



**ENVIRONMENTAL ASSESSMENT**  
*DOI-BLM-CO-N040-2012-0028-EA*

**Kokopelli Phase II Natural Gas Pipeline  
and  
Spruce Creek to Beaver Creek Water Pipelines**

**Garfield County, Colorado  
June 2012**



Lead Agency:

USDI Bureau of Land Management  
Colorado River Valley Field Office  
2300 River Frontage Road  
Silt, CO 81652

Cooperating Agency:

USDA Forest Service  
White River National Forest  
900 Grand Avenue  
Glenwood Springs, CO 81601

Cover photograph: A portion of the proposed Kokopelli II natural gas pipeline alignment along the existing Energy Transfer pipeline corridor; view to the east across the Porcupine Creek watershed (WWE 2011a).

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**Lead Agency:** USDI Bureau of Land Management  
Colorado River Valley Field Office

**Cooperating Agency:** USDA Forest Service  
White River National Forest

**Responsible Official:** Steve G. Bennett, BLM Field Manager

**Project Leader:** Jim Byers, BLM Natural Resources Specialist

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## **EXECUTIVE SUMMARY**

Bargath, LLC (“Bargath”) and WPX Energy Rocky Mountain, LLC (“WPX”) have proposed to install two separate but parallel pipelines in an area south of Rifle, Colorado. The proposal is referred to as the Kokopelli Phase II Natural Gas Pipeline and Spruce Creek to Beaver Creek Water Pipelines Project. The WPX Spruce Creek to Beaver Creek buried water pipelines would connect existing gas fields with water delivery and water collection lines constructed of two 6-inch diameter Flexsteel pipes (4.7 miles in length). This work would be completed in late spring-summer-fall 2012. The Bargath Kokopelli Phase II Pipeline would be a high pressure buried natural gas pipeline constructed of 16-inch diameter steel pipe (22.3 miles in length). This work would be completed no earlier than spring-summer-fall 2013 and perhaps later.

The Kokopelli Phase II pipeline would begin at the Dry Hollow Compressor Station (NE¼, Section 9, Township 7 South, Range 92 West [T7S, R92W], Sixth Principal Meridian) and proceed west-northwest for approximately 22.3 miles and end at the northwestern corner of the existing Rulison Compressor Station area (NE¼, section 29, T6S, R94W). The Spruce Creek to Beaver Creek water pipeline would begin a short distance west of Beaver Creek (NE¼ of Section 12, T7S, R94W) and proceed westerly approximately 4.7 miles to Spruce Creek (SW¼, Section 4, T7S, R94W).

As proposed, the pipelines would be located entirely within Garfield County, Colorado. Approximately 20,900 feet (3.95 miles) of the proposed WPX water pipelines would be built on BLM lands, with the entire water pipeline length on BLM and falling within the 2013 Kokopelli gas pipeline corridor. An additional 775 feet (0.15 mile) on the east end of the WPX waterline on private land would parallel the Bargath pipeline. The remaining 3,282 feet (0.62 mile) of the connecting WPX trench work would occur on private lands. The WPX water pipelines lines would be installed in their own trench.

To install and operate the Kokopelli Phase II pipeline on BLM and National Forest System (NFS) lands, Bargath would seek approval for a ROW grant across approximately 44,864 feet (8.5 miles) of Federal land. Of the total 22.3 miles of proposed pipeline, approximately 39,934 feet (7.6 miles) would be installed on BLM-administered Federal lands and 4,930 feet (0.9 mile) on USFS-managed lands. The remaining 73,074 feet (13.8 miles) would be on private property.

The purpose of the proposed pipeline projects is to support the development oil and gas resources consistent with existing Federal lease rights. The Bargath action is needed to expand the current natural gas gathering infrastructure in order to provide a gathering and transportation system to developing gas producing fields within the area. The WPX action is needed to reduce production costs and increase efficiency by reducing truck traffic used to transport fluids produced by natural gas wells.

The total line capacity of the Bargath pipeline would be approximately 200 million standard cubic feet per day (MMcfd). The actual gas volumes would be dependent upon available produced gas and operating pressures. The proposed 16-inch pipeline is designed to handle anticipated increases in natural gas production from wells currently being drilled in WPX’s Kokopelli natural gas field as well as future wells to be drilled by operators in the area.

Bargath has requested a 50-foot-wide permanent right-of-way (ROW), with an adjacent variable 25-foot-wide to 75-foot-wide temporary use areas to provide adequate construction area. The pipeline would connect to the recently constructed 16-inch Kokopelli Phase I pipeline, which was completed during 2011 and terminates at the Dry Hollow compressor station. The WPX water pipeline will have a 30-foot-wide permanent ROW, with an additional 25-foot wide extra work space area for construction. The WPX work space will fall entirely within the Bargath construction area and the trench for the water pipelines will be offset from the Bargath natural gas center line by approximately 15 feet.

Both pipelines would be installed adjacent to existing pipeline and/or road corridors where possible. For the most part, existing roads would be used to access the construction workspace. One temporary access road would be needed along an existing pipeline corridor near Porcupine Creek. A second temporary access road would be used on USFS lands in the Mamm Creek area. Bargath may potentially use three temporary staging areas for use during mobilization and demobilization and for delivery of pipe materials. One staging area would utilize the Dry Hollow Compressor Station to minimize new disturbance at the beginning point of the 16-inch pipeline. Staging Area 2 would be within either the WPX's Rulison or Anvil Points Compressor sites and access would be a short distance off U.S. Highway 6. A third Staging Area would potentially be located on WPX private holdings off CR329 along Spruce Creek; this site would be small and not used as extensively as the other two sites. Smaller project related staging areas would potentially be employed during construction and would include smaller gas field facilities such as well pad locations near the pipeline alignment. WPX may use one staging area located on their private land holdings in the Spruce Creek area; no other staging areas will be needed along the pipeline ROW for WPX construction.

WPX's construction is scheduled to start in spring or summer 2012. Anticipated completion of the construction would be approximately 60 to 90 days later. The pipeline would be operated on a year-round basis. Bargath's construction is planned to start in 2013 or later depending on market conditions for natural gas and the need to supplement existing pipeline capacity. Construction could take up to 150 days to complete. Where irrigation ditches are encountered, WPX and Bargath would bore beneath the ditches to maintain water flow and prevent damage to the integrity of the ditch. A horizontal direction bore will be used to install the Bargath pipeline under the Colorado River. Other perennial streams will be crossed using open cut methods that employ temporary flumed flows to maintain sustainable aquatic conditions during construction.

