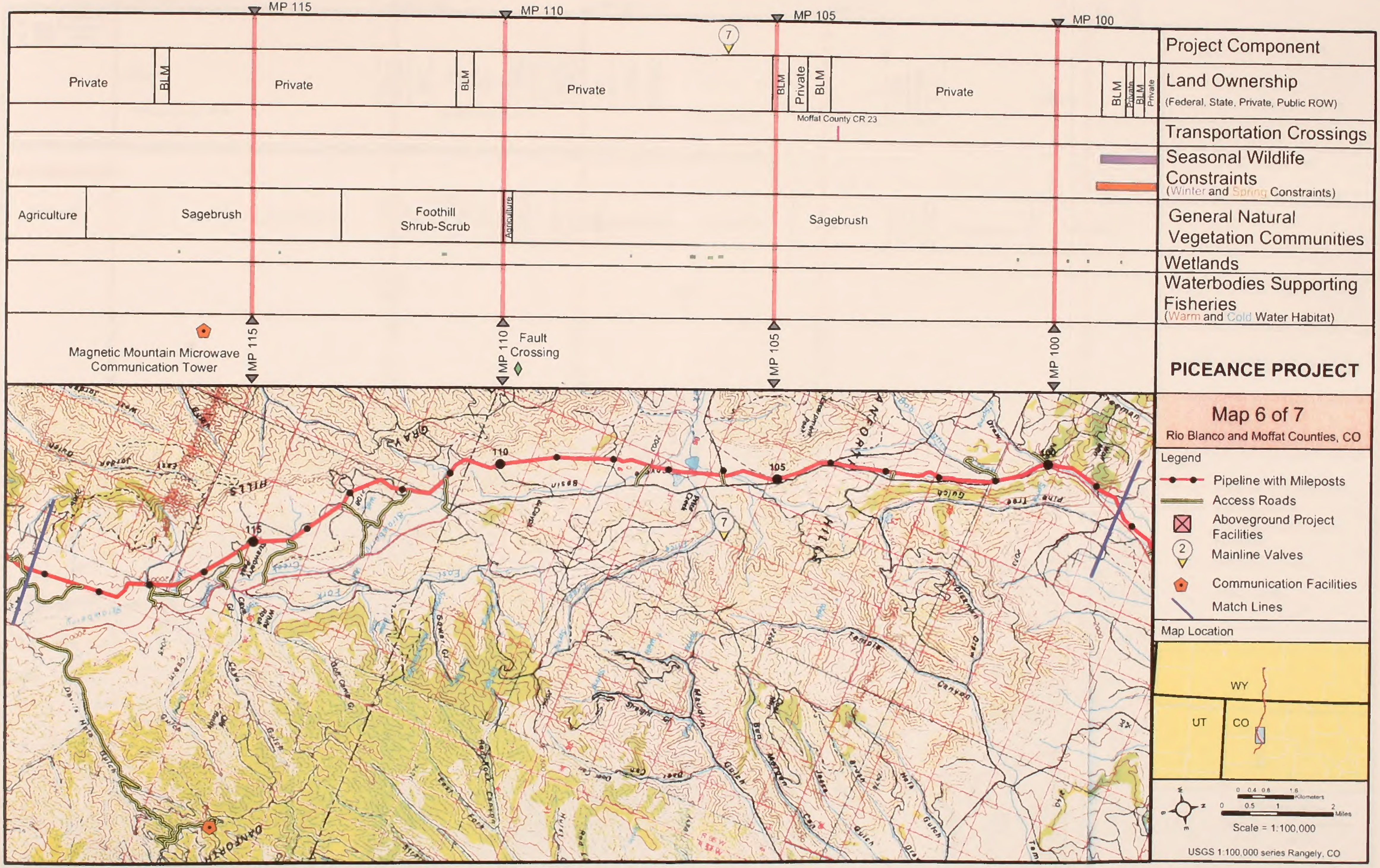


MP 80
MP 75
MP 70
MP 65
MP 60
Project Component
Land Ownership
(Federal, State, Private, Public ROW)
Private
BLM
State of Colorado
Transportation Crossings
Moffat County CR 8
Moffat County CR 14
Moffat County CR 6
Moffat County CR 5
Moffat County CR 44
Moffat County CR 42
Moffat County CR 7
Seasonal Wildlife Constraints
(Winter and Spring Constraints)
General Natural Vegetation Communities
Sagebrush
Salt Desert / Greasewood
Wetlands
Waterbodies Supporting Fisheries
(Warm and Cold Water Habitat)
PICEANCE PROJECT
Map 4 of 7
Moffat County, CO
Legend
Pipeline with Mileposts
Access Roads
Aboveground Project Facilities
Mainline Valves
Match Lines
Map Location
WY
UT
CO
Scale = 1:100,000
USGS 1:100,000 series Craig, CO, and Canyon of Lodore, CO
7/1/05

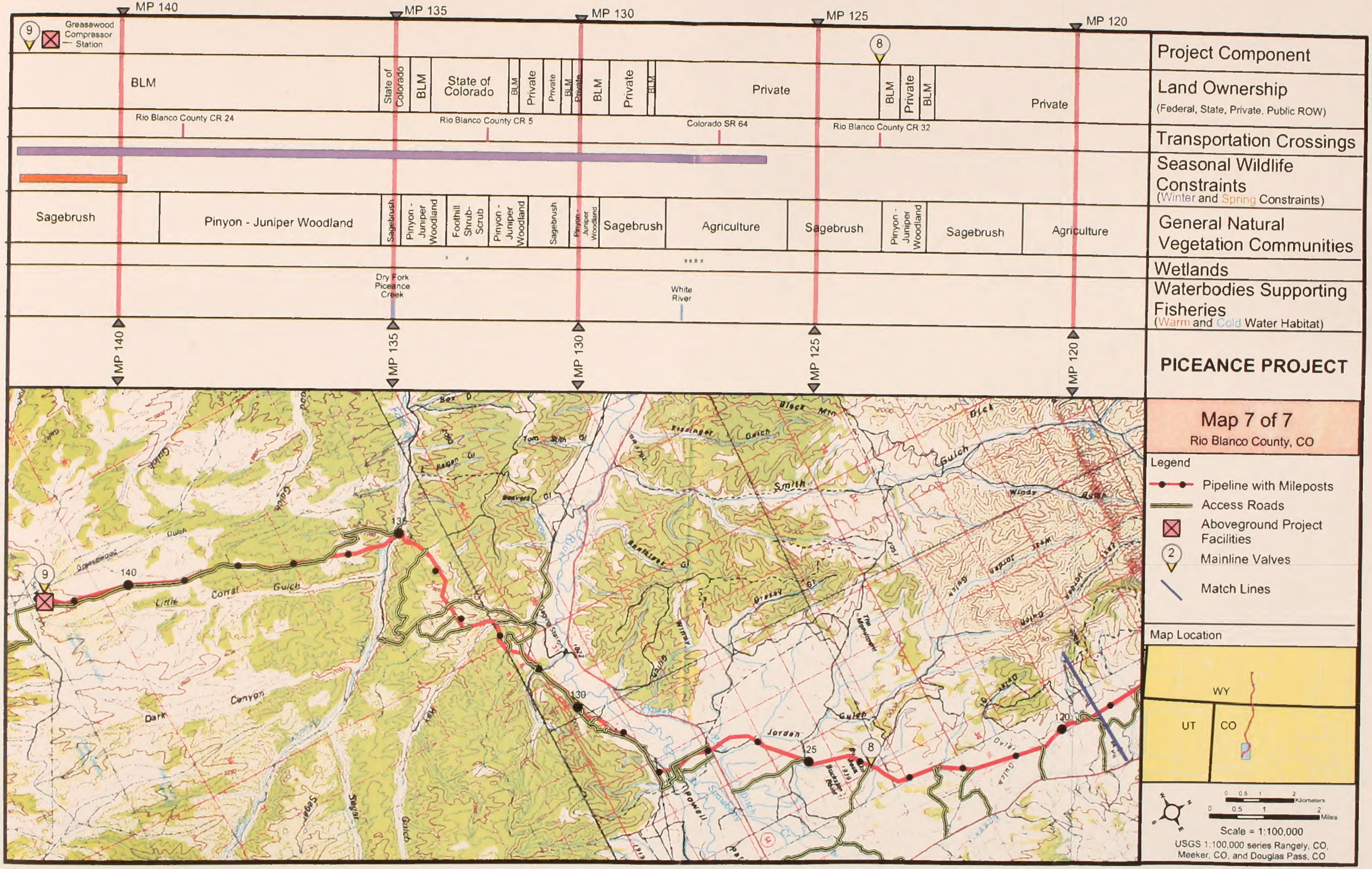


MP 95
MP 90
MP 85
MP 80
6
Project Component
Private
BLM
Private
Private
BLM
Private
BLM
BLM
Private
Private
State of Colorado
Private
BLM
Private
BLM
Private
BLM
Private
BLM
Private
BLM
Land Ownership
(Federal, State, Private, Public ROW)
Moffat County CR 59
US Hwy 40
Transportation Crossings
Seasonal Wildlife Constraints
(Winter and Spring Constraints)
Sagebrush
Grassland
Sagebrush
Agriculture
Sagebrush
General Natural Vegetation Communities
Wetlands
Yampa River
Waterbodies Supporting Fisheries
(Warm and Cold Water Habitat)
Juniper Mountain Microwave Communication Tower
Sinkhole Hazard
PICEANCE PROJECT
Map 5 of 7
Moffat County, CO
Legend
Pipeline with Mileposts
Access Roads
Aboveground Project Facilities
Mainline Valves
Communication Facilities
Match Lines
Map Location
WY
UT
CO
Scale = 1:100,000
USGS 1:100,000 series Craig, CO, Rangely, CO and Canyon of Lodore, CO

7/5/05


MP 115
MP 110
MP 105
MP 100
7
Project Component
Private
BLM
Private
BLM
Private
BLM
Private
BLM
Private
BLM
Private
BLM
Private
Land Ownership
(Federal, State, Private, Public ROW)
Moffat County CR 23
Transportation Crossings
Seasonal Wildlife Constraints
(Winter and Spring Constraints)
Agriculture
Sagebrush
Foothill Shrub-Scrub
Agriculture
Sagebrush
General Natural Vegetation Communities
Wetlands
Waterbodies Supporting Fisheries
(Warm and Cold Water Habitat)
Magnetic Mountain Microwave Communication Tower
MP 115
MP 110
Fault Crossing
MP 105
MP 100
PICEANCE PROJECT
Map 6 of 7
Rio Blanco and Moffat Counties, CO
110
115
105
7
Legend
Pipeline with Mileposts
Access Roads
Aboveground Project Facilities
2
Mainline Valves
Communication Facilities
Match Lines
Map Location
WY
UT
CO
0 0.4 0.8 1.6 Kilometers
0 0.5 1 2 Miles
Scale = 1:100,000
USGS 1:100,000 series Rangely, CO

7/5/05


MP 140
MP 135
MP 130
MP 125
MP 120
Greasewood Compressor Station
9
8
Project Component
Land Ownership
(Federal, State, Private, Public ROW)
BLM
State of Colorado
Private
Transportation Crossings
Rio Blanco County CR 24
Rio Blanco County CR 5
Colorado SR 64
Rio Blanco County CR 32
Seasonal Wildlife Constraints
(Winter and Spring Constraints)
General Natural Vegetation Communities
Sagebrush
Pinyon - Juniper Woodland
Foothill Shrub-Scrub
Agriculture
Wetlands
Waterbodies Supporting Fisheries
(Warm and Cold Water Habitat)
Dry Fork Piceance Creek
White River
PICEANCE PROJECT
Map 7 of 7
Rio Blanco County, CO
Legend
Pipeline with Mileposts
Access Roads
Aboveground Project Facilities
Mainline Valves
Match Lines
Map Location
WY
UT
CO
Scale = 1:100,000
USGS 1:100,000 series Rangely, CO, Meeker, CO, and Douglas Pass, CO
Kilometers
Miles
140
135
130
125
120
Little Corral Gulch
Dark Canyon
Smith
Jordan
Gulch

7/1/05

APPENDIX B

WIC'S UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN

THIS PLAN IS PART OF THE BLM'S DRAFT PLAN OF DEVELOPMENT (POD). FIGURES REFERENCED IN THIS PLAN ARE NOT INCLUDED IN THIS APPENDIX.

Note: WIC's modifications to the FERC Upland Erosion Control, Revegetation, and Maintenance Plant (FERC Plan) are highlighted with bold text. Variances to the FERC Plan are denoted by ***bold, italic*** text.

Appendix B

Upland Erosion Control, Revegetation, And Maintenance Plan

Wyoming Interstate Company, Ltd.

Piceance Basin Expansion Project
Moffat and Rio Blanco Counties, Colorado
Sweetwater County, Wyoming

UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN

TABLE OF CONTENTS

UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN

I. APPLICABILITY

A. The intent of this Plan is to assist applicants by identifying baseline mitigation measures for minimizing erosion and enhancing revegetation. The project sponsors should specify in their applications for a FERC Certificate (Certificate) any individual measures in this Plan they consider unnecessary, technically infeasible, or unsuitable due to local conditions and to fully describe any alternative measures they would use. Applicants should also explain how those alternative measures would achieve a comparable level of mitigation.

Once a project is certificated, further changes can be approved. Any such changes from the measures in this Plan (or the applicant's approved plan) will be approved by the Director of the Office of Energy Projects (Director), upon the applicant's written request, if the Director agrees that an alternative measure:

1. provides equal or better environmental protection;

2. is necessary because a portion of this Plan is infeasible or unworkable based on project-specific conditions; or

3. is specifically required in writing by another Federal, state, or Native American land management agency for the portion of the project on its land or under its jurisdiction.

Any requirements in this Plan to file material with the Secretary of the FERC (Secretary) do not apply to projects undertaken under the provisions of the blanket certificate program. This exemption does not apply to a request for alternative measures.

Project-related impacts on wetland and waterbody systems are addressed in the staff's Wetland and Waterbody Construction and Mitigation Procedures (Procedures).

II. SUPERVISION AND INSPECTION

A. ENVIRONMENTAL INSPECTION

1. At least one Environmental Inspector is required for each construction spread during construction and restoration (as defined by section V). The number and experience of Environmental Inspectors assigned to each construction spread should be appropriate for the length of the construction spread and the number/significance of resources affected. ***For the Piceance Basin Expansion Project, WIC will assign three Environmental Inspectors (EI) per spread.***
   - ***The Lead EI for each spread will begin responsibilities before pre-construction training occurs and will be on site throughout construction activities, including clean up and reclamation.***
   - ***A second EI will begin work approximately one week prior to commencement of ground disturbance and will remain with the project until the pipeline is placed in-service.***
   - ***The third EI will begin work once pipe stringing begins and will remain with the project through completion of hydrostatic testing.***
   - ***In addition, WIC will add one EI for each mini-crew activity, such as work in a big game critical winter range, for the duration of construction by that mini-crew.***

   All EIs hired for this project will be full time positions, separate from all other activity inspectors. As indicated in item 2 below, WIC will also have a Chief EI responsible for supervision of the EI crews for both spreads.

2. Environmental Inspectors shall have peer status with all other activity inspectors. **The EI will be supervised by and responsible to the Chief Inspector ("CI") who has overall authority over construction.**

3. Environmental Inspectors shall have the authority to stop activities that violate the environmental conditions of the Certificate Order, state and Federal environmental permit conditions, or landowner requirements; and to order appropriate corrective action.

B. RESPONSIBILITIES OF ENVIRONMENTAL INSPECTORS

At a minimum, the Environmental Inspector(s) shall be responsible for:

1. Ensuring *and documenting* compliance with the requirements of this Plan, the Procedures, the environmental conditions of the Certificate authorization, the mitigation measures proposed by the applicant (as approved and/or modified by the Certificate), other environmental permits

and approvals, and environmental requirements in landowner easement agreements. *This includes responsibility for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract and any other authorizing document.;*

2. Identifying, documenting, and overseeing corrective actions, as necessary to bring an activity back into compliance;

3. Verifying that the limits of authorized construction work areas and locations of access roads are properly marked before clearing;

4. Verifying the location of signs and highly visible flagging marking the boundaries of sensitive resource areas, waterbodies, wetlands, or areas with special requirements along the construction work area;

5. Identifying erosion/sediment control and soil stabilization needs in all areas;

6. Ensuring that the location of dewatering structures and slope breakers will not direct water into known cultural resources sites or locations of sensitive species;

7. Verifying that trench dewatering activities do not result in the deposition of sand, silt, and/or sediment near the point of discharge into a wetland or waterbody. If such deposition is occurring, the dewatering activity shall be stopped and the design of the discharge shall be changed to prevent reoccurrence;

8. Ensuring that subsoil and topsoil are tested in agricultural and residential areas to measure compaction and determine the need for corrective action;

9. Advising the Chief Construction Inspector when conditions (such as wet weather) make it advisable to restrict construction activities to avoid excessive rutting;

10. Ensuring restoration of contours and topsoil;

11. Verifying that the soils imported for agricultural or residential use have been certified as free of noxious weeds and soil pests, unless otherwise approved by the landowner;

12. Determining the need for and ensuring that erosion controls are properly installed, as necessary to prevent sediment flow into wetlands, waterbodies, sensitive areas, and onto roads;

13. Inspecting and ensuring the maintenance of temporary erosion control measures at least:

    a. on a daily basis in areas of active construction or equipment operation;

    b. on a weekly basis in areas with no construction or equipment operation; and

    c. within 24 hours of each 0.5 inch of rainfall;

    Although primarily the responsibility of the EI, all inspectors are responsible to regularly inspect and assess the condition of the erosion and sediment control devices employed on the ROW or workspace during construction.

14. Ensuring the repair of all ineffective temporary erosion control measures within 24 hours of identification;

15. Keeping records, *including status reports,* of compliance with the environmental conditions of the FERC certificate, and the mitigation measures proposed by the project sponsor in the application submitted to the FERC, and other Federal or state environmental permits during active construction and restoration; and

16. Identifying areas that should be given special attention to ensure stabilization and restoration after the construction phase;

WIC shall file updated status reports prepared by the head EI with the Secretary on a weekly basis ***until all construction-related activities, including restoration activities, are complete****. On request, these status reports also will be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:*

1. *the current construction status of each spread, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;*

2. *a listing of all problems encountered and each instance of noncompliance observed by the EIs during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);*

3. *a description of corrective actions implemented in response to all instances of noncompliance, and their cost;*

4. *the effectiveness of all corrective actions implemented;*

5. *a description of any landowner/resident complaints that may relate to compliance with the requirements of the Commission Order, and the measures taken to satisfy their concerns; and*

6. *copies of any correspondence received by WIC from other federal, state, or local permitting agencies concerning instances of noncompliance, and WIC's response.*

III. PRECONSTRUCTION PLANNING

The project sponsor shall do the following before construction:

A. CONSTRUCTION WORK AREAS

1. Identify all construction work areas (e.g., construction right-of-way, extra work space areas, pipe storage and contractor yards, borrow and disposal areas, access roads, etc.) that would be needed for safe construction. The project sponsor must ensure that appropriate cultural resources and biological surveys have been conducted.

2. Project sponsors are encouraged to consider expanding any required cultural resources and endangered species surveys in anticipation of the need for activities outside of certificated work areas.

B. DRAIN TILE AND IRRIGATION SYSTEMS

1. Attempt to locate existing drain tiles and irrigation systems.

2. Contact landowners and local soil conservation authorities to determine the locations of future drain tiles that are likely to be installed within 3 years of the authorized construction.

3. Develop procedures for constructing through drain-tiled areas, maintaining irrigation systems during construction, and repairing drain tiles and irrigation systems after construction.

4. Engage qualified drain tile specialists, as needed to conduct or monitor repairs to drain tile systems affected by construction. Use drain tile specialists from the project area, if available.

C. GRAZING DEFERMENT

Develop grazing deferment plans with willing landowners, grazing permittees, and land management agencies to minimize grazing disturbance of revegetation efforts.

D. ROAD CROSSINGS AND ACCESS POINTS

Plan for safe and accessible conditions at all roadway crossings and access points during construction and restoration.

E. DISPOSAL PLANNING

Determine methods and locations for the disposal of construction debris (e.g., timber, slash, mats, garbage, drilling fluids, excess rock, etc). Off-site disposal in other than commercially operated disposal locations is subject to compliance with all applicable survey, landowner permission, and mitigation requirements.

F. AGENCY COORDINATION

The project sponsor must coordinate with the appropriate local, state, and Federal agencies as outlined in this Plan and in the Certificate.

1. Obtain written recommendations from the local soil conservation authorities or land management agencies regarding permanent erosion control and revegetation specifications.

2. Develop specific procedures in coordination with the appropriate agency to prevent the introduction or spread of noxious weeds and soil pests resulting from construction and restoration activities.

G. STORMWATER POLLUTION PREVENTION PLAN

Make available on each construction spread the Stormwater Pollution Prevention Plan prepared for compliance with the U.S. Environmental Protection Agency's National Stormwater Program General Permit requirements. **This Plan, along with the SPCC make up the components of an SWPPP for compliance with the EPA's and/or state(s) National Pollution Discharge and Elimination System Program ("NPDES"). These components of the SWPPP will be**

retained at the construction offices associated with this project throughout the period of construction.

IV. INSTALLATION

A. APPROVED AREAS OF DISTURBANCE

1. Project-related ground disturbance shall be limited to the construction right-of-way, extra work space areas, pipe storage yards, borrow and disposal areas, access roads, and other areas approved in the Certificate. Any project-related ground disturbing activities outside these Certificated areas, except those needed to comply with the Plan and Procedures (e.g., slope breakers, energy-dissipating devices, dewatering structures, drain tile system repairs) will require prior Director approval. All construction or restoration activities outside of the Certificated areas are subject to all applicable survey and mitigation requirements.

   Construction of a gas pipeline consists of distinct phases: clearing, grading, ditching, lowering-in, backfilling, hydrostatic testing and restoration as shown in figure Plan-1 (Appendix A of the POD).

2. The construction right-of-way width for a project shall not exceed *85* feet or that described in the FERC application unless otherwise modified by a Certificate condition. However, in limited, non-wetland areas, this construction right-of-way width may be expanded by up to 25 feet without Director approval to accommodate full construction right-of-way topsoil segregation and to ensure safe construction where topographic conditions (such as side-slopes) or soil limitations require it. Twenty-five feet of extra construction right-of-way width may also be used in limited, non-wetland or non-forested areas for truck turn-arounds where no reasonable alternative access exists.

   Figure Plan-2 (Appendix A of the POD) shows a typical ROW configuration where construction activities will take place. Figures Plan-3 through Plan-6 (Appendix A of the POD) show typical erosion control devices used during clearing, grading, and ditching phases of construction (i.e., Water Bars, Silt Fence, Hay/Straw Bales, Trench Breakers, respectively).

   Project use of these additional limited areas is subject to landowner approval and compliance with all applicable survey and mitigation requirements. When such additional areas are used, each one should be identified and the need explained in the weekly or biweekly construction reports to the FERC, if required. The following material should be included in the reports:

a. the location of each additional area by station number and reference to a previously filed alignment sheet, or updated alignment sheets showing the additional areas;

b. identification of where the Commission's records contain evidence that the additional areas were previously surveyed; and

c. a statement that landowner approval has been obtained and is available in project files.

Prior written approval of the Director is required when the Certificated construction right-of-way width would be expanded by more than 25 feet.

To minimize potential impacts to wildlife, horses, and livestock, WIC shall place earthen trench plugs, with ramps on either side, at 1-mile intervals along the trench as well as at well-defined livestock and wildlife trails intersected by the trench. WIC also shall leave breaks in the strung and welded pipe, topsoil, and spoil piles at locations that correspond to the earthen trench plugs to allow movement of wildlife and livestock across the construction ROW. WIC shall consult with the BLM regarding specific placement of trench plugs and ramps on lands managed by the BLM.

*In order to minimize potential construction impacts to smaller, less mobile species, WIC shall cap uncovered pipe that has been placed in the trench at the end of each workday to prevent animals from entering the pipe. In addition, EIs or biological monitors shall remove animals from open trenches **during construction**.*

B. TOPSOIL SEGREGATION

1. Unless the landowner or land management agency specifically approves otherwise, prevent the mixing of topsoil with subsoil by stripping topsoil from either the full work area or from the trench and subsoil storage area (ditch plus spoil side method) in:

   a. actively cultivated or rotated croplands and pastures ;

   b. residential areas;

   c. hayfields; and

d. other areas at the landowner's or land managing agency's request.

For the Piceance Basin Expansion Project, in areas where the ground is naturally level, the Company proposes to separate topsoil up to one foot in depth along the ditch line only. The working and spoil sides of the right of way would be mowed or skimmed to promote equipment passage. The topsoil from the ditch line would be placed immediately next to the ditch line on the working side and will be under the string of pipe until backfill. After backfill, this topsoil will be spread evenly over the ditch line. By doing this, less disturbance will occur and more root stock from existing vegetation will be preserved. To reestablish compaction levels, in some areas, the Company may need to rip the working side, to a depth no greater than 12 inches. Disturbed areas will be seeded in accordance with the Company revegetation plan. Landowners of actively cultivated or rotated crop lands and improved pastures, residential areas, and hayfields will be contacted prior to using this method. This method will only be used if the landowner or land managing agency approves of this method in writing to the company.

2. In residential areas importation of topsoil is an acceptable alternative to topsoil segregation.

3. In deep soils (more than 12 inches of topsoil), segregate at least 12 inches of topsoil. In soils with less than 12 inches of topsoil make every effort to segregate the entire topsoil layer. ***In areas where topsoil segregation is required and the landowner or land managing agency specifically approves in writing, the Company proposes to segregate no less than six inches and no more than 12 inches where topsoil is available. In general, if topsoil is present at all, a six inch salvage is necessary to capture topsoil. A lesser depth would involve too small of a volume, a volume that could be easily lost. The native seed base is contained in the top 12 inches of topsoil. Removal of deeper topsoil will dilute this seed base and will not promote return of native vegetation as well. Further, most soils along the project are between six and 12 inches in depth.***

4. Where topsoil segregation is required, maintain separation of salvaged topsoil and subsoil throughout all construction activities.

5. Segregated topsoil may not be used for padding the pipe.

6. *To protect against topsoil loss, WIC's EIs shall monitor for potential topsoil degradation in areas where it is not stripped from the working side*

of the construction ROW. If topsoil in these areas becomes powdered or pulverized to a depth of 4 inches (2 inches on BLM managed lands) and is being mixed with subsoil, or if wind is moving topsoil off the ROW regardless of dust control measures applied, then WIC shall strip topsoil from both the ditch line and the working side of the ROW and replace topsoil in the impacted areas. If, in the opinion of the EI, with the concurrence of the Federal Monitor, requiring topsoil stripping on the working side will result in total loss of root base from existing vegetation, the EI, with concurrence of the Federal Monitor, can require that such topsoil not be stripped.

C. DRAIN TILES

1. Mark locations of drain tiles damaged during construction.

2. Probe all drainage tile systems within the area of disturbance to check for damage.

3. Repair damaged drain tiles to their original or better condition. Do not use filter-covered drain tiles unless the local soil conservation authorities and the landowner agree. Use qualified specialists for testing and repairs.

4. For new pipelines in areas where drain tiles exist or are planned, ensure that the depth of cover over the pipeline is sufficient to avoid interference with drain tile systems. For adjacent pipeline loops in agricultural areas, install the new pipeline with at least the same depth of cover as the existing pipeline(s).

D. IRRIGATION

Maintain water flow in crop irrigation systems, unless shutoff is coordinated with affected parties.

E. ROAD CROSSINGS AND ACCESS POINTS

1. Maintain safe and accessible conditions at all road crossings and access points during construction.

2. If crushed stone access pads are used in residential, or active agricultural areas, place the stone on synthetic fabric to facilitate removal **(see figure Plan-7 Appendix A of the POD)**.

F. TEMPORARY EROSION CONTROL

Install temporary erosion controls immediately after initial disturbance of the soil. Temporary erosion controls must be properly maintained throughout construction (on a daily basis) and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration is complete.

1. Temporary Slope Breakers **(see figure Plan-3 Appendix A of the POD)**

   a. Temporary slope breakers are intended to reduce runoff velocity and divert water off the construction right-of-way. Temporary slope breakers may be constructed of materials such as soil, silt fence, staked hay or straw bales, or sand bags.

   b. Install temporary slope breakers on all disturbed areas, as necessary to avoid excessive erosion. Temporary slope breakers must be installed on slopes greater than 5 percent where the base of the slope is less than 50 feet from waterbody, wetland, and road crossings at the following spacing (closer spacing should be used if necessary):

Slope (%)	Spacing (feet)
5 - 15	300
>15 - 30	200
>30	100

   c. Direct the outfall of each temporary slope breaker to a stable, well vegetated area or construct an energy-dissipating device at the end of the slope breaker and off the construction right-of-way.

   d. Position the outfall of each temporary slope breaker to prevent sediment discharge into wetlands, waterbodies, or other sensitive resources.

2. Sediment Barriers

   a. Sediment barriers are intended to stop the flow of sediments and to prevent the deposition of sediments into sensitive resources. They may be constructed of materials such as silt fence, staked hay or straw bales, compacted earth (e.g., driveable berms across travelways), sand bags, or other appropriate materials.

   b. At a minimum, install and maintain temporary sediment barriers across the entire construction right-of-way at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody, wetland, or road crossing until revegetation is successful as defined in this Plan. Leave adequate room between the base of the slope and the sediment barrier to accommodate ponding of water and sediment deposition.

c. Where wetlands or waterbodies are adjacent to and downslope of construction work areas, install sediment barriers along the edge of these areas, as necessary to prevent sediment flow into the wetland or waterbody.

3. Mulch

a. Apply mulch on all slopes (except in actively cultivated cropland) concurrent with or immediately after seeding, where necessary to stabilize the soil surface and to reduce wind and water erosion. Spread mulch uniformly over the area to cover at least 75 percent of the ground surface at a rate of 2 tons/acre of straw or its equivalent, unless the local soil conservation authority, landowner, or land managing agency approves otherwise in writing.

b. Mulch can consist of weed-free straw or hay, wood fiber hydromulch, erosion control fabric, or some functional equivalent.

c. Mulch before seeding if:

(1) final grading and installation of permanent erosion control measures, will not be completed in an area within 20 days after the trench in that area is backfilled (10 days in residential areas), as required in section V.A.1; or

(2) construction or restoration activity is interrupted for extended periods, such as when seeding cannot be completed due to seeding period restrictions.

d. If mulching before seeding, increase mulch application on all slopes within 100 feet of waterbodies and wetlands to a rate of 3 tons/acre of straw or equivalent.

e. If wood chips are used as mulch, do not use more than 1 ton/acre and add the equivalent of 11 lbs/acre available nitrogen (at least 50 percent of which is slow release).

f. Ensure that mulch is adequately anchored to minimize loss due to wind and water.

g. When anchoring with liquid mulch binders, use rates recommended by the manufacturer. Do not use liquid mulch binders within 100 feet of wetlands or waterbodies.

h. Install erosion control fabric on waterbody banks at the time of final bank recontouring. Anchor the erosion control fabric with pegs, staples or other appropriate devices **(see figure Plan-8 Appendix A of the POD)**.

V. RESTORATION

A. CLEANUP

1. Commence cleanup operations immediately following backfill operations. Complete final grading, topsoil replacement, and installation of permanent erosion control structures within 20 days after backfilling the trench (10 days in residential areas). If seasonal or other weather conditions prevent compliance with these time frames, maintain temporary erosion controls (temporary slope breakers and sediment barriers) until conditions allow completion of cleanup.

   The project sponsor should file with the Secretary for the review and written approval of the Director, a winterization plan if construction will continue into the winter season when conditions could delay successful decompaction, topsoil replacement, or seeding until the following spring.

2. A travel lane may be left open temporarily to allow access by construction traffic if the temporary erosion control structures are installed as specified in section IV.F. and inspected and maintained as specified in sections II.B.12 through 14. When access is no longer required the travel lane must be removed and the right-of-way restored.

3. Rock excavated from the trench may be used to backfill the trench only to the top of the existing bedrock profile. Rock that is not returned to the trench should be considered construction debris, unless approved for use as mulch or for some other use on the construction work areas by the landowner or land managing agency.

4. Remove excess rock from at least the top 12 inches of soil in all actively cultivated or rotated cropland and pastures, hayfields, and residential areas, as well as other areas at the landowner's request. The size, density, and distribution of rock on the construction work area should be similar to

adjacent areas not disturbed by construction. The landowner may approve other provisions in writing.

5. Grade the construction right-of-way to restore pre-construction contours and leave the soil in the proper condition for planting.

6. Remove construction debris from all construction work areas unless the landowner or land managing agency approves otherwise.

7. Remove temporary sediment barriers when replaced by permanent erosion control measures or when revegetation is successful.

B. PERMANENT EROSION CONTROL DEVICES

1. Trench Breakers **(see figure Plan-6 Appendix A of the POD)**

   a. Trench breakers are intended to slow the flow of subsurface water along the trench. Trench breakers may be constructed of materials such as sand bags or polyurethane foam. Do not use topsoil in trench breakers.

   b. An engineer or similarly qualified professional shall determine the need for and spacing of trench breakers. Otherwise, trench breakers shall be installed at the same spacing as and upslope of permanent slope breakers.

   c. In agricultural fields and residential areas where slope breakers are not typically required, install trench breakers at the same spacing as if permanent slope breakers were required.

   d. At a minimum, install a trench breaker at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody or wetland and where needed to avoid draining a waterbody or wetland.

2. Permanent Slope Breakers **(see figure Plan-3 Appendix A of the POD)**

   a. Permanent slope breakers are intended to reduce runoff velocity, divert water off the construction right-of-way, and prevent sediment deposition into sensitive resources. Permanent slope breakers may be constructed of materials such as soil, sand bags, or some functional equivalent.

   b. Construct and maintain permanent slope breakers in all areas, except cultivated areas and lawns, using spacing recommendations obtained from the local soil conservation authority or land managing agency.

In the absence of written recommendations, use the following spacing unless closer spacing is necessary to avoid excessive erosion on the construction right-of-way:

Slope (%)	Spacing (feet)
5 - 15	300
>15 - 30	200
>30	100

c. Construct slope breakers to divert surface flow to a stable area without causing water to pool or erode behind the breaker. In the absence of a stable area, construct appropriate energy-dissipating devices at the end of the breaker.

d. Slope breakers may extend slightly (about 4 feet) beyond the edge of the construction right-of-way to effectively drain water off the disturbed area. Where slope breakers extend beyond the edge of the construction right-of-way, they are subject to compliance with all applicable survey requirements.

C. SOIL COMPACTION MITIGATION

1. Test topsoil and subsoil for compaction at regular intervals in agricultural and residential areas disturbed by construction activities. Conduct tests on the same soil type under similar moisture conditions in undisturbed areas to approximate preconstruction conditions. Use penetrometers or other appropriate devices to conduct tests.

2. Plow severely compacted agricultural areas with a paraplow or other deep tillage implement. In areas where topsoil has been segregated, plow the subsoil before replacing the segregated topsoil.

   Alternatively, make arrangements with the landowner to plant and plow under a "green manure" crop, such as alfalfa, to decrease soil bulk density and improve soil structure. If subsequent construction and cleanup activities result in further compaction, conduct additional tilling.

3. Perform appropriate soil compaction mitigation in severely compacted residential areas.

D. REVEGETATION

1. General

a. The project sponsor is responsible for ensuring successful revegetation of soils disturbed by project-related activities, except as noted in section V.D.1.b.

b. Restore all turf, ornamental shrubs, and specialized landscaping in accordance with the landowner's request, or compensate the landowner. Restoration work must be performed by personnel familiar with local horticultural and turf establishment practices.

2. Soil Additives

Fertilize and add soil pH modifiers in accordance with written recommendations obtained from the local soil conservation authority, land management agencies, or landowner. Incorporate recommended soil pH modifier and fertilizer into the top 2 inches of soil as soon as possible after application.

3. Seeding Requirements

a. Prepare a seedbed in disturbed areas to a depth of 3 to 4 inches using appropriate equipment to provide a firm seedbed. When hydroseeding, scarify the seedbed to facilitate lodging and germination of seed.

b. Seed disturbed areas in accordance with written recommendations for seed mixes, rates, and dates obtained from the local soil conservation authority or the request of the landowner or land management agency. Seeding is not required in actively cultivated croplands unless requested by the landowner.

c. Perform seeding of permanent vegetation within the recommended seeding dates. If seeding cannot be done within those dates, use appropriate temporary erosion control measures discussed in section IV.F. and perform seeding of permanent vegetation at the beginning of the next recommended seeding season. ***However, the Company plans to seed whenever the clean up is complete, even if it is not in the recommended seeding season. This will permit establishment of at least some seed and does not relieve the Company of its responsibility to achieve acceptable reclamation after construction. Company will mulch all areas seeded outside***

the recommended season, at mulch rates described herein for seeded areas. This variance will be implemented only if the NRCS offices in affected areas have approved of this out of season seeding proposal. Lawns may be seeded on a schedule established with the landowner.

d. In the absence of written recommendations from the local soil conservation authorities, seed all disturbed soils within 6 working days of final grading, weather and soil conditions permitting, subject to the specifications in section V.D.3.a-c. ***Due to the length of this project and potential for separation between seeding crews and final clean up crews, the Company proposes to extend the time between these activities from six working days to twelve working days (fourteen calendar days), weather permitting, subject to approval of the affected landowner or land managing agency.***

e. Base seeding rates on Pure Live Seed. Use seed within 12 months of seed testing.

f. Treat legume seed with an inoculant specific to the species using the manufacturer's recommended rate of inoculant appropriate for the seeding method (broadcast, drill, or hydro).

g. In the absence of written recommendations from the local soil conservation authorities, landowner, or land managing agency to the contrary, a seed drill equipped with a cultipacker is preferred for seed application.

Broadcast or hydroseeding can be used in lieu of drilling at double the recommended seeding rates. Where seed is broadcast, firm the seedbed with a cultipacker or roller after seeding. In rocky soils or where site conditions may limit the effectiveness of this equipment, other alternatives may be appropriate (e.g., use of a chain drag) to lightly cover seed after application, as approved by the Environmental Inspector.

VI. OFF-ROAD VEHICLE CONTROL

To each owner or manager of forested lands offer to install and maintain measures to control unauthorized vehicle access to the right-of-way. These measures may include:

A. Signs;

B. Fences with locking gates;

C. Slash and timber barriers, pipe barriers, or a line of boulders across the right-of-way; and

D. Conifers or other appropriate trees/or shrubs across the right-of-way.

VII. POST-CONSTRUCTION ACTIVITIES

A. MONITORING AND MAINTENANCE

1. Conduct follow-up inspections of all disturbed areas after the first and second growing seasons to determine the success of revegetation.

2. Revegetation in non-agricultural areas shall be considered successful if upon visual survey the density and cover of non-nuisance vegetation are similar in density and cover to adjacent undisturbed lands. In agricultural areas, revegetation shall be considered successful if crop yields are similar to adjacent undisturbed portions of the same field.

   Continue revegetation efforts until revegetation is successful. *If excessive wind or water erosion occurs **during restoration or operations** (as indicated by poor revegetation success, noticeable deflation, sheet or rill erosion, and/or downgradient soil deposition), WIC shall renew site restoration treatments (including soil stabilization and revegetation) and install and monitor erosion minimization treatments (e.g., crimped mulch, water and sediment barriers, snow fences) to ensure soil stabilization as part of WIC's ongoing maintenance program. Such efforts shall be conducted in coordination with landowners or appropriate federal or state land management agencies.*

3. Monitor and correct problems with drainage and irrigation systems resulting from pipeline construction in active agricultural areas until restoration is successful.

4. Restoration shall be considered successful if the right-of-way surface condition is similar to adjacent undisturbed lands, construction debris is removed (unless requested otherwise by the land owner or land managing agency), revegetation is successful, and proper drainage has been restored.