The Bargath Kokopelli II pipeline would traverse two Federal land management jurisdictional boundaries and, therefore, falls under provisions listed in Sec. 28 (c)(2) of the Mineral Leasing Act, which state that "where the surface of the Federal lands involved is administered by two or more Federal agencies, the Secretary (of Interior) is authorized, after consultation with the agencies involved, to grant or renew ROWs or permits through the Federal lands involved." Thus, although this project would cross a combination of NFS and BLM-managed public lands, only one ROW grant would be issued, by the BLM.

After completion of construction, all disturbed areas (including the ROW, travel routes, temporary access roads, and staging areas) would be returned to pre-construction grades and contours. Topsoil would then be replaced over the ROW from the area in which it was stripped. Revegetation using one or more native seed mixes approved by the BLM would be the primary method for stabilizing soils, controlling erosion, impeding infestations of noxious weeds, and returning the disturbed areas to a self-sustaining community of desirable native species. Where the pipeline crosses private lands, the landowner would have the final say in selection of a seed mix consistent with previous and intended future land uses.

**FONSI**  
**DOI-BLM-CO-N040-2012-0028-EA**

The U.S. Department of the Interior (USDI), Bureau of Land Management (BLM), Colorado River Valley Field Office (CRVFO) and the U.S. Department of Agriculture (USDA), U.S. Forest Service (USFS), White River National Forest (WRNF) have reviewed the attached Environmental Assessment (EA) of the Kokopelli Phase II Natural Gas Pipeline and Spruce Creek to Beaver Creek Water Pipelines project proposed by Bargath, LLC and WPX Energy Rocky Mountain, LLC. The project designs and approved mitigation measures result in a Finding of No Significant Impact on the human environment for the Proposed Action. Therefore, an Environmental Impact Statement under the National Environmental Policy Act (NEPA) is not necessary to analyze the impacts further.

**DECISION RECORD**

DECISION: It is my decision to approve the Proposed Action of the Kokopelli Phase II Natural Gas Pipeline and Spruce Creek to Beaver Creek Water Pipelines project, except that a decision is deferred relative to proposed crossings of four streams on private lands—Gant Gulch, Beaver Creek, Middle Fork Mamm Creek, and East Fork Mamm Creek—pending the results of consultation with the U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of the Endangered Species Act. The deferral relative to the four stream crossings is due to the presence of potentially suitable habitat for the Ute ladies'-tresses orchid (*Spiranthes diluvialis*), as species Federally listed as threatened.

RATIONALE:

1. This decision will provide for the orderly, economical, and environmentally sound gathering and conveyance of natural gas resources from valid Federal oil and gas leases. It will also improve operational efficiency by improving the management of produced water and other fluids used in the production of natural gas.
2. Large portions of the project alignment will follow existing pipeline corridors. Segments where new corridors must be constructed have been located and designed to minimize adverse environmental consequences.
3. This decision does not authorize the initiation of construction activities on BLM or National Forest System (NFS) lands. For both pipeline projects, those activities will be authorized only upon issuance by BLM of a Right-of-Way (ROW) Grant and Temporary Use Permit (TUP) for portions of the pipeline on BLM and WRNF lands and issuance by the WRNF of a Road Use Permit for portions of the project on NFS lands.
4. This decision does not authorize the initiation of construction activities with potentially suitable habitat for the Ute ladies'-tresses orchid, a Federally listed threatened plant, as mapped during project-specific surveys. Construction within the potentially suitable habitat for this species will be authorized only upon completion of consultation with the USFWS and incorporation into project design of conservation measures specified in the USFWS Biological Opinion (BO).

MITIGATION: Environmental impacts will be avoided, minimized, or mitigated by the following:

- Construction of the pipeline along an existing pipeline corridor to the extent practicable.

- Project design components (including boring beneath the Colorado River) to protect water quality for downstream users and the Colorado pikeminnow and razorback sucker, Federally protected endangered fish species.
- Timing limitations to prohibit construction from December 1 through April 30 to protect wintering big game.
- Timing limitations to protect nesting raptors for activities commencing during the nesting season of February 15 to July 15 and Birds of Conservation Concern infor activities during the period May 1 to July 1, unless surveys indicate that nests are inactive.
- Timing limitations and specific construction and reclamation stipulations to protect Colorado River cutthroat trout in Beaver Creek.
- Reductions in habitat disturbance and implementation of specific mitigation and reclamation practices designed to minimize impact to Harrington's penstemon, a BLM and USFS sensitive plant species.
- A variety of additional restrictions applied as stipulations to the BLM ROW Grant and TUP and the WRNF Road Use Permit.

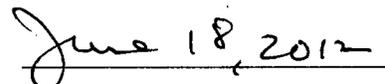
Copies of the Kokopelli Phase II Natural Gas Pipeline and Spruce Creek to Beaver Creek Water Pipelines EA are available for review at the BLM Colorado River Valley Field Office located at 2300 River Frontage Road, Silt, Colorado 81652.

NAME OF PREPARER: Jim Byers, Natural Resource Specialist, Project Lead

SIGNATURE OF AUTHORIZED OFFICIAL:



\_\_\_\_\_  
Authorized Officer



\_\_\_\_\_  
Date

## **FINDING OF NO SIGNIFICANT IMPACT DOI-BLM-CO-N040-2012-0028-EA**

The Environmental Assessment (EA) analyzing the environmental effects of the Proposed Action has been reviewed. Project design and approved mitigation measures result in a Finding of No Significant Impact on the human environment. Therefore, an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) is not necessary to further analyze the environmental effects of the Proposed Action.

### **AMENDED DECISION**

#### **BACKGROUND**

On June 18, 2012, the BLM, Colorado River Valley Field Office (CRVFO) issued a Finding of No Significant Impact (FONSI) and Decision Record approving the Environmental Assessment (EA) for the proposed Bargath Kokopelli Phase II Natural Gas Pipeline and WPX Spruce Creek to Beaver Creek Water Pipelines project (DOI-BLM-CO-N040-2012-0028-EA). As specified in the EA, the proposed WPX water pipelines were to be collocated with the Bargath natural gas pipeline along most of its length, including segments in the S½ Section 3 and NE¼ Section 10, Township 7 South, Range 94 West of the Sixth Principal Meridian.

The Decision Record of June 18, 2012, also deferred approval of portions of the pipeline at crossings of four drainages pending completion of consultation with the U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of the Endangered Species Act (ESA) relative to potentially suitable habitat for the Ute ladies'-tresses orchid (*Spiranthes diluvialis*), a species Federally listed as threatened.

This Amended Decision has been prepared to address two changes in the project subsequent to the initial FONSI and Decision Record June 18, 2012:

- The portion of the Bargath gas pipeline in the S½ Section 3 and NE¼ Section 10, T7S, R94W, is to be rerouted to follow an existing Energy Transfer Corporation (ETC) gas pipeline and would no longer be collocated with the WPX water pipelines in that area.
- The WPX pipelines alignment does not cross potentially suitable habitat for the Ute ladies'-tresses, obviating the need for ESA Section 7 consultation.

#### **DECISION**

Based on the facts presented above, the FONSI and Decision Record dated June 18, 2012, remain valid relative to the WPX Spruce Creek to Beaver Creek Water Pipelines Project, as proposed and as analyzed in DOI-BLM-CO-N040-2012-0028-EA. The planned reroute by Bargath of a proposed collocated segment of the Kokopelli Phase II Natural Gas Pipeline does not affect the validity of the initial Decision Record as pertains to the WPX pipelines.

However, because of the planned reroute of a portion of the Bargath Kokopelli Phase II Natural Gas Pipeline Project, it is also my Decision to defer approval of that project pending completion by the BLM of NEPA documentation describing the proposed realignment, analyzing and disclosing associated environmental impacts, and specifying appropriate and adequate mitigation to be required as terms and conditions (stipulations) for issuance of a Right-of-Way Grant and Temporary Use Permit for that project. It also continues to be my Decision to defer approval of the Bargath Kokopelli Phase II Natural Gas Pipeline pending completion of ESA Section 7 consultation with the USFWS regarding the Ute ladies'-tresses orchid and of additional surveys for other rare plants along the planned reroute.

RATIONALE

1. This decision will improve operational efficiency of existing and planned future Federal oil and gas developments by improving the management of produced water, fresh water, and other aqueous fluids associated with the development of natural gas resources.
2. Notwithstanding the planned realignment of a portion of the Bargath natural gas pipeline to avoid the S $\frac{1}{2}$  Section 3 and NE $\frac{1}{4}$  Section 10, T7S, R94W, large portions of the two pipeline project alignments will follow existing pipeline corridors. Segments where new corridors must be constructed have been located and designed to minimize adverse environmental consequences.
3. This decision does not authorize the initiation of construction activities on BLM lands. Those activities will be authorized by BLM's issuance of a Right-of-Way Grant and Temporary Use Permit for portions of the pipeline on BLM lands.

MITIGATION: Environmental impacts will be avoided, minimized, or mitigated by the following:

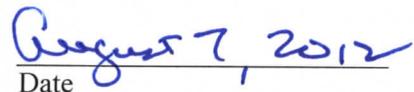
- Construction of the pipeline along an existing pipeline corridor to the extent practicable.
- Project design components (including boring beneath the Colorado River) to protect water quality for downstream users and the Colorado pikeminnow and razorback sucker, Federally protected endangered fish species.
- Reductions in habitat disturbance and implementation of specific mitigation and reclamation practices designed to minimize impact to Harrington's penstemon, a BLM and USFS sensitive plant species.
- Timing limitations to prohibit construction from December 1 through April 30 to protect wintering big game.
- Timing limitations to protect nesting raptors for activities commencing during the nesting season of February 15 to July 15 and Birds of Conservation Concern for activities during the period May 1 to July 1, unless surveys indicate that nests are inactive.
- A variety of additional restrictions applied as stipulations to the BLM Right-of-Way Grant and Temporary Use Permit.

Copies of the Kokopelli Phase II Natural Gas Pipeline and Spruce Creek to Beaver Creek Water Pipelines EA are available for review at the BLM Colorado River Valley Field Office located at 2300 River Frontage Road, Silt, Colorado 81652.

SIGNATURE OF AUTHORIZED OFFICIAL:



Authorized Officer



Date

**BARGATH KOKOPELLI II NATURAL GAS PIPELINE AND  
WPX SPRUCE CREEK TO BEAVER CREEK WATER PIPELINES  
DOI-BLM-CO-N040-2012-0028-EA, JUNE 2012**

## **INTRODUCTION**

### **Project Name**

Kokopelli Phase II Natural Gas Pipeline and Spruce Creek to Beaver Creek Water Pipelines

### **Casefile Numbers**

Bureau of Land Management (BLM) Right-of-Way Grant COC75020/COC75020T for Bargath Kokopelli Phase II Natural Gas Pipeline and BLM Right-of-Way Grant COC75224 for WPX Spruce Creek to Beaver Creek Water Pipelines

### **Locations**

The Kokopelli Phase II natural gas pipeline would begin at the Dry Hollow Compressor Station (NE $\frac{1}{4}$ , Section 9, Township 7 South [T7S], Range 92 West [R92W], Sixth Principal Meridian) and proceed west-northwest for approximately 22.3 miles and end at the northwestern corner of the existing Rulison Compressor Station area (NE $\frac{1}{4}$ , Section 29, Township 6 S, R94W).

The WPX Spruce Creek to Beaver Creek water pipelines would begin west of Beaver Creek (NE $\frac{1}{4}$ , Section 12, T7S, R94W) and proceed westerly approximately 4.7 miles to Spruce Creek (SW $\frac{1}{4}$ , Section 4, T7S, R94W).

### **Applicants**

Bargath, LLC (“Bargath”) is the proponent for the Kokopelli Phase II Natural Gas Pipeline. The contact person is Tom Fiore, 4289 County Road 215, Parachute, CO 81635.

WPX Energy Rocky Mountain, LLC (“WPX”) is the proponent for the Spruce Creek to Beaver Creek Water Pipelines. The contact person is April Mestas, PO Box 370, Parachute, CO 81635.

Effective January 1, 2012, one of the initial applicants, Williams Production RMT Company, LLC, changed its name to WPX Energy Rocky Mountain, LLC. As a result of corporate reorganization, WPX is no longer tied to Williams Field Services, the single corporate entity of which Williams Production RMT Company and Bargath, LLC, were the exploration/production and pipeline arms, respectively. However, because the project began before the corporate reorganization, and because the two pipeline projects would include a substantial length of shared alignment, BLM decided to complete the Environmental Assessment (EA) to include both projects for efficiency and to avoid piece-mealing the impact analysis under the National Environmental Policy Act of 1969 (NEPA) for the collocated segment.

### **Background**

WPX initially approached BLM regarding their desire to pursue a water pipeline connection between Spruce Creek and Beaver Creek in early spring 2011, as Bargath was initially planning their Kokopelli II gas pipeline project. At the time, WPX asked if temporary surface water lines could be installed in

summer 2011 between Spruce and Beaver Creeks while the Kokopelli II project planning was being undertaken. BLM asked WPX to delay its permitting request for the surface water pipelines and incorporate the installation of buried water lines with the planned Kokopelli II gas pipeline project which was submitted to the BLM office in fall, 2011. The idea was to have both pipeline projects buried in the same trench during the same construction period.