5. Routine vegetation maintenance clearing shall not be done more frequently than every 3 years. However, to facilitate periodic corrosion and leak surveys, a corridor not exceeding 10 feet in width centered on the pipeline

may be maintained annually in a herbaceous state. In no case shall routine vegetation maintenance clearing occur between April 15 and August 1 of any year.

6. Efforts to control unauthorized off-road vehicle use, in cooperation with the landowner, shall continue throughout the life of the project. Maintain signs, gates, and vehicle trails as necessary.

B. REPORTING

1. The project sponsor shall maintain records that identify by milepost:

   a. method of application, application rate, and type of fertilizer, pH modifying agent, seed, and mulch used;

   b. acreage treated;

   c. dates of backfilling and seeding;

   d. names of landowners requesting special seeding treatment and a description of the follow-up actions; and

   e. any problem areas and how they were addressed.

2. The project sponsor shall file with the Secretary quarterly activity reports documenting problems, including those identified by the landowner, and corrective actions taken for at least 2 years following construction.

APPENDIX C

WIC'S WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES

THIS PLAN IS PART OF THE BLM'S DRAFT PLAN OF DEVELOPMENT (POD). *FIGURES REFERENCED IN THIS PLAN ARE NOT INCLUDED IN THIS APPENDIX.*

Note: WIC's modifications to the FERC Wetland and Waterbody Construction and Mitigation Procedures (FERC Procedures) are highlighted with bold text. Variances to the FERC Plan are denoted by *bold, italic* text.

Appendix C

Wetland and Waterbody Construction and Mitigation Procedures

Wyoming Interstate Company, Ltd.

Piceance Basin Expansion Project
Moffat and Rio Blanco Counties, Colorado
Sweetwater County, Wyoming

WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES

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WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES

I. APPLICABILITY

A. The intent of these Procedures is to assist applicants by identifying baseline mitigation measures for minimizing the extent and duration of project-related disturbance on wetlands and waterbodies. The project sponsors should specify in their applications for a FERC Certificate (Certificate) any individual measures in these Procedures they consider unnecessary, technically infeasible, or unsuitable due to local conditions and to fully describe any alternative measures they would use. Applicants should also explain how those alternative measures would achieve a comparable level of mitigation.

Once a project is certificated, further changes can be approved. Any such changes from the measures in these Procedures (or the applicant's approved procedures) will be approved by the Director of the Office of Energy Projects (Director), upon the applicant's written request, if the Director agrees that an alternative measure:

1. provides equal or better environmental protection;

2. is necessary because a portion of these Procedures is infeasible or unworkable based on project-specific conditions; or

3. is specifically required in writing by another Federal, state, or Native American land management agency for the portion of the project on its land or under its jurisdiction.

Any requirements in these Procedures to file material with the Secretary of the FERC (Secretary) do not apply to projects undertaken under the provisions of the blanket certificate program. This exemption does not apply to a request for alternative measures.

Project-related impacts on non-wetland areas are addressed in the staff's Upland Erosion Control, Revegetation, and Maintenance Plan (Plan).

B. DEFINITIONS

1. "Waterbody" includes any natural or artificial stream, river, or drainage with perceptible flow <u>at the time of crossing</u>, and other permanent waterbodies such as ponds and lakes:

a. "minor waterbody" includes all waterbodies less than or equal to 10 feet wide at the water's edge at the time of construction;

b. "intermediate waterbody" includes all waterbodies greater than 10 feet wide but less than or equal to 100 feet wide at the water's edge at the time of construction; and

c. "major waterbody" includes all waterbodies greater than 100 feet wide at the water's edge at the time of construction.

2. "Wetland" includes any area that is not in actively cultivated or rotated cropland and that satisfies the requirements of the current Federal methodology for identifying and delineating wetlands.

II. PRECONSTRUCTION FILING

A. The following information shall be filed with the Secretary prior to the beginning of construction:

1. the hydrostatic testing information specified in section VII.B.3. and a wetland delineation report as described in section VI.A.1., if applicable; and

2. a schedule identifying when trenching or blasting would occur within each waterbody greater than 10 feet wide, or within any designated coldwater fishery. The project sponsor shall revise the schedule as necessary to provide FERC staff at least 14 days advance notice. Changes within this last 14-day period must provide for at least 48 hours advance notice.

B. The following site-specific construction plans required by these Procedures must be filed with the Secretary for the review and written approval by the Director:

1. plans for extra work areas that would be closer than 50 feet from a waterbody or wetland;

2. plans for major waterbody crossings;

3. plans for the use of a construction right-of-way greater than 75 feet wide in wetlands; and

4. plans for horizontal directional drill (HDD) "crossings" of wetlands or waterbodies.

III. ENVIRONMENTAL INSPECTORS

A. At least one Environmental Inspector having knowledge of the wetland and waterbody conditions in the project area is required for each construction spread. The number and experience of Environmental Inspectors assigned to each construction spread should be appropriate for the length of the construction spread and the number/significance of resources affected.

B. The Environmental Inspector's responsibilities are outlined in the Upland Erosion Control, Revegetation, and Maintenance Plan (Plan).

IV. PRECONSTRUCTION PLANNING

A. A copy of the Stormwater Pollution Prevention Plan (SWPPP) prepared for compliance with the U.S. Environmental Protection Agency's (EPA) National Stormwater Program General Permit requirements must be available in the field on each construction spread. The SWPPP shall contain Spill Prevention and Response Procedures that meet the requirements of state and Federal agencies. **These Procedures, taken with the FERC Plan and the SPCC, make up the components of an SWPPP for compliance with the EPA's and/or state(s) National Pollution Discharge and Elimination System Program ("NPDES").**

1. It shall be the responsibility of the project sponsor and its contractors to structure their operations in a manner that reduces the risk of spills or the accidental exposure of fuels or hazardous materials to waterbodies or wetlands. The project sponsor and its contractors must, at a minimum, ensure that:

   a. all employees handling fuels and other hazardous materials are properly trained;

   b. all equipment is in good operating order and inspected on a regular basis;

   c. fuel trucks transporting fuel to on-site equipment travel only on approved access roads;

   d. all equipment is parked overnight and/or fueled at least 100 feet from a waterbody or in an upland area at least 100 feet from a wetland boundary. *In order to protect Spring Creek and Deception Creek from potential spills, WIC shall locate areas designated for refueling, parking or maintenance, or storage of fuels, lubricants, or hazardous materials a minimum of 100 feet from the upper edge (crest) of the stream terraces along Spring*

Creek and Deception Creek. These activities can occur closer *(including at Spring Creek and Deception Creek)* only if the Environmental Inspector finds, in advance, no reasonable alternative and the project sponsor and its contractors have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill;

e. hazardous materials, including chemicals, fuels, and lubricating oils, are not stored within 100 feet of a wetland, waterbody, or designated municipal watershed area, unless the location is designated for such use by an appropriate governmental authority. This applies to storage of these materials and does not apply to normal operation or use of equipment in these areas; and

f. concrete coating activities are not performed within 100 feet of a wetland or waterbody boundary, unless the location is an existing industrial site designated for such use.

2. The project sponsor and its contractors must structure their operations in a manner that provides for the prompt and effective cleanup of spills of fuel and other hazardous materials. At a minimum, the project sponsor and its contractors must:

   a. ensure that each construction crew (including cleanup crews) has on hand sufficient supplies of absorbent and barrier materials to allow the rapid containment and recovery of spilled materials and knows the procedure for reporting spills;

   b. ensure that each construction crew has on hand sufficient tools and material to stop leaks;

   c. know the contact names and telephone numbers for all local, state, and Federal agencies (including, if necessary, the U. S. Coast Guard and the National Response Center) that must be notified of a spill; and

   d. follow the requirements of those agencies in cleaning up the spill, in excavating and disposing of soils or other materials contaminated by a spill, and in collecting and disposing of waste generated during spill cleanup.

B. AGENCY COORDINATION

The project sponsor must coordinate with the appropriate local, state, and Federal agencies as outlined in these Procedures and in the Certificate.

V. WATERBODY CROSSINGS

A. NOTIFICATION PROCEDURES AND PERMITS

1. Apply to the U.S. Army Corps of Engineers (COE), or its delegated agency, for the appropriate wetland and waterbody crossing permits.

2. Provide written notification to authorities responsible for potable surface water supply intakes located within 3 miles downstream of the crossing at least 1 week before beginning work in the waterbody, or as otherwise specified by that authority.

3. Apply for state-issued waterbody crossing permits and obtain individual or generic section 401 water quality certification or waiver.

4. Notify appropriate state authorities at least 48 hours before beginning trenching or blasting within the waterbody, or as specified in state permits.

B. INSTALLATION

1. Time Window for Construction

Unless expressly permitted or further restricted by the appropriate state agency in writing on a site-specific basis, instream work, except that required to install or remove equipment bridges, must occur during the following time windows:

a. coldwater fisheries - June 1 through September 30; and

b. coolwater and warmwater fisheries - June 1 through November 30.

2. Extra Work Areas

a. Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from water's edge, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land.

b. The project sponsor shall file with the Secretary for review and written approval by the Director, a site-specific construction plan for each extra work area with a less than 50-foot setback from the water's edge, (except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land) and a site-specific explanation of the conditions that will not permit a 50-foot setback. ***The Company has proposed site specific crossing procedures at three perennial waterbody crossings included with the application. These site specific crossing procedures include variances from the setback requirements contained herein. The Company proposes to follow the requirements herein at crossings where site specific plans have not been filed with and approved by the Director of OEP.***

c. Limit clearing of vegetation between extra work areas and the edge of the waterbody to the certificated construction right-of-way.

d. Limit the size of extra work areas to the minimum needed to construct the waterbody crossing.

3. General Crossing Procedures

a. Comply with the COE, or its delegated agency, permit terms and conditions.

b. Construct crossings as close to perpendicular to the axis of the waterbody channel as engineering and routing conditions permit.

c. If the pipeline parallels a waterbody, attempt to maintain at least 15 feet of undisturbed vegetation between the waterbody (and any adjacent wetland) and the construction right-of-way.

d. Where waterbodies meander or have multiple channels, route the pipeline to minimize the number of waterbody crossings.

e. Maintain adequate flow rates to protect aquatic life, and prevent the interruption of existing downstream uses.

f. Waterbody buffers (extra work area setbacks, refueling restrictions, etc.) must be clearly marked in the field with signs and/or highly visible flagging until construction-related ground disturbing activities are complete.

4. Spoil Pile Placement and Control

   a. All spoil from minor and intermediate waterbody crossings, and upland spoil from major waterbody crossings, must be placed in the construction right-of-way at least 10 feet from the water's edge or in additional extra work areas as described in section V.B.2.

   b. Use sediment barriers to prevent the flow of spoil or heavily silt-laden water into any waterbody.

5. Equipment Bridges

   a. Only clearing equipment and equipment necessary for installation of equipment bridges may cross waterbodies prior to bridge installation. Limit the number of such crossings of each waterbody to one per piece of clearing equipment.

   b. Construct equipment bridges to maintain unrestricted flow and to prevent soil from entering the waterbody. Examples of such bridges include:

      (1) equipment pads and culvert(s) **(see figure Proc-1, Appendix A of the POD)**;

      (2) equipment pads or railroad car bridges without culverts **(see figure Proc-2 Appendix A of the POD)**;

      (3) clean rock fill and culvert(s) **(see figure Proc-3 Appendix A of the POD)**; and

      (4) flexi-float or portable bridges **(see figure Proc-4 Appendix A of the POD)**.

   Additional options for equipment bridges may be utilized that achieve the performance objectives noted above. Do not use soil to construct or stabilize equipment bridges.

   c. Design and maintain each equipment bridge to withstand and pass the highest flow expected to occur while the bridge is in place. Align culverts to prevent bank erosion or streambed scour. If necessary, install energy dissipating devices downstream of the culverts.

d. Design and maintain equipment bridges to prevent soil from entering the waterbody.

e. Remove equipment bridges as soon as possible after permanent seeding unless the COE, or its delegated agency, authorizes it as a permanent bridge.

f. If there will be more than 1 month between final cleanup and the beginning of permanent seeding and reasonable alternative access to the right-of-way is available, remove equipment bridges as soon as possible after final cleanup.

6. Dry-Ditch Crossing Methods

a. Unless approved otherwise by the appropriate state agency, install the pipeline using one of the dry-ditch methods outlined below for crossings of waterbodies up to 30 feet wide (at the water's edge at the time of construction) that are state-designated as either coldwater or significant coolwater or warmwater fisheries.

b. Dam and Pump **(see figure Proc-5 Appendix A of the POD)**

(1) The dam-and-pump method may be used without prior approval for crossings of waterbodies where pumps can adequately transfer streamflow volumes around the work area, and there are no concerns about sensitive species passage.

(2) Implementation of the dam-and-pump crossing method must meet the following performance criteria:

(i) use sufficient pumps, including on-site backup pumps, to maintain downstream flows;
(ii) construct dams with materials that prevent sediment and other pollutants from entering the waterbody (e.g., sandbags or clean gravel with plastic liner);
(iii) screen pump intakes;
(iv) prevent streambed scour at pump discharge; and
(v) monitor the dam and pumps to ensure proper operation throughout the waterbody crossing.

c. Flume Crossing **(see figure Proc-6 Appendix A of the POD)**

The flume crossing method requires implementation of the following steps:

(1) install flume pipe after blasting (if necessary), but before any trenching;

(2) use sand bag or sand bag and plastic sheeting diversion structure or equivalent to develop an effective seal and to divert stream flow through the flume pipe (some modifications to the stream bottom may be required in to achieve an effective seal);

(3) properly align flume pipe(s) to prevent bank erosion and streambed scour;

(4) do not remove flume pipe during trenching, pipelaying, or backfilling activities, or initial streambed restoration efforts; and

(5) remove all flume pipes and dams that are not also part of the equipment bridge as soon as final cleanup of the stream bed and bank is complete.

d. Horizontal Directional Drill (HDD) **(see figure Proc-7 Appendix A of the POD)**

To the extent they were not provided as part of the pre-certification process, for each waterbody or wetland that would be crossed using the HDD method, provide a plan that includes:

(1) site-specific construction diagrams that show the location of mud pits, pipe assembly areas, and all areas to be disturbed or cleared for construction *(See Appendix A of the POD, Alignment Sheets, for site specific drawings with these detail items)*;

(2) a description of how an inadvertent release of drilling mud would be contained and cleaned up *(see Appendix E of the POD*; and

(3) a contingency plan for crossing the waterbody or wetland in the event the directional drill is unsuccessful and how the abandoned drill hole would be sealed, if necessary. *If WIC*

is not able to complete an HDD crossing at the Yampa and White Rivers, WIC shall not proceed with a non-HDD crossing of the Yampa or White Rivers ***until*** *it has filed a site-specific alternate crossing plan with the Secretary for review. This plan shall identify measures that would minimize instream impacts and avoid or minimize potential impacts on federally listed fishes. WIC shall not begin a non-HDD crossing of the Yampa or White Rivers* ***until*** *the FERC completes any necessary ESA Section 7 consultation with the FWS, and the Director of OEP notifies WIC in writing that it may proceed with the alternate river crossing method.*

7. Crossings of Minor Waterbodies (see figure proc-8 Appendix A of the POD)

Where a dry-ditch crossing is not required, minor waterbodies may be crossed using the open-cut crossing method, with the following restrictions:

a. except for blasting and other rock breaking measures, complete instream construction activities (including trenching, pipe installation, backfill, and restoration of the streambed contours) within 24 hours. Streambanks and unconsolidated streambeds may require additional restoration after this period;

b. limit use of equipment operating in the waterbody to that needed to construct the crossing; and

c. equipment bridges are not required at minor waterbodies that do not have a state-designated fishery classification (e.g., agricultural or intermittent drainage ditches). However, if an equipment bridge is used it must be constructed as described in section V.B.5.

8. Crossings of Intermediate Waterbodies

Where a dry-ditch crossing is not required, intermediate waterbodies may be crossed using the open-cut crossing method, with the following restrictions:

a. complete instream construction activities (not including blasting and other rock breaking measures) within 48 hours, unless site-specific conditions make completion within 48 hours infeasible;

b. limit use of equipment operating in the waterbody to that needed to construct the crossing; and

c. all other construction equipment must cross on an equipment bridge as specified in section V.B.5.

9. Crossings of Major Waterbodies

Before construction, the project sponsor shall file with the Secretary for the review and written approval by the Director a detailed, site-specific construction plan and scaled drawings identifying all areas to be disturbed by construction for each major waterbody crossing (the scaled drawings are not required for any offshore portions of pipeline projects). This plan should be developed in consultation with the appropriate state and Federal agencies and should include extra work areas, spoil storage areas, sediment control structures, etc., as well as mitigation for navigational issues.

The Environmental Inspector may adjust the final placement of the erosion and sediment control structures in the field to maximize effectiveness.

10. Temporary Erosion and Sediment Control

Install sediment barriers (as defined in section IV.F.2.a. of the Plan) immediately after initial disturbance of the waterbody or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion and sediment control measures are addressed in more detail in the Plan; however, the following specific measures must be implemented at stream crossings:

a. install sediment barriers across the entire construction right-of-way at all waterbody crossings, where necessary to prevent the flow of sediments into the waterbody. Removable sediment barriers (or driveable berms) must be installed across the travel lane. These removable sediment barriers can be removed during the construction day, but must be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;

b. where waterbodies are adjacent to the construction right-of-way, install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way; and

c. use trench plugs at all waterbody crossings, as necessary, to prevent diversion of water into upland portions of the pipeline trench and to keep any accumulated trench water out of the waterbody.

11. Trench Dewatering

Dewater the trench (either on or off the construction right-of-way) in a manner that does not cause erosion and does not result in heavily silt-laden water flowing into any waterbody. Remove the dewatering structures as soon as possible after the completion of dewatering activities.

C. RESTORATION

1. Use clean gravel or native cobbles for the upper 1 foot of trench backfill in all waterbodies that contain coldwater fisheries.

2. For open-cut crossings, stabilize waterbody banks and install temporary sediment barriers within 24 hours of completing instream construction activities. For dry-ditch crossings, complete streambed and bank stabilization before returning flow to the waterbody channel.

3. Return all waterbody banks to preconstruction contours or to a stable angle of repose as approved by the Environmental Inspector.

4. Application of riprap for bank stabilization must comply with COE, or its delegated agency, permit terms and conditions.

5. Unless otherwise specified by state permit, limit the use of riprap to areas where flow conditions preclude effective vegetative stabilization techniques such as seeding and erosion control fabric.

6. Revegetate disturbed riparian areas with conservation grasses and legumes or native plant species, preferably woody species.

7. Install a permanent slope breaker across the construction right-of-way at the base of slopes greater than 5 percent that are less than 50 feet from the

waterbody, or as needed to prevent sediment transport into the waterbody. In addition, install sediment barriers as outlined in the Plan.

In some areas, with the approval of the Environmental Inspector, an earthen berm may be suitable as a sediment barrier adjacent to the waterbody.

8. Sections V.C.3. through V.C.6. above also apply to those perennial or intermittent streams not flowing at the time of construction.

D. POST-CONSTRUCTION MAINTENANCE

1. Limit vegetation maintenance adjacent to waterbodies to allow a riparian strip at least 25 feet wide, as measured from the waterbody's mean high water mark, to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be maintained in a herbaceous state. In addition, trees that are located within 15 feet of the pipeline that are greater than 15 feet in height may be cut and removed from the permanent right-of-way.

2. Do not use herbicides or pesticides in or within 100 feet of a waterbody except as allowed by the appropriate land management or state agency.

VI. WETLAND CROSSINGS

A. GENERAL

1. The project sponsor shall conduct a wetland delineation using the current Federal methodology and file a wetland delineation report with the Secretary before construction. This report shall identify:

   a. by milepost all wetlands that would be affected;

   b. the National Wetlands Inventory (NWI) classification for each wetland;

   c. the crossing length of each wetland in feet; and

   d. the area of permanent and temporary disturbance that would occur in each wetland by NWI classification type.

The requirements outlined in this section do not apply to wetlands in actively cultivated or rotated cropland. Standard upland protective measures, including workspace and topsoiling requirements, apply to these agricultural wetlands.

2. Route the pipeline to avoid wetland areas to the maximum extent possible. If a wetland cannot be avoided or crossed by following an existing right-of-way, route the new pipeline in a manner that minimizes disturbance to wetlands. Where looping an existing pipeline, overlap the existing pipeline right-of-way with the new construction right-of-way. In addition, locate the loop line no more than 25 feet away from the existing pipeline unless site-specific constraints would adversely affect the stability of the existing pipeline.

3. Limit the width of the construction right-of-way to 75 feet or less. Prior written approval of the Director is required where topographic conditions or soil limitations require that the construction right-of-way width within the boundaries of a federally delineated wetland be expanded beyond 75 feet. Early in the planning process the project sponsor is encouraged to identify site-specific areas where existing soils lack adequate unconfined compressive strength that would result in excessively wide ditches and/or difficult to contain spoil piles.

4. Wetland boundaries and buffers must be clearly marked in the field with signs and/or highly visible flagging until construction-related ground disturbing activities are complete.

5. Implement the measures of sections V. <u>and</u> VI. in the event a waterbody crossing is located within or adjacent to a wetland crossing. If all measures of sections V. and VI. cannot be met, the project sponsor must file with the Secretary a site-specific crossing plan for review and written approval by the Director before construction. This crossing plan shall address at a minimum:

   a. spoil control;

   b. equipment bridges;

   c. restoration of waterbody banks and wetland hydrology;

   d. timing of the waterbody crossing;

   e. method of crossing; and

f. size and location of all extra work areas.

6. Do not locate aboveground facilities in any wetland, except where the location of such facilities outside of wetlands would prohibit compliance with U.S. Department of Transportation regulations.

B. INSTALLATION

1. Extra Work Areas and Access Roads

a. Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from wetland boundaries, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land. ***The Company has proposed site specific crossing procedures at wetlands associated with the three perennial waterbody crossings included with the application. These procedures are shown on the same site specific drawings as the five perennial waterbody crossings. These site specific crossing procedures include variances from the setback requirements contained herein. The Company proposes to follow the requirements herein at crossings where site specific plans have not been filed with and approved by the Director of OEP.***

b. The project sponsor shall file with the Secretary for review and written approval by the Director, a site-specific construction plan for each extra work area with a less than 50-foot setback from wetland boundaries (except where adjacent upland consists of actively cultivated or rotated cropland or other disturbed land) and a site-specific explanation of the conditions that will not permit a 50-foot setback.

c. Limit clearing of vegetation between extra work areas and the edge of the wetland to the certificated construction right-of-way.

d. The construction right-of-way may be used for access when the wetland soil is firm enough to avoid rutting or the construction right-of-way has been appropriately stabilized to avoid rutting (e.g., with timber riprap, prefabricated equipment mats, or terra mats).

In wetlands that cannot be appropriately stabilized, all construction equipment other than that needed to install the wetland crossing shall use access roads located in upland areas. Where access roads in upland areas do not provide reasonable access, limit all other construction equipment to one pass through the wetland using the construction right-of-way.

e. The only access roads, other than the construction right-of-way, that can be used in wetlands without Director approval, are those existing roads that can be used with no modification and no impact on the wetland.

2. Crossing Procedures

a. Comply with COE, or its delegated agency, permit terms and conditions **(see figures Proc-9 and Proc-10 Appendix A of the POD)**.

b. Assemble the pipeline in an upland area unless the wetland is dry enough to adequately support skids and pipe.

c. Use "push-pull" or "float" techniques to place the pipe in the trench where water and other site conditions allow.

d. Minimize the length of time that topsoil is segregated and the trench is open.

e. Limit construction equipment operating in wetland areas to that needed to clear the construction right-of-way, dig the trench, fabricate and install the pipeline, backfill the trench, and restore the construction right-of-way.

f. Cut vegetation just aboveground level, leaving existing root systems in place, and remove it from the wetland for disposal.

g. Limit pulling of tree stumps and grading activities to directly over the trenchline. Do not grade or remove stumps or root systems from the rest of the construction right-of-way in wetlands unless the Chief Inspector and Environmental Inspector determine that safety-related construction constraints require grading or the removal of tree stumps from under the working side of the construction right-of-way.

h. Segregate the top 1 foot of topsoil from the area disturbed by trenching, except in areas where standing water is present or soils are saturated or frozen. Immediately after backfilling is complete, restore the segregated topsoil to its original location.

i. Do not use rock, soil imported from outside the wetland, tree stumps, or brush riprap to support equipment on the construction right-of-way.

j. If standing water or saturated soils are present, or if construction equipment causes ruts or mixing of the topsoil and subsoil in wetlands, use low-ground-weight construction equipment, or operate normal equipment on timber riprap, prefabricated equipment mats, or terra mats.

k. Do not cut trees outside of the approved construction work area to obtain timber for riprap or equipment mats.

l. Attempt to use no more than two layers of timber riprap to support equipment on the construction right-of-way.

m. Remove all project-related material used to support equipment on the construction right-of-way upon completion of construction.

3. Temporary Sediment Control

Install sediment barriers (as defined in section IV.F.2.a. of the Plan) immediately after initial disturbance of the wetland or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench). Except as noted below in section VI.B.3.c., maintain sediment barriers until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion and sediment control measures are addressed in more detail in the Plan.

a. Install sediment barriers across the entire construction right-of-way immediately upslope of the wetland boundary at all wetland crossings where necessary to prevent sediment flow into the wetland.

b. Where wetlands are adjacent to the construction right-of-way and the right-of-way slopes toward the wetland, install sediment barriers along the edge of the construction right-of-way as necessary to prevent sediment flow into the wetland.

c. Install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way through wetlands. Remove these sediment barriers during right-of-way cleanup.

4. Trench Dewatering

Dewater the trench (either on or off the construction right-of-way) in a manner that does not cause erosion and does not result in heavily silt-laden water flowing into any wetland. Remove the dewatering structures as soon as possible after the completion of dewatering activities.

C. RESTORATION

1. Where the pipeline trench may drain a wetland, construct trench breakers and/or seal the trench bottom as necessary to maintain the original wetland hydrology.

2. For each wetland crossed, install a trench breaker at the base of slopes near the boundary between the wetland and adjacent upland areas. Install a permanent slope breaker across the construction right-of-way at the base of a slope(s) greater than 5 percent where the base of the slope is less than 50 feet from the wetland, or as needed to prevent sediment transport into the wetland. In addition, install sediment barriers as outlined in the Plan. In some areas, with the approval of the Environmental Inspector, an earthen berm may be suitable as a sediment barrier adjacent to the wetland.

3. Do not use fertilizer, lime, or mulch unless required in writing by the appropriate land management or state agency.

4. Consult with the appropriate land management or state agency to develop a project-specific wetland restoration plan. The restoration plan should include measures for re-establishing herbaceous and/or woody species, controlling the invasion and spread of undesirable exotic species (e.g., purple loosestrife and phragmites), and monitoring the success of the revegetation and weed control efforts. Provide this plan to the FERC staff upon request.

5. Until a project-specific wetland restoration plan is developed and/or implemented, temporarily revegetate the construction right-of-way with annual ryegrass at a rate of 40 pounds/acre (unless standing water is present).

6. Ensure that all disturbed areas successfully revegetate with wetland herbaceous and/or woody plant species.

7. Remove temporary sediment barriers located at the boundary between wetland and adjacent upland areas after upland revegetation and stabilization of adjacent upland areas are judged to be successful as specified in section VII.A.5. of the Plan.

D. POST-CONSTRUCTION MAINTENANCE

1. Do not conduct vegetation maintenance over the full width of the permanent right-of-way in wetlands. However, to facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be maintained in a herbaceous state. In addition, trees within 15 feet of the pipeline that are greater than 15 feet in height may be selectively cut and removed from the permanent right-of-way.

2. Do not use herbicides or pesticides in or within 100 feet of a wetland, except as allowed by the appropriate land management agency or state agency.

3. Monitor and record the success of wetland revegetation annually for the first 3 years after construction or until wetland revegetation is successful. At the end of 3 years after construction, file a report with the Secretary identifying the status of the wetland revegetation efforts. Include the percent cover achieved and problem areas (weed invasion issues, poor revegetation, etc.). Continue to file a report annually until wetland revegetation is successful.

4. Wetland revegetation shall be considered successful if the cover of herbaceous and/or woody species is at least 80 percent of the type, density, and distribution of the vegetation in adjacent wetland areas that were not disturbed by construction. If revegetation is not successful at the end of 3 years, develop and implement (in consultation with a professional wetland ecologist) a remedial revegetation plan to actively revegetate the wetland. Continue revegetation efforts until wetland revegetation is successful.

VII. HYDROSTATIC TESTING

A. NOTIFICATION PROCEDURES AND PERMITS

1. Apply for state-issued water withdrawal permits, as required.

2. Apply for National Pollutant Discharge Elimination System (NPDES) or state-issued discharge permits, as required.

3. Notify appropriate state agencies of intent to use specific sources at least 48 hours before testing activities unless they waive this requirement in writing.

B. GENERAL

1. Perform 100 percent radiographic inspection of all pipeline section welds or hydrotest the pipeline sections, before installation under waterbodies or wetlands.

2. If pumps used for hydrostatic testing are within 100 feet of any waterbody or wetland, address the operation and refueling of these pumps in the project's Spill Prevention and Response Procedures.

3. The project sponsor shall file with the Secretary before construction a list identifying the location of all waterbodies proposed for use as a hydrostatic test water source or discharge location.

C. INTAKE SOURCE AND RATE

1. Screen the intake hose to prevent entrainment of fish.

2. Do not use state-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate Federal, state, and/or local permitting agencies grant written permission.

3. Maintain adequate flow rates to protect aquatic life, provide for all waterbody uses, and provide for downstream withdrawals of water by existing users.

4. Locate hydrostatic test manifolds outside wetlands and riparian areas to the maximum extent practicable.

D. DISCHARGE LOCATION, METHOD, AND RATE

1. Regulate discharge rate, use energy dissipation device(s), and install sediment barriers, as necessary, to prevent erosion, streambed scour,

suspension of sediments, or excessive streamflow **(see figure Proc-11 Appendix A of the POD)**.

2. Do not discharge into state-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate Federal, state, and local permitting agencies grant written permission.

APPENDIX D

WIC'S RECLAMATION PLAN

Reclamation Plan
for the
Piceance Basin Expansion
Natural Gas Pipeline

Submitted to:

Federal Energy Regulatory Commission
Office of Pipeline Regulation
888 First Street, NE
Washington, D.C. 20426

for

Wyoming Interstate Company
P.O. Box 1087
Colorado Springs, CO 80903

Prepared by:

Bio-Resources, Inc.
135 East Center
Logan, Utah 84321

March 21, 2005

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RECLAMATION PLAN - PICEANCE BASIN EXPANSION

1.0 INTRODUCTION

Reclamation of the Piceance Basin Expansion Pipeline right-of-way will involve a variety of problems resulting from soil conditions, sensitive plant communities, harsh weather conditions and repeated disturbance. While Wyoming Interstate Company (WIC) has adopted the Federal Energy Regulatory Commission's Upland Erosion Control, Revegetation, and Maintenance Plan (FERC 1/17/2003 Version), a site-specific reclamation plan is also needed.

This Reclamation Plan has been developed by Bio-Resources, Inc., in coordination with regional soil reclamation experts, wetlands and vegetation specialists, the Federal Energy Regulatory Commission (FERC) local Natural Resource Conservation Service (NRCS) and Bureau of Land Management (BLM) offices, and the Colorado State Board of Land Commissioners.

Specifications included in this Reclamation Plan are intended to supplement the general FERC guidelines, which will remain in effect for this project, but the specifications in the Reclamation Plan will supercede those guidelines where they are contradictory. *Specifications that differ from the FERC guidelines are indicated in underlined italics.*

WIC, through its pipeline contractor, will have overall responsibility for the reclamation effort. WIC will require the pipeline contractor to subcontract the revegetation effort to a qualified revegetation contractor with local experience. All seedbed preparation after topsoil replacement will be performed by the revegetation contractor, who will be responsible for all discing, seeding, application of fertilizer and/or manure, mulching, crimping, etc.

2.0 SOIL MANAGEMENT

2.1 CLEARING, GRADING, TOPSOILING

Unless otherwise specified, the right-of-way width will be 85 feet. Exceptions include right-of-way widths of 75 feet or less in wetland areas and right-of-way widths greater than 85 feet in specified extra work areas. At some of the stream and creek crossings, the right-of-way width may be limited to save riparian trees.

In shrubby or brushy areas, the right-of-way will be mowed with a bush hog or similar implement before any grading or topsoiling is done.

In areas where the ground is naturally level, the working and spoil sides of the right-of-way will not be cut or graded. Skimming with a maintainer (moving no more than 2 inches of topsoil) may be done with the concurrence of the environmental inspector and the Federal compliance monitor. To eliminate uneven soils around the base to plants to provide a smooth driving surface. The intention is to leave the topsoil, with its bank of native seeds, as undisturbed as possible.

In naturally level areas, topsoil will be separated up to one foot in depth along the ditch line only. Topsoil from the ditch line will be placed immediately next to the ditch line on the working side, and will be leveled and compacted in a lift located under the skids and string of pipe. If soil conditions become pulverized or powdered out by construction vehicles to a depth of 4 inches or greater, and the pulverized soils are being lost off the ROW from wind or mixed with subsoils, the EI or federal compliance monitor will direct WIC to change operations and begin salvaging topsoil from the working side as further described below.

Where right of way grading is necessary, topsoil will be segregated no less than 6 inches and no more than 12 inches where topsoil is available. In general, if topsoil is present at all, a 6-inch salvage is necessary to capture topsoil. A lesser depth would involve too small a volume of soil, which could be easily lost. The native seed base is contained in the top 12 inches of topsoil. Removal of deeper topsoil would dilute this seed base and slow the return of native vegetation. Further, most soils along the project are between 6 and 12 inches in depth.

Separation of salvaged topsoil and subsoil will be maintained throughout all construction activities.

Segregated topsoil may not be used for padding the pipe.

Segregated topsoil in wind prone areas will be sprayed with water or an approved tacifier to form a crust to minimize soil losses due to wind blown transport of topsoil.

2.2 Contouring, Decompaction, Topsoil Replacement

Cleanup operations should commence immediately following backfill. The right-of-way will be restored to its natural contours. *If compaction has occurred on the working side or other parts of the right-of-way, it should be ripped to a depth no greater than 12 inches.* In places where topsoil has been segregated, the subsoil will be ripped before replacing the topsoil.

Final grading, decompaction, topsoil replacement, and installation of permanent erosion control structures must be completed within 20 days of backfill.

If trees are going to be put back on the right-of-way, they will be stockpiled. After seeding has been completed and verified by the BLM Monitor, trees will be placed back on the right-of-way.

2.3 Rock

Where necessary, surface rock will be removed from the trench or right-of-way and stockpiled along the edge of the work areas. During cleanup, salvaged surface rock will be spread to blend with off-right-of-way areas, to conceal the corridor from adjacent undisturbed areas and to act as a mulch to minimize erosion. If spreading rock over the right-of-way will prevent the safe operation and maintenance of the pipeline, *or if it will hamper successful reclamation*, it will be removed and properly disposed. Rock may be stockpiled on the right-of-way edge near existing roads *if directed by the EI or federal compliance monitor* to keep the public from driving on the right-of-way.

Rock excavated from the trench may be used to backfill the trench only to the top of the existing bedrock profile. Rock that is not returned to the trench should be considered construction debris, unless it is approved for use as mulch (in areas with surface rock), or for some other use on the construction work areas by the landowner or land managing agency.

2.4 Cropland and Irrigated Pasture or Hayland

<u>*Ditch line topsoiling, rather than full right-of-way topsoiling, will be used on cropland and irrigated pasture or hayland, with the written approval of the landowner or land managing agency. This is a variance to the FERC plan, and is suggested as a way to eliminate as much soil handling as possible to minimize mixing, loss and wind erosion.*</u>

<u>*If rutting exceeds 4 to 6 inches in depth, significantly increasing the chance of topsoil mixing with subsoils, work will continue and the rutted area will be covered with at least an adequate volume of new topsoil to replace mixed soils and subsoils, such topsoil purchased in the immediate vicinity,*</u> another variance from the FERC Plan. This variance would allow for continuation of construction during inclement weather at the cost of supplying new topsoil. This departure from the FERC Plan will not apply to rangeland.

Topsoil and subsoil will be tested for compaction at regular intervals with a penetrometer or other appropriate device. Compaction on the right-of-way should approximate the compaction level in adjacent undisturbed areas. Severely compacted agricultural land will be plowed with a paraplow or other deep tillage implement. Where topsoil has been segregated, the subsoil will be plowed before replacing the topsoil.

Excess rock will be removed from at least the top 12 inches of soil in all actively cultivated or rotated croplands and pastures, hayfields, and residential areas, as well as other areas at the landowner's request. The size, density, and distribution of rock on the right-of-way should be similar to adjacent areas not disturbed by construction.

Trench breakers will be installed in both sides of the trench at irrigation ditches to prevent channeling of irrigation water along the trench.

In irrigated pasture, after the pipe is placed in the ditch, the following criteria must be used for backfill and compaction:

- Granular material will be placed on both sides of the pipe up to approximately the top of the pipe.
- Granular material will be water-settled by jetting or directing high pressure nozzles at the material to insure it is "washed" around the bottom half of the pipe.
- Backfill material (18 to 24 inches measured from top of pipe) will be placed in the ditch and leveled to allow compaction equipment to operate. Water will be added

to the backfill material as necessary to achieve optimum compaction. The compaction equipment may be "wacker" packers, flat vibratory plates that are stand alone or mounted on a backhoe, or "sheepsfoot" rollers (either vibratory or non-vibratory). Extra care must be taken to avoid direct contact of the pipe with backfilling, leveling, or compacting equipment. The "aim" density is 92 to 95 percent.

- Additional lifts must be limited to a maximum of 12 inches. If compaction is not acceptable, the lifts will be reduced to 8 inches.
- Topsoil will be restored and the right-of-way leveled to blend topographically with the adjacent undisturbed fields. Irrigation will be restored over the right-of-way.

3.0 SEEDING

3.1 SEEDING DATES

NRCS-recommended seeding dates for the route of the Piceance Basin Expansion are October 1 to May 1 (Oct. 15 to May 1 in some areas). *However, WIC plans to seed whenever the cleanup is complete, even if it is not in the recommended seeding season. This will permit establishment of at least some seed, and does not relieve WIC of its responsibility to achieve acceptable reclamation after construction. WIC will mulch all areas seeded outside the recommended season, at mulch rates described below for seeded areas.* This variance will be implemented only if the NRCS and BLM offices in affected areas have approved of this out-of-season seeding proposal. This determination will need to be made on a site specific basis by BLM. For example, if the clean up reclamation happens very late in the season during muddy and frozen soil conditions, WIC will be able to do no more than temporary stabilization in the form of temporary erosion control structures and mulch. Final decompaction and grading would likely wait until the following summer and then seeding the ROW that fall.

Seeding and mulching shall be completed within 12 working days (14 calendar days) of final grading, weather permitting.

Trees that are going to be spread back on the right-of-way will only be replaced after seeding has been completed and verified by a BLM.

3.2 SEEDBED PREPARATION

Decompaction of the right-of-way (ripping) will be done by the cleanup crew. The seeding crew, however, may encounter surface compaction due to the use of a driving lane after cleanup, or to surface crusting of some soils after rain. There may also be clods left by ripping. The revegetation contractor should be equipped with discs or other tillage implements to deal with these conditions and provide a firm seedbed to a depth of 3 to 4 inches.

Unnecessary discing should be avoided, since it is desirable to leave as much natural vegetation intact as possible.

3.3 Drilling and Broadcasting

Drill seeding is the preferred method. The drill should be a reclamation-type drill, equipped with depth bands and with seedbox agitators and monitors capable of handling mixes of native seed species. One-half inch planting depth will be standard, with 6 to 10 inch drill spacing.