During the planning for the two pipeline projects, discussions were focused on the best manner to cross public lands in Section 3 (T7S R94W) since the pipelines were proposed across portions of BLM where little oil and gas development has occurred previously. BLM initially leased the 600 acres of public land in Section 3 (COC06935) in 1955 and the lease has been held by production from producing wells ever since. BLM requested that the proposed pipeline corridor follow the future well development access road, which was identified in Notices of Staking submitted by WPX in fall 2009. The thought process was to include the two pipeline projects alongside the planned access road serving two future well pads (RWF 23-3 and RWF 33-3 pads) and combine the disturbance area for much of the future gas development in Section 3 within the same general corridor.

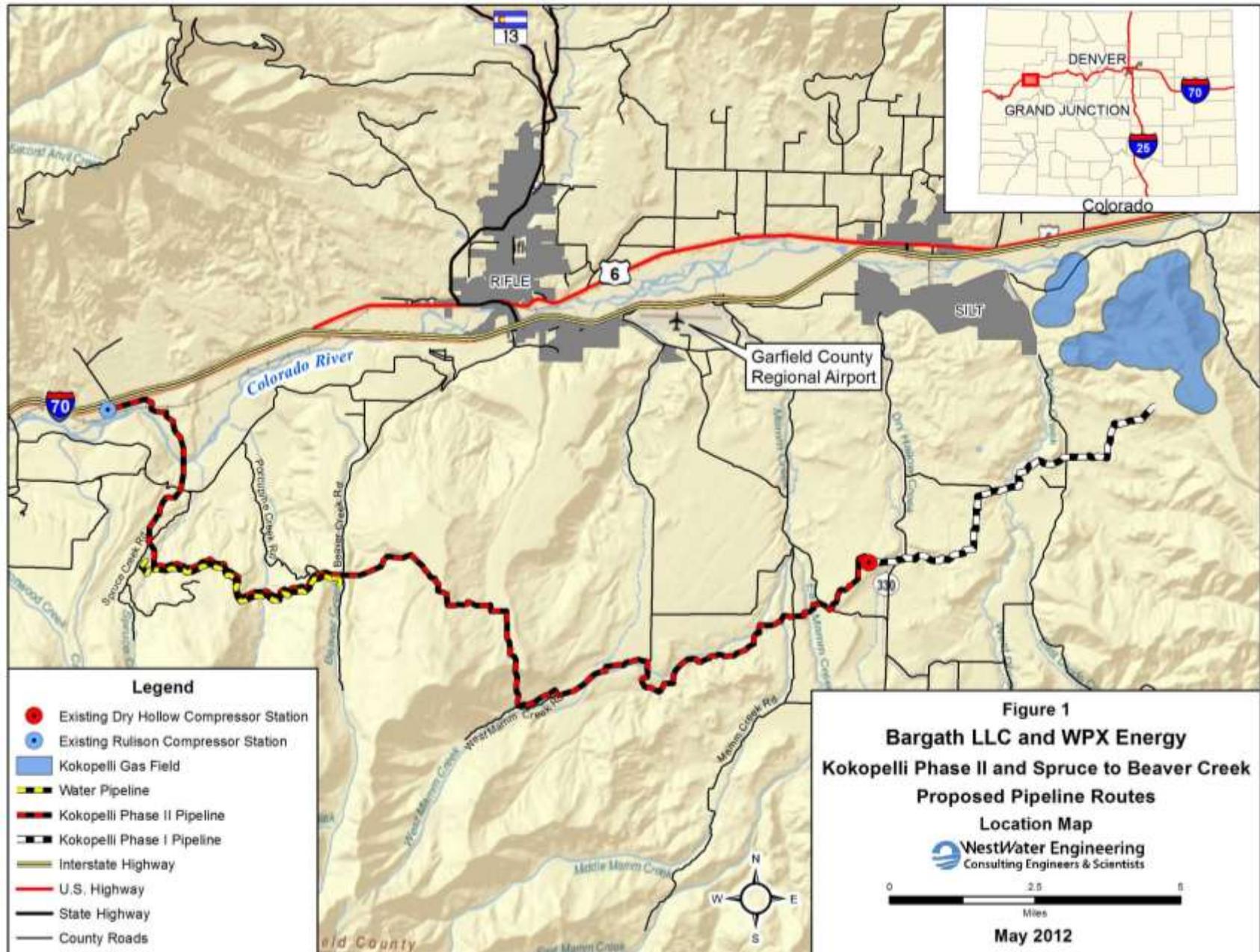
## **Purpose and Need**

### **Kokopelli Phase II Gas Pipeline**

Oil and gas drilling, development, and production in the Parachute and Rifle regions of Colorado produce a significant volume of natural gas as well as liquid condensate and formation water. Pipelines are also used extensively to provide water for drilling and completion (hydraulic fracturing, or “fracing”) operations. The proposed new pipelines are needed because existing pipelines and gathering facilities are approaching maximum capacity and will be unable to adequately gather and transport the anticipated volumes of natural gas and water needed to provide continued support in the project area. The current depressed price for natural gas has resulted in a slowdown of new drilling, which has postponed plans to expend capital to initiate and complete the Kokopelli II natural gas pipeline installation in 2012. However, Bargath projects that construction of the Kokopelli Phase II natural gas pipeline project with its additional transportation capacity may be needed as early as 2013 to meet demands. Bargath, a midstream company operating under Williams Field Services, would gather natural gas produced by WPX from the Kokopelli Natural Gas Field and move it to processing facilities in Parachute, Colorado, using the Kokopelli natural gas pipeline with a total line capacity of approximately 200 million standard cubic feet per day (MMcfd).

The earlier Kokopelli Phase I pipeline was approved by the BLM with right-of-way (ROW) grant COC74709, issued in March 2011, and the initial pipeline phase was constructed during summer 2011. Kokopelli Phase I (initially analyzed by BLM in the Kokopelli Master Development Plan EA #DOI-BLM-CO-NO40-2008-0016) featured a high-pressure 16-inch natural gas pipeline running west from the Williams (WPX) Kokopelli Field to the new Dry Hollow Compressor Station (NE¼, Section 9, T7S, R92W). The proposed Kokopelli Phase II gas pipeline would represent the second and final phase of the main transport line from the Kokopelli Field.

The Kokopelli Phase II 16-inch natural gas pipeline would connect the recently completed terminus of the Kokopelli Phase I pipeline segment to the existing 16-inch gas gathering line at the Rulison Compressor Station (Figure 1). The Kokopelli Phase II pipeline would proceed west-northwesterly from the Dry Hollow Compressor for approximately 22.3 miles and end at the northwest corner of the existing Rulison Compressor Station area (NE¼, Section 29, T6S, R94W). The Phase II pipeline would connect to the existing high-pressure 16-inch Bargath Gathering Pipeline System, which begins at the Rulison Compressor Station area and delivers natural gas to the Parachute processing plant. Bargath submitted a ROW application (COC75020) to the BLM in September 2011, seeking authorization to construct,



Map Source: Z:\Waters\Bargath\Kokopelli Phase II\GIS\report maps\EA Maps\EA Maps May 2012\05EA\EA Figure 1 Location.mxd May 2012 10:00

operate, and maintain the Kokopelli Phase II gas pipeline across BLM land and National Forest System (NFS) lands managed by the White River National Forest (WRNF).

Postponement of the construction of the Kokopelli II pipeline is based on the currently unfavorable business conditions affecting Bargath's ongoing operational plans. However, extensive pre-development engineering and planning, including extensive environmental surveys, have been previously completed. Therefore, Bargath has requested that permitting of the Kokopelli II gas line project move forward in 2012 for Federal, State, and Garfield County approvals. With permitting authorizations in place, Bargath would be able to mobilize and start construction relatively quickly in 2013 or at such point thereafter when market conditions for natural gas improve.

### **Spruce Creek to Beaver Creek Water Pipelines**

WPX submitted a ROW application to BLM in October 2011, to seek authorization to construct, operate, and maintain buried water pipelines serving their Spruce Creek, Beaver Creek, and Flatiron Mesa gas fields. The two proposed 6-inch water pipelines would provide enhanced water delivery and water collection capabilities between the Spruce Creek and Beaver Creek natural gas fields and establish a critical pipeline link that would drastically reduce water truck traffic on Garfield County, BLM, and private roads.

Given the delay in construction of the Kokopelli II gas pipeline until 2013 at the earliest, WPX would proceed in 2012 with the construction of the Spruce Creek to Beaver Creek Water Pipelines within the proposed 4.7-mile corridor. The Kokopelli II gas pipeline and WPX water lines would generally be located south of Rifle, Garfield County, Colorado, and cross a series of private, BLM, and NFS parcels (Figure 2).

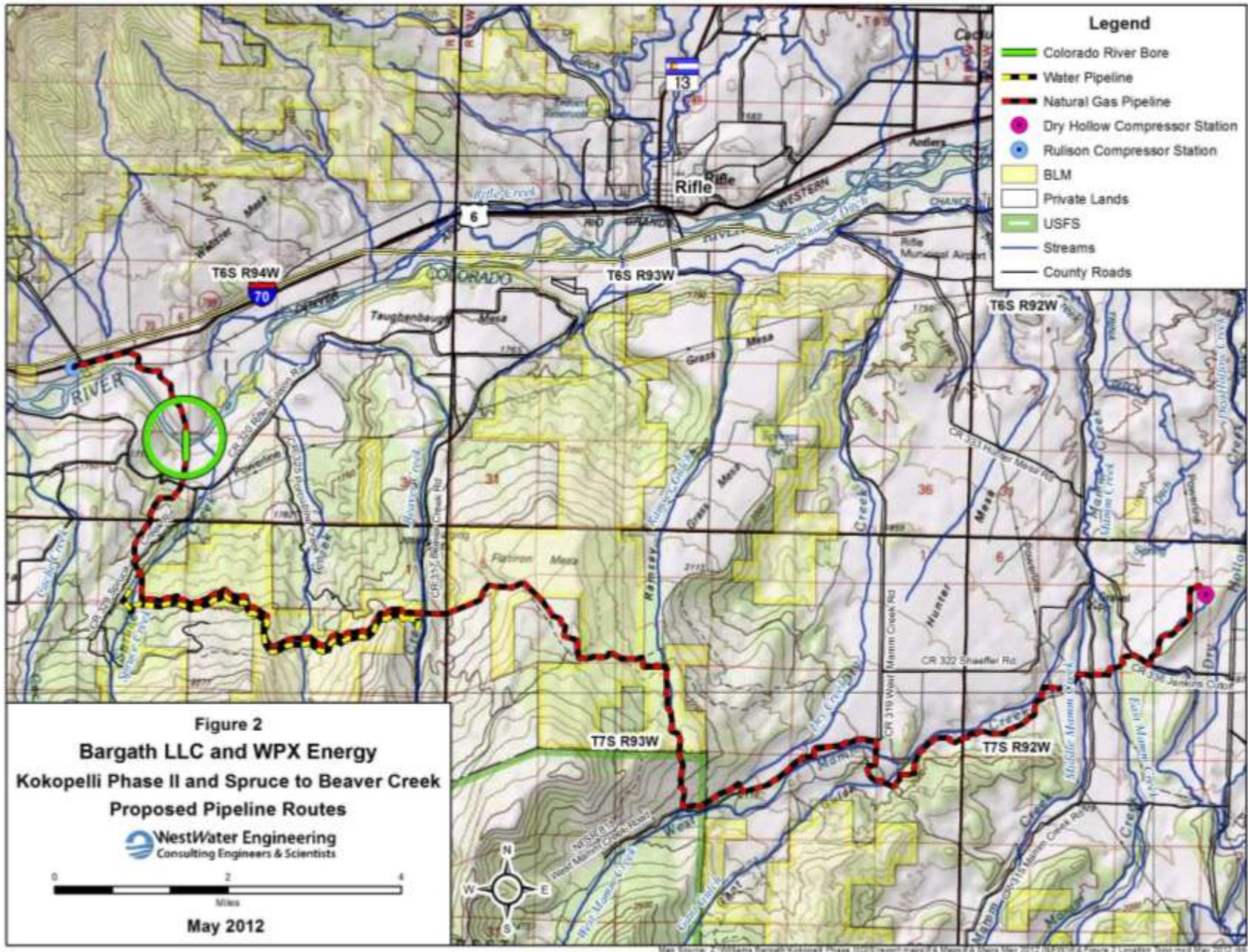
### **Authorizing Actions and Relationship to Statutes and Regulations**

Application for the Bargath Kokopelli II natural gas pipeline project was made under the Mineral Leasing Act of 1920 (MLA), as amended. The MLA (Sec. 28 (a)) authorizes Federal agencies to grant ROWs for pipeline purposes for the transportation of oil, natural gas, synthetic liquid or gaseous fuels, or any refined product. The MLA (Sec. 28 (e)) further gives Federal agencies authority to allow temporary uses of Federal lands for construction, operation, and maintenance of pipelines. The U.S. Department of Interior,

BLM and U.S. Department of Agriculture, U.S. Forest Service (USFS) implementing regulations for this portion of the MLA are found at 43 CFR 2800/2880 and 36 CFR 251.