Seed may be broadcast rather than drilled in terrain where drilling is unsafe or impractical. Seed must be broadcast at double the drilling rate. Hand-operated or mechanically-powered cyclone type broadcasters should be used. Broadcast seed should be lightly covered or pressed into the soil with a cultipacker, roller, or sheep's-foot. Where such implements cannot be practically used, seed may be incorporated with a chain drag or by hand raking.

3.4 Seed Mixes

All seed used will be certified unless certified seed is not available from any source. All seed tags will be provided to the reclamation Environmental Inspector and will then be made available to the appropriate BLM Field Office.

Seed mixes and seeding rates for the Piceance Basin Expansion are listed in Appendix A. Seed mixes by milepost are listed in Table 1.

Table 1 Seed Mixes by Milepost on the Piceance Basin Expansion

Milepost	Distance	Source	Site Characterization	County	Seed Mix
0.0-20.5	20.5	BLM	Sagebrush	Sweetwater	1
20.5-21.8	1.3	BLM	Salt Desert Shrub	Sweetwater	3
21.8-50.2	28.4	BLM	Sagebrush	Sweetwater	1
50.2-51.9	1.7	BLM	Pinyon-Juniper	Sweetwater	2
51.9-53.5	1.6	NRCS	Loamy Foothills/Clayey Foothills	Moffat	4
53.5-54.2	0.7	NRCS	Sandy Soils	Moffat	5
54.2-55.4	1.2	NRCS	Loamy Foothills/Clayey Foothills	Moffat	4
55.4-56.2	0.8	NRCS	Sandy Soils	Moffat	5
56.2-66.9	9.9	NRCS	Loamy Foothills/Clayey Foothills	Moffat	4
66.1-66.4	0.3	NRCS	Sandy Soils	Moffat	5
66.4-72.9	6.5	NRCS	Loamy Foothills/Clayey Foothills	Moffat	4
72.9-74.1	1.2	NRCS	Sandy Soils	Moffat	5
74.1-75.9	1.8	NRCS	Loamy Foothills/Clayey Foothills	Moffat	4
75.9-76.2	0.3	NRCS	Sandy Soils	Moffat	5
76.2-83.9	7.7	NRCS	Loamy Foothills/Clayey Foothills	Moffat	4
83.9-87.2	3.3	NRCS	Sandy Soils	Moffat	5
87.2-88.0	0.8	NRCS	Loamy Foothills/Clayey Foothills	Moffat	4
88.0-93.2	5.2	NRCS	Sandy Soils	Moffat	5
93.2-110.4	17.2	NRCS	Loamy Foothills/Clayey Foothills	Moffat	4

Table 1 Seed Mixes by Milepost on the Piceance Basin Expansion					
Milepost	**Distance**	**Source**	**Site Characterization**	**County**	**Seed Mix**
110.4-127.0	16.6	NRCS	Range below 7000'	Rio Blanco	6
127.0-128.3	1.3	NRCS	Riparian	Rio Blanco	7
128.3-136.5	8.2	NRCS	Range below 7000'	Rio Blanco	6
136.5-141.7	5.2	NRCS	Range above 7000'	Rio Blanco	8

Irrigated hayland and irrigated pasture will likely be seeded with mixes stipulated by the landowners. If there are no such stipulations, Mix 9 (Appendix A) will be used. Note: Mix 9 is actually two mixes, a grass mix and alfalfa. One or the other, not both, should be used at the listed drilling rates. If a landowner wishes to mix the grass and alfalfa, drilling rates should be adjusted accordingly.

In actively cultivated cropland, seeding is not required unless requested by the landowner.

A total of 2.4 miles of land enrolled in the Conservation Reserve Program (CRP) occurs in six locations along the Piceance Line (Table 2). As specified in Table 2, Mixes 10-14 will be used on these lands (Appendix A).

Table 2 Conservation Reserve Lands (CRP) located on the Piceance Basin Expansion		
Milepost	**Distance, miles**	**Comment**
117.9-118.15	0.25	Seed mix 11, Vandiver
120.25-120.45	0.2	Seed mix 12, Barton
121.5-121.9	0.4	Seed mix13, Byerly
121.9-122.4	0.5	Seed mix 14, Etchart
123.7-124.5	0.8	Seed mix15, Lake
125.5-125.75	0.25	Seed mix 15, Lake
Total	**2.4 miles**	

Mixes 1, 2 and 5 contain big sagebrush. The BLM has stipulated that the sage seed will be spread independently of the rest of the seed mix. WIC intends to broadcast the sage seed ahead of the drill that plants the rest of the seed mix. The drill for these mixes will be equipped with a cultipacker. When the drill goes over the broadcast sage seed, the drill discs and the cultipacker will incorporate the seed into the soil. Sage seed will be broadcast at double the drilling rate. On state of Colorado lands, 0.75 PLS/acre of sage will be used, rather than the quantities called for in the seed mixes. The locations of State of Colorado lands are given in Table 3.

The right-of-way route passes through two brood-rearing grounds and one lek in Wyoming and 16 brood-rearing grounds and five leks in Colorado (see Table 7 of Appendix O in the POD). Although construction will not affect nesting or brooding in the two-mile radius around leks, it will affect vegetation in this critical habitat. Therefore, sagebrush seed to be spread in these areas will be from seed collected locally, if possible, or *Artemisia wyomingensis*. In addition to sagebrush seed, forb species will be included in the mix, namely, small burnet, Ryland alfalfa, Lewis flax, lupine common to Moffat County, and Cicer milkvech.

Table 3 State of Colorado Trust Lands Located on the Piceance Basin Expansion	
Milepost	Distance, miles
53.9-54.4	0.5
58.15-59.15	1.0
70.5-71.85	1.35
85.85-87.5	1.65
88.3-88.85	0.55
89.15-91.9	2.75
94.8-94.95	0.15
101.8-102.1	0.3
131.8-134.3	2.5
134.75-135.4	0.65
TOTAL	**11.4**

Certified, blue-tagged seed shall be supplied where a named variety is specified. Vendor shall indicate on the bid whether certified or common seed is being offered, as well as the origin of the seed. The blue tags which are removed to mix the seed shall be given to the revegetation contractor and the environmental inspector; in addition, mix tags showing the weighted averages of the ingredients shall be attached to each bag. As the bags are used, the crew will save the mix tags and turn them over to the environmental inspector.

The environmental inspector will sample seed in the following way:

- For lots of 1 to 6 bags, each bag will be sampled.
- For lots of more than 6 bags, samples will be taken from 5 bags plus at least 10 percent of the total number of bags.

Samples will be obtained by plunging the hand into different areas of the bags to extract a handful of seeds. Seeds will be placed into sample bags and labeled. Mix tags and seed samples will be kept stored and available for analysis for five years.

4.0 MULCH

Mulch will be applied mulch on all slopes over 5 percent (except in actively cultivated cropland) concurrent with or immediately after seeding. The mulch to be used will be certified weed-free straw or hay.

Mulch will be spread uniformly to cover at least 75 percent of the ground surface at a rate of <u>*1.5 tons/acre. The rate of 1.5 tons/acre is a slight variance to the standard of 2*</u>

tons/acre. However, in our experience 1.5 tons/acre does give at least a 75 percent ground cover, providing equal protection to the resource. A rate of 2 tons/acre tends to form a matted thatch that does not crimp easily; 1.5 tons/acre does crimp well, and so provides a greater protection to the resource.

Mulch will be crimped into the soil with a Finn crimper or similar implement.

WIC will mulch all areas seeded outside the recommended season, including level ground. In other words, all areas seeded before October 1.

5.0 WETLANDS, RIPARIAN AREAS

Reclamation guidelines specified in the Wetland and Waterbody Construction and Mitigation Procedures (FERC 1/17/2003 Version) will be implemented in the construction right-of-way within wetland areas.

5.1 SEEDING

The riparian area in Rio Blanco County, from MP 127.0 to MP 128.3, will be seeded with Mix 8.

Streambanks, wetlands, or riparian areas with predominantly upland vegetation will be seeded with the mixes called for in Table 1 for those areas.

Streambanks, wetlands, and riparian areas with standing water or predominantly hydrophilic vegetation will be allowed to revegetate naturally; that is, they will not be seeded.

5.2 TREES AND SHRUBS

Unless blading is required to level the right-of-way to create a safe working area, the contractor will limit pulling of tree stumps and grading to directly over the trenchline. On the rest of the right-of-way, trees and shrubs will be cut just above ground level, leaving existing root systems in place. Small woody and herbaceous vegetation may also be mowed or crushed to clear the right-of-way.

Where required by FERC, BLM, or U. S. Army Corps of Engineers (COE) permit conditions, tree cuttings, containerized plants, or transplants, will be used to restore woody plant communities, stabilize riparian areas, and provide a visual screens to conceal the right-of-way. Potential species include willow, cottonwood, and aspen. Willow species will be planted as non-rooted cuttings; cottonwood as rooted cuttings. Tree cuttings will be obtained from adjacent areas within the surveyed corridor that were identified and approved by the land-management agency. Locally obtained tree cuttings will be used to ensure that plants are adaptable to the environment

Tree cuttings will be between 16 and 24 inches long and obtained during the dormant season (February to May) and planted within two weeks of cutting, or stored under refrigeration, until needed.

Willow and aspen cuttings will be spaced with an average of 10 feet/center; cottonwoods will be spaced as 15 feet/center. Plantings will be randomly placed to promote a natural distribution, but the recommended average plant density will be maintained. Species will not be planted within 10 feet either side of the pipeline.

Tree cuttings will be inserted into the ground approximately 6 inches and will be covered with a fine plastic netting to deter browsing.

6.0 MONITORING

Follow-up inspections will be conducted after the first and second growing seasons to determine the success of revegetation. If plant density and cover are insufficient, seeding efforts will continue until revegetation is successful, with continued monitoring for at least a five year period.

Revegetation shall be considered successful if upon visual survey the density and cover of non-nuisance vegetation is similar to that of adjacent undisturbed areas. If revegetation is a success, a final inspection will be made in the fifth year following reclamation.

7.0 REFERENCES

Federal Energy Regulatory Commission, (FERC), Office of Pipeline Regulation. *Upland Erosion Control, Revegetation, and Maintenance Plan, 1/17/2003 Version.*

Federal Energy Regulatory Commission, (FERC), Office of Pipeline Regulation. *Wetland and Waterbody Construction and Mitigation Procedures, 1/17/2003 Version.*

RECLAMATION PLAN APPENDIX A
SEED MIXES
PICEANCE BASIN EXPANSION

MIX 1 Piceance Basin Expansion Project Wyoming Mix 1 (WM#1) Sagebrush Communities Seeding Mix		
Species	**Seeding Rate in Lbs/acre/PLS [a/]**	
	Drilled	**Broadcast**
Thickspike wheatgrass-Critana	4	8
Indian ricegrass-Nezpar	2	4
Western wheatgrass-Rosana	2	4
Needleandthread	2	4
Big sagebrush-Wyoming [b/]	0.5	1
Gardner's saltbush	1	2
Total	**11.5**	**23**

a/ Seeding mix may be modified based on site-specific conditions, identification of additional species for rapid site stabilization, species success in other restoration efforts, and seed availability. An alterative seeding rate may be used if the mixture is modified, if the BLM modifies the rate, or a landowner requests an alternative seeding rate.
b/ Big sagebrush seed will be spread independently of the rest of the seed mix to promote germination.

Alternative species that may be used in this mix include bottlebrush squirreltail, shadscale, slender wheatgrass, fourwing saltbush, scarlet globemallow, and Lewis' flax.

MIX 2 Piceance Basin Expansion Project Wyoming Mix 2 (WM#2) Juniper Woodland Community Seeding Mix		
Species	**Seeding Rate in Lbs/acre/PLS [a/]**	
	Drilled	**Broadcast**
Western wheatgrass-Rosana	4	8
Indian ricegrass-Nezpar	2	4
Thickspike wheatgrass-Critana	2	4
Slender wheatgrass-Pryor	2	4
Big sagebrush-Wyoming [b/]	0.5	1
Serviceberry	1	2
Total	**11.5**	**23**

a/ Seeding mix may be modified based on site-specific conditions, identification of additional species for rapid site stabilization, species success in other restoration efforts, and seed availability. An alterative seeding rate may be used if the mixture is modified, if the BLM modifies the rate, or a landowner requests an alternative seeding rate.
b/ Big sagebrush seed will be spread independently of the rest of the seed mix to promote germination.

Alternative species that may be used in this mix include bluebunch wheatgrass, green needlegrass, Great Basin wildrye, antelope bitterbrush, snowberry, and Lewis' flax.

MIX 3 Piceance Basin Expansion Project Wyoming Mix 3 (WM#3) Salt Desert Scrub Community Seeding Mix		
Species	**Seeding Rate in Lbs/acre/PLS a/**	
	Drilled	**Broadcast**
Western wheatgrass-Rosana	4	8
Slender wheatgrass-Pryor	2	4
Indian ricegrass-Nezpar	2	4
Bottlebrush squirreltail	2	4
Gardner's saltbush	1	2
Common winterfat	1	2
Total	**12**	**24**
a/ Seeding mix may be modified based on site-specific conditions, identification of additional species for rapid site stabilization, species success in other restoration efforts, and seed availability. An alterative seeding rate may be used if the mixture is modified, if the BLM modifies the rate, or a landowner requests an alternative seeding rate.		

Alternative species that may be used in this mix include needleandthread, Indian ricegrass, and scarlet globemallow.

MIX 4 Moffat County Mix for Loamy and Clay Foothills			
Species	**Variety**		**Seed Rate (drilled PLS/acre)**
	1st Option	**2nd Option**	
Western Wheatgrass			4
Green Needlegrass			2
Needle and Thread			1
Thickspike Wheatgrass			1.5
Indian Ricegrass			1
Wyoming Big Sagebrush [b/]			3
Total			**12.5**
a/ Seeding mix may be modified based on site-specific conditions, identification of additional species for rapid site stabilization, species success in other restoration efforts, and seed availability. An alternative seeding rate may be used if the mixture is modified, if the BLM modifies the rate, or a landowner requests and alternative seeding rate. b/ Big sagebrush seed will be spread independently of the rest of the seed mix to promote germination.			

MIX 5 Moffat County Sandy Soils			
Species	Variety		Seed Rate (drilled PLS/acre)
	1st Option	2nd Option	
Indian Ricegrass			2.5
Needle and Thread			2
Nevada Bluegrass			1
Prairie Junegrass			1
Great Basin Wildrye			1
Bluebunch Wheatgrass			0.25
Wyoming Big Sage [b/]			3
Antelope Bitterbrush			0.25
Total			**11.0**
a/ Seeding mix may be modified based on site-specific conditions, identification of additional species for rapid site stabilization, species success in other restoration efforts, and seed availability. An alternative seeding rate may be used if the mixture is modified, if the BLM modifies the rate, or a landowner requests and alternative seeding rate. b/ Big sagebrush seed will be spread independently of the rest of the seed mix to promote germination			

MIX 6 Rio Blanco County Seed Mix for Gravelly 10-14", Pinyon/Juniper Woodland, Stony Foothills, 147 (Mountain Mahogany)		
Species	Variety	Pounds/PLS/Acre
Western Wheatgrass	Rosanna	2 lbs/acre
Bluebunch Wheatgrass	Whitmar	2 lbs/acre
Thickspike Wheatgrass	Critana	2 lbs/acre
Indian Ricegrass	Rimrock	1 lbs/acre
Fourwing Saltbush	Wytana	1 lbs/acre
Utah Sweetvetch		1 lbs/acre
Total Pounds PLS/Acre		**9**

MIX 7 Rio Blanco County Seed Mix for Riparian Areas		
Species	Variety	Pounds PLS/Acre
Redtop	Streaker	0.2 lbs/acre
Reed Canary Grass	Ioreed	1.4 lbs/acre
Canada Bluegrass	Poco	1.2 lbs/acre
Alkali Sacaton	Salado	0.6 lbs/acre
Streambank Wheatgrass	Sodar	4.4 lbs/acre
Total Pounds PLS/Acre		**7.8**

MIX 8 Rio Blanco County Seed Mix for Deep Loam, Loamy 10"-14", Loamy Breaks, Loamy Slopes, Rolling Loam, Valley Bench		
Species	**Variety**	**Pounds/PLS/Acre**
Western Wheatgrass	Roasanna	2 lbs/acre
Indian Ricegrass	Rimrock	1 lbs/acre
Bluebunch Wheatgrass	Whitmar	2 lbs/acre
Thickspike Wheatgrass	Critana	2 lbs/acre
Letterman Needlegrass	ACLE9	1 lbs/acre
Globemallow		0.5 lbs/acre
Total Pounds PLS/Acre		**8.5**
*alternate forbs, Utah Sweetvetch, Balsamroot		

MIX 9 Rio Blanco County Seed Mix for Irrigated Hayland and Irrigated Pasture		
Species	**Variety**	**Pounds PLS/Acre**
Timothy	Climaz	1.4 lbs/acre
Orchardgrass	Latar	2.6 lbs/acre
Smooth Bromegrass	Lincoln	8.6 lbs/acre
Total Pounds PLS/Acre		**12.6**
Alfalfa		16.0 lbs/acre
Total Pounds PLS/Acre		**16.0**
*Two seed mixtures are provided to meet the needs of landowners who produce either grass or alfalfa hay. Landowners should be contacted to determine which mix		

MIX 10 Rio Blanco County Seed Mix for Vandiver CRP Land		
Species	**Variety**	**Pounds/PLS/Acre**
Crested Wheatgrass	Fairway	0.6 lbs/acre
Intermediate Wheatgrass	Luna	2.3 lbs/acre
Crested Wheatgrass	Nordan	0.8 lbs/acre
Alfalfa	Spreader II	0.6 lbs/acre
Smooth Bromegrass	Manchar	1.6 lbs/acre
Total Pounds PLS/Acre		**5.9**

MIX 11 Rio Blanco County Seed Mix for Barton CRP Land		
Species	**Variety**	**Pounds/PLS/Acre**
Thickspike Wheatgrass	Critana	1.1 lbs/acre
Streambank Wheatgrass	Sodar	0.6 lbs/acre
Western Wheatgrass	Arriba	0.8 lbs/acre
Alfalfa	Ladak	0.8 lbs/acre
Great Basin Wildrye	Magnar	0.6 lbs/acre
Slender Wheatgrass	San Luis	0.6 lbs/acre
Bluebunch Wheatgrass	Secar	1.0 lbs/acre
Cicer Milkvetch	Monarch	0.7 lbs/acre
Total Pounds PLS/Acre		**6.2**

MIX 12 Rio Blanco County Seed Mix for Byerly CRP Land		
Species	**Variety**	**Pounds/PLS/Acre**
Crested Wheatgrass	Nordan	1.3 lbs/acre
Tall Wheatgrass	Jose	1.1 lbs/acre
Alfalfa	Spreader II	1.0 lbs/acre
Smooth Bromegrass	Lincoln	2.6 lbs/acre
Total Pounds PLS/Acre		**6.0**

MIX 13 Rio Blanco County Seed Mix for Etchart CRP Land		
Species	**Variety**	**Pounds/PLS/Acre**
Intermediate Wheatgrass	Oahe	3.5 lbs/acre
Crested Wheatgrass	Nordan	2.0 lbs/acre
Alfalfa	Spreader II	1.0 lbs/acre
Total Pounds PLS/Acre		**6.5**

MIX 14 Rio Blanco County See Mix for Lake CRP Land		
Species	**Variety**	**Pounds/PLS/Acre**
Tall Wheatgrass	Jose	2.8 lbs/acre
Intermediate Wheatgrass	Luna	4.5 lbs/acre
Crested Wheatgrass	Nordan	1.3 lbs/acre
Total Pounds PLS/Acre		**8.6**

In the Bitterbrush Hunting Unit (Milepost 89.2 to 91.9), the primary objective of reclamation will be the establishment of Antelope Bitterbrush (*Purshia tridentata*) and other big game browse species. The seed mix used (to be approved by CDOW) will be composed of only forb and shrub species. Seeds will be drilled at approximately one inch to minimize seed predation by rodents. In addition, bitterbrush seedling found on the right-of-way will be removed and containerized prior to construction. These plants will be maintained in a nursery and returned to the right-of-way as part of restoration activities. Browse excluders will be placed around the replaced seedlings and will be maintained until plants are established.

APPENDIX E

WIC'S HYDROSTATIC TEST PLAN

THIS PLAN IS PART OF THE BLM'S DRAFT PLAN OF DEVELOPMENT (POD). SECTIONS OF (OR ATTACHMENTS TO) THE POD REFERENCED IN THIS PLAN ARE NOT INCLUDED IN THIS APPENDIX.

Appendix E

Hydrostatic Test Plan

Wyoming Interstate Company, Ltd.

Piceance Basin Expansion Project
Moffat and Rio Blanco Counties, Colorado
Sweetwater County, Wyoming

APPENDIX E
HYDROSTATIC TEST PLAN

INTRODUCTION

Wyoming Interstate Company, Ltd. (WIC) is proposing to construct a new 24" O.D. natural gas pipeline, extending from the existing Greasewood Compressor Station in Section 8, Township 2 South, Range 96 West, Rio Blanco County, Colorado, northerly to the existing Wamsutter Compressor Station in Section 27, Township 20 North, Range 94 West, Sweetwater County, Wyoming. Once constructed, in order to assure compliance with U.S. Department of Transportation regulations, WIC must pressure test this line to a level of 110% (1628 psig) of its proposed maximum allowable operating pressure. For this project, WIC plans to hydrostatically test the completed pipeline, using water pressured to the appropriate level.

WATER SOURCES

WIC proposes to obtain water for testing from the following sources:

Source	Location	Volume Withdrawn (gallons)	Volume Withdrawn (acre feet)	Maximum Withdrawal Rate/gallons per minute	Duration of Use
White River	MP 127.7	5,177,600 gallons	15.9	2500 gpm	Max 90 days
Yampa River	MP 87.6	2,850,000 gallons	8.7	2500 gpm	Max 90 days
Little Snake River	MP 53.1	9,125,395 gallons	28.0	2500 gpm	Max 90 days
Total Withdrawal		17,152,995 gallons	52.6		

All water will be discharged within the same basin from which it is taken. The line will be filled completely in 18 separate test sections, filling a maximum of five segments at one time. During the filling of the pipe, the water intake at the location where water is being taken will be screened to prevent entrainment of fishes from the river. The intake will be set to avoid sedimentation and the rate of extraction will assure a continued flow in the river, up to 2500 gallons per minute. WIC agrees that any withdrawals from the Little Snake River will not exceed 5% of stream flow at the time of the withdrawal. Water will be drawn out with a low pressure pump pumping into the suction side of a high pressure pump that moves water into the pipeline. All pumps will be set into fuel/oil containment areas. Any additional restrictions issued by the Federal Energy Regulatory Commission on behalf of the U.S. Fish and Wildlife Service will be observed where water is withdrawn. Withdrawal will likely begin between October 15 and December 31, 2005. Discharge should be complete by January 15, 2006.

The FWS has unequivocally stated that no water withdrawals will occur from the Yampa River until September 15. Since this project will not start until after this date, this potential impact is avoided. These withdrawals appear to be below the 100 acre-feet (annual average) that triggers a \$15.93/acre-foot depletion fee by the FWS. Add withdrawals of approximately 3.3 acre-feet from the three rivers in Colorado needed for dust abatement to the 33 acre-feet listed above and the 100 acre-feet is not reached. How these depletions will be treated by the FWS will be detailed in their Biological Opinion.

TESTING

Water will be used for no more than three months. Discharges will occur at the locations described below. Prior to testing, pipe has been inspected and welds have been x-rayed. In the unlikely event that there should there be an accidental release due to pipe or valve failure, the location of the release will be contained as quickly as practicable and, once the facility has been repaired and retested, the damaged area will be recontoured and reclaimed in compliance with the Reclamation Plan.

DISCHARGE

Once the pipe has been tested and the water is no longer needed, the water will be discharged in a vegetated upland area within the same drainage basin where the water was withdrawn. Discharges are planned to occur at the following locations:

Currently Proposed Hydrostatic Test Water Discharges for the Piceance Basin Expansion

Mile Post	Expected Discharge Volume (gallons)	Expected Discharge Volume (acre feet)	Water Source	Drainage Basin Receiving Discharge	Water Disposal Site
19.6	2,,360.847	7.3	Little Snake		Open Ground
47.5	3,200,556	9.8	Little Snake		Open Ground
52.1	718,056	2.2	Little Snake	Little Snake	Open Ground
53.2	1,505,156	4.6	Little Snake		Open ground
64.42	1,340,780	4.1	Little Snake		Open Ground
TOTAL	*9,125,395*	*28.0*	Little Snake		
87.79	2,850,000	8.7	Yampa		Open Ground
TOTAL	*2,850,000*	*8.7*	Yampa		
127.82	5,177,600	15.9	White River	White	Open Ground

Currently Proposed Hydrostatic Test Water Discharges for the Piceance Basin Expansion					
Mile Post	**Expected Discharge Volume (gallons)**	**Expected Discharge Volume (acre feet)**	**Water Source**	**Drainage Basin Receiving Discharge**	**Water Disposal Site**
TOTAL	*5,177,600*	*15.9*	White		
Overall Total	**17,152,995**	**52.6**			

The pipe for Piceance Basin Expansion will be new. Typically, hydrostatic test water will pick up some iron oxide (rust) from new pipe, depending on the total duration the water remains in the pipe. The quantity is likely to be fairly small and may give the discharge water a slight red color. The water may also pick up some sand or dirt left over from the installation. While night caps are always installed after a days work, dirt may still find its way into the pipe. All hydrostatic test water will be discharged through a hay or straw bale dissipation device to slow down the velocity and to help pick up solids (Procedure 11, Appendix A, Site Specific Plans, POD). Any contaminants in the discharge water will likely be below the required minimums. To insure this conclusion, water will be collected and tested[a] at a certified water testing laboratory. For this reason there is no plan to use any chemical treatment of the hydrostatic test water. The only physical treatment for the water will be the hay or straw bale dissipation device. The discharge locations will be into upland grassy areas to help avoid erosion issues. Water will be discharged into the basin from which it is extracted. However, WIC expects that mitigation for water usage will include a form of compensation for water lost during testing from these basins.

[a] The hydrostatic test discharge permit in Colorado will require analysis of TSS, total iron, pH, and a visual for oil and grease (if a sheen is observed and oil and grease sample will be collected, if a sheen is not observed, it will be documented in field notes/reports. Wyoming will require TSS, TDS, total iron, pH, and a visual for oil and grease.

APPENDIX F

WIC'S WATERBODY CROSSING PLAN

THIS PLAN IS PART OF THE BLM'S DRAFT PLAN OF DEVELOPMENT (POD). SECTIONS OF (OR ATTACHMENTS TO) THE POD REFERENCED IN THIS PLAN ARE NOT INCLUDED IN THIS APPENDIX.

APPENDIX F
MAJOR WATERBODY CROSSING PLAN
WYOMING INTERSTATE COMPANY

PICEANCE BASIN EXPANSION PROJECT
MOFFAT and RIO BLANCO COUNTIES, COLORADO
and
SWEETWATER COUNTY, WYOMING

APPENDIX F
MAJOR WATERBODY CROSSING PLAN

1.0 INTRODUCTION

Wyoming Interstate Company (WIC) proposes to cross four perennial streams in the State of Colorado, the Little Snake (MP 53.1), the Yampa (MP 87.6), and the White Rivers (MP 127.7) and the Dry Fork Piceance Creek (MP 135.0). Due to federal (Army Corps of Engineers, US Fish and Wildlife Service) and state (Colorado Division of Wildlife, Colorado State Land Board) concerns and construction requirements, a crossing plan for each of the major perennial streams is presented below.

1.1 River Classification

Four perennial streams are crossed by the proposed route of the Piceance Basin Expansion, all within Colorado. One of these streams - the Dry Fork Piceance Creek - is less than 10 feet in width and will not be considered in this plan. Of the other perennial streams, two exceed 10 feet in width - the Little Snake (approximately 40 feet) and the White River (approximately 75 feet). One stream exceeds 100 feet in width - the Yampa River (approximately 140 feet). The Yampa is classified as a warmwater fishery; the White and Little Snake Rivers and the Dry Fork Piceance Creek are classified as coldwater fisheries.

1.1.1 Sport Fisheries

The State of Colorado does not designate any of the streams in Colorado as either commercial or sport fisheries. Nevertheless, the Little Snake has a few sport fishes below Baggs, Wyoming, east (upstream) of the proposed crossing. The Yampa supports small mouth bass and northern pike in the vicinity of the proposed crossing, the White River supports whitefish and brown trout at its crossing, and the Dry Fork Piceance Creek supports brook trout when its waters are flowing (Brad Petch, CDOW, Meeker, CO, 970-878-6090, personal communication, 11-23-04).

1.1.2 Species of Special Concern

Fisheries of special concern occur in the Little Snake, Yampa and White Rivers include the Colorado pikeminnow (*Ptychocheilus lucius*) humpback chub (*Gila cypha*), bonytail chub (*Gila elegans*), and razorback sucker (*Xyrauchen texanus*), all federally listed endangered species that inhabit warmwater fisheries.

<u>Colorado Pikeminnow</u>

The Colorado pikeminnow is an endangered species in the Upper Colorado River Basin. Regarding the streams the proposed pipeline crosses (based on a report for the Uinta Basin Lateral), at the Little Snake River the only record of pikeminnow was at the river's confluence with the Yampa River, far distant from the proposed crossing (Valdez 1991). The FWS does not include the Little Snake as part of this fish's current distribution nor is this river included in its recovery goals. At the Yampa River, the pikeminnow is found from Craig, Colorado, west to the confluence with the Green River in Utah. At the White River, the pikeminnow is found below the Taylor Draw Dam, just east of Rangely, Colorado. At the time of UBL construction the White River crossing was in the warmwater section of the river, near the Piceance Creek confluence. Presently the crossing is in the coldwater reach of the White and above the 150-mile recovery area.

Humpback Chub

The humpback chub currently lives in canyons with swift currents and white water, which eliminates all proposed crossings from concern with this species. Preferred habitat is far downstream of the Piceance Basin Expansion. Historically, this reach of the Yampa supported large populations of the Colorado pikeminnow and the humpback chub. Today it supports sparse numbers with little, if any, reproduction.

Bonytail Chub

The bonytail chub is the most endangered of the Colorado River fishes. Its distribution is limited to the lower reaches of the Yampa River in Dinosaur National Monument. The fish is not a concern at the river crossings proposed for construction of the Piceance Basin Expansion.

Razorback Sucker

The razorback sucker is a known resident of the Yampa River at the crossing site and though a small number are known in the White River, that crossing appears to be of minimal concern.

Considerations for Pipeline Construction

The most sensitive time of the year for endangered fishes is from May 15 to September 15, which is a time of year for spawning-related activities and rearing of young. Spawning migrations by Colorado pikeminnow in the Yampa River ranged from May 27 to June 30 in 1981, 1983 and 1988 (Tyus 1990). Spawning activity ranged from June 20 to August 18 during 5 years (1981, 1983, 1984, 1985, and 1988). Migrations of Colorado pikeminnow are also documented in the White River (Tyus 1987) at approximately the same time. Only one Colorado pikeminnow was reported in 1991 in the Little Snake River in the vicinity of Baggs, Wyoming (Personal communication with W.L. Minckley). The reach of the Little Snake crossed by the pipeline is not included in the FWS's recovery plans. Hatching dates for Colorado pikeminnow in the Yampa River ranged from June 11 to August 6 for the years 1981-1988 (Tyus and Haines 1991). Transport of larval Colorado pikeminnow from the Yampa River is rapid and nearly complete by mid-September. No water depletion of the Yampa is allowed between September 1 and September 15, a period of stream augmentation for the fishery, as mandated by the US Fish and Wildlife Service.

Instream construction activities should be avoided between May 15 and September 15, based on communication with B. Petch, CDOW and FWS requirements referenced above. Activity during this time period could physically interfere with migration of adult

Colorado pikeminnow and razorback sucker and/or chemically interfere with chemoreceptors that cue fish to spawning sites. Instream activity could also alter spawning areas and increase sedimentation to spawning gravels. Also, instream activities could destroy or disrupt nursery shorelines and backwaters before the fish are large enough to escape to alternate habitats.

The most desirable time for instream construction activity is from January 1 to May 15 because the young fish are sufficiently large to escape physical and chemical disturbances. Furthermore, any instream disturbance and increased sedimentation would be flushed by spring runoff, which usually occurs in these tributaries between May 15 and June 15. The second best period for construction is September 15 to December 31 because it is a period when the young fish continue to occupy nursery areas but are strong enough to escape most disturbances.

The FWS has unequivocally stated that no water withdrawals will occur from the Yampa River until September 15. Since this project will not start until after this date, this potential impact is avoided. These withdrawals appear to be below the 100 acre-feet (annual average) that triggers a $15.93/acre-foot depletion fee by the FWS. Add withdrawals of approximately 18 acre-feet from the three rivers in Colorado needed for dust abatement to the 33 acre-feet needed for hydrostatic testing and the 100 acre-feet is not reached. How these depletions will be treated by the FWS will be detailed in their Biological Opinion.

Instream disturbances should be kept to a minimum by avoiding heavy equipment in the stream where possible.

2.0 WATERBODY CONSTRUCTION PROCEDURES

WIC's Wetland and Waterbody Construction and Mitigation Procedures (WIC 2004) will be adopted in full for each stream channel crossing, unless other crossing procedures are approved by the appropriate agencies, including FERC. The Little Snake, Yampa and White rivers will be directionally drilled. Note that should the directional drill fail, an open cut would be required. Crossing these streams will occur after September 15, 2005.

2.1 Construction and Operation Impacts

Impacts to streams range from bank destabilization and erosion to excessive sediment affecting fish survival. Entrainment of fishes during water extraction used for hydrostatic testing in the Little Snake, Yampa and White Rivers is another source of impact (See Hydrostatic Testing Plan, Plan of Development, Appendix D) as is water depletion for dust control or any other water use. Spills or leaks of toxic substances into streams also represent a potential impact to fisheries. Introduction of diesel fuel, oil, hydraulic fluid and other toxic substances into the fishery could result in direct mortality to fish, disruption of aquatic food bases, and long-term reduction in productivity of the stream (See Spill Prevention Containment and Countermeasure Plan, Plan of Development, Appendix C).

The Yampa (MP 87.6) and White (127.7) rivers will be directionally drilled, as suggested by the Colorado State Land Board (CSLB) the Colorado Division of Wildlife (CDOW), and the U.S. Fish and Wildlife Service (FWS) in their letter to the FERC (Letter to Salas, M.R., FERC, 8-16-04, ES/CO:FERC, MS 65412 GJ). The Little Snake River (MP 53.1) will be directionally drilling based on the recommendation of the construction contractor. Directional drilling will greatly reduce construction-related impacts at these crossings.

Potential impacts to these perennial streams would not be significant, except for the danger of fractures releasing drilling mud into the water. Should the drilling process fail, these crossings would be open cut, which could potentially result in significant impacts to these rivers. If this situation occurs, WIC has proposed a 250-foot-wide construction right-of-way in both stream beds. This width allows for movement of equipment and spoil to reduce the time working in the river and to protect and preserve river bottom spoil. Ultimately the reduced time constructing in the river and placing river spoil in areas of low stream flow will result in less sedimentation downstream. The major potential direct and indirect impacts would be bank stabilization after construction and increased sediment flows into perennial waters, which could affect fish survival. There are no impaired waters or contaminated sediments that affect pipeline construction or operation.

2.2 Horizontal Directional Drilling Plan

2.2.1 General

Horizontal Directional Drilling (HDD) is a trenchless construction method to install pipelines beneath features that require special attention to environmental and logistical concerns. This specification is general and will address the HDD installation for a natural gas pipeline. Contractor shall conduct work according to this specification or within the intent of this specification.

2.2.2 Foreign Line and Utility Crossings

WIC (the Company) will have exercised due diligence in locating foreign pipelines and/or utility line crossings. However, the Contractor shall confirm the location of all such crossings and notify the owner prior to any HDD activity in the vicinity of the crossings. Contractor shall be responsible for all damages to foreign pipelines and/or utility line crossings during HDD operations. Contractor shall repair damaged foreign pipelines and/or utility line crossings to original or better condition and meet Company approval. In all cases, foreign pipelines, utility line crossings and/or structures take precedence over Company tolerances.

2.2.3 Drilling Plan

The Contractor shall submit with his bid a preliminary drilling plan which describes the pilot hole, hole opening and pullback procedures. At a minimum, the plan shall include the number and diameter of each hole opening pass, manufacturer and type of down hole tools, supports/rollers along the stringing area, guidelines for the bentonite properties (i.e. viscosity, etc.), drilling fluid down hole pressures and drilling fluid flow rate. This plan will be completed during the preconstruction phase for approval by Company. This plan must be approved by Company prior to construction. All drilling operations shall be performed by experienced supervisors and personnel. Contractor shall provide with his proposal resumes for all key personnel. Technical support, tool suppliers and required support systems used during this operation shall be provided by the Contractor.

2.2.4 Site Preparation

The Contractor shall set-up all necessary equipment, personnel and materials, set up work areas on the entry and exit sides of the crossing and prepare the sites for construction. The construction work space and sensitive area boundaries will be marked by the Company. The Contractor shall not go outside the provided work space or disturb any sensitive area. The Contractor shall meet the requirements and/or stipulations of each landowner in accordance with the ROW Line List.

2.2.4.1. Entry Side

The Contractor shall remove fences, trees, shrubs, trash and debris, and set up work space shown on plan and profile drawing. Contractor shall, at a Company approved site, dispose of all timber, stumps and rock as required to not impede construction activity. Contractor shall not damage those trees marked and/or fenced by Company on and/or adjacent to the work space. The area shall be graded and a 12-in. high containment berm built around the mud pit or as required by permits. The site shall contain the horizontal drilling rig, pipe storage racks, mud pumps, primary pickup pits, mud tank, shaker/desander-desilter, disposal pits, water cleaning equipment, dry storage area for drilling fluid additives (etc.), offices, a crane area, and parking facilities.

2.2.4.2 Exit Side Including Pipe Stringing Area

The Contractor shall remove fences, trees, shrubs, trash and debris, and set up a temporary work area as shown on plan and profile drawing. Contractor shall, at a Company approved site, dispose of all timber, stumps and rock as required to not impede construction activity. Contractor shall not damage those trees marked and/or fenced by Company on and/or adjacent to the work space. The area shall be graded and a 12-inch high containment berm built around the mud pit or as required by permits.

2.2.5 Pilot Hole Operations

Contractor shall provide and maintain instrumentation which will accurately measure drilling fluid discharge rate and pressure. Company shall have access to instruments and their readings at all times.

The pilot hole shall be drilled along the path shown on the plan and profile drawing within Company tolerances. However, right-of-way restrictions, foreign lines and utility crossings take precedence over Company tolerances. The entry and exit points as shown on plan and profile drawings shall be located using traditional survey methods. The position of the drill string shall be monitored by Contractor with precise down hole survey instruments and verified with surface location equipment, i.e., tru-tracker or equal. Contractor shall compute the position in the X, Y and Z axis relative to ground surface from down-hole survey data a minimum of once per length of each drilling pipe (approximately 30-ft. interval). Deviations between the recorded position of the drill string and the plan and profile drawing shall be documented and immediately brought to the attention of the Company. Curves shall be drilled at a radius equal to or greater than that shown on the plan and profile drawing. Contractor shall calculate the drilled radius over any three joint (range 2 drill pipe) segments using the following formula:

$R_{drilled} = (L_{drilled}/A_{avg}) * 57.32$

Where:

$R_{drilled}$ = drilled radius over $L_{drilled}$

$L_{drilled}$ = length drilled, no less than 75 feet and no greater than 100 feet

A_{avg} = total change in angle over $L_{drilled}$

The horizontal deflection shall not exceed the limits of the permanent right-of-way as shown on plan and profile drawing; however, in all cases, right-of-way restrictions, foreign lines and utility crossings shall take precedence over horizontal deflection tolerance. Contractor shall provide to the Company, on demand, the data generated by the down-hole survey tools in a form suitable for independent calculation of the pilot hole profile. The exit point shall fall within a rectangle 20-ft. wide and 40-ft. long centered on the planned exit point.

2.2.6 Pipeline Assembly

2.2.6.1 Welding

The Contractor shall provide qualified welders to perform the work. Every welder shall be tested by Company in accordance with API 1104, 49CFR192 and Company Specifications.

All girth welds will have 100 percent radiographic inspection and be in accordance with API 1104, 49CFR192 and Company Specifications.

2.2.6.2 Girth Weld Coating and Coating Repairs

The Contractor shall repair pipe coating damaged after receipt from the Company. FBE coating repair shall be inspected with a Company-approved electronic holiday detector. Surface preparation, pipe coating repairs and inspection of coating repairs shall be in accordance with the Company specifications. Contractor shall coat all field joints in accordance with Company specifications to the thickness specified in the Scope of Work.

2.2.6.3 Hydrostatic Pretest

Contractor shall provide and maintain instrumentation, which will accurately measure hydrostatic test pressure. Company shall have access to instruments and their readings at all times.

The entire pull section shall be tested complete or as sub-assemblies prior to final reaming. Test pressure shall be for a minimum four continuous hour duration or per test design and be documented and performed in conformance with Company Specifications.

This preliminary hydrostatic test is a pretest and shall not preclude the requirement for an 8-hour test of the entire in-place crossing after installation.

2.2.7 Pullback Operations

Contractor shall provide and maintain instrumentation, which will accurately measure drill string axial and torsional loads. Company shall have access to instruments and their readings at all times.

Company maximum permissible tensile load imposed on the pull section shall be calculated using the following formula:

Max Pull Load = (SMYS * Pipe Area) * 0.9

Where:

SMYS = specifies minimum yield strength of pipe

Pipe Area = area of pipe section(s)

If more than one value is involved for a given pull section, the lesser shall govern.

To minimize torsional stress imposed on the pull section, Contractor shall use a swivel assembly to connect the pull section.

Contractor shall install pipeline in one continuous string with no tie-in welds unless stated otherwise in the Company approved drilling plan. Once Contractor begins pullback operations, installation shall not cease until pullback operations are complete.

Contractor shall provide buoyancy modification as required and/or when conditions necessitate.

During the pullback operation, Contractor shall monitor roller operation and use sidebooms if required to assist movement of the pipe. Situations which cause coating damage shall be corrected immediately. Coating damage shall be repaired to Company Coating Specifications by Contractor before pulling operations resume.

2.2.8 Site Restoration

Contractor shall remove all equipment, material (fencing, pit liners, etc.) and waste from all work areas. The general work area and all other construction areas used during construction shall be restored and graded by Contractor to their original contours.

Fences, gates, and utilities, which were removed or altered during construction, shall be restored or replaced by Contractor.

Land restoration shall satisfy Company General Conditions, landowner conditions, specifications and agency approved permits and the Plan of Development (POD).

2.2.9 Environmental

2.3.9.1 Work Space

Dewatering, including storm water, shall be completed per the Plan of Development (see Appendix B – NPDES Stormwater Pollution Prevention Plan).

All trash, removed vegetation, and waste shall be removed from the site and disposed of in a manner acceptable to the Company.

2.2.9.2 Water Supply

Contractor shall procure and transport water for drilling operations and hydrostatic testing from sources approved by the Company.

2.2.9.3 Hydrostatic Test Water Discharge

All hydrostatic test water shall be treated by Contractor to satisfy the POD and all applicable permit requirements and discharged at a Company approved site. At no time shall discharge cause soil erosion, bottom sediment disturbance, nor affect safety.

2.2.9.4 Bentonite

Technical criteria for bentonite shall be as given in API Spec. 13A, Specification for Oil Well Drilling Fluids Material. The composition of all drilling fluids proposed for use shall be submitted to Company for approval. Drilling fluids shall comply with all applicable permit requirements and environmental regulations.

2.2.9.5 Drilling Fluids and Cuttings Disposal

Waste cuttings and drilling fluids shall be disposed of by Contractor at a Company approved disposal site. The construction areas will be checked a minimum of twice daily for signs of unplanned leaks or seeps. A written record shall be maintained by the Contractor of all inspections and submitted with his daily report to the Company Representative.

2.2.9.6 Sanitation Facilities

Sanitation facilities shall be provided and human waste shall be transported off-site for disposal. Contractor shall provide portable toilets, garbage containers, and services to empty and clean these facilities at all work sites.

2.2.9.7 Refueling and Equipment Maintenance

All activities involving fuels and lubricants shall be performed in accordance with the Company Spill Prevention Control Plan (SPCP) in the POD (Plan of Development, Appendix C – Spill Prevention Control Plan).

2.2.9.8 Inadvertent Returns

The Horizontal Directional Drilling operation will be a closed system to eliminate the discharge of water, drilling fluids and cuttings to areas involved in the construction process other than the entry and exit pits. Contractor shall provide equipment and procedures to maximize the recirculation of drilling fluid to minimize waste. In the event annular circulation is lost, Contractor shall take steps to restore circulation. If inadvertent returns (frac out) of drilling fluids occur, they shall be immediately contained with barriers (i.e. hay bales, silt fences, etc.) and/or a containment pit as necessary. Drilling fluids shall be collected using pumps or if the amount of inadvertent returns is not enough to practically pump, the affected area shall be diluted with fresh water and the drilling fluid will be allowed to dry and dissipate naturally in upland areas. If surface returns exceed what can be contained as described, drilling operations shall cease until inadvertent returns are under control.

2.2.9.9 Equipment and Materials

Contractor shall provide equipment (graders, shovel, etc.) and materials (such as ground sheets, hay bales and/or silt fences, booms, absorbent pads, etc.). Equipment shall be maintained on site and materials stockpiled and readily available for use during clean-up , erosion control and contingencies, as necessary.

2.2.9.10 Record Drawing

Contractor shall maintain a separate set of plan and profile construction drawings on site during construction. Details will be neatly marked on these drawings on a daily basis. If changes are required which cannot be marked on the drawings, the Contractor shall prepare a neat sketch complete with dimensions and notes. At the end of the job the Record As-Built Drawing will be signed by the Contractor and turned over to the Company.

2.3 Yampa River Construction

To protect the endangered fishes at the Yampa River, WIC plans to directionally drill the crossing. The Horizontal Directional Drilling Plan will proceed as described in Section 2.2. The Typical Workspace Layout Directional Drill Method – Procedure 7 is located in the Plan of Development, Appendix A. DWG 233A-37A-1, Plan and Profile Crossing of the Yampa River is also located in Appendix A . A bridge for construction equipment will be built prior to river crossing construction to facilitate movement of stringing trucks, dozers, graders, track hoes and trenching machines. The bridge will use clean gravel and flumes along each bank to support a railroad car. At the Yampa, an additional gravel support may be needed in the middle of the stream. A total of 4.4 acres of wetlands would be affected by construction at the Yampa River crossing.

2.4 White River Construction

To protect the endangered fishes at the White River, WIC plans to directionally drill the crossing. The Horizontal Directional Drilling Plan is presented above in Section 2.2. The Typical Workspace Layout Directional Drill Method – Procedure 7 is located in the Plan of Development, Appendix A. DWG 233A-53A-1, Plan and Profile Crossing White River is also located in Appendix A. A bridge for construction equipment will be built prior to river crossing construction to facilitate movement of stringing trucks, dozers, graders, track hoes and trenching machines. The bridge will use clean gravel and flumes along each bank to support a railroad car. A total of 0.4 acres of wetlands would be affected by construction activities on the White River.

2.5 LITTLE SNAKE RIVER CONSTRUCTION

The Little Snake River will also be directionally drilled, based on the recommendation of the construction contractor. The Horizontal Directional Drilling Plan is presented above in Section 2.2. An additional list of general construction notes and site-specific notes are found on DWG 233A-22A-1, Appendix A.The Typical Workspace Layout Directional Drill Method – Procedure 7 is located in the Plan of Development, Appendix A. A bridge for construction equipment will be built prior to river crossing construction to facilitate movement of stringing trucks, dozers, graders, track hoes and trenching machines. The bridge will use clean gravel and flumes along each bank to support a railroad car. A total of approximately 1.15 acres of wetlands would be affected by construction on the Little Snake River.

3.0 REFERENCES CITED

Minckley, W.L. 1991. Personal communication with Richard Valdez, Bio/West, Inc., Logan, Utah (435/752-4202) regarding Colorado squawfish distribution in the Little Snake River.

Tyus. H.M., R.L. Jones, and L.A. Trinca. 1987. Colorado River fishes monitoring project. 1982-1985. Final Report. U.S. Department of Interior, Fish and Wildlife Service, Vernal, Utah. 127 pp.

Tyus, H.M. 1990. Potamodromy and reproduction of Colorado squawfish in the Green River Basin, Colorado and Utah. Trans. Amer. Fish. Soc. 119(6):1035-1047.

Tyus H.M. and G.B. Haines. 1991. Distribution, habitat use, and growth of age-0 Colorado squawfish in the Green River Basin, Colorado and Utah. Trans. Amer. Fish. Soc. 120(1):79-89.

Wyoming Interstate Company (WIC). 2004. Wyoming Interstate Company's Wetland and Waterbody Construction and Mitigation Procedures. El Paso Corporation, Colorado Springs, CO. December 2004. 20 pp.

APPENDIX G

WIC'S NOXIOUS AND INVASIVE WEED PLAN

SECTIONS OF THIS PLAN ARE NOT INCLUDED IN THIS APPENDIX.

Piceance Basin Expansion Natural Gas Pipeline
Noxious and Invasive Weed Plan

Prepared for:

Wyoming Interstate Company
P.O Box 1087
Colorado Springs, Colorado
80944

Prepared by:

Bio-Resources, Inc
135 East Center
Logan, Utah
84321

June 27, 2005

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1.0 INTRODUCTION

Noxious and invasive weed control practices for the Piceance Basin Expansion as described in this plan have been developed utilizing the following sources:

1) Noxious and invasive weed surveys of the pipeline right-of-way conducted in summer and fall 2004 by Bio-Resources, Inc.;
2) Colorado Department of Agriculture, Division of Plant Industry;
3) Colorado County Noxious Weed Program;
4) Colorado Noxious Weed Act.
5) Wyoming Designated Noxious Weeds .S. 11-5-102 (a) (xi) and Prohibited Noxious Weeds W.S. 11-12-104
6) BLM Wyoming Invasive Weeds

1.1 Plan Purpose

The purpose of this plan is to prescribe methods to prevent and control the spread of noxious weeds during and following construction of the Piceance Basin Expansion. Invasive species will be controlled through the proper establishment of reclamation species. The Wyoming Interstate Company (WIC) and its contractors will be responsible for carrying out the methods described in this plan.

This plan is applicable to the construction and operation of the proposed pipeline facilities, including the pipeline right-of-way, aboveground facilities, staging areas, railyard/pipe storage areas, temporary extra workspaces, and any other areas disturbed during construction.

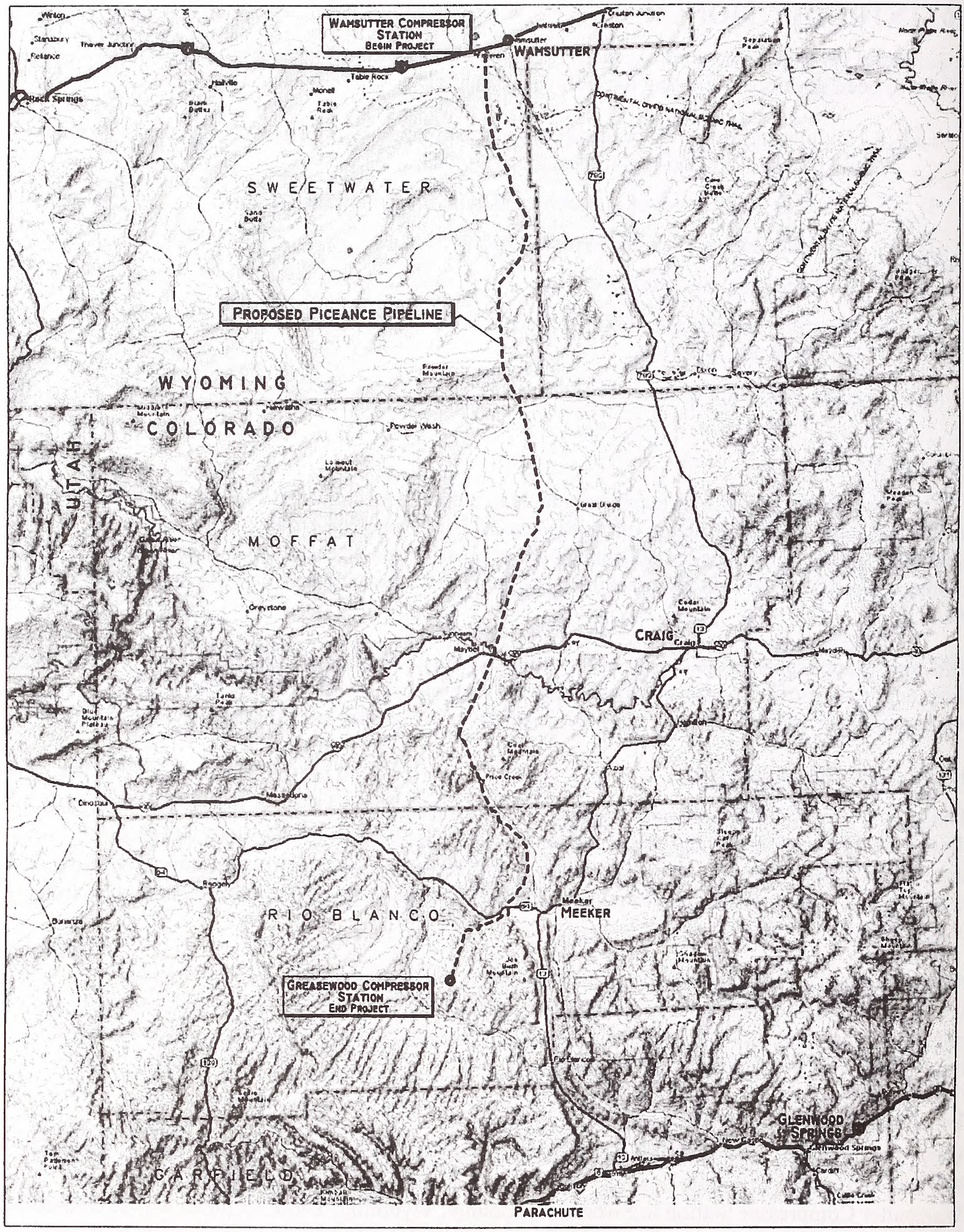
1.2 Goals and Objectives

The goal of weed control is to implement preventive measures to minimize the spread of weeds during pipeline installation and construction of the proposed facilities. Noxious weeds are opportunistic plant species that are injurious to public health, agriculture, recreation, wildlife, or property and that readily flourish in disturbed areas, thereby preventing native plant species from establishing communities.

Monitoring and maintenance during the construction and operational phases will include identification of any local infestation areas on and adjacent to the right-of-way that may pose potential infestation. An evaluation of the efficiency of the prescribed control measures will be implemented during the operational phase.

1.3 Project Description

WIC proposes to construct and operate facilities to transport natural gas from the Greasewood Hub in Rio Blanco County, Colorado to a new interconnect at Colorado Interstate Gas Company's Wamsutter Compressor Station in Sweetwater County, Wyoming. These facilities will be constructed in Colorado and Wyoming (see Figure 1). For more detailed information regarding the proposed facilities, see the Draft Environmental Impact Statement for the Piceance Basin Expansion, Chapter 1, Project Description.



elpaso
Colorado Interstate
Gas Company

FIGURE I PICEANCE BASIN EXPANSION PIPELINE - GENERAL LOCATION MAP.

2.0 NOXIOUS WEED INVENTORY

Preconstruction field surveys were conducted to identify existing noxious weed infestations along the pipeline right-of-way, and at the proposed facilities. Field surveys targeted species designated by law as noxious weeds within the states of Colorado and Wyoming, as well as county noxious weed lists for Moffat and Rio Blanco counties, Colorado (Table 1). The results of field surveys are shown on Maps 1-18, Appendix G-1.

Both states crossed by the pipeline maintain an official list of weed species that are designated noxious species. Local weed supervisors in Colorado designate weed species as noxious within individual counties. Noxious weeds are defined as weeds "...arbitrarily defined by law as being especially undesirable, troublesome, and difficult to control. Definition will vary according to legal interpretation (USU Cooperative Extension 1992)." Information such as species identified within counties traversed by the project was collected from the Colorado Department of Agriculture, Division of Plant Industry; the Wyoming Weed and Pest Control Council; Bureau of Land Management, and local Weed Districts.

WIC, the Bureau of Land Management (BLM), and other agencies recognize there are species, such as cheatgrass (*Bromus tectorum*), that because of their widespread distribution, are not considered feasible for general control. In addition, WIC's objective is to prevent the spread of noxious weeds, and treat selected areas along the right-of-way where target species are problematic and form a significant portion of the vegetation community. Proper reclamation will control the spread of invasive species through the establishment of reclamation species.

The preventive measures identified in Section 3.2 will be implemented along the pipeline right-of-way and at all of the proposed facilities to minimize the spread of noxious weeds during construction activities.

2.1 COLORADO

Under the authority of the Colorado Weed Management Act (§§ 35-5.5-101 through 119, C.R.S.) (2003), 71 plant species have been officially designated as noxious. The state of Colorado classifies noxious weeds into three lists, A, B, and C.

1) List A includes noxious weeds targeted for eradication. State noxious weed management plans for List A species are included in Part 3 of 8 CCR 1203-19, Rules Pertaining to the Administration and Enforcement of the Colorado Noxious Weed Act.

2) List B includes noxious weed species that the state recommends managing, but does not require it by law (though other agencies may require management). Currently, there are no state noxious weed management plans for List B species.

3) List C includes noxious weed species for which the state's goal is not to stop their continued spread (though other agencies may require management), but to provide educational, research, and biological control resources. Currently, there are no state noxious weed management plans for List C species.

List A species and weeds of concern to individual counties along the pipeline right-of-way are noted in Table 1. The goal for noxious weeds on the county lists is eradication where possible, or containment then control where eradication is not feasible.

2.2 Wyoming

Twenty-four plant species officially have been designated as noxious by the state of Wyoming, per the Wyoming Weed and Pest Control Act. The state's list of noxious weeds is presented Table 1.

Table 1. Noxious Weeds of Concern Along WIC's Piceance Basin Expansion

Common Name	Scientific Name	Colorado*	Wyoming	Located During 2004 and 2005 Survey**
African Rue	*Peganum harmala*	List A		
Black Henbane	*Hyoscyamus niger*	Rio Blanco List B		MP 114.3, 114.6
Camelthorn	*Alhagi pseudalhagi*	List A		
Common Burdock	*Arctium minus*	Rio Blanco	State List	MP 110.91-111.62, 135.05
Common Crupina	*Crupina vulgaris*	List A		
Common Mullein	*Verbascum thapsus*	Rio Blanco List C		MP 102.39, 110.91-111.85, 115.95, 127.57, 135.05
Common St. Johnswort	*Hypericum perforatum*	List C	State List	
Common Tansy	*Tanacetum vulgare*	List B	State List	
Cypress Spurge	*Euphorbia cyparissias*	List A		
Dyer's Woad	*Isatis tinctoria*	List A	State List	
Field Bindweed	*Convolvulus arvensis*	Rio Blanco List C	State List	MP 102.38, 108.44, 110.72-111.62, 131.47, 135.05
Giant Salvinia	*Salvinia molesta*	List A		
Halogeton		Rio Blanco List C		Widespread, see map for locations
Hoary Cress (whitetop)	*Cardaria draba and Cardaria pubescens*	Rio Blanco List B	State List	Widespread, see maps for locations
Houndstongue	*Cynoglossum officinale*	Rio Blanco List B	State List	MP 102.06, 103.62, 110.91-111.85, 114.31-114.71, 116.97, 119.53, 133.65, 135.05, access road in Strawberry Peak area
Hydrilla	*Hydrilla vertcillata*	List A		
Knapweed, Black	*Centaurea nigra*	Rio Blanco		
Knapweed, Diffuse	*Centaurea diffusa*	Moffat, Rio Blanco List B	State List	
Knapweed, Meadow	*Centaurea pratensis*	List A		
Knapweed, Russian	*Centaurea or Acroptilon repens*	Moffat, Rio Blanco List B	State List	
Knapweed, Spotted	*Centaurea maculosa*	Moffat, Rio Blanco List B	State List	
Knapweed, Squarrose	*Centaurea virgata*	List A		
Leafy Spurge	*Euphorbia esula*	Moffat, Rio Blanco List B	State List	MP 127.7, 129.6-133.65, , access road near MP 129.5
Mediterranean sage	*Salvia aethiopis*	List A		

Table 1. Noxious Weeds of Concern Along WIC's Piceance Basin Expansion				
Common Name	**Scientific Name**	**Colorado***	**Wyoming**	**Located During 2004 and 2005 Survey****
Medusahead	*Taeniatherum caput-medusae*	List A		
Myrtle spurge	*Euphorbia myrsinites*	List A		
Oxeye Daisy	*Chrysanthemum leucanthemum*	List B	State List	
Perennial Pepperweed (Giant whitetop)	*Lepidium latifolium*	Rio Blanco List B	State List	
Perennial Sowthistle	*Sonchus arvensis*	List C	State List	
Purple Loosestrife	*Lythrum salicaria*	List A	State List	
Quackgrass	*Agropyron repens*	List B	State List	27.05, 37.21, 38.47
Rush Skeletonweed	*Chondrilla juncea*	List A		
Skeletonleaf Bursage	*Franseria discolor*	List A	State List	
Sericea lespedeza	*Lespedeza cuneata*	List A		
Tamarisk (Saltcedar)	*Tamarix spp*	List B	State List	83.98, 126.06
Tansy Ragwort	*Senecio jacobea*	List A		
Thistle, Canada	*Cirsium arvense*	Rio Blanco List B	State List	MP 95.05, 103.6, 111, 114.29, 114.6, 114.7, 114.8, 114.95, 120.1, 120.3, 122.69, 122.8, 127.7, 127.83, 135.0
Thistle, Musk	*Carduus nutans*	Rio Blanco List B	State List	MP 111
Thistle, Plumeless	*Carduus acanthoides*	Rio Blanco List B	State List	
Thistle, Scotch	*Onopordum acanthium* *Onopordum tauricum*	Rio Blanco List B	State List	MP 111, 117.62, 117.68, 118.09, 120.28, 125.91, 127.57, 127.77
Toadflax, Dalmation	*Linaria dalmatica*	Rio Blanco List B	State List	
Toadflax, Yellow	*Linaria vulgaris*	Rio Blanco List B	State List	
Yellow Starthistle	*Cantaurea solstitialis*	List A		

*** The Colorado list includes weeds listed as of concern to individual counties along the right-of-way in Colorado, as well as their designation by the state. The State of Colorado lists species according to control recommendations. List A species are targeted for eradication and management plans have been developed for their control. Control of these species is required by law. List B species are recommended for control, but management plans have not yet been developed for these species and control is not required by law. List B species were not included in this table unless they also appeared on an individual county's noxious weed list. List C species are generally considered too widespread to effectively control, and control of List C species is not required. List C species were not included in this table unless they also appeared on an individual county's noxious weed list.***

*****all locations shown on Maps 1-18, Appendix G-1 of the Noxious Weed Plan***

3.0 NOXIOUS WEED MANAGEMENT

Regulatory agencies along the pipeline right-of-way and at the proposed facilities have varying requirements for weed management. Those requirements that diverge from the basic preventive measures WIC already requires of its Contractors are noted in Section 3.4. Implementation of preventive measures to control the spread of noxious weeds is the most cost-effective management approach.

3.1 Identification of Problem Areas

Prior to construction, WIC will provide information and training regarding noxious weed management; identification; and the impacts on agriculture, livestock, and wildlife to the Construction Contractors and inspection staff. The importance of preventing the spread of noxious weeds in areas not infested, and controlling the proliferation of weeds already present, will be explained. Additional surveys for noxious and invasive weeds will be conducted in 2005 by BioResources Inc. Prior to construction, areas of concern will be identified and flagged in the field by WIC staff. The flagging will alert construction personnel and prevent access into areas until noxious weed management control measures have been implemented.

3.2 Preventive Measures

The following preventive measures will be implemented to prevent the spread of noxious weeds:

1) All Contractor vehicles and equipment will be cleaned prior to arrival at the work site using power or high pressure equipment. The washdown will concentrate on tracks, feet, or tires and on the undercarriage, with special emphasis on axles, frame, cross members, motor mounts, and on underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out and refuse will be disposed of in waste receptacles. The Contractor, with Environmental Inspector (EI) oversight, will ensure that vehicles and equipment are free of soil and debris capable of transporting noxious weed seeds, roots, or rhizomes before the vehicles and equipment leave the contractor's yard and are allowed use of access roads and the right-of-way

2) In areas where infestations are identified or noted in the field, the Contractor will stockpile cleared vegetation and salvaged topsoil adjacent to the area from which they are stripped to eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes. During reclamation, the Contractor will return topsoil and vegetative material from infestation sites to the areas from which they were stripped;

3) The Contractor will use pressurized water to remove seeds, roots, and rhizomes from the equipment before transport off site. Cleaning sites will be recorded using GPS equipment and this information will be reported to the local contact person or agency;

4) The Contractor will ensure that straw or hay bales used for sediment barrier installations or mulch distribution are obtained from state-cleared sources that are free of primary noxious weeds.

5) The Contractor will implement the reclamation of disturbed lands immediately following construction as outlined in the Reclamation Plan. Continuing revegetation efforts will ensure adequate vegetative cover to minimize the invasion of noxious weeds; and invasive species.

6) The Contractor will apply fertilizer to reclaimed areas only according to the Reclamation Plans and as directed by the jurisdictional land management agency, property owner, or EI.

3.3 Treatment Methods

WIC will implement weed control measures that will be in accordance with existing regulations and jurisdictional land management agency or landowner agreements. Before construction, appropriate action, which may include application of herbicides, will be taken on identified weed infestations to reduce the spread or proliferation of weeds. Post-construction control measures may include one or more of the following methods:

1) Mechanical methods rely on equipment that is used to mow or disc weed populations. If such a method is used, subsequent seeding will be conducted to re-establish a desirable vegetative cover that will stabilize the soils and slow the potential re-invasion of noxious weeds. Seed selection will be based on site-specific conditions and the appropriate seed mix identified for those conditions, as presented in the Reclamation Plan;

2) Discing or other mechanical treatments that would disturb the soil surface within native habitats or occupied prairie dog towns will be avoided;

3) Suitable habitat for four state and BLM-listed sensitive plants has been identified along the pipeline right-of-way (Table 2). Weeds will usually be controlled by manual methods..

Table 2. Rare Plant Locations on the Piceance Basin Expansion, Wyoming and Colorado, 2004

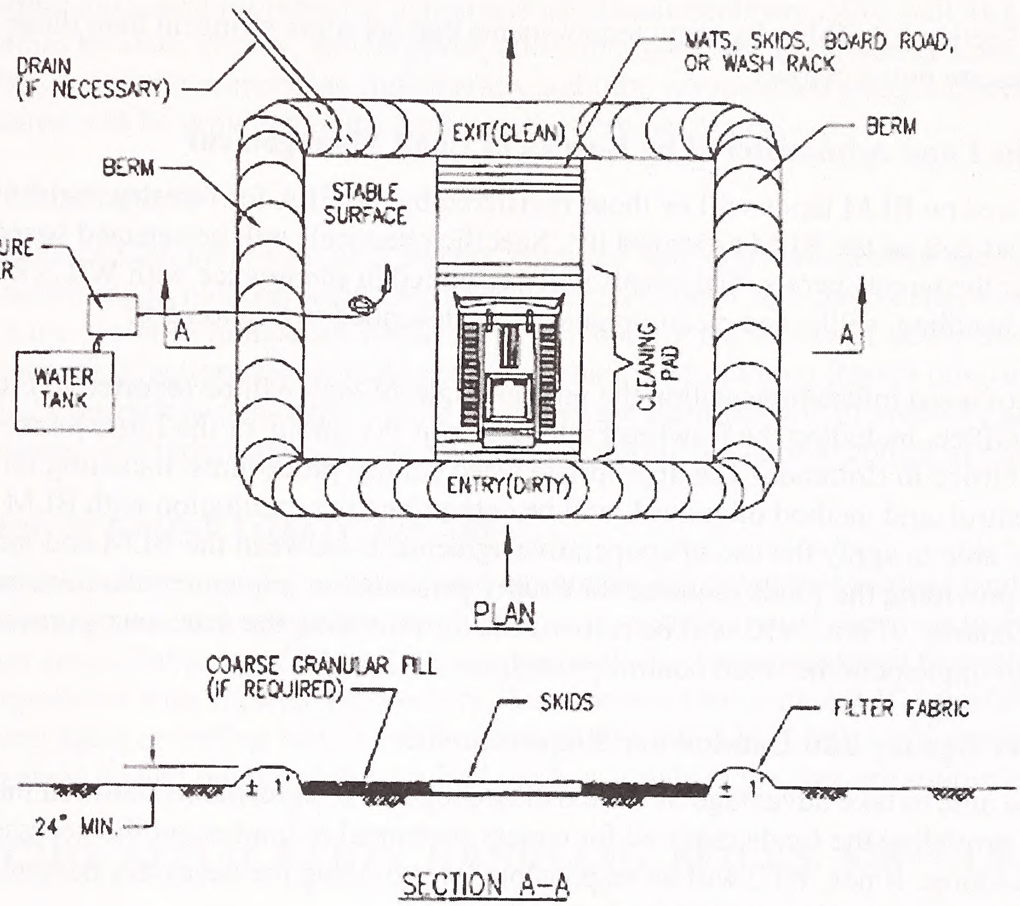
Milepost	Common Name	Scientific Name	Status
38.8	Sheep Creek beardtongue	*Penstemon pachyphyllus* var *mucronatus*	Sensitive, State of Wyoming
39.4	Sheep Creek beardtongue	*Penstemon pachyphyllus* var *mucronatus*	Sensitive, State of Wyoming
41.8	Sheep Creek beardtongue	*Penstemon pachyphyllus* var *mucronatus*	Sensitive, State of Wyoming
41.9	Sheep Creek beardtongue	*Penstemon pachyphyllus* var *mucronatus*	Sensitive, State of Wyoming
41.9	Colorado bedstraw	*Galium coloradoense*	Sensitive, State of Wyoming
42.0	Sheep Creek beardtongue	*Penstemon pachyphyllus* var *mucronatus*	Sensitive, State of Wyoming
42.0	Colorado bedstraw	*Galium coloradoense*	Sensitive, State of Wyoming
49.0	San Raphael daisy	*Erigeron compactus* var. *consimilis*	Sensitive, State of Wyoming
50.7	San Raphael daisy	*Erigeron compactus* var. *consimilis*	Sensitive, State of Wyoming
125.1	Debris milkvetch	*Astragalus detritalis*	Sensitive, State of Colorado; Sensitive, BLM
125.15	Debris milkvetch	*Astragalus detritalis*	Sensitive, State of Colorado; Sensitive, BLM

4) Herbicide application is an effective means of reducing the size of weed populations and weed seed banks. Applications will be controlled, as described in Section 5.1, to minimize the impacts on the surrounding vegetation. In areas of dense infestation, a broader application will be used and a follow-up seeding program implemented. Supplemental seeding will be based on the criteria in the Reclamation Plan. The timing of subsequent revegetation efforts will be based on the life of the selected herbicide;

5) Treatment methods will be based on species-specific and area-specific conditions (e.g., proximity to water or riparian areas, or agricultural areas, and time of year) and will be coordinated with the local regulatory offices; and

6) If areas are not seeded until the following spring because of weather or scheduling constraints, all annuals and undesirable vegetation that have become established will be controlled before seeding.

7) A Noxious Weed Wash Station (see Figure 2) will be placed on the south side of the Yampa River to minimize the spread of Whitetop.



NOTES:

1. ALL EQUIPMENT AND VEHICLES SHALL BE REQUIRED TO BE WASHED AT WASH STATIONS LOCATED AS SHOWN ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED IN THE NOXIOUS WEED MANAGEMENT PLAN. WASH STATIONS SHALL BE CONSTRUCTED BY THE CONTRACTOR. WASHINGS SHALL BE CARRIED OUT UNDER THE SUPERVISION AND TO THE SATISFACTION OF THE COMPANY REPRESENTATIVE.
2. WASH WATER USED FOR CLEANING SHALL NOT BE ALLOWED TO ENTER ANY WATERBODY, WETLAND, OR IRRIGATION CANAL/DITCH. ANY SOILS CONTAMINATED BY PETROLEUM-BASED OR OTHER UNDESIRABLE MATERIALS FROM WASH STATIONS SHALL BE REMOVED IN ACCORDANCE WITH APPLICABLE REQUIREMENTS.
3. SIZE OF STATION TO BE ADEQUATE TO ACCOMMODATE MAXIMUM SIZE OF EQUIPMENT EXPECTED AND REQUIRED WORK.
4. EQUIPMENT TO ENTER A "DIRTY END" AND EXIT A "CLEAN END".
5. STABLE DRAINAGE FROM SITE (IF NECESSARY) TO BE PROVIDED. DO NOT DISCHARGE TO A STREAM OR WETLAND.
6. GRAVEL FILL (IF REQUIRED) AND FILTER FABRIC WILL BE REMOVED AND DISPOSED OF IN AN ACCEPTABLE LAND FILL.
7. WASH STATIONS ARE TO BE EQUIPPED WITH SKID PADS OR WASH RACKS TO PREVENT SOIL FROM BEING CARRIED ON TRACKS OR TIRES AS EQUIPMENT AND VEHICLES EXIT THE WASH STATION.
7. DEPRESSION TO BE BACKFILLED WITH BERMED MATERIAL.

FIGURE 2
EQUIPMENT CLEANING STATION
WYOMING INTERSTATE COMPANY

3.4 Agency-Specific Requirements

As noted in Section 3.1, federal agency requirements that are more stringent than those imposed by local agencies are noted below.

3.4.1 Public Land Administered by Bureau of Land Management

Herbicides used on BLM lands will be those registered by the EPA for forestry, right-of-way and rangeland uses and on the BLM approved list. Specific chemicals will be selected based on efficacy of control for the target species. Chemicals will be applied in accordance with WIC's herbicide application, handling, spills, and clean-up guidelines described in Section 5.0.

Occurrence of weed infestations within the pipeline right-of-way will be reported to the appropriate BLM Field Office, including the Rawlins Field Office in Wyoming, or the Little Snake or White River Field Office in Colorado. The appropriate weed control procedures, including target species, timing of control, and method of control, will be determined in consultation with BLM personnel. WIC may be able to apply the use of cooperative agreements between the BLM and individual counties by providing the funds required for county personnel to implement the necessary weed control procedures. If not, WIC will be responsible for providing the necessary personnel or hiring a Contractor to implement the weed control procedures.

3.4.2 Other Agency and Landowner Requirements

WIC may be able to take advantage of the existing cooperative agreements between most of the counties by providing the funds required for county personnel to implement the necessary weed control procedures. If not, WIC will be responsible for providing the necessary personnel or hiring a Contractor to implement the weed control procedures.

4.0 MONITORING

Monitoring of weeds will be conducted during reclamation monitoring, on an ongoing basis, as well as on an annual basis in areas of known infestations.

4.1 Reclamation Monitoring

WIC's effort to reclaim areas disturbed during construction will be evaluated over a period of 5 years. WIC intends to begin monitoring during the first growing season following construction. Reclamation and the associated noxious weed monitoring of the pipeline right-of-way will begin in the summer of 2006 following the 2005 construction. Noxious weed monitoring will occur annually for approximately 5 years and then every three years after successful reclamation. Noxious weed conditions will be included in the primary second growing season evaluations of revegetation success (2007). Reclamation success and invasive species will be monitored along the entire project annually. WIC will implement this schedule on federal and state-owned lands, as well as private lands. After the initial 5 years of monitoring of the right-of-way, control measures and monitoring will be continued in problem areas of infestation. This monitoring will continue as long as it takes to control any infestation.

WIC will document its observations following the above-noted field inspections and make these monitoring reports available to the Bureau of Land Management, counties and the FERC as required.

Any areas where a spread of noxious weed infestation is noted, particularly in previously unaffected areas, will be further evaluated for remedial action and additional treatment. WIC will identify such areas to the agencies by state, county, and milepost, and will record any additional noxious weed control treatments. A report summarizing right-of-way stability, revegetation progress, percent cover, and weed infestation will be provided to the landowners every two years.

4.2 Ongoing Monitoring

WIC will communicate with individual land owners, counties, and land management agencies if they have a concern pertaining to noxious weeds within their jurisdiction. These parties may also contact WIC to report on the presence of noxious weeds. WIC will control the weeds on a case-by-case basis and include a summary of actions taken in the next Reclamation Monitoring Report (above). Furthermore, WIC's operations personnel will be trained in the identification of predominant noxious weed populations and will report spreads of noxious weeds during the normal course of maintenance.

4.3 Monitoring of Known Infestation Areas

In addition to annual and the ongoing noxious weed monitoring (as noted by counties/ landowners or WIC's pipeline maintenance and operations team), WIC will conduct annual site visits to monitor known infestation areas (Table 1 and Maps 1-18, Appendix G-1). These areas will be evaluated and controlled in cooperation with adjacent landowners. Landowners can contact WIC by talking with their specified land agent or calling WIC's toll-free line (1-877-598-5263). WIC will continue to visit these infestation areas on and ongoing basis or until noxious weeds in the area are controlled.

5.0 HERBICIDE APPLICATION, HANDLING, SPILLS, AND CLEANUP

5.1 Herbicide Application and Handling

Herbicide application will be based on information gathered from the State Weed Laws and the Bureau of Land Management. Before application, WIC or its Contractor will obtain any required permits from the local authorities (the Weed Districts and Bureau of Land Management). A licensed contractor will perform the application in accordance with applicable laws and regulations. Spraying is scheduled to occur in 2005, with landowner permission, prior to weeds seed dispersal. If needed, individual populations will be sprayed again prior to the first entry by any construction equipment associated with the project.

All herbicide applications will follow Environmental Protection Agency label instructions. Application of herbicides will be suspended when any of the following conditions exists:

1) Wind velocity exceeds 10 miles per hour (mph) during application of liquids or 15 mph during application of granular herbicides;

2) Snow or ice covers the foliage of noxious weeds; or

3) Precipitation is occurring or is imminent.

Vehicle-mounted sprayers (e.g., handgun, boom, and injector) will be used mainly in open areas that are readily accessible by vehicle. Hand application methods (e.g., backpack spraying) that target individual plants will be used to treat small or scattered weed populations in rough terrain.

Calibration checks of equipment will be conducted at the beginning of spraying and periodically to ensure that proper application rates are achieved.

Herbicides will be transported to the project site daily with the following provisions:

1) Only the quantity needed for that day's work will be transported;

2) Concentrate will be transported in approved containers only and in a manner that will prevent tipping or spilling, and in a compartment that is isolated from food, clothing, and safety equipment;

3) Mixing will be done off site and at a distance greater than 200 feet from open or flowing water, wetlands, or other sensitive resources. No herbicides will be applied at these areas unless authorized by appropriate regulatory agencies; and

4) All herbicide equipment and containers will be inspected for leaks daily.

5.2 Herbicide Spills and Cleanup

All reasonable precautions will be taken to avoid herbicide spills. In the event of a spill, cleanup will be immediate. Contractors will keep spill kits in their vehicles and in herbicide storage areas to allow for quick and effective response to spills. Items to be included in the spill kit are:

1) Protective clothing and gloves,
2) Adsorptive clay, "kitty litter," or other commercial adsorbent,
3) Plastic bags and bucket,
4) Shovel,
5) Fiber brush and screw-in handle,
6) Dust pan,
7) Caution tape,
8) Highway flares (use on established roads only), and
9) Detergent.