The MLA directs the agencies to require the applicant to submit a plan of construction, operation, and rehabilitation for ROWs. Submission by Bargath of a pipeline Plan of Development (POD) satisfies this requirement. In addition, the MLA at Sec. 28 (h) (2) gives Federal agencies the authority to impose stipulations on pipeline projects for the following:

1. Requirements for restoration, revegetation, and curtailment of erosion of the surface of the land.
2. Requirements to insure that activities in connection with the ROW or permit would not violate applicable air and water quality standards or related facility citing standards established by or pursuant to law.
3. Requirements designed to control or prevent:
  - Damage to the environment (including damage to fish and wildlife habitat)
  - Damage to public or private property
  - Hazards to public health and safety



4. Requirements to protect the interests of individuals living in the general area of the ROW or permit who rely on the fish, wildlife, and biotic resources of the area for subsistence purposes. Such regulations shall be applicable to every ROW granted.

The Kokopelli Phase II project traverses several Federal land management jurisdictional boundaries and therefore falls under provisions listed in Sec. 28 (c) (2) of MLA: “[W]here the surface of the Federal lands involved is administered by two or more Federal agencies, the Secretary (of Interior) is authorized, after consultation with the agencies involved, to grant or renew rights-of-way or permits through the Federal lands involved.” Thus, although this project would cross a combination of public lands managed by the BLM, Colorado River Valley Field Office (CRVFO), or the USFS, WRNF, Rifle Ranger District, a single ROW grant with an adjacent Temporary Use Permit (TUP) to accommodate extra construction space, where appropriate, would be issued for the entire project by the BLM.

The proposed WPX water pipelines would be authorized with a BLM ROW granted pursuant to Title V of the Federal Land Policy and Management Act (FLPMA) of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761). The issuance of the water line ROW would be a discretionary action subject to terms of the current BLM land use plan. Being installed only on BLM and private lands, the WPX water lines would be approved with BLM and Garfield County permitting; no review or permitting would be needed by the USFS for the WPX water lines.

A list of Federal permits, approvals, and authorizing actions necessary to construct, operate, maintain, and abandon the proposed pipeline is provided in Table 1.

<b>Table 1. Federally Required Permits, Approvals, and Authorizing Actions</b>		
<i>Agency</i>	<i>Action for Permit or Consultation</i>	<i>Applicability</i>
Bureau of Land Management (BLM)	Prepare EA	NEPA compliance; Project oversight on BLM-managed lands
	Issue ROW grant and Temporary Use Permit (TUP) for Bargath gas pipeline	Pipeline construction, operation, and maintenance (O&M) on Federal lands
	Issue ROW grant for WPX water pipelines	
U.S. Forest Service (USFS)	Assist with EA review	NEPA compliance and project oversight on USFS-managed lands
	Issue Road Use Permit for construction of Bargath gas pipeline	Commercial use (operations and maintenance) of National Forest System Road 818
U.S. Army Corps of Engineers (USACE)	Evaluate Pre-construction Notification for Section 404 Nationwide Permit (NWP) 12	Work in jurisdictional Waters of the U.S.
U.S. Fish and Wildlife Service (USFWS)	Completes Endangered Species Act Section 7 consultation	Informal consultation process for threatened or endangered species
NEPA = National Environmental Policy Act ESA = Endangered Species Act NFS = National Forest System		

**Decisions to be Made Based on this Environmental Assessment**

Pursuant to NEPA, the outcome of this EA is a Decision Record documenting that the Proposed Action would either not significantly affect or significantly affect the human environment. In the case of the former, the lead agency prepares a Finding of No Significant Impact (FONSI); in the case of the latter, the

lead agency prepares an Environmental Impact Statement (EIS). The responsible official will decide on an alternative based on the analysis contained in this EA.

This analysis considers the environmental consequences of the Proposed Action, as submitted by the proponents, as well as a variety of Conditions of Approval (mitigation measures) to be identified by BLM and/or USFS and attached to the BLM ROW Grants and TUP as protective stipulations. If the Proposed Action is not approved, the result would be denial by BLM of the ROW applications—i.e., the No Action Alternative. Other alternatives were considered but not analyzed in detail due to their impracticability or infeasibility.

The Decision Record associated with this EA does not constitute approval of the Proposed Action, but instead provides a basis for BLM to issue the ROW Grants and TUP, which in turn authorize the commencement of ground-disturbing activities on Federal lands. A Road Use Permit would be issued by the USFS to allow Bargath and its subcontractors to use and maintain the existing National Forest System (NFS) Road 818 (NFSR 818) to provide construction access to the Kokopelli II alignment across Section 21, T7S, R93W.

## **PROPOSED ACTION AND ALTERNATIVES**

The Proposed Action would involve two separate but parallel pipelines:

- The Bargath Kokopelli Phase II Pipeline would be a high pressure buried natural gas pipeline constructed of 16-inch diameter steel pipe (22.3 miles in length). This work would be completed no earlier than spring-summer-fall 2013.
- The WPX Spruce Creek to Beaver Creek buried water pipelines would connect existing gas fields with water delivery and water collection lines constructed of two 6-inch diameter Flexsteel pipes (4.7 miles in length). This work would be completed in late spring-summer-fall 2012.

Initial construction plans were developed in consultation with the BLM, which included both pipelines to be concurrently installed in a shared trench; however, changing business circumstances for the two companies resulted in the necessity for phased construction distributed over two years with WPX waterlines planned for 2012 and Bargath pipelines planned for 2013 or later. As a result, in areas where the alignments overlap, the majority of the pipelines will be installed in separate but parallel trenches. An exception to separate trench construction methods would occur in one short segment where the pipeline alignments cross Porcupine Creek, a perennial stream. At this location, concurrent and shared trench construction techniques would minimize potential adverse effects to Waters of the U.S. and protect archeological resources. The Bargath natural gas pipeline segment would be temporarily capped awaiting connection to the subsequent natural gas pipeline construction planned for 2013 or later.

The No Action Alternative, required under NEPA, would deny the ROW applications for the use of Federally-administered lands, and thus, the construction of the pipelines (either Bargath gas pipeline or WPX water lines) would not occur on BLM or USFS land.

### **Design Criteria, Stipulations and Best Management Practices (BMPs)**

Bargath and WPX have committed to follow certain mitigation measures (also known as “design criteria”) as part of the proposed construction and maintenance activities. These mitigation measures/design criteria, outlined in the POD that accompanied the ROW application, would be followed during construction and operation/maintenance of the pipeline and associated facilities (Bargath 2011). The BLM and USFS stipulations would be developed in the EA and applied as terms and conditions of approval (COAs) of the ROW grants. Industry-standard Best Management Practices (BMPs) for resource protection including wildlife habitat provisions would also be employed throughout the project.

**Proposed Action**

A succinct description of construction of the WPX Spruce Creek to Beaver Creek Water Pipelines and a lengthier description of construction of the Bargath Natural Gas Pipeline are provided below. The more detailed Kokopelli II narrative is generally applicable to the WPX water pipelines. Figure 3 shows cross-section diagrams of the initial 2012 WPX water pipeline installation plan (top view) and the 2013 Bargath gas pipeline installation alongside WPX water line; each in their respective trenches.

**Construction of WPX Water Pipelines – Currently Scheduled for 2012**

WPX proposes to install two buried 6-inch diameter Flexsteel water pipelines from the existing WPX RWF 24-4 Frac Pad near Spruce Creek Road (CR329) to the existing WPX RU 31-12V pad near the Beaver Creek Road (CR 317). This pipeline trench would cross BLM and private lands between Spruce and Beaver Creeks. The two 6-inch pipelines serve WPX’s field development in the Spruce Creek, Flatiron Mesa, and Beaver Creek areas and drastically reduce water truck use on the nearby county, BLM, and private access roads. The BLM would issue FLPMA ROWs to WPX installation, operation, and maintenance of portions of the two waterlines on BLM land.

The entire water pipeline length, between the RWF 24-4 frac pad and the tank battery located at the RU 31-12V near Beaver Creek Road, would be 24,945 feet (4.7 miles) with approximately 21,663 feet (4.1 miles) occurring parallel to the Kokopelli II gas pipeline alignment (Figure 4).

Approximately 20,900 feet (3.95 miles) of the proposed water lines would occur on BLM lands with the entire water pipeline length on BLM and falling within the 2013 Kokopelli gas pipeline corridor. An additional 775 feet (0.15 mile) on the east end of the WPX waterline on private land would parallel the Bargath pipeline. The remaining 3,282 feet (0.62 mile) of the connecting WPX trench work would occur on private lands. The WPX water lines, to be installed in their own trench with a 30 foot permanent ROW, would have an average disturbance width of 55 feet (Figure 3). For the separate connecting trenches (outside the Kokopelli II corridor) at either end of the project, a disturbance corridor of only 30 feet would be needed. The total surface disturbance of the WPX water pipelines would be approximately 30.25 acres (Table 2).

<b>Table 2. Amount of Surface Disturbance for the WPX Water Pipelines (Acres)</b>			
<i>Land Ownership</i>	<i>Disturbance Within Permanent Right-of-Way <sup>1</sup></i>	<i>Disturbance Within Temporary Use Areas <sup>2</sup></i>	<i>Totals</i>
<b>WPX Spruce Creek to Beaver Creek Water Pipeline</b>			
BLM	14.38	12.62	27.00
Private	2.79	0.45	3.24
<b>Total</b>	<b>17.17</b>	<b>13.07</b>	<b>30.24</b>
<sup>1</sup> Short-term disturbance for the 30-foot permanent ROW area to be authorized with BLM ROW grant.			
<sup>2</sup> Short-term disturbance for the temporary use areas (minimum 25-foot width) to be authorized with BLM TUP.			

Because the WPX water pipelines would be installed in 2012, at least 1 year prior to the Kokopelli II gas line, the planned working space including the vegetative clearing with hydro-axe equipment would be limited to 55-foot width. However, removing certain trees outside the corridor edge (or “feathering” the edge) would be required in various segments of the project to mitigate visual impacts.