Response to an herbicide spill will vary with the size and location of the spill, but general procedures include:

1) Traffic control;
2) Dressing the clean-up team in protective clothing;
3) Stopping the leaks;
4) Containing the spilled material;
5) Cleaning up and removing the spilled herbicide and contaminated adsorptive material and soil; and
6) Transporting the spilled pesticide and contaminated material to an authorized disposal site.

5.3 Worker Safety and Spill Reporting

All herbicide contractors will obtain and have readily available copies of the appropriate material safety data sheets for the herbicides used. All herbicide spills will be reported in accordance with applicable laws and requirements.

6.0 REFERENCES

Bio-Resources, Inc. 2004. Preconstruction Noxious Weed Survey for the Piceance Basin Expansion.

Bureau of Land Management. 2004a. Bureau of Land Management Colorado. Weed Management. http://www.co.blm.gov/botany/weedhome.htm

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APPENDIX H

WIC'S CONSERVATION MEASURES PLAN

THIS PLAN IS PART OF THE BLM'S DRAFT PLAN OF DEVELOPMENT (POD). SECTIONS OF (OR ATTACHMENTS TO) THE POD REFERENCED IN THIS PLAN ARE NOT INCLUDED IN THIS APPENDIX.

Final Conservation Measures Plan

Piceance Basin Expansion Project

Wyoming and Colorado

Submitted to

Bureau of Land Management
2505 South Townsend
Montrose, CO 81401

Submitted by

Wyoming Interstate Company
a subsidiary of
El Paso Natural Gas
PO Box 1087
Colorado Springs, CO 80944

and

Bio-Resources, Inc.
135 E. Center
Logan, UT 84321

June 2005

Conservation Measures Plan

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CONSERVATION MEASURES PLAN

1.0 INTRODUCTION

This document describes the potential impacts that the proposed Piceance Basin Expansion Natural Gas Pipeline (Figure 1) would have on federally listed threatened and endangered species of plants and animals, including candidate species and species proposed for listing, as well as species classified as sensitive by the Bureau of Land Management (BLM).

This plan includes:

- A listing of sensitive species in the project area, including their status.
- Potential direct, indirect and cumulative impacts to these species.
- Suggested "likely to affect" or "not likely to affect" findings for species of concern.
- Big game distribution and habitat requirements

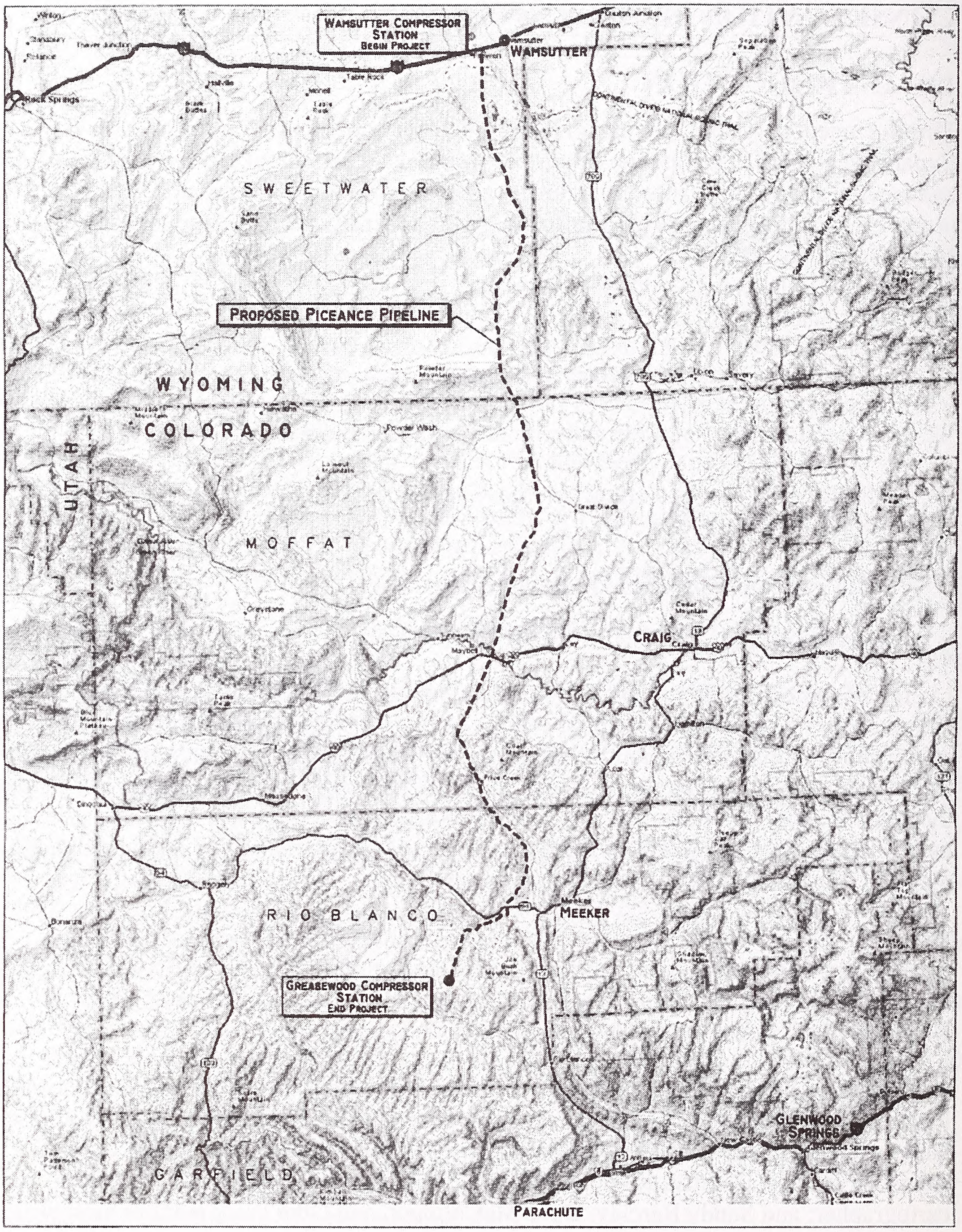
2.0 METHODS

Literature sources used in preparing this plan included taxonomic publications for Colorado and Wyoming. These publications were the main source of species distribution maps. Other sources of distribution data were the Colorado Natural Heritage Database and Wyoming Natural Diversity Database, which provided Township, Range and Section locations for species of concern. Atlases for both states listed species in a large area and lacked the specificity needed for assessing distribution and impacts along the proposed pipeline, but did aid in presence/absence determination.

The other species were keyed to habitat that suggested a species' presence. This information was derived from a survey of plant communities traversed by the proposed Piceance Basin Expansion pipeline and at associated locations conducted by Bio-Resources during the summer of 2004.

In addition, a 300-foot-wide swath along the pipeline right-of-way, as well as associated locations, were surveyed on the ground for species of concern by experienced biologists, namely, C.V. Grant, wildlife biologist; Robert Dorn and Frank Smith, botanists; Cindy Johnson, wetland scientist; Ramona Rukavina, vegetation specialist; Patrick Meyer, cartographer; and Sandy Barclay, Dave McCullough and Greg Paul, wildlife biologists.

Results of these file and literature searches and field surveys have been incorporated into a series of resource reports prepared for the Piceance Basin Expansion project and form the basis for the analysis presented here.



elpaso
Colorado Interstate
Gas Company

FIGURE 1 PICEANCE BASIN EXPANSION PIPELINE - GENERAL LOCATION MAP.

3.0 ENDANGERED AND THREATENED SPECIES

Based on information from federal and state agencies, there are 27 species of federal concern along the route of the Piceance Basin Expansion in Wyoming (Table 1) and 20 species of federal concern in Colorado (Table 2).

In Wyoming (Table 1), seven species that potentially occur along the pipeline route are listed by the Fish and Wildlife Service (FWS) including one endangered species, black-footed ferret; two threatened species, bald eagle and Ute ladies'-tresses; one candidate, yellow-billed cuckoo; and three sensitive species, pygmy rabbit, sage grouse and mountain plover. The endangered Colorado River fishes would be implicated if any water depletions of streams draining into the Little Snake and Green Rivers occurred during pipeline construction or operation in Wyoming. However, Wyoming Interstate Company (WIC) does not propose pumping water from any stream in Wyoming. In addition, 20 species that may occur along the pipeline route are listed as sensitive by the BLM.

Table 1 Wyoming Threatened, Endangered, Candidate and Sensitive Species potentially occurring along the Piceance Basin Expansion, 2004.

Species	Status	Habitat
Fish and Wildlife Service		
Bald eagle *Haliaeetus leucocephalus*	T	Riparian woodland, adjacent babitat
Black-footed ferret *Mustela nigripes*	E	Prairie dog towns
Ute ladies'-tresses *Spiranthes diluvialis*	T	Wet meadows, springs, lakes; perennial streams
Colorado River Fishes	E	Formal consultation if water depleted
Yellow-billed cuckoo *Coccyzus americanus*	C	Riparian wetlands
Pygmy rabbit *Brachylagus idahoensis*	S	Big sage steppe
Sage grouse *Cetrocercus urophasianus*	S*	Big sage steppe
Mountain plover *Charadrius montanus*	S*	Sparse shortgrass/badlands
Bureau of Land Management Sensitive Species		
Ferruginous hawk *Buteo regalis*	S	Open grasslands and shrubland
American peregrine falcon *Falco peregrinus anatum*	S	Mountainous zones or cliffs near large lakes and rivers
Columbian sharp-tailed grouse *Tympanuchus phasianellus columbianus*	S	Brushy areas in prairie county or foothills
Long-billed curlew *Numenius americanus*	S	Meadows, pastures, shorelines and marshes
Short-eared owl *Asio flammeus*	S	Open grasslands, meadows, marshes and farmland

Table 1 Wyoming Threatened, Endangered, Candidate and Sensitive Species potentially occurring along the Piceance Basin Expansion, 2004.		
Species	**Status**	**Habitat**
Burrowing owl *Athene cunicularia* *(Speotyto cunicularia)*	S	Plains and basins, often associated with prairie dog towns
Loggerhead shrike *Lanius ludovicianus*	S	Open country with scattered trees and shrubs
Sage thrasher *Oreoscoptes montanus*	S	Sagebrush and greasewood
Sage sparrow *Amphispiza belli*	S	Medium to tall sagebrush shrubland
Brewer's sparrow *Spizella breweri*	S	Sagebrush foothills and basins
Spotted bat *Euderma maculatum*	S	Cliff roosting, generally near perennial water
Townsend's big-eared bat *Corynorhinus townsendii* *(Plecotus townsendii)*	S	Dry upland habitats near riparian and wetland areas
White-tailed prairie dog *Cynomys leucurus*	S	Grassland and shrub-grass
Wyoming pocket gopher *Thomomys clusius* *(Thomomys talpoides)*	S	Dry upland areas
Swift fox *Vulpes velox*	S	Shortgrass prairie, sage-grassland
Northern leopard frog *Rana pipiens*	S	Near permanent water in areas up to 9,000 ft.
Roundtail chub *Gila robusta*	S	Large rivers, Little Snake River drainage and occasionally small rivers such as Muddy Creek
Bluehead sucker *Catostomus discobolus*	S	Larger streams and rivers of the Little Snake, Bear, Green and Snake River drainages
Flannelmouth sucker *Catostomus latipinnis*	S	Mostly in large rivers but also smaller streams and occasional lakes
Colorado River cutthroat trout (Native populations) *Orncorhyunchus clarki pleuriticus*	S	Cold, clear water in rocky steep gradient streams
E= Endangered T= Threatened S=Sensitive C=Candidate *Also BLM Sensitive		

In Colorado (Table 2), 20 species that may occur along the pipeline route are listed by the FWS including four endangered species, Colorado pikeminnow, humpback chub, bonytail chub and razorback sucker; four threatened species, bald eagle, Ute ladies'-tresses, Dudley Bluffs bladderpod, and Piceance twinpod; two sensitive species, Debris milkvetch and Piceance bladderpod; and ten species of concerned conservation, including the mountain plover, sage grouse and the ferruginous hawk. Five of these species (Table 2) are also considered sensitive by the BLM and are marked with an asterisk.

Table 2 Colorado Threatened, Endangered, Candidate and Sensitive Species along the Piceance Basin Expansion, 2004		
Species	**Status**	**Habitat**
Fish and Wildlife Service/Bureau of Land Management Sensitive Species		
Bald Eagle *Haliaeetus leucocephalus*	T	Riparian woodland
Colorado Pikeminnow *Ptychocheilus lucius*	E	Yampa River
Humpback chub *Gila cypha*	E	Yampa River
Bonytail chub *Gila elegans*	E	Yampa River
Razorback sucker *Xyrauchon texanus*	E	Yampa River
Ute ladies'-tresses *Spiranthes diluvialis*	T	Wet meadow, spring, ponds, perennial streams
Dudley Bluffs bladderpod *Lesquerella congesta*	T	White Tongue soils, Parachute Creek Member, Green River Formation
Piceance twinpod *Phyoria obcordata*	T	White Tongue soils, Parachute Creek Member, Green River Formation
Debris milkvetch *Astragalus detritalis*	S*	Pinyon-juniper, mixed desert shrub
Piceance bladderpod *Lesquerella parviflora*	S*	Shale outcrops, Green River Formation
Black-throated gray warbler *Dendroica nigrencens*	CC	Juniper woodlands
Brewer's sparrow *Spizella breweri*	CC	Sagebrush foothills and medium-height sagebrush in basins. Also, mountain mahogany hills
Loggerhead shrike *Lanius ludovicianus*	CC	Open country with scattered trees and shrubs
Long-billed curlew *Numenius americanus*	CC	Meadows, pastures, shorelines and marshes
Pinyon jay *Gymnorhinus cyanocephalus*	CC	Pinyon-juniper woodland
Sage sparrow *Amphispiza belli*	CC	Medium to tall sagebrush shrubland
Virginia's warbler *Vermivora virginiae*	CC	Riparian woodlands and brushy slope
Mountain plover *Charadrius montanus*	CC*	Sparse shortgrass/badlands
Sage grouse *Centrocercus urophasianus*	CC*	Big sage steppe

Table 2 Colorado Threatened, Endangered, Candidate and Sensitive Species along the Piceance Basin Expansion, 2004		
Species	**Status**	**Habitat**
Ferruginous hawk *Buteo regalis*	CC*	Open grasslands and shrubland
T=Threatened S=Sensitive CC= Species of Conservation Concern E= Endangered *= Also BLM Sensitive		

Some of the species of concern listed in Tables 1 and 2 were eliminated from consideration based on a lack of appropriate habitat in the project area (Table 3). The elimination of these species from consideration was based on ground surveys during 2004 and experience with said species.

Table 3 Sensitive Species Eliminated from Consideration due to Lack of Habitat on the Piceance Basin Expansion		
Name	**Scientific Name**	**Comment**
MAMMALS		
Spotted bat	*Euderma maculatum*	No suitable habitat
Townsend's big-eared bat	*Plecotus townsendii pallescens*	No suitable habitat
Swift fox	*Vulpes velox velox*	No suitable habitat
BIRDS		
Yellow-billed cuckoo	*Coccyzus americanus*	No suitable habitat
Columbian sharp-tailed grouse	*Tympanuchus phasianellus columbianus*	No suitable habitat
Short-eared owl	*Asio flammeus*	No suitable habitat
AMPHIBIANS		
Northern leopard frog	*Rana pipiens*	No suitable habitat
FISHES		
Roundtail chub	*Gila robusta*	No suitable habitat
Bluehead sucker	*Catostomas discobolus*	No suitable habitat
Flannelmouth sucker	*Catostomas latipinnis*	No suitable habitat
Colo. R. Cutthroat trout	*Orncorhyrunchus clarki pleuriticus*	No suitable habitat

3.1 Mammals

3.1.1 Black-footed Ferret

The black-footed ferret is an endangered species potentially occurring in the project area in Wyoming and Colorado. Black-footed ferrets may be affected by pipeline construction if prairie dog towns, which provide habitat for the ferret, are impacted. In Wyoming, black-footed ferret surveys are no longer recommended in black-tailed prairie dog towns or in white-tailed prairie dog towns except those noted in a February 2, 2004 letter from the Fish and Wildlife Service (USFWS 2004). Consistent with these guidelines, the white tailed prairie dog towns along the pipeline right-of-way in Townships 13N to 20N, Range 94W were considered for black-footed ferret surveys. In April 2005, a survey of prairie dog towns in this area was conducted by C. Val Grant, Dave McCullough and Kendrick Moholt. The pipeline's route from the Wamsutter Compressor Station (MP 0.0) to MP 12 in Sweetwater County was considered a potential site for ferret searches based on the BLM's survey using aerial mapping of prairie dog burrows and Bio-Resources, Inc.'s 2004 survey suggesting a continuous complex of burrows in this same area (Table 4).

The 2005 survey confirmed the existence of the 51-acre town south of the Wamsutter Compressor Station plus two locations of burrows in the Uinta Basin Lateral's trenchline occupied by prairie dogs at MPs 5.35 and 5.7 (Table 5). A visual inspection of burrows in the first 15 miles of pipeline showed that 99 percent of the burrows were either abandoned or occupied by ground squirrels. The 51-acre town and two sets of burrows does not meet the 200-acre minimum in a complex per the FWS's ferret search guidelines from April 1989. Details of this survey are presented in "2005 Survey White-tailed Prairie Dog and Sage Grouse" by C.V. Grant, June 13, 2005 in Appendix H-3

Some prairie dog towns in eastern Colorado have been block cleared and surveys for ferrets in these locations are no longer recommended. No block clearances of white-tailed prairie dogs are in place in western Colorado. However, FWS has designated prairie dog towns in Moffat County, Colorado and Sweetwater County, Wyoming as "experimental populations." These populations are considered to have a low probability for ferret occurrence and are designated as potential ferret introduction sites. As mentioned above, ferret searches are not required in these areas (Leachman, pers. comm. 2004). However, FWS encourages WIC to protect all prairie dog towns in the project area for their value to the prairie ecosystem and the myriad of species that rely on them.

Table 4 White-tailed Prairie Dog Towns Located on the Piceance Basin Expansion Pipeline in Wyoming and Colorado, 2004

County	Milepost	Status	Distance from Centerline, ft.	Length on Centerline, ft	Acreage Disturbed
WYOMING					
Sweetwater	0.0	Active	On	820	1.6
Sweetwater	0-24.0	Scattered	-	-	
Sweetwater	13.4	Active	On	1400	2.7
Sweetwater	21.3	Active	On	1200	2.3
Sweetwater	29.8-30.1	Active	On	1400	2.7
COLORADO					
Moffat	54.0	Active	On	840	1.6
Moffat	83.0	Active	2500 W	-	
Moffat	93.5-94.1	Active	On	3800	7.4
Rio Blanco	111.3	Active	On	500	2.3

Table 5 White-tailed prairie dog activity along the Piceance Basin Expansion Project in Wyoming and Colorado, April 2005.

Number	Milepost	Map #[1]	Category	Area, acres	Length on Centerline, ft.	Distance from Centerline, ft.	Acreage Disturbed
WYOMING							
1	0 - 0.4	1A	Town	51	On CL		1.6
2	5.35	1A	2 Burrows, 2 ind.		On CL		<0.01
3	5.7	1A	2 Burrows		On CL		<0.01
4	13.5 - 13.7	2A	Town	22	1400		2.7
5	20.3 - 21.2	2A	Town	115	4777		9.3
6	25.4 - 25.5	3A	Town	8	1007		2.0

Table 5 White-tailed prairie dog activity along the Piceance Basin Expansion Project in Wyoming and Colorado, April 2005.							
Number	**Milepost**	**Map #[1]**	**Category**	**Area, acres**	**Length on Centerline, ft.**	**Distance from Centerline, ft.**	**Acreage Disturbed**
7	28.7	3A	1 Burrow, 1 ind.		On CL		<0.01
8	49.6 - 49.7	4A	Town	5	820		1.6
9	50.3	4A	Town	3	On Access Rd.	9022 East	0
COLORADO							
10	53.8 - 53.9	5A	Town	36	840		1.6
11	83	8A	Town	7	On Access Rd.	2500 West	0
12	93.1	9A	Town	29	On Access Rd.	3255 East	0
13	93.5 - 94.1	9A	Town	96	3800		7.4
14	110.9	10A	Town	Inactive	Squirrels only		-
[1] *Maps in Appendix H-1*							

Impacts

In Wyoming, if white-tailed prairie dog towns or complexes greater than 200 acres would be disturbed, surveys for the endangered black-footed ferret may be recommended by FWS in order to determine if the action would result in an adverse effect to the species. In addition, surveys may be recommended if a portion of the white-tailed prairie dog town or complex, as identified in the recent FWS letter (USFWS 2004), would be disturbed. According to the Black-Footed Ferret Survey Guidelines (USFWS 1989), a prairie dog complex consists of two or more neighboring prairie dog towns less than 7 km (4.3 miles) from each other. A field check conducted by Bio-Resources in 2005 indicated that less than 200 acres of prairie dog towns would be affected.. Based on BLM Rawlins data, shape files, only one town (MP 13.5) appeared to qualify for the FWS criterion; however, it covered only 22 acres. The locations of these towns are depicted on Maps 1A -11A, Appendix H-1.

Mitigation

Based on the spring survey of the prairie dog towns in April 2005, a ferret survey will not be conducted in July 2005, if the FWS agrees with these data. Any time trenching occurs in a prairie dog town, an environmental inspector or biologist will accompany the trencher. Should a ferret be sighted, all construction will cease in the prairie dog town, FWS will be notified, and construction will not resume until FWS gives approval to proceed. This will apply to all prairie dog towns along the pipeline route.

3.1.2 Pygmy Rabbit

The pygmy rabbit is a FWS-designated sensitive species. The FWS has received a petition (April 21, 2003), to list the pygmy rabbit under the Endangered Species Act. This smallest of the Leporidae family occurs in portions of many western states including southwestern Wyoming, where they occur in a few isolated populations in Lincoln, Uinta, and Sweetwater Counties (Clark and Stromberg 1987). New populations have recently been located near Fontenelle, Wyoming, in the same counties (Kung 2004).

Pygmy rabbits are sagebrush obligate species, primarily found in dense western big sagebrush communities preferably where at least two other species of sagebrush and forbs occur as well. Habitat appropriate for the pygmy rabbit may be present along the Piceance Basin Expansion. A survey was conducted in April 2005 by C. V. Grant, Dave McCullough and Kendrick Moholt of Bio-Resources. A report of the findings of this survey is included in Appendix H-4 of this plan. Pygmy rabbit sign – including pellets, burrows, and individuals – was found at 92 sites in Wyoming and seven sites in Colorado (Table 6). The pygmy rabbit has not been previously recorded in Colorado. Mapped sites are in Appendix H-4.

Table 6 Pygmy rabbit locations in Sweetwater County, WY, and Moffat County, CO, along the Piceance Basin Expansion pipeline during April, 2005

Type	Zone	UTM		Note	Distance to Center Line (m)	Milepost
		Easting	Northing			
pygmed	13 T	251085	4618146	Medium to high density pygmy rabbit scat	72	0.40
pygmed	13 T	251027	4618118	Medium to high density pygmy rabbit scat	89	0.44
pygmed	13 T	250866	4618178	Medium to high density pygmy rabbit scat	0	0.53
pygmed	13 T	250655	4618146	Medium to high density pygmy rabbit scat	8	0.67
pygmed	13 T	250602	4618114	Medium to high density pygmy rabbit scat	14	0.70
pygmed	13 T	250565	4618122	Medium to high density pygmy rabbit scat	1	0.72
pygmed	13 T	250530	4618119	Medium to high density pygmy rabbit scat	4	0.75
pyglat	13 T	250282	4618070	Carpet of pygmy rabbit scat	2	0.90
pygmed	12 T	746721	4613820	Medium to high density pygmy rabbit scat	5	4.98
pygmed	12 T	746761	4613539	Medium to high density pygmy rabbit scat	28	5.02
pygmed	12 T	746735	4613607	Medium to high density pygmy rabbit scat	4	5.06
pygmed	12 T	746729	4613660	Medium to high density pygmy rabbit scat	1	5.16
pygmed	12 T	746729	4613463	Medium to high density pygmy rabbit scat	6	5.20
pygmed	12 T	746739	4613350	Medium to high density pygmy rabbit scat	2	5.27
pygmed	12 T	746744	4613067	Medium to high density pygmy rabbit scat	0	5.45
pygmed	12 T	746746	4613010	Medium to high density pygmy rabbit scat	1	5.49
pygmed	12 T	746771	4612258	Medium to high density pygmy rabbit scat	8	5.95
pygmed	12 T	746765	4612178	Medium to high density pygmy rabbit scat	0	6.00
pygmed	12 T	746762	4611961	Medium to high density pygmy rabbit scat	8	6.14
pygmed	12 T	746788	4611593	Medium to high density pygmy rabbit scat	9	6.37
pygmed	12 T	746776	4611407	Medium to high density	7	6.48

Table 6 Pygmy rabbit locations in Sweetwater County, WY, and Moffat County, CO, along the Piceance Basin Expansion pipeline during April, 2005						
Type	Zone	UTM		Note	Distance to Center Line (m)	Milepost
		Easting	Northing			
				pygmy rabbit scat		
pygmed	12 T	746780	4611235	Medium to high density pygmy rabbit scat	7	6.59
pygmed	12 T	746787	4611129	Medium to high density pygmy rabbit scat	3	6.65
pygmed	12 T	746785	4611076	Medium to high density pygmy rabbit scat	6	6.69
pygmed	12 T	746793	4610953	Medium to high density pygmy rabbit scat	1	6.76
pygmed	12 T	746802	4610797	Medium to high density pygmy rabbit scat	5	6.86
pygmed	12 T	746794	4610678	Medium to high density pygmy rabbit scat	6	6.94
pygmed	12 T	746838	4609279	Medium to high density pygmy rabbit scat	5	7.80
pyghole	12 T	746858	4608510	Medium to high density pygmy rabbit scat; scrape; burrow	7	8.28
pygmed	12 T	746853	4608254	Medium to high density pygmy rabbit scat	4	8.44
pygmed	12 T	748447	4587076	Medium to high density pygmy rabbit scat	59	15.31
pygmed	13 T	250717	4589971	Medium to high density pygmy rabbit scat	59	20.48
pygmed	13 T	250771	4589224	Medium to high density pygmy rabbit scat	4	20.95
pygmed	13 T	250902	4587076	Medium to high density pygmy rabbit scat	18	22.32
pygmed	13 T	251484	4585551	Medium to high density pygmy rabbit scat	74	23.34
pygmed	13 T	251747	4585210	Medium to high density pygmy rabbit scat	1	23.62
pygmed	13 T	253566	4581374	Medium to high density pygmy rabbit scat	4	26.24
pyglat	13 T	253671	4580214	Carpet of pygmy rabbit scat	15	27.06
pygmed	13 T	253632	4580026	Medium to high density pygmy rabbit scat	3	27.18
pygmed	13 T	253522	4579745	Medium to high density pygmy rabbit scat	18	27.36
pyglat	13 T	253383	4579196	Carpet of pygmy rabbit scat	58	27.71
pygmed	13 T	253368	4578919	Medium to high density pygmy rabbit scat	6	27.90
pygmed	13 T	253316	4578669	Medium to high density pygmy rabbit scat	18	28.05
pygmed	13 T	253254	4578249	Medium to high density pygmy rabbit scat	13	28.33
pygmed	13 T	253259	4577905	Medium to high density pygmy rabbit scat	18	28.53
pygmed	13 T	253287	4576656	Medium to high density pygmy rabbit scat	18	29.34
pygmed	13 T	253151	4576329	Medium to high density pygmy rabbit scat	13	29.56

Table 6 Pygmy rabbit locations in Sweetwater County, WY, and Moffat County, CO, along the Piceance Basin Expansion pipeline during April, 2005						
Type	**Zone**	**UTM**		**Note**	**Distance to Center Line (m)**	**Milepost**
		Easting	**Northing**			
pygmed	13 T	252970	4575894	Medium to high density pygmy rabbit scat	11	29.85
pygmed	13 T	252844	4575596	Medium to high density pygmy rabbit scat	12	30.05
pygmed	13 T	252601	4575013	Medium to high density pygmy rabbit scat	11	30.45
pygmed	13 T	252258	4574198	Medium to high density pygmy rabbit scat	13	31.00
pygmed	13 T	251733	4572947	Medium to high density pygmy rabbit scat	13	31.84
pygmed	13 T	251478	4572379	Medium to high density pygmy rabbit scat	29	32.23
pygmed	13 T	250757	4571541	Medium to high density pygmy rabbit scat	23	32.94
pygmed	13 T	250082	4570918	Medium to high density pygmy rabbit scat	2	33.49
pygmed	13 T	249579	4570427	Medium to high density pygmy rabbit scat	6	33.95
pygmed	13 T	248859	4569691	Medium to high density pygmy rabbit scat	6	34.59
pygmed	12 T	750624	4568382	Medium to high density pygmy rabbit scat	21	35.65
pygmed	12 T	749879	4567556	Medium to high density pygmy rabbit scat	49	36.33
pygmed	12 T	749846	4566345	Medium to high density pygmy rabbit scat	12	37.08
pygmed	12 T	749857	4569691	Medium to high density pygmy rabbit scat	11	37.28
pygmed	12 T	750359	4555855	Medium to high density pygmy rabbit scat	6	43.79
pygmed	12 T	750760	4554421	Medium to high density pygmy rabbit scat	1	44.67
pygmed	12 T	750541	4552990	Medium to high density pygmy rabbit scat	2	45.58
pygmed	12 T	750562	4552399	Carpet of pygmy rabbit scat	7	45.94
pygmed	12 T	750583	4552080	Medium to high density pygmy rabbit scat	3	46.15
pygmed	12 T	750650	4550620	Medium to high density pygmy rabbit scat	11	47.05
pygmed	12 T	750681	4550312	Medium to high density pygmy rabbit scat	6	47.24
pygmed	12 T	750700	4550213	Medium to high density pygmy rabbit scat	4	47.30
pyghole	12 T	750717	4550163	Small rabbit (~6") seen going into burrow. pygmy rabbit scat in area	4	47.33
pygmed	12 T	750716	4550111	Medium to high density pygmy rabbit scat	6	47.37
pygmed	12 T	750741	4549981	Medium to high density pygmy rabbit scat	3	47.45
pygmed	12 T	750777	4549765	Medium to high density pygmy rabbit scat	4	47.58

Table 6 Pygmy rabbit locations in Sweetwater County, WY, and Moffat County, CO, along the Piceance Basin Expansion pipeline during April, 2005						
Type	**Zone**	**UTM**		**Note**	**Distance to Center Line (m)**	**Milepost**
		Easting	**Northing**			
pygmed	12 T	750834	4549457	Medium to high density pygmy rabbit scat	1	47.78
pygmed	12 T	750864	4549253	Medium to high density pygmy rabbit scat	6	47.91
pygmed	12 T	750892	4549132	Medium to high density pygmy rabbit scat	1	47.99
pygmed	12 T	750906	4549058	Medium to high density pygmy rabbit scat	3	48.03
pygmed	12 T	750925	4548929	Medium to high density pygmy rabbit scat	1	48.11
pygmed	12 T	750904	4548779	Medium to high density pygmy rabbit scat	1	48.21
pygmed	12 T	750854	4548579	Medium to high density pygmy rabbit scat	3	48.34
pygmed	12 T	750933	4548287	Medium to high density pygmy rabbit scat	1	48.54
pygmed	12 T	751014	4548181	Medium to high density pygmy rabbit scat	0	48.63
pygmed	12 T	751091	4548084	Medium to high density pygmy rabbit scat	7	48.70
pyglow	12 T	751634	4547087	Low to medium density pygmy rabbit scat	46	49.43
pyglow	12 T	751654	4547051	Low to medium density pygmy rabbit scat	46	49.45
pyglow	12 T	751701	4546964	Low to medium density pygmy rabbit scat	52	49.51
pyglow	12 T	751728	4546917	Low to medium density pygmy rabbit scat	52	49.55
pygnest	12 T	751787	4546846	High probablity pygmy rabbit, fresh scrape, scat	58	49.60
pyglow	12 T	751787	4546819	Low to medium density pygmy rabbit scat	58	49.61
pyglow	12 T	751846	4546709	Low to medium density pygmy rabbit scat	54	49.70
pyglow	12 T	751886	4546658	Low to medium density pygmy rabbit scat	46	49.74
pygmed	12T	752135	4546146	Medium to high density pygmy rabbit scat	15	49.90
pygsight	13 T	254851	4522759	At gate to Leks 6A, 6B; pygmy rabbit sighting	2203	65.01
pygmed	13 T	247135	4508044	Medium to high density pygmy rabbit scat	42	75.58
pygmed	13 T	246388	4505376	Medium to high density pygmy rabbit scat	29	77.30
pygmed	12 T	752816	4503804	Medium to high density pygmy rabbit scat	49	78.42
pygmed	12 T	752747	4503783	Near Lek 11. Medium to high density pygmy rabbit scat.	109	78.45
pygsight	12 T	747300	4501000	Cty Rd 19 north of Maybell, 0515-0545, 1 pygmy rabbit on road	4593	81.28

Table 6 Pygmy rabbit locations in Sweetwater County, WY, and Moffat County, CO, along the Piceance Basin Expansion pipeline during April, 2005						
Type	Zone	UTM		Note	Distance to Center Line (m)	Milepost
		Easting	Northing			
pygmed	12 T	744559	4478728	Lek 13A. Medium to high density pygmy rabbit scat	49	95.01

Impacts

All of the habitats where the rabbit was located, which ranged from sagebrush shrub to alkaline scrub, were continuous with similar habitat. Sites that would be lost to construction totaled 52 in Wyoming and none in Colorado. Two burrows and one latrine area, i.e., ground covered with pellets over at least one square meter, would be lost to construction. The other 49 sites vary from low to medium and on occasion high density of sign that are apparently used for shelter and foraging. The remaining sites are at least 30 feet from centerline and can likely be avoided. Construction will eliminate both shelter and forage for at least five years. Tempering this loss, sagebrush habitat beyond the construction zone is extensive throughout Wyoming and Colorado. Whether rabbits displaced by construction can survive is unknown, nevertheless, the density of the pygmy rabbit population in this linear look at Sweetwater County is high. As sagebrush invades the right-of-way, forage and shelter will return. In the long term it does not appear that pipeline construction would significantly affect the viability of pygmy rabbit populations in Wyoming and Colorado.

Mitigation

Based on the findings of this survey, the pipeline's construction and operation does not appear to be an adverse impact that would affect the pygmy rabbit's viability. Over the 52-mile transect surveyed through Wyoming for this study, the pygmy rabbit appears to be common and widespread. Construction would destroy three high-density concentrations of the rabbit in Wyoming. The amount of sagebrush habitat available to the species will be diminished by 1460 acres (1102 ac. sagebrush scrub; 194 ac. low shrub; 164 ac. alkaline scrub). Some of this loss will return to a facsimile of its original condition over time, probably 5 to 15 years, as sagebrush invades the right-of-way. This can be allayed to some degree by seeding the right-of-way with sagebrush seed during reclamation, as is currently planned through the sagebrush habitat associated with sage grouse leks in Colorado. Sagebrush will still abut the right-of-way on its eastern edge and provide cover and forage for the rabbits. As sagebrush begins to grow in the right-of-way, it will also provide forage, but not shelter, for 5 to 10 years. There are places along the Uinta Basin Lateral, built in 1992, that have adequate cover for pygmy rabbits and are in fact being used by the species. Mitigation from the FWS and the States of Colorado and Wyoming will be forthcoming following submission of this report and confirmation of our findings.

3.1.3 Spotted Bat

According to Clark and Stromberg (1987), the spotted bat, a BLM sensitive species, has been found in only one location in northeastern Wyoming, but is expected throughout the state. The bat roosts in cliffs and rock outcrops and has been found in practically all habitat types, but is associated with open water (Fitzgerald et al. 1994), usually along perennial stream courses (Grant, C. V., personal observation, 1988). Pipeline construction is not likely to affect this bat due to a lack of appropriate habitat in the project area for the bat or the moths it consumes.

3.1.4 Townsend's Big-eared Bat

The Townsend's big-eared bat, a BLM sensitive species, inhabits caves as well as mine adits, and uses buildings as day roosts (Clark and Stromberg 1987). It occurs in desert shrub lands, pinyon-juniper woodlands and dry coniferous forests. Although desert shrub is present in the project area, no caves, adits or buildings are present for day time refuge along the proposed route. Therefore, the project is not likely to affect Townsend's big-eared bats.

3.1.5 White-tailed Prairie Dog

The white-tailed prairie dog is a BLM sensitive species in Wyoming. Prairie dogs are spread throughout Sweetwater County, Wyoming and Moffat County, Colorado and the northern half of Rio Blanco County, Colorado. FWS has removed the species from its candidate list but is concerned about its existence due to its importance to ferrets as well as other species, such as mountain plovers and burrowing owls. Please refer to the black-footed ferret (above) for a detailed rationale for searching the listed prairie dog towns. Based on a spring 2005 survey, five white-tailed prairie dog towns occurred on the pipeline right-of-way in Sweetwater County, Wyoming, two in Moffat County, Colorado, and none in Rio Blanco County (Table 5). The town in Rio Blanco County (MP 110.9) was occupied by ground squirrels.

Impacts

Direct impacts to the white-tailed prairie dog could occur during clearing, if heavy equipment collapses burrows while moving along the right-of-way, or if trenching destroys burrows. Once the pipeline is completed and reclaimed, the only direct impact would be a pipeline breach at a prairie dog town. Operational monitoring is usually done by aircraft, so no vehicles would be expected at a town. Required periodic operational surveys will be conducted on foot in potential habitat.

Indirect impacts to these mammals are mainly positive. On the negative side, displacement of rodents during construction may increase predation success on the prairie dogs. Prairie dogs would be displaced and disrupted for 2 weeks maximum during construction, due to an open ditch. Some individual prairie dogs may be killed during construction but the loss would be inconsequential. Since most construction would take place after the reproductive season, most prairie dogs would be mobile and able to avoid the ditching machine as well as construction traffic. Once completed, the revegetated pipeline would provide additional forage for the prairie dogs as well as unconsolidated soils in which to burrow. Since the seven towns affected by the pipeline are estimated at small to medium in size, the effect on the species would be minimal. The consequence of the pipeline's construction would be short-term disruption (two weeks maximum) of the prairie dog towns; and a benefit (3 to 7 years) of grasses and forbs, and loose soil for the prairie dogs in the reclaimed right-of-way, potentially maintaining or increasing a food resource.

Cumulative impacts may occur to the prairie dogs due to increased human recreational use of the pipeline's right-of-way corridor or to similar or other use of the corridor by linear projects, such as fiber optic cables and natural gas or liquid pipelines. Human recreation would be limited by individual landowners. Additional construction in the right-of-way would require landowner consent. On BLM land access to the corridor would be more difficult to control.

Mitigation

Construction through the prairie dog towns will require special construction techniques. The active towns do not have a high burrow density, and distance through the towns is moderate with the exception of 3800 feet through a town in Moffat County, Colorado (MP 93.5-94.1) (Table 5). The boundaries of any town that is active at the time of construction will be clearly marked and signed by the environmental inspectors. The right-of-way width will stay at 85 feet through all dog towns. The reason for this change from a reduced 75-foot right-of-way through prairie dog towns is based on recent construction on the Cheyenne Plains pipeline through eastern Colorado and southern Kansas (Moholt, pers. comm. 2005). There, the 75-foot right-of-way negatively affected pipeline construction and had no effect on prairie dog behavior and distribution. No activity will take place within or near (300 ft) the town's boundaries other than that stated below.

The pipeline's linear impact would not disturb more than 9.3 acres of the largest town, located in Sweetwater County (MP 20.3-21.2)(Table 5). Each phase of construction, clearing, pipe-stinging, bending, trenching, lowering-in, backfilling, and clean up will take place in the usual course of construction; however, no equipment and no vehicles will be left overnight within 300 feet of the town and traffic through the town will be limited to a one-time pass through.

During reclamation, the pipeline right-of-way will be reseeded with BLM and NRCS seed mixes appropriate to the area's soil and range conditions.

The proposed action is not likely to have an adverse impact on the white-tailed prairie dog. The pipeline's construction is not likely to contribute to the need for the species to become federally listed as threatened or endangered.

3.1.6 Wyoming Pocket Gopher

The Wyoming pocket gopher is limited to the southeastern corner of Sweetwater County; its burrows are usually found on drier ridge tops, associated with gravelly loose soils and greasewood (Clark and Stromberg 1987). Its burrows are similar to the northern pocket gopher; however, no specimens of the latter species are known in the area. It is a BLM sensitive species. Pipeline construction could potentially affect the gopher.

Impacts

Direct impacts to Wyoming pocket gophers could occur during clearing, if heavy equipment collapses dens and tunnels along the right-of-way, or trenching. Once the pipeline is completed and reclaimed, the only direct impact would be a pipeline breach at a den site. Operational monitoring is usually done by aircraft, so no vehicles would be expected at or near a den. Required periodic operational surveys will be conducted on foot in potential habitat.

Indirect impacts to the gophers would be mainly positive. Displacement of gophers during construction may increase predation. Once the pipeline is operational, the corridor would provide loose soil for dens and rodent burrows plus forbs, grasses and seeds for rodent forage, potentially maintaining or increasing a food resource.

Cumulative impacts to the gophers could occur due to increased human recreational use of the pipeline's right-of-way corridor or to similar or other use of the corridor by linear projects, such as fiber optic cables and natural gas or liquid pipelines. On private, state or federal lands, the gopher's habitat, usually limited to ridgetops would not be subject to prolonged use.

Mitigation

During an evaluation of prairie dog towns, the habitat for the gopher was reassessed. No gopher burrows were noticed when crossing the rocky ridges in southern Sweetwater County. Since the gopher will likely be estivating during construction, an environmental inspector or biological monitor will accompany the ditching machine or track hoes through appropriate habitat and watch for any animals unearthed in the construction process. If an animal is killed and can be retrieved in a safe manner, it will be given to either the BLM or the University of Wyoming as a specimen. Recovery of any live animal unearthed during construction will require direction from the BLM on procedure. During reclamation, the pipeline right-of-way will be reseeded with BLM and NRCS seed mixes appropriate to the area's soil and range conditions.

3.1.6 Swift Fox

Swift fox, a BLM sensitive species in Wyoming, are few and far between on the west slope of the Rocky Mountains with only three sites east of the proposed pipeline, the closest in Carbon County, more than 10 miles to the east of the proposed pipeline (Clark and Stromberg 1987). The fox is a shortgrass and mid-grass prairie inhabitant and historically were abundant in Carbon County. Since no extensive prairie grasslands occur along the proposed route, the proposed action is not likely to impact the swift fox.

3.2 Birds

3.2.1 Bald Eagle

The bald eagle is a federal and state listed threatened species. On the Piceance Basin Expansion, it is a permanent resident at the Little Snake and White River crossings and a winter resident at the Yampa River. Table 7 shows roosts and active nests in the project area. While habitat loss still remains a threat to the bald eagle's full recovery, most experts agree that its recovery to date is encouraging. Bald eagles may live up to 30 years in the wild. Adult eagles establish life-long pair bonds and build huge nests in the tops of large trees near rivers, lakes, marshes, or other wetland areas. Bald eagles may use the same nest in consecutive years. Although bald eagles may range over great distances, they usually return to nest within 100 miles of where they were fledged. The nests and roosts are depicted in Maps 1-18, Appendix H-1 and code identified in Table A, Appendix H-2.

Table 7 Bald Eagle Roosts and Active Nests in Wyoming and Colorado along the Piceance Basin Expansion, 2005

County	Habitat	Distance From ROW (Feet)	Milepost
COLORADO			
Moffat	Possibly Active	1500	53.1
Moffat	Roost	2018	87.0
Rio Blanco	Roost	1443	128.5
Rio Blanco	Roost	862	130.5
Rio Blanco	Roost	3548	130.7
Rio Blanco	Active nest	1350	128.5

Impacts

In order to reduce potential adverse effects to the bald eagle, a disturbance-free buffer zone of 0.5 mile should be maintained around eagle nests and 0.25 miles at winter roost sites (Craig 2001). Activity within 0.5 mile of an eagle nest or 0.25 mile of a roost may disturb the eagles and result in Atake.@ If a disturbance-free buffer zone of 0.5 or 0.25 mile is not practicable, then the activity should be conducted outside of February 15 - August 15 to protect nesting birds and November 1 through April 15 to protect roosting birds. No nesting bald eagles would be impacted due to timing of construction activities. However, construction would cross three rivers where bald eagles are known to roost during winter, the Little Snake, Yampa, and White Rivers. According to the BLM in Wyoming, one mile is the buffer for nests and roosts. In Colorado, the BLM requires a 0.5-mile development buffer around a nest, a 0.5-mile development buffer around a winter roost and concentration area, and no surface occupancy within 0.25 mile around a nest or roost. Project construction could disturb bald eagles using these roost sites.

Mitigation

Pipeline construction would cross three rivers where bald eagles are known to roost in winter. Construction is scheduled to take place between September and January 2006, which coincides with bald eagle winter roost use but avoids nesting and fledging of young eagles. To avoid impact to roosting bald eagles from construction within 0.5 mile of the roost sites, roosts will be monitored continuously regarding bald eagle numbers and behavior. Based on past experience with bald eagles wintering on the White River in Utah (Grant et al. 1991) and the Colorado River near Parachute, Colorado (Grant, pers. comm. 1998), bald eagles do not spend the nights in cottonwood roosts in riparian areas, due apparently to the intense cold along the rivers, as found by Stalmaster and Gessaman 1984. The eagles would fly to higher elevations where heat balance could be maintained. It is likely that the eagles roosting on the White River would move to higher elevation roosts once temperatures drop in mid to late winter. In November and December, roosting is dependent on a variety of conditions (food availability and weather conditions to the north and in the immediate area) and roost use is haphazard. Nevertheless, the roosts will be counted morning and evening starting November 1 or when construction is within 3 miles of a roost. Construction will cease at a sign of disturbance (a decrease of 50% or more in roosting eagles on two consecutive nights, assuming a stable roosting population prior to construction's activity) and FWS will be contacted to determine appropriate actions necessary to ensure that bald eagles are not disturbed further. Using this approach, the proposed action is not likely to have an adverse impact on the bald eagle, dependent on FWS and CDOW concurrence.

3.2.2 Yellow-billed Cuckoo

The yellow-billed cuckoo is a candidate for federal listing as threatened or endangered and may occur west of the Continental Divide in Wyoming and Colorado. Federal agencies have policies to protect candidate species from further population declines. The cuckoo is restricted to dense riparian woodlands for nesting, and no such habitat occurs along the Piceance Basin Expansion right-of-way nor have any cuckoos been recorded in Sweetwater County (Dorn and Dorn 1999). Therefore, the proposed action is not likely to impact yellow-billed cuckoos.

3.2.3 Mountain Plover

The mountain plover was proposed for FWS listing in 2003 but dropped from consideration in 2004. It is a BLM sensitive species in Wyoming and Colorado and a species of FWS Concerned Conservation in Colorado. One nesting plover was seen during the 2004 biological survey in Wyoming, in one area where appropriate habitat was located during 2004 field survey (Table 8), although prairie dog towns (Table 5) could also support plovers. A pair of plovers was seen during April 2005 and no nest was found (MP 12.8). No other plovers were seen at prairie dog towns or in appropriate habitat during April and May 2005. The BLM classifies land from MP 3 to MP 22 as known occupied habitat and another 10 miles along the route as potential habitat. In Wyoming (Dorn and Dorn 1999) and eastern Colorado (Andrews and Righter 1992), plovers are summer residents. Short grass prairie is preferred habitat as is fallow cropland. Plovers usually arrive in the project area in late March and April and begin nesting in late

April/early May. By mid-June the eggs have hatched and the female will usually lead the young away from the nest, foraging and roosting in the nest's vicinity. However, during the drought in 2002, nesting in Colorado did not begin until June and continued into July. Fall migration begins in the late summer/early fall.

Table 8 Mountain Plover Locations along the Piceance Basin Expansion in Wyoming and Colorado, 2004

County	Milepost	Habitat
WYOMING		
Sweetwater	8.3-15.8	Adequate
Sweetwater	15.1	Nest w/ 3 eggs
Sweetwater	18.8-21.0	Adequate

Impacts

Based on the schedule of construction, there would be no direct impacts to mountain plovers. By the time construction reaches plover habitat in Wyoming, the birds will have migrated to their wintering grounds. Indirect impacts would likely be positive due to clearing more ground of shrubs and possibly increasing food along the right-of-way. Cumulatively, the more ground cleared by pipelines or such that lack permanent facilities, the more potential habitat for the plover.

Mitigation

Mountain plovers and their habitat were found in Wyoming only during surveys of the pipeline right-of-way. Since construction would not affect plover numbers or distribution because of construction schedule, no surveys for the species will be made prior to construction.

The proposed action is not likely to have an adverse impact on mountain plovers. The pipeline's construction is not likely to contribute to the need for the species to become federally listed as threatened or endangered.

3.2.4 Sage Grouse

The sage grouse is classified as a sensitive species by the FWS and the BLM of Wyoming and Colorado. The FWS has received several petitions to list the greater sage-grouse under the Endangered Species Act. The causes for the greater sage-grouse rangewide decline are not completely understood and may be influenced by local conditions. However, habitat loss and degradation, as well as loss of population connectivity are important factors (Braun 1998, Wisdom et al. 2002). Greater sage-grouse are dependent on sagebrush habitats year-round. Therefore, any activities that result in loss or degradation of sagebrush habitats that are important to this species should be closely evaluated for their impacts to sage grouse. If important breeding habitat (leks, nesting or brood rearing habitat) is present in the project area, FWS recommends no project-related disturbance between March 1 and June 30, annually. Minimization of disturbance during lek activity, nesting, and brood rearing is critical to sage grouse survival. BLM suggests no activity within two miles of the lek through the breeding season and complete avoidance within 0.25 miles of the lek as does CDOW. These avoidance areas are depicted in Maps 1A-11A, Appendix H-1. The proposed route passes through four brood-rearing grounds in Wyoming (the 2-mile buffer) and 22 brood-rearing grounds and four leks (the 0.25-mile buffer within the brood-rearing grounds) in Colorado (Table 9). Two leks were new: 2A in Wyoming and 13C in Colorado.

Table 9. Activity on sage grouse leks in Wyoming and Colorado, along the Piceance Basin Expansion Project, April 2005.

Milepost	Lek #	Map #	Activity	Grouse Present	Distance from Centerline, feet
WYOMING					
26.7	L 1	3A	Not active		2600 E
30.8	L 2	3A	Not active		1600 E
31.3	L 2A	3A	New Lek	1 male	1538 E
31.3	L 3	3A	Not active		500 E
COLORADO					
56.9	L 3A	5A	Not Active		85 W
58.3	L 3B	5A	Active	44 males, many females	4260 W
59.5	L 4	5A	Not active		4800 W
62.7	L5	6A	Not surveyed		>2 MILES
62.8	L6	6A	Not surveyed		>2 MILES
65.5	L 6A	6A	Active	1 male	4150 E
66.3	L 6B	6A	Active	8 males	2250 W
67.3	L 6C	6A	Not active		3528 E
67.3	L 6D	6A	Not active		4242 E
74	L 7	7A	Not active		2700 E
75.4	L 8	7A	Not active		2400 E
77.2	L 9	7A	Not active		380 W
77.8	L 10	7A	Not active		1830 W
78.4	L 11	7A	Not active	1 female, 1 caecal sac	350 W
82.3	L 12	8A	Not surveyed		3048 W
93.1	L 12A	9A	Not active		3520 E
94.9	L 13	9A	Not active		620 W
94.9	L 13A	9A	Not active		2800 W
94.9	L 13C	9A	New Lek	44+ males, many females	5500 W
95.1	L 13B	9A	Not active		4800 W
97.7	L 14	9A	Active	1 male	4600 W
98	L 15	9A	Not active		4150 W
141.5	L 16	11A	Not active		7300 E
141.7	L 17A	11A	Not active		6950 E

Impacts to sagebrush habitat are detailed in Table 10.

Table 10 Habitat impacted on Sage Grouse Leks Located on the Piceance Basin Expansion in Colorado and Wyoming, 2005. Maps in Appendix H-3

County	Milepost	Map Notation	Status	Distance and acreage on Centerline, ft, within 0.25 mile buffer	Distance and acreage on Centerline, ft, within 2 mile buffer	Active/Inactive Unknown
WYOMING						
Sweetwater	26.7	L1	Lek, Historic*	0/0	19,374 ft - 37.8 acres	Inactive
Sweetwater	30.8	L2	Lek, Historic*	0/0	21,061 ft - 41.1 acres	Inactive
Sweetwater	31.3	L2A	New Lek	0/0	21,235 ft - 41.1 acres	Active
Sweetwater	31.3	L3	Lek, Historic*	0/0	0/0	Inactive
COLORADO						
Moffat	56.9	L3A	Lek, CDOW	2756 ft - 5.4 acres	19,004 ft – 36.9 acres	Inactive
Moffat	58.2	L3B	Lek, CDOW	0/0	6152 ft – 12.0 acres	Active
Moffat	59.6	L4	Lek, CDOW	0/0	6496 ft – 12.7 acres	Inactive
Moffat	65.7	L6A	Lek, CDOW	0/0	19,072 ft – 37.2 acres	Active
Moffat	66.2	L6B	Lek, CDOW	0/0	6040 ft – 11.7 acres	Active
Moffat	67.2	L6C	Lek, CDOW	0/0	965 ft – 1.8 acres	Inactive
Moffat	67.2	L6D	Lek, CDOW	0/0	2818 ft – 5.5 acres	Inactive
Moffat	74	L7	Lek, Bio-92**	0/0	20,982 ft – 40.9 acres	Inactive
Moffat	75.4	L8	Lek, CDOW	0/0	5145 ft – 10.0 acres	Inactive
Moffat	77.2	L9	Lek, CDOW	2897 ft - 5.6 acres	5132 ft – 10.0 acres	Inactive
Moffat	77.0		Individuals	On	-	-
Moffat	77.8	L10	Lek, Bio-92**	0/0	3212 ft – 6.3 acres	Inactive
Moffat	78.4	L11	Lek, Bio-92**	2539 ft - 5.0 acres	2730 ft – 5.3 acres	Inactive
Moffat	82.5	L12	Lek, CDOW	0/0	20,260 ft – 39.5 acres	Inactive
Moffat	93.0	L12A	Lek, CDOW	0/0	19,975 ft – 39.0 acres	Inactive
Moffat	94.9	L13	Lek, CDOW	2333 ft - 4.5 acres	9180 ft – 17.9 acres	Inactive
Moffat	94.9	L13A	Lek, CDOW	0/0	0/0	Inactive
Moffat	95.4	L13B	Lek, CDOW	0/0	1814 ft – 3.5 acres	Inactive
Moffat	94.9	L13C	New Lek	0/0	0/0	Active
Moffat	97.6	L14	Lek, CDOW	0/0	11,936 ft – 23.3 acres	Active
Moffat	98.0	L15	Lek, Bio-92**	0/0	1539 ft – 3.0 acres	Inactive
Moffat	107.0		14 Individuals	300E	-	-
Moffat	107.5		12 Individuals	800E	-	-
Rio Blanco	141.2	L16	Lek, BLM	0/0	10,417 ft – 20.3 acres	Inactive
Rio Blanco	141.7	L17A	Lek	0/0	9249 ft – 18.0 acres	Inactive
TOTAL				**10,525 ft – 20.5 acres**	**243,788 ft – 474.8 acres**	

** BLM **Bio-92-Lek from UBL survey*

Impacts

Information suggests that greater sage-grouse populations are negatively affected by construction activities, especially those that degrade important sagebrush habitat, even when mitigative measures are implemented (Braun 1998). Greater sage-grouse populations can repopulate areas developed for resource extraction after habitat reclamation for the species (Braun 1987). However, there is no evidence that populations attain their previous levels and reestablishment of sage grouse in a reclaimed area may take 20-30 years, or longer (Braun 1998). Therefore, this project should be carefully evaluated for long-term and cumulative effects on the greater sage-grouse, since reclamation may not restore populations to pre-activity levels. WIC should ensure this activity does not exacerbate greater sage-grouse declines on either a local or range-wide level. Sage grouse habitat will be treated according to direction from FWS, BLM, WGF, and CDOW.

Mitigation

Sage grouse distribution in Colorado was reviewed with Brad Petch (pers. comm. 2005) CDOW, Craig, Colorado and the following criteria for mitigation were agreed upon. In April 2005, the leks listed in Table 9 were surveyed for activity. Presently, 6 of the 28 leks in Table 9 are considered active. The right-of-way passes through a 0.25-mile radius immediately around four leks, all in Colorado. The Wyoming lek (L3) is historic with no recent activity (Map 4, Appendix H-1). A new lek (2A) was active with one male. In Colorado, Lek 3A (Map 7, Appendix H-1) is almost centered on the UBL right-of-way and may be an active site in the future, with five birds using the area once in 2001. Lek 3B was the active lek with about 50 birds in 2002 and 2003 and 44 males in 2005. Leks 9, 11 and 13 (Maps 10, 12, Appendix H-1) are all inactive.

Although construction would not affect nesting or brooding, it may affect winter distribution of the grouse for a short period. This disruption should not constitute a significant impact. In terms of reclamation, sagebrush seed will be spread on the right-of-way prior to drill seeding. The seed will be collected locally, if possible; otherwise *Artemisia wyomingensis* will be used. Since the distance through the 2-mile radius around the leks is extensive, a patchwork of sagebrush seeding is suggested. Mileposts for this seeding effort is included in the site-specific Reclamation Plan (Appendix P of the POD) prepared for this project. In addition to the sagebrush seed, forb seeds will be an integral part of the mix, namely, small burnet, Ryland alfalfa, Lewis flax, lupine common to Moffat County, and Cicer milkvetch.

3.2.5 Ferruginous Hawk

The ferruginous hawk, a BLM sensitive species in Wyoming and Colorado and a species of FWS concerned conservation in Colorado, is a summer resident in the project area (Dorn and Dorn 1999; Andrews and Righter 1992). Usually ferruginous hawks initiate nesting in April and young are fledged by July 1. This schedule is known to extend into July during some years. No active ferruginous hawk nests were found in Colorado or Wyoming during biological surveys of the route in late summer 2004 and in May 2005.

Raptor nest site are depicted in Maps 1-18 in Appendix H-1 and described in Table A, Appendix H-2.

Impacts

Since no ferruginous hawks were found along the route nor would any nests be affected by construction or operation, impacts would be unlikely to occur during construction. Based on fall construction, no birds would be on nest; hence, no direct impacts would occur. Indirectly, more prey feeding on the reclaimed right-of-way would increase food for the hawks. Cumulative impacts would likely be minor since no nests would be damaged nor would the route make the nests more accessible. The proposed action is not likely to result in impacts to ferruginous hawks.

Mitigation

The ferruginous hawk will be searched for in their appropriate habitat prior to construction. Construction will occur when all birds are dispersed or have migrated south. Any sightings will be noted and any nesting sites avoided during construction.

Should any migrating hawk occur on any part of the pipeline during construction, work will cease immediately at the specific location until authorities are notified and permission to proceed is issued.

3.2.6 American Peregrine Falcon

The peregrine falcon, a BLM sensitive species in Wyoming, is a possible but unconfirmed summer resident in Sweetwater County (Dorn and Dorn 1999). No peregrines were seen during biological surveys of the project area in 2004 or 2005.

Impacts

Since the peregrine would be a transient it if it occurred along the route, the proposed action is not likely to result in direct, indirect or cumulative impacts to this species.

Mitigation

Mitigation will involve informing the FWS and BLM if a peregrine falcon is sighted on or near construction. Construction will cease until the BLM gives the instruction to continue.

3.2.7 Columbian Sharp-tailed Grouse

The sharp-tail grouse, a BLM sensitive species in Wyoming and Colorado, is not known in Sweetwater County (Dorn and Dorn 1999). No appropriate habitat for this species occurs along the proposed route. Therefore, the proposed action is not likely result in significant impacts to this species.

3.2.8 Long-billed Curlew

The curlew, a BLM sensitive species in Wyoming and Colorado and a species of FWS concerned conservation in Colorado, is a possible but unconfirmed summer resident in Sweetwater County (Dorn and Dorn 1999), a non-breeding summer resident in northwestern Moffat County, and a questionable summer resident in Rio Blanco County. No curlews were seen during biological surveys of the project area in 2004 or 2005. The curlew is known in grasslands, which are scattered and of small acreage along the proposed route.

Impacts

Direct impacts to the curlew would be minimal since construction would occur in the fall, after or during the bird's migration. Indirect impacts would be positive, resulting from grassier habitat for foraging along the pipeline corridor following reclamation. Cumulative impacts could result from increased access to areas along the corridor that were previously inaccessible.

Mitigation

The long-billed curlew will be searched for in their appropriate habitat prior to construction. Construction will occur when all birds are dispersed or have migrated south. Any sightings will be noted and if possible any nesting sites avoided during construction.

Should any migrating bird(s) considered sensitive occur on any part of the pipeline during construction, work will cease immediately at the specific location until authorities are notified and permission to proceed is issued.

3.2.9 Short-eared Owl

The short-eared owl, a BLM sensitive species in Wyoming, is a possible but unconfirmed summer resident in Sweetwater County (Dorn and Dorn 1999). No owls were seen during biological surveys of the project area in 2004. Its distribution in Colorado occurs in shortgrass prairie, agricultural areas and marshes, and rarely in sagebrush shrubland or pinyon-juniper woodlands (Andrews and Righter 1992). The proposed action is not likely to result in significant impacts to the short-eared owl.

3.2.10 Burrowing Owl

Burrowing owls, a Colorado threatened species and BLM sensitive species in Wyoming, are known breeders in Wyoming; however, there have been only four records of sightings in Moffat County (Dorn and Dorn 1999; Andrews and Righter 1992). The owl's critical nesting period occurs between April 15 and July 15. Burrowing owls are usually associated with prairie dog colonies, although not necessarily so. They are summer residents along the pipeline route. One active nest was observed at MP 54 in a prairie dog town in Moffat County during biological surveys of the project area during 2004 (Map 7, Appendix H-1 and Table A, Appendix H-2). During May 2005 burrowing owls were found at MPs 80.5 and 93.3, respectively, each location associated with scattered white-tailed prairie dogs. The former nest was within the right-of-way, the other to the east.

Impacts

Based on construction timing, burrowing owls could be present along the route in September and October. Potential direct impacts would occur if a nest were destroyed. Potential indirect impacts would be positive, consisting of an increase the owl's prey base following successful reclamation of the right-of-way. Cumulative impacts could result from increased human access to nests.

Mitigation

Prior to construction, the nests will be surveyed and every effort will be made to avoid the nest within the pipeline's right-of-way. Based on the presence of prairie dogs in the area, there would be alternative nesting sites available in spring 2006.

3.2.11 Loggerhead Shrike

Loggerhead shrikes, a BLM sensitive species in Wyoming and a species of FWS concerned conservation in Colorado, are a possible but unconfirmed summer resident in Sweetwater County (Dorn and Dorn 1999) and a summer resident along the Yampa and White Rivers in Moffat and Rio Blanco Counties, respectively (Andrews and Righter 1992). Usually shrikes are on their nests from late April to mid-May; nests are usually located in large shrubs or isolated small trees. No shrikes were seen during biological surveys of the project area in 2004; however, there were two sightings during April 2005 (MPs 75.2, 76.9), each in Colorado; and four in May 2005, two in Wyoming (MPs 2.7 and 38.7), and two in Colorado (MPs 56.2 and 70.8). Maps of these locations will be completed by July 15, 2005 and submitted to the FERC.

Impacts

Based on a fall construction schedule, no shrikes would be on nest and most would have moved south to warmer climes prior to the start of construction. Indirectly, shrubs–mainly greasewood used for nests or storing prey–would be lost during clearing. Replacing these nest sites would take years. At present there are numerous nest sites, greasewood and sagebrush, available. Cumulatively, further loss of nesting sites due to continued construction in the project area could prove to be significant.

Mitigation

The loggerhead shrike will be searched for in appropriate habitat prior to construction. Construction will occur when all birds are dispersed or have migrated south. Any sightings will be noted and if possible any nesting sites avoided during construction.

Should any migrating shrike occur on any part of the pipeline during construction, work will cease immediately at the specific location until authorities are notified and permission to proceed is issued.

3.2.12 Pinyon Jay

The pinyon jay is a species of FWS concerned conservation in Colorado. It almost exclusively lives in pinyon-juniper woodlands and is considered common to abundant in Moffat and Rio Blanco Counties (Andrews and Righter 1992). No birds were seen during biological surveys of the project area in 2004. This may be due to the jay's wandering habits after the young have fledged or to drought conditions in the project area, as this bird's abundance is known to be drought regulated (Grant 1986). No pinyon jays were seen during surveys of the project area during April and May 2005.

Impacts

The pinyon jays are permanent residents of the project area and would be present in pinyon-juniper woodland throughout construction. The birds forage through the woodlands in flocks. Direct impacts would be negligible due to the bird's mobility. Indirectly, some potential nesting trees could be lost but increased foraging area in reclaimed areas would be available. Cumulatively, loss of nesting sites does not appear to be significant due to the jay's wandering habits. The proposed action is not likely to result in significant impacts to pinyon jay.

Mitigation

Construction will occur when all birds are dispersed. Any sightings will be noted and if possible any nesting sites avoided during construction.

Should any resident jays occur on any part of the pipeline during construction, work will cease immediately at the specific location until authorities are notified and permission to proceed is issued.

3.2.13 Sage Thrasher

The thrasher, a BLM sensitive species in Wyoming, is a known summer resident in Sweetwater County (Dorn and Dorn 1999). Although appropriate habitat, sagebrush shrubland, is available, no thrashers were seen during biological surveys of the project area in 2004. In 2005, especially during April, sage thrashers were numerous in the project area. At 21 sites, one or more thrashers were seen in Wyoming, mainly males displaying from the highest sagebrush in the vicinity. During May 2005, only one thrasher was seen in Wyoming, four in Colorado. One singing male was seen in Colorado in April. Maps of these locations will be completed by July 15, 2005 and submitted to the FERC.

Impacts

Based on fall construction schedule, no birds would be on nest and most would have moved south to warmer climes prior to the start of construction. Indirectly, shrubs–mainly sagebrush and some greasewood used for nests–would be lost during clearing. Replacing the greasewood nest sites would take years; sagebrush would begin growing in the right-of-way within a year of construction. At present there are numerous nest sites, greasewood and sagebrush, available. Cumulatively, further loss of nesting sites due to continued construction could prove to be significant.

Mitigation

Construction will occur when all birds are dispersed or have migrated south. Any sightings will be noted and if possible any nesting sites avoided during construction.

Should any migrating thrasher occur on any part of the pipeline during construction, work will cease immediately at the specific location until authorities are notified and permission to proceed is issued.

3.2.14 Virginia's Warbler

The Virginia's warbler, a BLM sensitive species in Wyoming and a species of FWS concerned conservation in Colorado, is a possible but unconfirmed summer resident in Sweetwater County (Dorn and Dorn 1999); known locations in Sweetwater County are not on the proposed route. In Colorado the mountain shrub vegetation in Moffat County and the pinyon-juniper woodland in Rio Blanco County plus the Yampa and White Rivers are potential habitat (Andrews and Righter 1992); however, in 11 years of monitoring on the lower White River, the warbler nested in riparian woodlands during two years and was not seen in juniper woodland (Grant 1986). Habitat for this warbler, though present in small patches, appears to be inadequate to support nesting pairs. No warblers were seen during biological surveys of the project area in 2004 and 2005.

Impacts

Direct impacts to this warbler would be minimal due to construction schedule. Indirect impacts would be loss of nesting sites and shrubs for foraging. Since habitat in the project area is minimal, indirect impacts would also be minimal. No cumulative impacts would occur from construction and operation of the proposed pipeline.

Mitigation

Construction will occur when all birds are dispersed or have migrated south. Any sightings will be noted and if possible any nesting sites avoided during construction.

Should any migrating warbler occur on any part of the pipeline during construction, work will cease immediately at the specific location until authorities are notified and permission to proceed is issued or the bird has flown away.

The proposed action is not likely to result in significant impacts to Virginia's warbler.

3.2.15 Black-throated Gray Warbler

The black-throated gray warbler, a species of FWS concerned conservation in Colorado, is a possible but unconfirmed summer resident in juniper woodlands in Moffat and Rio Blanco Counties (Andrews and Righter 1992). No warblers were seen during biological surveys of the project area in 2004, although appropriate habitat is present. One male was seen in pinyon-juniper located south of the White River during April 2005 (MP 130). A map of this location will be completed by July 15, 2005 and submitted to the FERC.

Impacts

Based on a fall construction schedule, no birds would be on nest and most would have moved south to warmer climes prior to construction. Indirectly, trees–mainly junipers used for nests–would be lost during clearing. Replacing these nest sites would take years. At present there are numerous nest sites, juniper trees, available. Cumulatively, further loss of nesting sites due to continued construction could prove to be significant.

Mitigation

The black-throated gray warbler will be searched for in their appropriate habitat prior to construction. Construction will occur when all birds are dispersed or have migrated south. Any sightings will be noted and if possible any nesting sites avoided during construction.

Should any migrating warbler occur on any part of the pipeline during construction, work will cease immediately at the specific location until authorities are notified and permission to proceed is issued.

3.2.16 Sage Sparrow

The sage sparrow, a BLM sensitive species in Wyoming and a species of FWS concerned conservation in Colorado, is an uncommon summer resident in Sweetwater County (Dorn and Dorn 1999) and local summer resident in western Colorado (Andrews and Righter 1992). No sparrows were seen during biological surveys of the project area in 2004, although habitat was present and the species is common in similar habitat along the White River in nearby Utah (Grant 1986). During April 2005 sage sparrows were seen at seven locations, all in Wyoming; in May 2005 two sightings occurred in Wyoming and 15 in Colorado. Maps of these locations will be completed by July 15, 2005 and submitted to the FERC.

Impacts

Based on a fall construction schedule, no birds would be on nest and most would have moved south to warmer climes prior to the start of construction. Indirectly, shrubs–mainly sagebrush and some greasewood used for nests–would be lost during clearing. Replacing the greasewood nest sites would take years; sagebrush would begin growing in the right-of-way within a year of construction. At present there are numerous nest sites, greasewood and sagebrush, available. Cumulatively, further loss of nesting sites due to continued construction could prove to be significant.

Mitigation

Construction will occur when all birds are dispersed or have migrated south. Any sightings will be noted and if possible any nesting sites avoided during construction.

Should a sage sparrow occur on any part of the pipeline during construction, work will cease immediately at the specific location until authorities are notified and permission to proceed is issued.

3.2.17 Brewer's Sparrow

The Brewer's sparrow, a BLM sensitive species in Wyoming and a species of FWS concerned conservation in Colorado, is a common summer resident in Sweetwater County (Dorn and Dorn 1999) and in Moffat and Rio Blanco Counties (Andrews and Righter 1992). No sparrows were seen during biological surveys of the project area in 2004, although suitable habitat was present. This may be due to drought conditions in the project area. In similar habitat in Utah, this sparrow went from abundant to none to occasional due to drought; it recovered to an uncommon abundance once the drought ended (Grant 1986). During 2005 Brewer's sparrows were seen at two locations in the project area in April (MP 31.9, 32.8), and three locations in May (MPs 0.5, 2.7, 7.1), all in Wyoming. Maps of these locations will be completed by July 15, 2005 and submitted to the FERC.

Impacts

Based on fall construction, no birds would be on nest and most would have moved south to warmer climes prior to the start of construction. Indirectly, shrubs–mainly sagebrush and some greasewood used for nests–would be lost during clearing. Replacing the greasewood nest sites would take years; sagebrush would begin growing in the right-of-way within a year of construction. At present there are numerous nest sites, greasewood and sagebrush, available. Cumulatively, continued loss of nesting sites due to continued construction could prove to be significant. Nevertheless, this sparrow is subject to extreme changes in abundance in similar habitat though lower elevation. It probably should be monitored for five or more years in a variety of sagebrush habitats.

Mitigation

The Brewer's sparrow will be searched for in their appropriate habitat prior to construction. Construction will occur when all birds are dispersed or have migrated south. Any sightings will be noted and if possible any nesting sites avoided during construction.

Should a Brewer's sparrow occur on any part of the pipeline during construction, work will cease immediately at the specific location until authorities are notified and permission to proceed is issued.

3.3 Amphibians

3.1 Northern Leopard Frog

The northern leopard frog is a BLM sensitive species in Wyoming and is found throughout the state (Baxter and Stone 1980). It is only found at permanent water, which eliminates its presence along the proposed route. The proposed action is not likely to result in impacts to the northern leopard frog.

3.4 Fishes

3.4.1 Colorado Pikeminnow

The Colorado pikeminnow is an endangered species in the Upper Colorado River Basin. Regarding the streams the proposed pipeline crosses (based on a report for the Uinta Basin Lateral), at the Little Snake River the only record of pikeminnow was at the river's confluence with the Yampa River, far distant from the proposed crossing (Valdez 1991). The FWS does not include the Little Snake as part of this fish's current distribution nor is this river included in its recovery goals. At the Yampa River, the pikeminnow is found from Craig, Colorado, west to the confluence with the Green River in Utah. At the White River, the pikeminnow is found below the Taylor Draw Dam, just east of Rangely, Colorado. At the time of UBL construction the White River crossing was in the warmwater section of the river, near the Piceance Creek confluence. Presently the crossing is in the coldwater reach of the White and above the 150-mile recovery area.

Impacts

To protect the endangered fishes at the Yampa and White Rivers, WIC's plan is to directionally drill the crossing. However, should the drill fail, an alternative plan is to open cut these rivers. Potential impacts to the pikeminnow should drilling fail include sedimentation of streams, loss and disruption of habitat, and introduction of toxic substances into waterbodies. These would be reduced to acceptable levels or eliminated through implementation of best management practices as outlined in WIC's Wetland and Waterbody Construction and Mitigation Procedures (Appendix O of the POD), the Spill Prevention Plan, (Appendix F of the POD), and erosion control measures and directionally drilling the stream crossings on the Little Snake, Yampa and White Rivers (Appendix A-7 of the POD, Major Waterbody Crossing Plan).

Since there are only small wetlands at these crossings and bridging is not in a backwater, impacts to young fishes would be reduced. Detailed drawings and plans for both drilling all the rivers are located in the POD, Appendix A-2, Alignment Sheets, DWG 233A-22A-1, 233A-37A-1, AND 233A-53A-1 for the Little Snake, Yampa and White Rivers, respectively. Additional impacts and mitigation may be forthcoming from the FWS in their Biological Opinion.

Mitigation

WIC's Wetland and Waterbody Construction and Mitigation Procedures (Appendix O) of the POD) will be adopted in full for each stream channel crossing, unless other crossing procedures are approved by the appropriate agencies, including FERC. To protect aquatic resources in the project area, the following guidelines would be used at all open-trench crossings, specifically, Dry Fork Piceance Creek, possibly at the Little Snake, Yampa and White Rivers in case of failure of the directional drill:

Construction will use the open-trench method and will complete each crossing within 12 hours on all perennial and intermittent streams.

To mitigate impacts at selected perennial stream crossings (Little Snake [MP 53.1] and Dry Fork Piceance Creek [MP 135.0]), a mat of clean gravel (1 to 3 inches in diameter) over flume or mats over flume will be placed at the upstream end of the riffle being crossed (Procedures 1, 2 and 3, Appendix A-2 of the POD). The addition of this gravel will help replace gravel disturbed by construction, allowing a quicker recovery of macroinvertebrate production, and could improve spawning habitat. A culvert/gravel (or culvert/mats combination) mat will be placed in all streams during construction. Should construction exceed 12 hours, flumes for the equipment bridges will be extended across the trench to prevent further sediment release downstream. In order to accommodate construction equipment crossing the Little Snake River, a gravel/ flume arrangement will be placed on each bank to support a railroad car that will span the river (Procedure 4, Appendix A-2 of the POD).

Where perennial or intermittent streams are trenched, steep stream banks will be flattened as much as possible and restabilized at the toe with large angular rock (greater than 2 feet in one dimension). Streams that have gradual banks will be seeded with native grasses and mulched or protected by a jute blanket (Plan 8, Appendix A-2 of the POD). Any woody vegetation removed during the stream installation will be spread on the banks to help protect new vegetation from livestock and wildlife.

Riparian canopy or stabilizing vegetation will not be removed if possible. Crushing or shearing streamside woody vegetation is preferable to complete removal. Any vegetation removed in conjunction with stream crossings will be reestablished immediately following the completion of the crossing.

Riparian areas and floodplains will not be used as staging or refueling areas. All chemicals, solvents, and fuels will be kept at least 150 feet from streams and riparian areas.

Any section of pipeline that parallels drainages will be located outside the 100-year floodplain. Pipeline crossings of riparian areas and streams will be at right angles.

Right-of-way widths will be minimized where the pipeline crosses riparian areas and streams.

For the two rivers that will be directionally drilled, a bridge for construction equipment will be built prior to river crossing construction for stringing trucks, dozers, graders, track hoes and trenching machines. The bridge will use clean gravel and flumes along each bank to support a railroad car. At the Yampa (MP 87.6), an additional gravel support may be needed in the middle of the stream.

Based on Richard Valdez's original mitigation for the UBL (Valdez 1991), construction precautions taken to protect the federally protected species (Colorado pikeminnow, humpback chub, razorback sucker) will also protect the other native species and games species.

These recommendations are based on the assumption that pipeline construction at the Yampa and White Rivers will be an open cut and buried. WIC will directionally drill the

Yampa and White river crossings. However, for analysis of potential impacts to fisheries, a worst-case scenario (i.e., an open cut at these crossings) was analyzed. Final determination of the viability for drilling the substrata of these rivers is positive, but should a drill fail, the alternate methodology will be to conduct an open cut installation. Accordingly, construction time windows and operating procedures are identified to minimize or avoid jeopardy to the species and/or destruction of their habitats.

The most sensitive time of the year for endangered fish species is from May 15 to September 15, which is a time of year for spawning-related activities and rearing of young. Spawning migrations by Colorado pikeminnow in the Yampa River ranged from May 27 to June 30 in 1981, 1983 and 1988 (Tyus 1990). Spawning activity ranged from June 20 to August 18 during 5 years (1981, 1983, 1984, 1985, and 1988). Migrations of Colorado pikeminnow are also documented in the White River (Tyus 1987) at approximately the same time. Only one Colorado pikeminnow was reported in 1991 in the Little Snake River in the vicinity of Baggs, Wyoming (Minckley, pers. comm.). Hatching dates for Colorado pikeminnow in the Yampa River ranged from June 11 to August 6 for the years 1981-1988 (Tyus and Haines 1991). Transport of larval Colorado pikeminnow from the Yampa River is rapid and nearly complete by mid-September.

Instream construction activities should be avoided between May 15 and September 15, based on Petch (pers. comm., 2005), and CDOW and FWS requirements referenced above. Activity during this time period could physically interfere with migration of adult Colorado pikeminnow and razorback sucker and/or chemically interfere with chemoreceptors that cue fish to spawning sites. Instream activity could also alter spawning areas and increase sedimentation to spawning gravels. Also, instream activities could destroy or disrupt nursery shorelines and backwaters before the fish are large enough to escape to alternate habitats.

The most desirable time for instream construction activity is from January 1 to May 15 because the young fish are sufficiently large to escape physical and chemical disturbances. Furthermore, any instream disturbance and increased sedimentation would be flushed by spring runoff, which usually occurs in these tributaries between May 15 and June 15.

The second best period for construction is September 15 to December 31 because it is a period when the young fish continue to occupy nursery areas but are strong enough to escape most disturbances.

Instream disturbances should be kept to a minimum by avoiding operation of heavy equipment in the stream where possible. Soon after construction begins, bridges will be built across the Little Snake, Yampa and White Rivers. This will entail some equipment in the water for a short period of time, less than 8 hours. Unless the project encounters consolidated rock in the streambed, which is highly unlikely based on previous experience on the UBL, open cut construction for these river crossings will all be completed in 24 hours or less. Construction baffles should be emplaced from shore and trenches should be excavated from shore when possible. Keeping equipment and machinery out of the stream bed will minimize disturbances and sediment releases as well as minimize instream fuel and oil spills. Accidental spills and intentional releases of fuel, oil, solvents, and cleaners in and around drainages should be avoided. Water used to hydrostatically test the pipeline should be pumped from center channel with swift current and not from shallow shoreline habitats, especially backwaters, to minimize fish entrainment. Effluent from hydrostatic testing should not be discharged into open waters but should be placed in settling ponds and the water allowed to evaporate (Procedure 11, Appendix A-2 of the POD). Settled materials should be transported from the area or buried.

Near-stream construction should avoid backwaters and jurisdictional wetlands. Backwaters are shallow habitats commonly used as nurseries by young fish, especially Colorado pikeminnow and razorback suckers. They are generally longer than wide with a single opening to the river and they are warmer and more productive than the main river.

These procedures would likely avoid adverse impacts affecting the viability of the pikeminnow, the chub and the sucker.

3.4.2 Humpback Chub

The humpback chub currently lives in canyons with swift currents and white water, which eliminates all proposed crossings from concern with this species. Preferred habitat is far downstream of the Piceance Basin Expansion. Historically, this reach of the Yampa supported large populations of the Colorado pikeminnow and the humpback chub. Today it supports sparse numbers with little, if any, reproduction. Therefore, proposed action is not likely to result in significant impacts to the humpback chub.

3.4.3 Bonytail Chub

The bonytail chub is the most endangered of the Colorado River fishes. Its distribution is limited to the lower reaches of the Yampa River in Dinosaur National Monument. The fish is not a concern at the river crossings proposed for construction of the Piceance Basin Expansion. The proposed action is not likely to result in significant impacts to the bonytail chub.

3.4.4 Razorback Sucker

The razorback sucker is a known resident of the Yampa River at the crossing site and though a small number are known in the White River, that crossing appears to be of minimal concern. Impacts and mitigation are the same as presented for the Colorado pikeminnow.

3.4.5 Roundtail Chub

The roundtail chub is a sensitive species in Wyoming. Its presence on the proposed route is not a concern due to the lack of perennial streams or ponds on the pipeline route in Wyoming. The proposed action is not likely to result in significant impacts to the roundtail chub.

3.4.6 Bluehead Sucker

The bluehead sucker is a sensitive species in Wyoming. Its presence on the proposed route is not a concern due to the lack of perennial streams or ponds on the pipeline route in Wyoming. The proposed action is not likely to result in significant impacts to the bluehead sucker.

3.4.7 Flannelmouth Sucker

The flannelmouth sucker is a sensitive species in Wyoming. Its presence on the proposed route is not a concern due to the lack of perennial streams or ponds on the pipeline route in Wyoming. The proposed action is not likely to result in significant impacts to the flannelmouth sucker.

3.4.8 Colorado River Cutthroat Trout

The Colorado River cutthroat trout is a sensitive species in Wyoming. Its presence on the proposed route is not a concern due to the lack of perennial streams or ponds on the pipeline route in Wyoming. The proposed action is not likely to result in significant impacts to the Colorado River cutthroat trout.

3.5 Plants

3.5.1 Ute Ladies' Tresses

This orchid occurs in wetland and riparian areas between 1500 and 7000 feet elevation and could occur along the three perennial streams and some of the wetlands and minor streams crossed by the proposed Piceance Basin Expansion in Colorado. Non-blooming plants are similar to hooded ladies-tresses (*Spiranthes romanzoffiana*) and the flower is required for identification. Flowering usually occurs in late July through September, but is sometimes in early July or as late as early October, depending on location and annual weather conditions. The orchid can remain dormant for one or more growing seasons. It "depends on natural disturbance, where early successional conditions are perpetuated or competition from other vegetation is restricted. The species is found in early-to mid-seral communities, usually in relatively open vegetation with sparse canopy, in full to partial shade" (Letter to Interested Parties, Philip Laumeyer, U.S. Fish and Wildlife Service [FWS], Spokane, WA, June 17, 1998.).

The species can occur in the following settings, based on the above letter:

- Floodplains, and moist to wet meadow on floodplains
- Abandoned meander channels
- Moist to wet meadows irrigated by freshwater springs
- Riparian streambanks, riparian scrub/wet meadow habitat mosaic, riparian forest/riparian scrub/wet meadow habitat mosaic, stream-side habitats dominated by grasses, rushes, and sedges, and willow saplings

- Man-made wetland habitat (borrow pits)
- Upper edges of river banks, terraces, open creek banks in the zone between dry grasslands at the top of the bank and cattail marsh along the stream channel
- Islands
- Point bars, as well as troughs that separate point bars from terraces
- Various topographic positions, up to 200 feet horizontally and 0.5 to 4 feet vertically from water's edge but not on steep slopes
- Rarely, in dense willow thickets and in mature narrow-leaf cottonwood stands that have remnant meanders with moist soils

No Ute ladies'-tresses orchids were found during field surveys conducted in 2004 on stream crossings and other appropriate habitat.

Impacts

Direct impacts to Ute ladies'-tresses orchid (i.e., destruction, injury or seed displacement) could occur at stream crossings or other appropriate habitat, such as, isolated wetlands, during clearing, trenching, and general vehicle movement along the right-of-way. Once the pipeline is completed and reclaimed, direct impacts during operation could only occur if a pipeline breached at a river crossing. Operational monitoring is usually done by aircraft so no vehicles would be expected on or near Ute ladies'-tresses habitat. Required periodic operational surveys will be conducted on foot in potential habitat.

Indirect impacts to orchid could include invasion of the habitat by weedy plant species, thus increasing competition for water, sunlight, or other resources. Altered soil conditions within the right-of-way may also facilitate colonization of the area by rodents, which could increase herbivory on the orchid. These impacts would likely be most apparent immediately following construction and revegetation and would diminish with time.

Cumulative impacts to the plant would be due to increased human recreational use of the pipeline's right-of-way corridor or to similar or other use of the corridor by linear projects, such as fiber optic cables and natural gas or liquid pipelines. Since the right-of-way is both under private ownership and federally administered, human recreation would be limited by the former and would require barriers on federal or state lands.

During late July 2005, river crossings and wetlands in Colorado will be checked again for the orchid's presence.

Mitigation

Because no orchids were found on or near the right-of-way, mitigation will likely be unnecessary. Nevertheless, if a population of the orchid is found, it will be mapped to determine if a reroute within the right-of-way (50 feet) will avoid a take. If the plant is in the centerline or working area, a front end loader or backhoe will remove a sod plug and place it in a prearranged location. All plants will be removed from the right-of-way for a 12-hour period (72 hours with rock). All plants will be returned to the right-of-way except as mentioned below.

If the sod plug is made up of silts and sand (i.e., a relatively stable plug) a structure will be built out of silt fence just off the right-of-way to hold the sod plugs while construction of the stream crossing commences in a 12- to 72-hour period (72 hours applies to crossings that require blasting or a rock hammer). The plugs will be watered by the environmental inspector or biologist so that the plug retains its needed moisture. A shallow backwater outside the right-of-way may also be used to hold the plugs, and would also require a silt fence structure. Topsoil in the right-of-way will be stored in the usual manner per the FERC guidelines. Once the pipe is lowered in, the ditch backfilled, and topsoil moved back in position, the sod plugs will be placed on or near their original location with the help of the EI/biologist. No piece of equipment will leave the right-of-way to retrieve the plugs. A 10-foot-wide swath of vegetation extending from the water's edge will remain intact (undisturbed) at each crossing except at the ditch line and the adjacent work area.

If the orchid occurs in a gravel bed or sandy substrate, a plug will be removed from the working area and immediately placed in a similar substrate. Due to the instability of the plug, it will not be returned to near its original position, but left in place to assure plant survival. A one-time pass through the area for all equipment will be permitted. Construction will take place in less than 12 hours unless the crossing has a rock base, which will require 72 hours.

If the orchid occurs in the right-of-way but can be left intact during construction, its location will be fenced and marked for avoidance.

The expected status of the Ute ladies'-tresses will not change due to the pipeline's construction and operation. The proposed action is not likely to have an adverse impact on the orchid.

3.5.2 Dudley Bluffs Bladderpod

The Dudley Bluffs bladderpod is a threatened species that is found on the White Tongue portion of the Parachute Creek Member of the Green River Formation. None of these plants were found during a search of the proposed route in the Little Hills area, the only location where suitable habitat occurs. The area will be searched again prior to construction. Should a population be found in the right-of-way, a plan for avoidance or take will be worked out with the FWS prior to construction.

3.5.3 Piceance Twinpod

The Piceance twinpod is a threatened species that is found on the White Tongue portion of the Parachute Creek Member of the Green River Formation. None of these plants were found during a search of the proposed route in the Little Hills area, the only location where suitable habitat occurs. The area will be searched again prior to construction. Should a population be found in the right-of-way, a plan for avoidance or take will be worked out with the FWS prior to construction.

3.5.4 Debris Milkvetch

Debris milkvetch is considered sensitive by the BLM in Colorado. It occurs in pinyon-juniper woodland and mixed desert shrub, often on rocky soils ranging from sandy clays to sandy loams. It also occurs on alluvial terraces with cobbles. Debris milkvetch was found at two locations, MPs 125.1 and 125.15 in Rio Blanco County in 2004 (Table 11). Details of their number are included in the Rare Plant Report, Appendix H-6.

Table 11 Rare Plants Locations on the Piceance Basin Expansion, Wyoming and Colorado, 2004

Milepost	Species
125.1	Debris milkvetch *Astragalus detritalis*
125.15	Debris milkvetch *Astragalus detritalis*

During May 2005 Frank Smith returned to the above area and found six populations, ranging from 5 plants to 130+ individuals (Table 12).

Table 12 Locations of Debris Milkvetch Populations Found during May 2005 Resurvey of WIC's Proposed Piceance Basin Expansion.

Site Number	Milepost	Population Size	Relative Location	UTM Coordinates (NAD 83)	
				Begin	End
1	125.1	50+ plants	About 55 feet west of centerline	753910 4438205	753161 4438265
2	125.2	130+ plants	West of centerline and west of the fence	753842 4438116	753669 4437964
3	125.3	5 plants	On centerline	753636 4437910	
4	125.3	10+ plants	Most on the edge of the road.	753625 4437923	
5	125.4	25+ plants	About 48 feet east of centerline	753612 4437864	
6	125.3	25+ plants	About 100 feet west of centerline	753594 4437932	

Impacts

The only site that appears in danger of being lost to construction is site 3 (Table 12). The others populations appeared to be avoidable; however, without survey, other populations may be impacted.

Mitigation

All other populations found in or near the right-of-way will be avoided where possible by rerouting around the plants, decreasing the width of the working side and using silt fence or snow fence to protect the plants from inadvertent damage. Where a loss is unavoidable, the plants will be transplanted as near to their origin as possible and if necessary off the right-of-way with landowner permission. Locations listed in Table 12 will be surveyed prior to construction in 2005 and a plan submitted to the BLM for direction and approval.

3.5.5 Piceance Bladderpod

This bladderpod occurs on the shale outcrops of the Green River Formation on ledges and slopes of canyons in open areas. No plants were found during a rare plant survey along the proposed route in 2004.

4.0 BIG GAME RANGES

Three big game species occur along the proposed Piceance Basin Expansion route: American elk, mule deer and pronghorn. In Wyoming, the pipeline right-of-way crosses 3.8 miles of winter range and 1.1 mile of year-long range for American elk in the southern part of Sweetwater County. No crucial winter range for elk is crossed in Wyoming. In Colorado, the pipeline traverses American elk winter range from near the Wyoming border to the Greasewood Compressor Station. The right-of-way traverses 29.4 miles of severe winter range in Moffat County from one mile north of Greasewood Gulch to the Bob Hughes Creek and Deception Creek confluence south of the Yampa River. The right-of-way crosses 9.3 miles of migration corridor beginning north of Greasewood Gulch and ending north of Spring Creek. The right-of-way also crosses 29 miles of summer range beginning at the Bob Hughes/Deception Creek confluence and ending one mile north of the White River. Table 13 identifies American elk ranges crossed by the Piceance Basin Expansion Project.

Table 13 Seasonal Distribution of American Elk in Wyoming and Colorado along the Piceance Basin Expansion Project, 2004					
Habitat	**Length (miles)**	**Mileposts**		**Acreage Affected by Construction***	**County**
		From	**To**		
WYOMING					
Undetermined	42	3.1	45.1	512.28	Sweetwater
Yearlong range	1.1	45.1	46.2	14.96	Sweetwater
Winter/Yearlong range	3.8	46.2	50	46.99	Sweetwater
Undetermined	2	50	52	26.4	Sweetwater
COLORADO					
Winter range	1	52	53	18.5	Moffat
Winter range	74.7	53	127.7	922.64	Moffat/Rio Blanco
Winter range	13.7	128	141.7	212.25	Rio Blanco
Total Winter/Colorado	**89.4**	--	--	**1153.39**	
Severe Winter range	29.4	68.7	98.1	383.3	Moffat
Migration Corridor	9.3	68.1	77.4	135.27	Moffat
Summer range	29	97.6	126.6	339.07	Moffat/Rio Blanco
*Includes temporary workspace (beyond 85' right-of-way)					

In Wyoming, the right-of-way traverses mule deer winter range and yearlong habitat from south of Interstate 80 for 45.4 miles, then crucial winter range/yearlong habitat for the next 3.5 miles in the juniper-covered breaks above the Little Snake River. In Colorado, the right-of-way traverses mule deer winter range for 87.6 miles from north of the Little Snake River to Greasewood Compressor Station. The right-of-way also traverses severe winter range in four areas: the juniper breaks north of the Little Snake River to the Wyoming border (1 mile), from Spring Creek Valley north of the Yampa to the sand hills south of the Yampa (9.3 miles), from Oyler Creek to the White River (7.1 miles) and the Little Hills area south of the White River (1.7 miles). A small 0.9-mile migration corridor is crossed in Hay Gulch, south of the White River. Summer range is extensive in the project area, spanning 68.8 miles of the pipeline route, from the Little Snake River to Devils Hole Gulch near Strawberry Creek. Table 14 identifies mule deer ranges crossed by the Piceance Basin Expansion Project.

Table 14 Seasonal Distribution of Mule Deer in Wyoming and Colorado along the Piceance Basin Expansion, 2004					
Habitat	**Length (miles)**	**Mileposts**		**Acreage Affected by Construction***	**County**
		From	**To**		
WYOMING					
Winter/Yearlong range	45.4	3.1	48.5	555.61	Sweetwater
Crucial winter range	3.5	48.5	52	43.17	Sweetwater
COLORADO					
Winter range	0.8	52.4	53.2	15.25	Moffat
Winter range	87.6	54.2	141.8	932.28	Moffat/Rio Blanco
Total Winter/Colorado	**88.4**	--	--	**947.53**	
Severe winter range	1	52.4	53.4	18.56	Moffat
Severe winter range	9.3	82.6	91.9	125.55	Moffat

Table 14 Seasonal Distribution of Mule Deer in Wyoming and Colorado along the Piceance Basin Expansion, 2004					
Habitat	**Length (miles)**	**Mileposts**		**Acreage Affected by Construction***	**County**
		From	**To**		
Severe winter range	7.1	119.9	127	80.02	Rio Blanco
Severe winter range	1.7	133.2	134.9	31.7	Rio Blanco
Total Severe Winter/Colorado	**19.1**	--	--	**255.83**	
Migration Corridor	0.9	132	132.9	19.72	Rio Blanco
Summer range	68.8	53.2	119	849.06	Moffat/Rio Blanco
*Includes temporary workspace (beyond 85' right-of-way)					

Pronghorn crucial winter range occurs along the first 3.1 miles of the Piceance Basin Expansion Project route, north of Interstate 80 and in the 4.4 miles north of the Colorado border in Wyoming. The remainder of Sweetwater County is winter/yearlong range. In Colorado, the pipeline route crosses 46.1 miles of pronghorn winter range. Severe winter range occurs in four small segments of 1.5 miles, 7.2 miles, 1.9 miles and 1.8 miles, all in Moffat County. Resident populations along the right-of-way are located from the Little Snake River then south for 3.9 miles and for 10 miles from south of the Yampa River to the confluence of Bob Hughes and Deception Creeks. Table 15 identifies pronghorn ranges crossed by the Piceance Basin Expansion Project.

Table 15 Seasonal Distribution of Pronghorn in Wyoming and Colorado along the Piceance Basin Expansion project, 2004.					
Habitat	**Length (miles)**	**Mileposts**		**Acreage Affected by Construction***	**County**
		From	**To**		
WYOMING					
Crucial winter/Yearlong range	3.1	0	3.1	48.4	Sweetwater
Winter/Yearlong range	44.4	3.1	47.5	542.4	Sweetwater
Crucial winter/Yearlong range	4.5	47.5	52	56.37	Sweetwater
Total crucial winter	**7.6**	--	--	**104.77**	
COLORADO					
Winter range	46.1	52	98.1	591.39	Moffat
Severe winter range	1.5	52.5	54	28.24	Moffat
Severe winter range	7.2	76.8	84	78.21	Moffat
Severe winter range	1.9	88.2	90.1	33.45	Moffat
Severe winter range	1.8	93.8	95.6	27.42	Moffat
Total Severe Winter	**12.4**	--	--	**167.32**	
Resident population	3.9	54.5	58.4	40.18	Moffat
Resident population	10	88.1	98.1	128.62	Moffat
Total Resident	**13.9**	--	--	**168.8**	
*Includes temporary workspace (beyond 85' right-of-way)					

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LIST OF APPENDICES

(Appendices not included in this EIS)

APPENDIX I

WETLANDS AFFECTED DURING CONSTRUCTION OF THE PICEANCE PROJECT

Piceance Project					
Wetlands Affected During Construction					
Beginning Milepost	Disturbance of Pipeline (P) and/or Additional Temporary Workspace Areas (A)	County	NWI Wetland Classification	Maximum Length of Crossing within ROW (feet)	Area Affected / Construction (acres)[a]
39.07	P	Sweetwater	PEM	202	0.26
41.57	P	Sweetwater	PEM	114	0.19
53.15	P	Moffat	PEM	103	0.18
53.29	P	Moffat	PEM	685	0.97
68.32	P	Moffat	PEM	27	0.04
69.42	P	Moffat	PEM	353	0.6
84.39	-	Moffat	PEM	0[b]	0[b]
87.63	P,A	Moffat	PSS/PEM	62	0.09
87.68	P,A	Moffat	PEM	1,171[c]	4.44[c]
87.92	P	Moffat	PSS/PEM	40	0.06
97.23	P	Moffat	PEM	51	0.03
97.44	P	Moffat	PEM	27	0.02
98.49	P	Moffat	PEM	15	0.02
99.32	P	Moffat	PSS	16	0.02
99.75	P	Moffat	PEM	46	0.05
100.73	-	Moffat	PEM	0[b]	0[b]
105.89	P	Moffat	PEM	174	0.30
106.17	P	Moffat	PEM	217	0.37
106.58	P	Moffat	PEM	584	0.72
107.18	P	Moffat	PEM	85	0.09
107.75	P	Moffat	PEM	73	0.05
111.17	P	Rio Blanco	PEM	18	0.02
114.67	P	Rio Blanco	PEM	50	0.07
116.45	-	Rio Blanco	PEM	0[b]	0[b]
127.46	-	Rio Blanco	PEM	0[b]	0[b]
127.59	P	Rio Blanco	PEM	71	0.09
127.63	-	Rio Blanco	PEM	0	0
127.65	P,A	Rio Blanco	PEM	364[c]	0.32[c]
132.95	P	Rio Blanco	PEM	15	0.02
133.71	P	Rio Blanco	PEM	6	0.01

[a] Based on field delineations within proposed ROW.

[b] Wetland ≥125 feet from centerline. Construction location will be adjusted to avoid disturbance in wetland.

[c] Located on agricultural land.

APPENDIX J

SPECIAL STATUS SPECIES IDENTIFIED FOR THE PICEANCE PROJECT

Special Status Species Identified for the Piceance Project[1]

Common Name	Scientific Name	Status[2]	Habitat Association	Potential for Occurrence Within the Project Area[3]	Eliminated From Detailed Analysis	References
MAMMALS						
Townsend's big-eared bat	*Plecotus townsendii*	BLM-WY; BLM-CO	This species inhabits dry coniferous forests, juniper woodlands, deciduous forests, basins, desert shrublands, and grasslands. Roost sites typically include caves and abandoned mines, but rock outcrops and buildings also will be used.	Low. No historic roost sites have been documented along the project route.	No.	Fitzgerald et al. 1994; WGFD 1996, 2004; WYNDD 2003.
Fringed myotis	*Myotis thysanodes*	BLM-WY; BLM-CO	This species primarily inhabits coniferous forests, woodland-chaparral, and basin-prairie shrublands, but have been documented in spruce-fir habitats. Roost sites include caves, abandoned mines, rock crevices, and buildings.	Low. This species could occur within suitable habitats in Colorado and Wyoming. No historic roost sites have been documented along the project route.	No.	Fitzgerald et al. 1994; WGFD 1996, 2004; WYNDD 2003.
Yuma myotis	*Myotis yumanensis*	BLM-CO	This species inhabits Basin-prairie shrublands, riparian shrub, grassland, barren areas, cliffs, and rock outcrops. Roosts primarily in human-built structures (building and bridges), and occasionally in mines and caves.	Low. This species could occur within suitable habitats in Colorado and Wyoming. No historic roost sites have been documented along the project route.	No.	Fitzgerald et al. 1994; WGFD 1996, 2004; WYNDD 2003.
Swift fox	*Vulpes velox*	BLM-WY	This species is found in short-, mid-, and mixed-grass prairies with gently rolling hills within eastern Colorado and Wyoming. Den sites are	None. No observations of this species have been documented within the project vicinity.	Yes. The closest known occurrence is greater than 10 miles to the east of the proposed pipeline in Carbon	Fitzgerald et al. 1994; WGFD 1996, 2004; WYNDD 2003.

(Continued)

Common Name	Scientific Name	Status[2]	Habitat Association	Potential for Occurrence Within the Project Area[3]	Eliminated From Detailed Analysis	References
			typically located on flat areas or along slopes or ridges that provide a good view. Young are born in late March, April, or early May.		County, Wyoming.	
Wyoming pocket gopher	*Thomomys clusius (Thomomys talpoides)*	BLM-WY	This species is known to occur in upland drier ridge tops (gravelly loose soils) in greasewood habitat. Nests in a maternal burrow, and usually feeds underground in a shallow tunnel, pulling roots and plants underground.	Low. The known range of this species is limited to the southeastern corner of Sweetwater County.	No. Potentially suitable habitat for this species could occur along the northern portion of the project route.	WGFD 2004.
Black-footed ferret	*Mustela nigripes*	FE; CO-E; WY-S	Suitable habitat consists of black-tailed prairie dog colonies or complexes (80 acres or greater) or White-tailed prairie dog colonies or complexes (200 acres or greater). Most litters are born in May and emerge from their nursery dens in July.	Low. The FWS has block-cleared all prairie dog towns in the Colorado portion of the proposed project area. Thus, no ferret surveys are necessary in Colorado. Surveys in Wyoming may be required.	No. Potentially suitable habitat for this species could occur within prairie dog colonies of suitable size and density between MP 0.0 and MP 51.0.	FWS 1989.
White-tailed prairie dog	*Cynomys leucurus*	BLM-WY BLM-CO[4]	This species occupies basin-prairie and mountain-foothill shrublands, sagebrush-grasslands, barren and overgrazed areas, and agricultural areas.	High. A total of 6 active white-tailed prairie dog colonies were identified along the project ROW.	No. Six small to medium colonies would be crossed at approximate MPs 0.0, 13.4, 21.3, 30.0, 54.0, and 94.0	69 FR 64889; WGFD 2004; Fitzgerald et al. 1994.

(Continued)

Common Name	Scientific Name	Status[2]	Habitat Association	Potential for Occurrence Within the Project Area[3]	Eliminated From Detailed Analysis	References
Pygmy rabbit	*Brachylagus idahoensis*	FWS - designated sensitive species	This species occurs in southwestern Wyoming, in isolated populations in Lincoln, Uinta, Sweetwater, Sublette, and Fremont Counties. Pygmy rabbits are sagebrush obligate species; primarily found in dense western big sagebrush communities, preferably where at least two other species of sagebrush and forbs occur as well.	High. This species was observed during the 2005 habitat surveys in Wyoming.	No.	FWS 2005; WIC 2005f
BIRDS						
Northern goshawk	*Accipiter gentilis*	BLM-WY; BLM-CO	This species occupies mature, closed-canopied coniferous and aspen forests habitats. This species nests in open older-aged class coniferous forests and aspen stands.	Moderate. The BLM has indicated that there are two potential sites within the southern portion of the project route.	No. Potentially suitable habitat is scattered between MP 129.5 and MP 141.7. This species is discussed in Section 3.5.2, Migratory Birds	Kingery 1998; WGFD 1996, 2004.
Golden eagle	*Aquila chrysaetos*	BLM-CO	This species occurs in a variety of habitats including grassland, pinyon juniper woodland, coniferous and deciduous forests, shrubland, and rock outcrop. Nest sites are usually located on cliffs and occasionally in large trees in open habitats.	High. This species could occur within suitable habitats along the project route.	No. A total of two active nests have been identified within 1 mile of the project ROW at approximate MP 13.0 and MP 71.0. This species is discussed in Section 3.5.2, Migratory Birds	Kingery 1998; WGFD 2004.

(Continued)

Common Name	Scientific Name	Status[2]	Habitat Association	Potential for Occurrence Within the Project Area[3]	Eliminated From Detailed Analysis	References
Ferruginous hawk	*Buteo regalis*	BLM-WY; BLM-CO	This species occurs in open semi-arid habitats including basin-prairie shrubland, mountain-foothills, badlands, and grassland. Nest sites include trees, ledges, and rock outcrops in sagebrush valleys and rolling grassland habitat.	Moderate. This species could occur within suitable habitats along the project route, although no nests have been documented within 0.5 mile of the project ROW.	No. This species is discussed in Section 3.5.2, Migratory Birds	Kingery 1998; WGFD 1996, 2004.
Swainson's hawk	*Buteo swainsoni*	BLM-CO	This species typically occurs in arid and semi-arid grassland habitats and in agricultural areas with scattered trees and shrubs. Nest sites typically occur in isolated trees, but will sometimes nest on cliffs or rock outcrops.	Moderate. This species could occur within suitable habitats along the project route.	No. This species is discussed in Section 3.5.2, Migratory Birds	Kingery 1998; WGFD 2004.
Bald eagle	*Haliaeetus leucocephalus*	FT[5]; CO-T; WY-T	This species typically occurs near large bodies of water that support suitable roosting and foraging habitat. Nests are commonly built in mature cottonwoods or conifers along lakes or other large bodies of water.	High. This species could occur within suitable habitats along the project route.	No. Two nest sites and winter roost areas have been identified in the vicinity of the project ROW.	Kingery 1998; WGFD 1996, 2004.

(Continued)

Common Name	Scientific Name	Status[2]	Habitat Association	Potential for Occurrence Within the Project Area[3]	Eliminated From Detailed Analysis	References
American peregrine falcon	*Falco peregrinus*	BLM-WY	This species typically breeds in foothills and mountainous areas. Nest sites are often located on ledges of high, steep-walled cliffs. Preferred foraging habitat includes marshes, lakes, rivers, and wet meadows.	Low. No falcon nest sites have been identified as occurring within the vicinity of the project route.	No. This species is discussed in Section 3.5.2, Migratory Birds	Kingery 1998; WGFD 2004.
Greater sage-grouse	*Centrocercus urophasianus*	BLM-WY; BLM-CO[4]	The sage grouse is a sagebrush obligate species. Lek sites are generally located in open areas such as broad ridges, grassy areas, and disturbed sites, adjacent to suitable nesting habitat. Nesting occurs within sagebrush stands with adequate height and canopy cover, and food source.	High. This species could occur within suitable habitats along the project route. Occurrence by this species has been documented within the project vicinity in Wyoming and Colorado. A total of 23 historic lek sites have been identified as occurring within 2 miles of the project ROW.	No. Potentially suitable breeding habitat for this species is scattered along the project route. A total of 10 active lek sites were identified within 2 miles of the project ROW during the 2004 surveys.	Connelly et al. 2004; Kingery 1998; WGFD 2004.

(Continued)

Common Name	Scientific Name	Status[2]	Habitat Association	Potential for Occurrence Within the Project Area[3]	Eliminated From Detailed Analysis	References
Mountain plover	*Charadrius montanus*	BLM-WY; BLM-CO	This species inhabits flat, short-grass prairie in areas often grazed by livestock and in areas occupied by prairie dog colonies.	High. This species could occur within suitable habitats along the northern portion of the project route.	No. Potentially suitable habitat for this species is scattered throughout the following areas: MP 0.0 to MP 24.0, MP 29.8 to MP 30.1, MP 54.0, MP 93.5 to 94.1, and MP 111.3. One active nest was documented at MP 15.1 during the 2004 surveys.	Kingery 1998; WGFD 1996, 2004.
Yellow-billed cuckoo	*Coccyzus americanus*	FC; BLM-WY; BLM-CO; WY-S	This species inhabits lowland deciduous woodlands, willow and alder thickets, mature cottonwood-riparian woodlands, deserted farmlands, and orchards. Breeding typically occurs in riparian woodlands.	None. No observations of this species have been documented within the project vicinity.	Yes. The dense riparian habitat necessary to support yellow-billed cuckoos is not present in the project area.	Kingery 1998; WGFD 1996, 2004; WYNDD 2003.
Western burrowing owl	*Athene cunicularia hypugea*	BLM-WY; CO-T	This species nest in non-riparian habitats including abandoned burrows of prairie dogs, ground squirrels, foxes, and badgers in grassland, open shrubland, and woodland communities.	High. This subspecies could nest within potentially suitable habitat along the project route.	No. One active nest was identified at MP 54.0 during the 2004 survey.	Kingery 1998; WGFD 2004; WYNDD 2003.

(Continued)

Common Name	Scientific Name	Status[2]	Habitat Association	Potential for Occurrence Within the Project Area[3]	Eliminated From Detailed Analysis	References
Sage thrasher	*Oreoscoptes montanus*	BLM-WY	This species inhabits basin-prairie and mountain-foothills shrubland, and nesting occurs in or beneath sagebrush shrubs.	Low. This species is a summer resident in Sweetwater County. No sage thrashers were seen during the 2004 surveys.	No. This species is discussed in Section 3.5.2, Migratory Birds.	WGFD 2004.
Sage sparrow	*Amphispiza belli*	BLM-WY	This species inhabits basin-prairie and mountain-foothills shrubland, and nesting occurs in or beneath sagebrush shrubs.	Low. This species is an uncommon summer resident in Sweetwater County and local summer resident in western Colorado. No sage sparrows were seen during the 2004 surveys.	No. This species is discussed in Section 3.5.2, Migratory Birds.	WGFD 2004.
Brewer's sparrow	*Spizella breweri*	BLM-WY	This species typically occurs in basin-prairie and mountain-foothills shrublands, especially sagebrush and woodland chaparral. Nest sites typically occur in shrubs.	Moderate. This species is a common summer resident in Sweetwater, Moffat, and Rio Blanco Counties. This species was not observed during 2004 surveys.	No. This species is discussed in Section 3.5.2, Migratory Birds.	WGFD 2004.

(Continued)

Common Name	Scientific Name	Status[2]	Habitat Association	Potential for Occurrence Within the Project Area[3]	Eliminated From Detailed Analysis	References
Loggerhead shrike	*Lanius ludovicianus*	BLM-WY	This species typically inhabits open riparian areas, agricultural areas, grasslands, and shrublands (especially semidesert shrublands). Nest sites usually occur in isolated trees or large shrubs.	Moderate. This species could nest within suitable habitat along the project route between MP 0.0 and MP 56.0, although none were observed during the 2004 survey.	No. This species is discussed in Section 3.5.2, Migratory Birds.	Kingery 1998; WGFD 2004.
AMPHIBIANS						
Great Basin spadefoot toad	*Spea intermontana*	BLM-WY; BLM-CO	This species inhabits pinon-juniper woodlands, sagebrush, and semi-desert shrubland. This species uses both permanent and temporary water sources for breeding. Breeding occurs in May through July.	Low. This species could occur within suitable habitats along the project route. This species has been observed in western Colorado and in Sweetwater County, Wyoming.	No.	Baxter and Stone 1980; Hammerson 1999; WGFD 2004; WYNDD 2003.
Northern leopard frog	*Rana pipiens*	BLM-WY; BLM-CO	This species inhabits marshes, ponds, beaver ponds, lakes, reservoirs, streams, and irrigation ditches. Breeding occurs in March through mid-September.	Low. This species occurs in areas with permanent water, which is scarce along the project route.	No.	Baxter and Stone 1980; WGFD 2004; WYNDD 2003.

(Continued)

Common Name	Scientific Name	Status[2]	Habitat Association	Potential for Occurrence Within the Project Area[3]	Eliminated From Detailed Analysis	References
REPTILES						
Midget faded rattlesnake	*Crotalus viridis concolor*	BLM-CO	This species inhabits rock outcrops in the sagebrush communities.	Low. This species could occur within suitable habitats along the project route in Sweetwater County, Wyoming.	No.	Baxter and Stone 1980; WGFD 2004; WYNDD 2003.
FISHES						
Bonytail	*Gilia elegans*	FE	This rare species occurs in larger river channels of Green, Colorado, Yampa, and Gilia Rivers in Colorado River drainage. This species primarily occupies pools and eddies rather than areas with swift current. Spawning typically occurs in June and July when water temperatures are approximately 64°F.	Low. No known populations occur in Colorado. The last occurrence by this species in the Yampa River was recorded at the confluence of the Green River in 1979.	No. Although it is highly unlikely that this species would occur along the project route, potential water depletions from the Colorado River Drainage could impact suitable habitat.	Lee et al. 1980; FWS 1990, 1993; Woodling 1985.
Bluehead sucker	*Catostomus discobolus*	BLM-WY; BLM-CO	This species is found in a variety of fluvial habitats, ranging from cold, clear trout streams to warm, turbid streams, with moderate-to-fast velocity. This species prefers areas with riffles over a rocky substrate. Spawning occurs in late spring or early summer at water temperatures of at least 61°F.	Low. This species is known to occur in riverine habitats on the western slope of Colorado including the Yampa and Little Snake Rivers.	No.	Baxter and Simon 1970; Lee et al. 1980; Woodling 1985.

(Continued)

Common Name	Scientific Name	Status[2]	Habitat Association	Potential for Occurrence Within the Project Area[3]	Eliminated From Detailed Analysis	References
Colorado pikeminnow	*Ptychocheilus lucius*	FE; CO-T	This species occurs in big, deep-water riverine habitats at a variety of depths and velocities over silt, sand, gravel, and boulder substrates. Spawning occurs in run, eddy, and pool habitats from June through August at water temperatures ranging from 71° to 77°F. Young fish primarily inhabit shallow, backwater areas over silt and sand bottoms.	Low. The project would intersect critical habitat for this species at the Yampa River crossing. Potential water depletions from the Colorado River Drainage also could impact suitable habitat.	No.	59 FR 13374; FWS 1993; Woodling 1985.
Flannelmouth sucker	*Catostomus latipinnis*	BLM-WY; BLM-CO	This species inhabits large streams and rivers in all habitat types including riffles, runs, pools, eddies, and backwaters. This species also enters mouths of small tributary streams. Spawning occurs in spring and early summer on riffles with coarse gravel bottoms at water temperatures near 55°F.	Low. This species could potentially occur at or near the crossing of the White River and Yampa River.	No.	FWS 1993; Woodling 1985.

(Continued)

Common Name	Scientific Name	Status[2]	Habitat Association	Potential for Occurrence Within the Project Area[3]	Eliminated From Detailed Analysis	References
Humpback chub	*Gilia cypha*	FE	This species occupies a variety of riverine habitats including in deep water pools riffles and eddies over silt, sand, boulder, and bedrock substrate. Spawning typically occurs after the highest spring flows when water temperatures approach 68°F. Young fish utilize shallow areas in backwaters, eddies, and runs.	Low. The closest known population occurs more than 40 miles west of the Yampa River crossing at the confluence of the Yampa and Green Rivers.	No. Although it is highly unlikely that this species would occur along the project route, potential water depletions from the Colorado River Drainage could impact suitable habitat.	Lee et al. 1980; FWS 1993; Woodling 1985.
Roundtail chub	*Gila robusta*	BLM-CO; BLM-WY	This species inhabits pools, eddies, runs, and ruffles in moderate to large rivers. Spawns in spring and early summer.	Moderate. This species could potentially occur at the White and Yampa River crossings.	No.	Karp and Tyus 1990; Woodling 1985.
Mountain sucker	*Catostomus platyrhynchus*	BLM-CO	This species is found in smaller rivers and streams with gravel, sand, and mud substrates. It typically occupies undercut banks, eddies, small pools, and areas of moderate current. Spawning occurs in late spring and early summer.	Moderate. This species could potentially occur at river and stream crossing within the project area in Colorado and Wyoming.	No.	Baxter and Simon 1970; Lee et al. 1980; Woodling 1985.

(Continued)

Common Name	Scientific Name	Status[2]	Habitat Association	Potential for Occurrence Within the Project Area[3]	Eliminated From Detailed Analysis	References
Razorback sucker	*Xyrauchen texanus*	FE; CO-E	This species is found in backwaters, eddies, pools, and flat-water areas in the main channel. Sand or silt substrates with low water velocity are preferred. Spawning occurs over mixed substrate in the spring with rising water levels and increasing temperatures ranging from 48° to 63°F. Young fish utilize quiet, shallow backwaters and river margins.	None. The closest known population occurs more than 40 miles west of the Yampa River crossing at the confluence of the Yampa and Green Rivers.	No. Although it is highly unlikely that this species would occur along the project route, potential water depletions from the Colorado River Drainage could impact suitable habitat.	FWS 1993; Woodling 1985.
PLANTS						
Debris milkvetch	*Astragalus detritalis*	BLM-CO	This species is found on rocky or sandy soils on alluvial terraces with cobbles in pinyon-juniper and mixed desert shrub communities. Flowering period: Late April-early June. Elevation: 5,400-7,200 feet.	High. A total of six populations were observed throughout the length of the project route.	No. This species occurs within suitable habitat throughout the project route.	Spackman et al. 1997; Smith 2004; WIC 2005f.
Nelson milkvetch	*Astragalus nelsonianus*	BLM-WY; BLM-CO	This species is found in gullies and flats on seleniferous soils in sparsely vegetated sagebrush. Flowering period: late May-August. Elevation: 6,000-7,000 feet.	Low. This species could occur along the project route in Sweetwater County, Wyoming.	No. This species could occur within potentially suitable habitat from MP - 0.0 to MP 52.0 and from MP 104.5 to MP 141.7.	Spackman et al. 1997.

(Continued)

Common Name	Scientific Name	Status[2]	Habitat Association	Potential for Occurrence Within the Project Area[3]	Eliminated From Detailed Analysis	References
Park rockcress	*Boechera fernaldiana*	BLM-CO	This species occurs on limestone and sandstone outcrops (usually Weber sandstone) in mixed desert shrub and pinyon-juniper communities, often in pine duff in shade.	None. No observations of this species have been documented within the project vicinity.	Yes. This species occurs outside of the project area in the extreme western portion of Moffat County, Colorado.	Spackman et al. 1997.
Ephedra buckwheat	*Eriogonum ephredoides*	BLM-CO	This species occurs on sparsely vegetated slopes on white shales of the Green River Formation and soils derived from them.	None. No observations of this species have been documented within the project vicinity.	Yes. This species occurs outside of the project area in the extreme western portion of Rio Blanco County, Colorado.	Spackman and Anderson 2002.
Utah genetian	*Gentianella tortuosa*	BLM-CO	This species occurs on barren shale knolls and slopes of the Green River Formation. Flowering period: July-August. Elevation: 8,500-10,800 feet.	None. No observations of this species have been documented within the project vicinity.	Yes. This species does not occur within the elevational range of this species in Rio Blanco County, Colorado.	Spackman et al. 1997.
Narrow-stem gilia	*Gilia stenothyrsa*	BLM-CO	This species occurs in grassland, sagebrush, mountain-mahogany, or pinyon-juniper communities on silty to gravelly loam soils derived from the Green River and Uinta formations. Flowering period: Late May-June. Elevation: 5,000-6,000 feet.	Low. This species could occur within potentially suitable habitat along the project route in Rio Blanco County, Colorado.	No. This species could occur within potentially suitable habitat from MP 103 to MP 141.7.	Spackman et al. 1997.

(Continued)

Common Name	Scientific Name	Status[2]	Habitat Association	Potential for Occurrence Within the Project Area[3]	Eliminated From Detailed Analysis	References
Dudley Bluffs bladderpod	*Lesquerella congesta*	FT	This species inhabits barren white shale outcrops of the Green River and Uinta formations exposed along drainages through erosion from the downcutting of streams in the Piceance Basin. Flowering period: April-May. Elevation: 6,000-6,700 feet.	Low. This species could occur within potentially suitable habitat along the project route in Rio Blanco County, Colorado.	No. Potentially suitable habitat for this species could occur between MP 128 and MP 141.7.	Spackman et al. 1997.
Piceance bladderpod	*Lesquerella parviflora*	BLM-CO	This species occupies shale outcrops of the Green River Formation, on ledges and slopes of canyons in open area. Flowering period: June-early July. Elevation: 6,200-8,600 feet.	Low. This species could occur within potentially suitable habitat along the project route in Rio Blanco County, Colorado.	No. This species could occur within potentially suitable habitat from MP 103 to MP 141.7.	Spackman et al. 1997.
Narrow-leaf evening primrose	*Oenothera acutissima*	BLM-CO	This species is found in sandy, gravelly or rocky soils, in seasonally wet areas; in meadows, depressions, or along arroyos in habitats ranging from mixed conifer forest to sagebrush scrub.	None. No observations of this species have been documented within the project vicinity.	Yes. This species occurs outside of the project area in western Moffat County, Colorado.	Spackman et al. 1997.
Rollins cryptanth	*Oreocarya rollinsii*	BLM-CO	This species occurs on white shale slopes of the Green River Formation in pinyon-juniper or cold desert shrubland communities.	None. No observations of this species have been documented within the project vicinity.	Yes. This species occurs outside of the project area in western Moffat County, Colorado.	Spackman et al. 1997.

(Continued)

Common Name	Scientific Name	Status[2]	Habitat Association	Potential for Occurrence Within the Project Area[3]	Eliminated From Detailed Analysis	References
Gibben's beardtongue	*Penstemon gibbensii*	BLM-WY; BLM-CO	This species is found in sparsely vegetated shale or sandy-clay slopes of the Brown's Park Formation. Associated vegetation includes pinyon-juniper woodland, sagebrush, or salt desert shrub communities. Flowering period: June-September. Elevation: 5,500-7,700 feet.	High. This species could occur within potentially suitable habitat along the project route in Sweetwater County, Wyoming.	No. This species could occur within potentially suitable habitat from MP 0.0 to MP 52 and from MP 103 to MP 141.7. This species was identified in the project vicinity during the 2004 field surveys.	Fertig 1994; Spackman et al. 1997.
Dudley Bluffs twinpod (a.k.a. Piceance twinpod)	*Physaria obcordata*	FT	This species is found on barren white outcrops and steep slopes exposed by creek downcutting. It is restricted to the Parachute Creek Member of the Green River Formation. Flowering period: May-June. Elevation: 5,900-7,500 feet.	High. This species could occur within potentially suitable habitat along the project route in Rio Blanco County, Colorado.	No. Suitable habitat for this species occurs between MP 128 and MP 141.7. This species was identified in the general project vicinity during the 2004 field surveys (although not along the proposed ROW).	Spackman et al. 1997.
Western prairie-fringed orchid	*Platanthera praeclara*	FT	This orchid occurs most often in mesic to wet unplowed tallgrass prairies and meadows but have been found in old fields and roadside ditches.	None. This species would not occur along the project route.	Yes. This species is not expected within the project vicinity based on known occurrence and range.	Bjugstad and Bjugstad 1989.

(Continued)

Common Name	Scientific Name	Status[2]	Habitat Association	Potential for Occurrence Within the Project Area[3]	Eliminated From Detailed Analysis	References
Ute ladies'-tresses	*Spiranthes diluvialis*	FT	This species is found in sub-irrigated alluvial soils along streams, and in open meadows in flood plains. Flowering period: July-September. Elevation: 4,200-7,000 feet.	Low. This species was not observed during the 2004 field surveys. The closest known occurrence is approximately 50 miles west of the project route.	No. This species is not expected within the project vicinity based on known occurrence and range. However, suitable habitat for this species was observed at several locations in Colorado.	Fertig 1994; Spackman et al. 1997.

[1] Species identified in this table include state and federally listed species and BLM sensitive species only.

[2] Status:

FE = Federally listed as endangered.
FT = Federally listed as threatened.
FC = Federal candidate.
CO-E = State-listed as endangered in Colorado.
CO-T = State-listed as threatened in Colorado.
WY-T = State-listed as threatened in Wyoming.
WY-S = Wyoming sensitive.
BLM-WY = Wyoming BLM sensitive.
BLM-CO = Colorado BLM sensitive.

[3] Potential for occurrence is based on range for the species, and not season.

[4] The FWS determined that further consideration for listing this species is not warranted.

[5] Proposed to be de-listed.

APPENDIX K

AGENCIES, ORGANIZATIONS, AND INDIVIDUALS WHO RECEIVED COPIES OF THE FINAL ENVIRONMENTAL IMPACT STATEMENT

Agencies, Organizations, and Individuals Who Received Copies of the Final Environmental Impact Statement

Federal Agencies

Advisory Council on Historic Preservation
- Headquarters – Washington, DC
- Office of Federal Agency Programs – Washington, DC
- Western Office – Lakewood, CO

Army Corps of Engineers
- Colorado/Gunnison Basin Regulatory Office – Grand Junction, CO
- Denver Regulatory Office – Littleton, CO
- Headquarters – Washington, DC
- Wyoming Regulatory Office – Cheyenne, WY

Bureau of Indian Affairs – Washington, DC

Bureau of Land Management
- Colorado State Office – Lakewood, CO
- Glenwood Springs Field Office – Glenwood Springs, CO
- Grand Junction Field Office – Grand Junction, CO
- Headquarters – Washington, DC
- Kremmling Field Office – Kremmling, CO
- Lander Field Office – Lander, WY
- Little Snake River Field Office – Craig, CO
- National Science and Technology Center – Denver, CO
- Rawlins Field Office – Rawlins, WY
- Rock Springs Field Office – Rock Springs, WY
- Umcompagre Field Office – Montrose, CO
- White River Field Office – Meeker, CO
- Wyoming State Office – Cheyenne, WY

Bureau of Reclamation
- Provo Area Office – Provo, UT
- Rocky Mountain Region (Colorado & Wyoming) – Denver, CO
- Wyoming Area Office – Mills, WY

Centers for Disease Control and Prevention, National Center for Environmental Health – Atlanta, GA

Council on Environmental Quality – Washington, DC

Department of Agriculture
- Natural Resource Conservation Service
  - Craig Field Service Center – Craig, CO
  - Grand Junction Area Office – Grand Junction, CO
  - Headquarters - Washington, DC
  - Meeker Field Service Office - Meeker, CO
  - Pinedale Field Office – Pinedale, WY
  - Wyoming State Office – Casper, WY
- Office of Finance and Management – Washington, DC

Department of Commerce, Office of the Secretary – Washington, DC

Department of Energy
- Washington, DC
  - Office of Environmental Compliance
  - Office of Fossil Energy
  - Office of Intergovernmental Affairs
  - Office of the Secretary
- Western Area Power Administration, Rocky Mountain Region – Loveland, CO

Department of Homeland Security, United States Coast Guard – Washington, DC

Department of Justice, Land & Natural Resources Division – Washington, DC

Department of Labor, Office of Regulatory Economics – Washington, DC

Department of State, Office of Environment/Health – Washington, DC
Department of the Interior – Washington, DC
- Minerals Management Service
- Office of Environmental Policy and Compliance

Department of Transportation
- Office of Environment and Policy – Washington, DC
- Office of Pipeline Safety
  - Central Region – Kansas City, MO
  - Eastern Region, Research and Special Program Administration – Washington, DC
  - Southwest Region – Houston, TX
  - Western Region – Lakewood, CO
- Office of the Secretary – Washington, DC

Federal Communication Commission – Lakewood, CO
Federal Energy Regulatory Commission – Washington, DC
Housing and Urban Development – Washington, DC
Interstate Commerce Commission, Office of Energy and Environment – Washington, DC
Library of Congress, Federal Documents Section, Exchange and Gift Division – Washington, DC
National Oceanic and Atmospheric Administration – Washington, DC
- Office of Habitat Protection – Silver Springs, MD

National Park Service – Washington, DC
- Intermountain Region – Denver, CO
- Air Resource Division – Denver, CO

U.S. Air Force, Environment, Safety, and Occupational Health – Washington, DC
U.S. Army, Tribal and Regulatory Affairs – Washington, DC
U.S. Coast Guard, Office of Operating and Environmental Standards – Washington, DC
U.S. Environmental Protection Agency
- Office of Federal Activities – Washington, DC
  - EIS Filing Section
  - NEPA Compliance Division
- Region 8, NEPA Compliance – Denver, CO

U.S. Fish and Wildlife Service
- Cheyenne Field Office – Cheyenne, WY
- Grand Junction Ecological Services Offices – Grand Junction, CO
- Region 6 Administration Office – Denver, CO

U.S. Forest Service – Washington, DC
- White River National Forest – Rifle, CO

U.S. Senate, Committee on Energy & Natural Gas – Washington, DC

State and Regional Agencies
Associated Governments of Northwest Colorado – Rifle, CO
Colorado Department of Natural Resources
- Headquarters – Denver, CO
- Office of Energy, Lands, and Forestry – Denver, CO
- Oil and Gas Conservation Commission – Denver, CO
- State Land Board – Craig, CO
- State Land Board – Denver, CO

Colorado Department of Public Health and Environment, Water Quality Control Division – Denver, CO
Colorado Department of Transportation – Denver, CO
Colorado Division of Commerce – Denver, CO
Colorado Division of Wildlife
- Area 6 Office – Meeker, CO
- Headquarters – Denver, CO
- Northwest Regional Service Center – Grand Junction, CO
- Piceance State Wildlife Area – Meeker, CO

Colorado Historical Society, Office of Archaeology and Historic Preservation – Denver, CO
Colorado Mountain College

- Dean of Student Learning - Glenwood Springs, CO
- Division Director - Rifle, CO

Colorado Public Utilities Commission – Denver, CO
University of Wyoming, Wyoming Natural Diversity Database – Laramie, WY
Wyoming Association of Municipalities – Cheyenne, WY
Wyoming Department of Environmental Quality – Cheyenne, WY

- Air Quality Division
- Industrial Siting Council
- Water Quality Division

Wyoming Department of Transportation – Cheyenne, WY
Wyoming Game and Fish Department

- Green River Regional Office – Green River WY
- Headquarters – Cheyenne, WY
- Laramie Regional Office – Laramie, WY

Wyoming Geological Survey – Laramie, WY
Wyoming Office of State Land and Investments – Cheyenne, WY
Wyoming Office of the Governor – Cheyenne, WY

- Environmental Policy Division

Wyoming Public Service Commission – Cheyenne, WY
Wyoming State Engineer's Office – Cheyenne, WY
Wyoming State Historic Preservation Office – Cheyenne, WY

- Cultural Records Office – Laramie, WY

Counties
Carbon County – Rawlins, WY

- Economic Development Corporation – Rawlins, WY
- Planning & Economic Development
- Weed and Pest Control

Garfield County

- Assessor's Office – Glenwood Springs, CO
- Cooperative Extension – Rifle, CO
- Oil and Gas Department – Rifle, CO
- Road and Bridge Department – Rifle, CO
- School District – Rifle, CO

Moffat County – Craig, CO

- Natural Resources Department
- Planning Department
- Weed Management

Rio Blanco County – Meeker, CO

- Assessor
- Planning and Development Department
- Road and Bridge Department

Sweetwater County

- Conservation District – Rock Springs, WY
- Emergency Management Agency – Rock Springs, WY
- School District, Desert School – Wamsutter, WY

Municipalities
Baggs Fire Department – Baggs, CO
City of Rawlins – Rawlins, WY

- Community Development Department
- Fire Department

City of Rifle – Rifle, CO

- Fire Protection District
- Planning Department

City of Rock Springs Fire Department – Rock Springs, CO
City of Silt – Silt, CO
Ryan Park Fire Department – Saratoga, WY
Town of Meeker – Meeker, CO
Town of New Castle – New Castle, CO
Town of Parachute – Parachute, CO

Media
Battlement Mesa-Parachute Sun News – Parachute, CO
Casper Star Tribune (Tom Mast) – Casper, WY
Craig Daily Press – Craig, CO
Daily Sentinel – Grand Junction, CO

- The News Bureau – Rifle, CO

Denver Post – Denver, CO
Glenwood Springs Post – Glenwood Springs, CO
Green River Star – Green River, WY
High Country News – Paonia, CO
KDNK FM Radio – Carbondale, CO
KFBC/Cowboy News Network – Cheyenne, WY
KGWN TV – Cheyenne, WY
KING/KOLT – Cheyenne, WY
KMTS/KGLN – Glenwood Springs, CO
KRGS 690 AM – Glenwood Springs, CO
KRSV – Afton, WY
KUGR/KYCS – Green River, WY
Moffat County Morning News – Craig, CO
Northwest Colorado Daily Press – Craig, CO
Rocket Miner – Rock Springs, WY
The Citizen Telegram – Rifle, CO
Western Inspirational Broadcast – Carson City, NV
Western Radio Communications – Casper, WY
Wyomedia KFNB-TV – Casper, WY
Wyoming State Tribune-Eagle – Cheyenne, WY

Libraries
Bureau of Land Management Library – Denver, CO
Carbon County Libraries, Saratoga Branch – Saratoga, WY
Colorado State University, Morgan Library – Fort Collins, CO
Garfield County Public Libraries

- Glenwood Springs Branch – Glenwood Springs, CO
- Parachute Branch – Parachute, CO
- Rifle Branch – Rifle, CO

Meeker Regional Library – Meeker, CO
Mesa County Public Library District, DeBeque Branch – DeBeque, CO
Moffat County Library – Craig, CO
Rangley Regional Library – Rangley, CO
Sweetwater County Libraries

- Rock Springs Library – Rock Springs, WY
- Wamsutter Library – Wamsutter, WY
- White Mountain Library – Rock Springs, WY
- Sweetwater County Library – Green River, WY

University of Wyoming Libraries – Laramie, WY

Utah State University, Merrill-Cazier Library – Logan, UT
Western Wyoming Community College, Hay Library – Rock Springs, WY

Elected Officials
Carbon County Commisioner, Lee Meacham – Saratoga, WY
Garfield County Commissioners – Glenwood Springs, CO
Governor Bill Owens – Denver, CO
Governor Dave Freudenthal – Cheyenne, WY
Granger City Council Member, Hippy Valerio – Granger, WY
Mayor Carma Rae Lindsley – Granger, WY
Mayor Dave DeRose – Craig, CO
Mayor John Evans – Silt, CO
Mayor Keith Lambert – Rifle, CO
Mayor Ralph Glenn – Rawlins, WY
Mayor William Coble – Superior, WY
Mayor William Hippe – Wamsutter, WY
Moffat County Commissioners

- Darryl Steele
  - Maybell, CO
  - Craig, CO
- Les Hampton – Craig, CO
- Saed F-Tayyara – Craig, CO

Rawlins City Council Members – Rawlins, WY

- Jim Wells
- Larry J. Kmoch

Rep. Al White – Denver, CO
Rep. Barbara Cubin – Washington, DC
Rep. Bill Thompson – Green River, WY
Rep. Christopher Boswell – Cheyenne, WY
Rep. Fred Parady – Rock Springs, WY
Rep. Scott McInnis – Glenwood Springs, CO
Rep. Stephen Watt – Rock Springs, WY
Rifle City Council Member, Beth Bascom – Rifle, CO
Rio Blanco County Board of Commissioners – Meeker, CO

- Forrest Nelson
- Kim Cook

Senator Bill Vasey – Rawlins, WY
Senator Craig Thomas

- Cheyenne, WY
- Rock Springs, WY
- Washington, DC

Senator Jack Taylor

- Denver, CO
- Steamboat Springs, CO

Senator Ken Salazar – Washington, DC
Senator Mark O. Harris – Green River, WY
Senator Mike Enzi – Washington, DC
Senator Rae Lynn Job – Rock Springs, WY
Senator Tex Boggs – Rock Springs, WY
Senator Wayne Allard

- Grand Junction, CO
- Washington, DC

Sheriff John Hutchins – Meeker, CO
Sheriff Lou Vallario – Glenwood Springs, CO
Sheriff Si Woodruff – Meeker, CO

Superior Town Council Member, Richelle Johnson – Superior, WY
Sweetwater County Commissioners – Green River, WY
- Alice Tielborg
- John D. Pallesen

Undersheriff Tim Templon – Glenwood Springs, CO

Tribal Organizations
Eastern Shoshone Business Council – Fort Washakie, WY
Northern Arapaho Tribe – Arapahoe, WY
- Business Committee – Fort Washakie, WY

Northern Ute Tribe, Cultural Rights and Protection – Fort Duchesne, UT
Northwestern Band of Shoshone Nation – Bringham City, UT
Pawnee Nation of Oklahoma, Tribal Historic Preservation Office – Pawnee, OK
Shoshone – Bannock Tribes – Fort Hall, ID
Shoshone Tribal Preservation Office – Fort Washakie, WY
Southern Ute Indian Tribe – Ignacio, CO
Uintah and Ouray Tribal Business Committee – Fort Duchesne, UT
Ute Mountain Ute Tribe – Towoac, CO

Organizations
American Gas Association – Washington, DC
American Pipeline Contractors Association – Dallas, TX
- Executive Director – Lafayette, LA

Center for Native Ecosystems – Denver, CO
Colorado Natural Heritage Program – Fort Collins, CO
Colorado Wilderness Network – Craig, CO
National Trails System – Salt Lake City, UT
Oregon-California Trails Association – Steilacoom, WA
Petroleum Association of Wyoming – Casper, WY
Sierra Club
- Colorado Springs Group – Monument, CO
- Uncompahgre Group – Grand Junction, CO

The Rocky Mountain Elk Foundation – Craig, CO
Western Colorado Congress – Steamboat Springs, CO
White River Electric Association – Meeker, CO
Wyoming Outdoor Council - Logan, UT

Industries/Businesses
ABO Petroleum Company – Artesia, NM
Airgas – Salt Lake City, UT
American Soda, LLP – Parachute, CO
Anadarko Land Corp. – Houston, TX
Anadarko Petroleum Corporation – Casper, WY
ARK Land Company – St. Louis, MO
Bear Creek Cattle Company – Centennial, CO
Bio-Resources, Inc.
- Logan, UT
- Lostine, OR

Bjork, Lindley, Danielson, & Little, PC – Denver, CO
Blackwell, Sanders, Peper, & Martin, LLP – Washington, DC
Box Elder Holding Company – Woody Creek, CO
BP Amoco Production Company – Wamsutter, CO
Brunenkant & Cross, LLP – Washington, DC
Burlington Resources – Midland, TX
CBM Associates, Inc. – Laramie, WY

Chevron Shale Oil Company – Houston, TX
Cheyenne Plains Gas Pipeline Co., LLC – Colorado Springs, CO
Colorado Interstate Gas Co.

- Cheyenne, WY
- Colorado Springs, CO

Dickstein, Shapiro, Morin, & Oshinskt, LLP – Washington, DC
DuBois Telephone – Dubois, WY
Edwards & Associates – Alexandria, VA
EEX Corp. – Houston, TX
El Paso Corporation

- Cheyenne, WY
- Colorado Springs, CO
- Houston, TX
- Washington, DC

EnCana Marketing (USA), Inc. – Denver, CO
Energy Enterprises – Rapid City, SD
ENSR International – Fort Collins, CO
Entrega Gas Pipeline, Inc.

- Denver, CO
- Lakewood, CO

ExxonMobil Gas & Power Marketing Company – Houston, TX
Kinder Morgan – Lakewood, CO
Knight Planning, Rio Blanco – Eagle, CO
Kurt Kelly, Attorney -- Sinclair, WY
Lario Oil & Gas Company – Denver, CO
Metcalf Archaeological Consultants, Inc. – Eagle, CO
MKT Low – Rawlins, WY
Natural Resource Group, Inc. - Denver, CO
Pacific Power & Light – Casper, WY
Questar Pipeline Company – Salt Lake City, UT
Sheehan Pipeline Construction

- Alderson, OK
- Cabot, AR

Solvay Minerals – Houston, TX
Squire, Sanders and Dempsey, LLP – Salt Lake City, UT
SWCA Environmental Consultants – Broomfield, CO
TransCanada Corporation – Calgary, Alberta, Canada
Trigon – Meeker, CO
Union Pacific Land Resources

- Omaha, NE
- Houston, TX

Union Pacific Railroad Company – Omaha, NE
V.W.I. Pipeline – Evanston, WY
Wallis Livestock Limited Partnership – Saratoga, WY
Western Gas Resources, Inc. – Denver, CO
Williams Field Services – Green River, WY
Williams Power Company, Inc. – Tulsa, OK
Wyoming Interstate Gas Company, Ltd.

- Colorado Springs, CO
- Craig, CO

Wyoming Natural Gas Pipeline Authority

- Casper, WY
- Highlands Ranch, CO

Individuals
Alfonso Jaramillo, Jr. et al - Rawlins, WY
Andrew Johnson - Laramie, WY
Andrew Peroulis - Craig, CO
Angelo Kallas - Green River, WY
Berislav Sepic and Djurdica Sepic – Mesa, AZ
Beverly J. Anderson - Silt, CO
Bill Anderson – Walcott, WY
Brian Ted Sherar - Cheyenne, WY
Bridgette Rieke - Meeker, CO
Bruce L. & Ellen A. Strickler - Potter Valley, CA
Bruce L. & Joyce K. Barnes - Maybell, CO
Bud Spillum - Cheyenne, WY
Catherine Byerly, Greeley, CO
Charlie Jaure - Rawlins, WY
Chris Halandras - Meeker, CO
Cleve Preece - Craig, CO
Craig T. Tomke – Hayden, CO
Dan Davidson - Craig, CO
Dave & Sue Cunningham – Laramie, WY
David & Patty Johnson – Meeker, CO
Dean & Dale Burk - Rifle, CO
Dean Parr – Meeker, CO
Dean Visintainer – Craig, CO
Dennis M. and Michelle R. Michnick - Santa Rosa, CA
Diane M. Sapounakis - Laguna Hills, CA
Don Black – Maybell, CO
Don Britton – Wheatland, WY
Donald W. and James E. Nutting – Swink, CO
Donald W. Blackmore - Sonora, CA
Doug Sterkel – Eagle, CO
E. Willis and Michael Nottingham – Craig, CO
Earl A. Saulet, Jr. – Camarillo, CA
Earl and Jeanne Ilgen - Meeker, CO
Edwin W. Davis – Buford, WY
Elmer Peterson - Rawlins, WY
Ethel Rabel – Cheyenne, WY
F. B. Espy - Rawlins, WY
Frank and Roy Bingman – Loma, CO
Frank R. Felley and Donna R. Felley – Winchester, CA
Frank Sampson – Meeker, CO
Franklin L. & Rose Marie Counts – Craig, CO
Frederick A. Larson and Paul C. Blackwell - College Station, TX
Gabriel Vaca - San Diego, CA
Gerald R. Le Beau – McFadden, WY
Gilbert D LeFevre and Melba LeFevre – Meeker, CO
Grady Ranch Inc. - Meeker, CO
Greg Pinker – Omaha, NE
Gus Anderson – Meeker, CO
Gus Halandras – Meeker, CO
Gus Halandras and Christine Halandras – Meeker, CO
Harris W. Hudson - Fort Lauderdale, FL
Henry C. & Georgie C. Taylor – Natchitoches, LA
Iris A. Brewer - Carson City, NV
Iver M. Villa and Mary R. Villa – Meeker, CO
J.E. Vandiver and Syllrene Vandiver Revocable Trust – Pearland, TX

James C. Byers - Glenwood Springs, CO
James M. and Susan L. McMaster - Granite Canyon, WY
James W. Buffham and Pamela M. Buffham – Maybell, CO
James Woodruff - Morgan Hill, CA
Janet Zink – Rawlins, WY
Jay Fetcher - Clark, CO
Jean Hultz – Blackfoot, ID
Jeff Puckett - Greenwood Village, CO
Joe Stovall – Denver, CO
Joe Stratton - Walnut Creek, CA
John & Steve Raftopoulos – Craig, CO
John and Leslie Cook - Maybell, CO
John Etchart – Meeker, CO
John Halandras - Meeker, CO
John P. and Sheryl R. Etchart and Douglas N. Proctor J.T. – Meeker, CO
John Swanson – Rawlins, WY
John Weibel - Longmont, CO
Johnnie Wilson Barton and Virginia May Barton - Meeker, CO
Jon Neary - Sarasota, FL
Joseph H. Claggett – Mitchell, SD
Joseph William & Robert Dale Jaure – Rawlins, WY
Judith Ann (Smith) Paul – Mannford, OK
Kathryn Bingman – Loma, CO
Kathryn V. de Montmollin – Meeker, CO
Keith Dunbar and Eula Dunbar, et al. – Meeker, CO
Kent DeVilbiss – Denver, CO
Lambert W. Holland Living Trust – Chamberlain, SD
Lance V. Larson - Pacific Palisades, CA
Leon G. Feterl Living Trust – Salem, SD
Lois Palm - Saratoga, WY
Lonnie K. Shults – Meeker, CO
Loraine Connor and Kenneth R Connor – Keyes, OK
Louise G. Buchanan – Denver, CO
Lyle Heath - Rapid City, SD
Lyle Heath et al - Rapid City, SD
Mabel Ann Fazzi – Silt, CO
Manie Minford – Overbrook, KS
Margrete V. Johnson et al – Meeker, CO
Marion Lake Culbertson Life Estate – Meeker, CO
Mark C. Booth – Lucerne, CO
Mary Heritage - Grand Junction, CO
Mary Lee Sloan and Charles D. Sloan - Meeker, CO
Max D. & Naomi Hardy - Sutherlin, OR
Melody Ann and Melonie May Tuimang – Hanover, NM
Mimosa T Tuimang - Yucaipa, CA
Nancy J. Voight – Mitchell, SD
Neal J & Anna Dow,Trustees - New Cuyama, CA
Olan Ray Reese and Cherry Lee Reese - Squaw Valley, CA
Onea Jewel Miller - Meeker, CO
Oscar S. Wyatt, Jr. – Houston, TX
Pat Hughes – Meeker, CO
Paul Anderson – Craig, CO
Peggy Sue Hallbauer & Dr. Charles Vandiver – Meeker, CO
Pete Shelton - Meeker, CO
Phil Schnabel – Cheyenne, WY
Philip E. Blacher – Pennsburg, PA

Pierre and Parna L. Etchart – Meeker, CO
R & M Feterl Properties, LLP - Salem, SD
Ralph Brokaw - McFadden, WY
Ralph W. Pound – Tupelo, MS
Rams Properties - Port St. Lucie, FL
Raymond T. Lopata and Lucille Z. Lopata - Downers Grove, IL
Reed Kelley - Meeker, CO
Richard J. & Kristine E. McGuirre – Laramie, WY
Richard N. & Sopee Lewis – Ventura, CA
Rick and Deb Myers - Baggs, WY
Rickie Tingle – Meeker, CO
Robert & Delores McGlothlin – Bloomington, IN
Robert Myers III et al - Bakersfield, CA
Robert O. Nutting et al - Manhatten Beach, CA
Rodney S. Cook and Tamara Cook – Rangely, CO
Roger Patel - Port St. Lucie, FL
Ronald J.& Norma J. Day - Laramie, WY
Roy L. Bingman – Hagerman, ID
Roy McKee Revocable Trust - Meeker, CO
Russell Dale Ellis, Jr. - Baggs, WY
Sally Haskins – Maybell, CO
Sam L. & Georgia B. McIntyre – Maybell, CO
Sam Love - Meeker, CO
Samuel Kelsall IV and Edna M. Kelsall – Phoenix, AZ
Sandra Clark, et al - Laramie, WY
Scott Frasier Coen - Rapid City, SD
Shirley J. & Cheryl A. Minnick – Craig, CO
Shirley Stehle – Craig, CO
Stephanie Gripne – Lander, WY
Stephen R. Andrew and Sharon L. Andrew – Craig, CO
Terry Harper – Saratoga, CA
Terry Miller – Meeker, CO
Thomas & Ruth Jared – Maricopa, CA
Thomas E. LeFevre and Joyce LeFevre – Maybell, CO
Thomas O. Bingman – Loma, CO
Todd J. King - Cheyenne, WY
Tommy A. Hannigan – Conifer, CO
Tosco/Shell/Puckett - Greenwood Village, CO
Vern Vivion - Rawlins, WY
Victor Parker – Meeker, CO
Warren McKnight and Kay McKnight - Meeker, CO
William Cahil – Glenbrook, NV
William Lake (Bill) - Meeker, CO
William S. Hobson – Craig, CO

LIST OF PREPARERS AND REVIEWERS

LIST OF PREPARERS AND REVIEWERS

The EIS was prepared by ENSR, a third-party contractor, under the direction of the FERC Staff. Representatives from the BLM also contributed to and participated in the preparation of this document and the NEPA review process. The following presents the names of individuals who prepared and/or reviewed the EIS and their area or areas of responsibility.

Preparers/Reviewers for the FERC and BLM

Name	Education	Responsibility
FERC		
Richard McGuire	M.S., Recreation and Parks, 1992, Pennsylvania State University B.S., Recreation and Parks, 1984, Ohio University	Environmental Project Manager; Project Description, Alternatives, Cumulative Impacts, Conclusions, others
L. J. Sauter, Jr.	M.S., Engineering/Environmental Chemistry, 1979, University of Maryland, College Park B.S., Civil Engineering, 1974, University of Maryland, College Park	NEPA Pre-filing Coordinator
David Swearingen	M.S., Marine Biology, 1996, University of North Carolina, Wilmington B.S., Zoology, 1992, Louisiana State University	Assistant Project Manager; Biology (Vegetation, Wildlife, Fisheries, T&E), others
Laurie Boros	B.A., Anthropology/Archaeology, 1980, Queens College, C.U.N.Y.	Cultural Resources, others
Eric Tomasi	B.S. Aerospace Engineering, 1994, Boston University	Air Quality, Noise, Reliability and Safety
Joanne Wachholder	M.S., Crop and Soil Sciences/ Environmental Toxicology, 1997, Michigan State University B.S., Environmental Biology, 1994, University of Wisconsin, Stevens Point	Water Resources, Wetlands
Wallace D. Laffoon	B.S., Fisheries and Wildlife, 2000, Virginia Polytechnic Institute and State University	Soils, Socioeconomics, Land Use, Recreation, Visual Resources, others
Name	**Responsibility**	
BLM		
Tom Hurshman	Project Manager, BLM WO	
Janelle Wrigley	Realty Specialist, Rawlins Field Office	
Heath Cline	Wildlife Biologist, Rawlins Field Office	
Patrick Walker	Archaeologist, Rawlins Field Office	
Dave Simons	Planning and Environmental Coordination, Rawlins Field Office	
Bob Lange	Hydrology, Rawlins Field Office	
Mark Newman	Geology, Paleontology, Rawlins Field Office	
Susan Foley	Soils, Invasive Weeds, Rawlins Field Office	
Krystal Clair	Recreation, Rawlins Field Office	
Mike Jensen	Engineering and Transportation, Rawlins Field Office	
Dale Hanson	Paleontology, Geology, Wyoming State Office	

Name	Responsibility
Louise McMinn	Realty Specialist, Little Snake Field Office
Name	**Responsibility**
BLM (Continued)	
Rob Ernst	Paleontology, Geology, Little Snake Field Office
Ole Olsen	Soil, Water Quality, Air Quality, Little Snake Field Office
Rob Schmitzer	Transportation, Recreation, VRM, Little Snake Field Office
Tim Novotny	Wildlife, Little Snake Field Office
Hunter Seim	Range, Vegetation, Reclamation, Little Snake Field Office
Desa Ausmus	Invasive Weeds, Little Snake Field Office
Penny Brown	Realty Specialist, White River Field Office
Tamara Meagley	Natural Resource Specialist, T&E Plants Species, White River Field Office
Michael Selle	Archaeology, Paleontology, White River Field Office
Ed Hollowed	Wildlife, T&E Animals, White River Field Office
Caroline Hollowed	Environmental Coordination, Hydrology, Soils, White River Field Office
Chris Ham	Recreation, Transportation, White River Field Office
Mark Hafkenshiel	Range, Vegetation, White River Field Office
Harley Armstrong	Paleontology, Geology, Colorado State Office

Preparers/Reviewers for ENSR and Subcontractors

Name	Education	Responsibility
ENSR Corporation		
Scott Ellis	B.A., Biology and English, 1971, Cornell University	Project Manager, Alternatives, Cumulative
Gabrielle Borin	B.S., Wildlife Management, 1991, Cook College, Rutgers University B.A., Biology, 1991, Rutgers College, Rutgers University	Co-assistant Project Manager, Project Description
Scott Duncan	M.S., Biology, 1984, Northern Arizona University B.A., Biology, 1978, Colgate University	Co-assistant Project Manager, Document Review and Coordination
Heidi Tillquist	M.S., Environmental Toxicology/ Fisheries Biology, 1992, Colorado State University B.S., Wildlife Biology, 1986, Colorado State University	Project Description, Introduction, Proposed Action, Public Safety, Review
Todd White	MDP Masters in Community Planning, 1999, University of Cincinnati MEn Masters in Environmental Science, 1992, Miami University M.A., Anthropology, 1989, CU Boulder B.A., Geology, 1988, Miami University	GIS, Land Use
Bill Berg	M.S., Geology, 1980, University of Wyoming B.S., Geology, 1976, Colorado State University	Geology
Jim Burrell	M.S., Civil Engineering, 1989, Colorado State University B.S., Forest Management, 1974, Colorado State University	Water Resources, Soils

Name	Education	Responsibility
ENSR Corporation (Continued)		
Chad Barnes	B.S., Biology , 1996, University of Arizona, Tucson	Wildlife, Fisheries, Threatened and Endangered Species, Vegetation
Kim Munson	M.A., Anthropology, 1997, Colorado State University B.A., Anthropology, 1994, Colorado State University	Cultural Resources, Paleontology
Joe Sanders	M.S., Public and Occupational Health, 1985, University of Alabama B.S., Physics, 1981, Auburn University	Noise
Vince Scheetz	M.S., Systems Management, 1970, University of Southern California B.S., Mathematics/Meteorology, 1964, Regis University, Denver	Air Quality, Climate
Doree Dufresne	B.S., Biology, 1990, Colorado State University	Database Coordination
Sue Coughenour	Western Illinois University	Document Production Supervisor
Adele Gard	HS Diploma	Document Production
Others		
Ron Dutton – Sammons/Dutton, LLC	M.S., Economics, 1976, University of Wyoming B.S., Economics, 1974, University of Wyoming	Socioeconomics

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GLOSSARY

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alluvial material composed of riverbed or delta material.

ancillary facilities facilities associated with the pipeline system, including compressor stations, valves, and metering stations.

aquifer a layer of underground sand, gravel, or porous rock in which water collects; a source of groundwater.

cathodic protection a method to reduce external corrosion by placing a small electrical charge on the steel pipe.

corrosion an electrochemical process that occurs when steel is exposed to an electrolyte, such as soil or water. Corrosion can occur along the internal or external surfaces of the pipe. External corrosion is reduced by cathodic protection and pipeline coatings. Corrosion is monitored by internal inspection tools (internal and external corrosion) and corrosion coupons (internal corrosion).

depth of cover in new construction areas, the burial depth typically would be 30 to 36 inches from the top of the pipe to the natural grade. No depth of cover is specified for existing pipe under OPS regulations.

easement a legal instrument, usually negotiated with the landowner, that is used to convey a ROW to the pipeline company. The easement gives the pipeline company the right to operate and maintain its pipeline in the permanent ROW and, in return, compensates the landowner for the use of the land.

eminent domain the right of the government to take private property for public use after providing just compensation by virtue of the sovereign power over all lands within its jurisdiction.

fugitive dust a non-point source of air pollution, such as from unpaved roads, agricultural croplands, and construction sites.

high consequence areas (HCAs) OPS-defined areas subject to the Integrity Management Rule. HCAs include high-density population areas, waters where commercial navigation occurs, and areas that are unusually sensitive to environmental damage.

horizontal directional drilling technology used for vertical drilling has been modified for the horizontal installation of pipelines beneath major obstacles, such as rivers, railroads, and highways.

hydrostatic testing pressure testing of a pipeline to test its structural integrity. Typically the line is tested to at least 125 percent of the MAOP and the pressure is held for 8 hours. Hydrostatic testing is a destructive test to evaluate the integrity of the pipe. A pipe that passes this test is considered safe to operate at pressures less than or equal to the MAOP.

Integrity Management Rule as defined in 49 CFR 192, this OPS rule increases requirements for inspection, enhanced damage protection, improved emergency response, and other measures to prevent and mitigate pipeline leaks in HCAs.

internal inspection tool a "smart pig"; tools that assess the pipeline's integrity. At this time, there are three primary types of internal inspection tools: caliper pigs, magnetic leak flux pigs, and ultrasonic pigs.

L_{dn} Day-night (average sound) level.

liquefaction The process by which water-saturated sediments lose strength and may fail during strong earthquake induced ground shaking. Liquefaction can result in the loss of ground bearing capacity or lateral spreading, both of which could potentially damage pipelines and ancillary facilities. Soil liquefaction hazards are associated with unconsolidated alluvial soils with a high water table.

Maximum Allowable Operating Pressure (MAOP) a rating indicating the maximum pressure at which a pipeline or segment of a pipeline may be operated under the DOT regulations in normal conditions.

metering stations	devices that measure the amount of natural gas transported and delivered.
pig	a plug designed to be pushed along the inside of a pipeline. Pigs can be used to clean or inspect the pipeline's surface.
pig launcher/receiver	a short section of pipe controlled by valves that interconnect with the main pipeline to launch and receive cleaning and inspection tools ("pigs") that travel inside the pipeline (also referred to as a pigging facility or pig trap).
right-of-way (ROW)	a legal right of passage over another's property. Typically, the ROW would consist of a 50-foot-wide permanent ROW and, during construction, an additional 35-foot construction ROW.
ROW grant	as defined in 43 CFR 288. A document authorizing a non-possessory, non-exclusive right to use specified federal lands for the limited purpose of construction, operation, purpose of construction, operation, maintenance, and termination of a pipeline. Typically, the grant includes agency stipulations, conditions imposed on the project as a result of the NEPA review, a complete POD, and approvals from other federal agencies.
SCADA	Supervisory Control and Data Acquisition; computerized system that monitors and analyses the pressure within the pipeline every 3 to 5 seconds, notifying operators of any operating abnormalities.
seasonal constraints	time periods when construction may be restricted, such as constraint periods associated with breeding birds.
well head protection areas	areas where land uses are managed to protect and maintain the quality of groundwater.

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