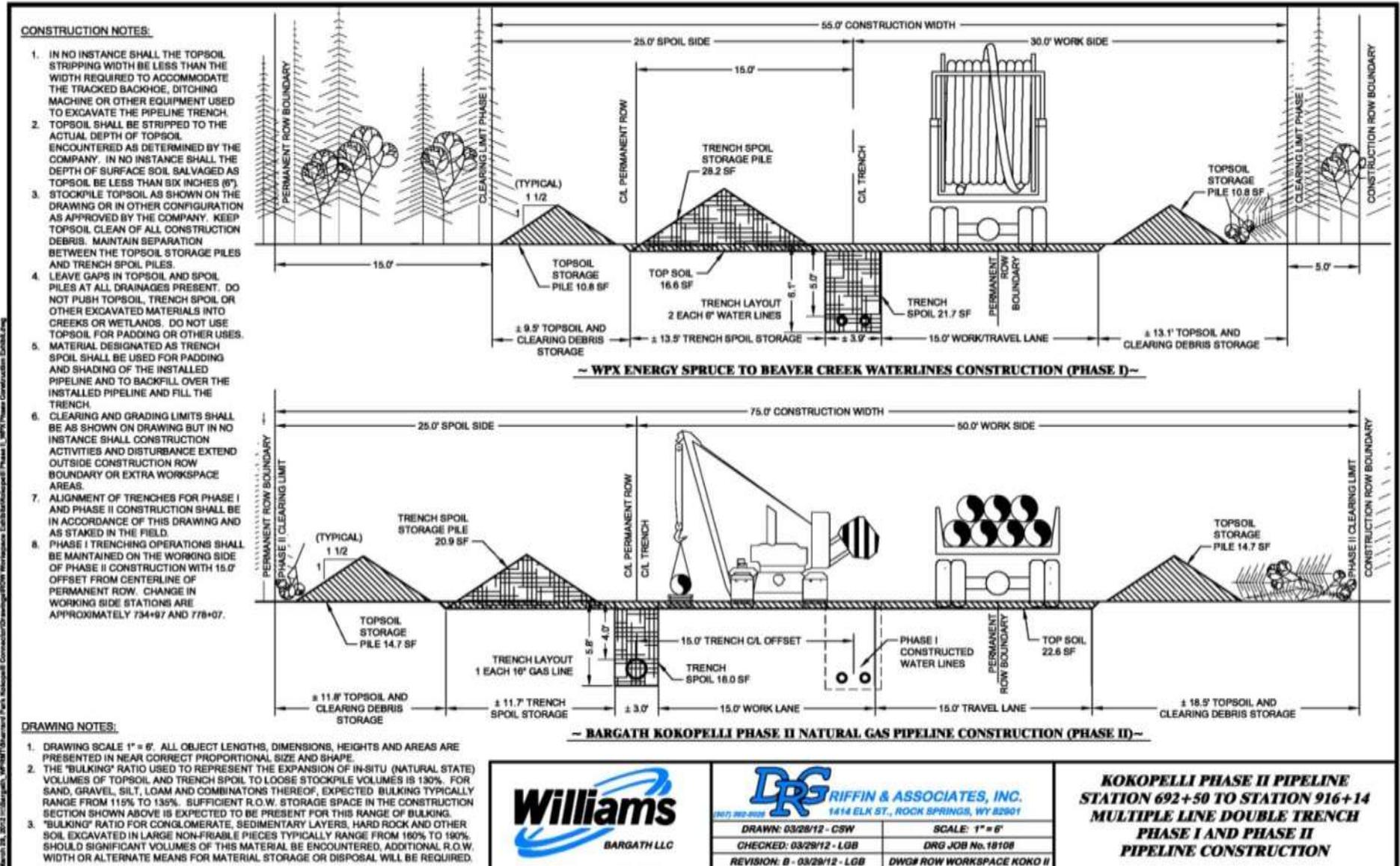
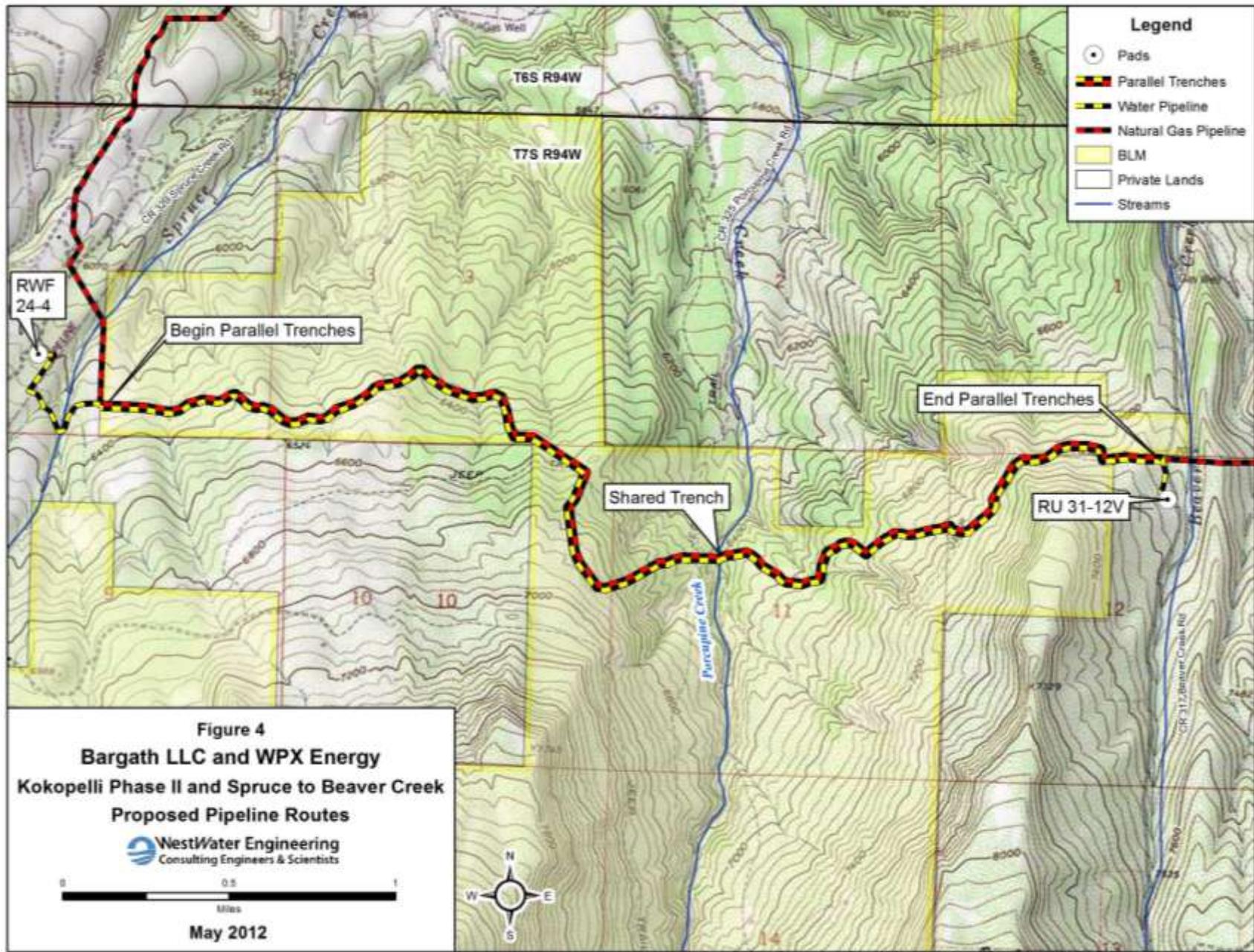


Figure 3. Cross-section Drawing of Bargath Kokopelli Phase II Natural Gas Pipeline and WPX Spruce to Beaver Creek Waterlines



Installation of the Flexsteel water pipelines would occur using the techniques and standards identified in the Proposed Action for the Kokopelli pipeline. Construction, backfilling, and site reclamation techniques listed in the Proposed Action would apply similarly to the water lines along their entire alignment. The 6-inch Flexsteel lines, delivered on spools and constructed in continuous segments of 1,000 feet, would be connected with appropriate industry-specified crimped fittings. After installation and prior to any use, the water lines would be tested with air to ensure the pipelines are suitable and safe for water transport. Approximately 0.25 acre feet of water would be required for dust control during construction. Above-ground valves would be installed along the proposed route based on industry standards to allow WPX to isolate the operating line segments as needed for maintenance activities.

### **Bargath Kokopelli II Natural Gas Pipeline – Currently Anticipated for 2013 or Later**

The product carried by the 16-inch steel gas pipeline system would be field grade semi-wet natural gas. Bargath, a wholly owned subsidiary of Williams Field Services, would operate the Kokopelli pipeline project. Natural gas discharged from the Dry Hollow compressor station would be transported by the Kokopelli II pipeline to existing Bargath gathering pipeline systems present in the Sharrard Park and Anvil Points area of the Colorado River Valley near Rulison, Colorado (Figure 2). From this point, existing pipeline systems would move the gathered field gas to WPX's gas processing and conditioning facilities (Parachute Creek Gas Plant) for treatment and quality improvement and eventual delivery to natural gas customers. Additional delivery and receipt points may be installed along the new pipeline to accommodate future connections to other gas transporters and producers. A unique portion of the Bargath pipeline proposal would include boring under the Colorado River in Sections 28 and 33, T6S, R94W. The river bore would involve private lands at either terminus; core testing of this river bore section was conducted with favorable results in summer 2011.

The pipeline ROW would be constructed across private and Federal lands including BLM and NFS lands. The project is situated entirely within Garfield County, Colorado, and would require permits and approvals from BLM, USFS, and the appropriate departments of Garfield County. Construction planned for 2013 or later, would begin upon the receipt of the necessary agency approvals and permits. The estimated duration of construction for this project is one hundred fifty (150) calendar days.

### **Pipeline ROW Length and Widths**

To install and operate the Kokopelli Phase II pipeline on BLM and NFS lands, Bargath would seek approval for a ROW grant across approximately 44,864 feet (8.5 miles) of Federal land. Of the total 22.3 miles of proposed pipeline, approximately 39,934 feet (7.6 miles) would be installed on BLM-managed lands and 4,930 feet (0.9 mile) on USFS-managed lands. The remaining 73,074 feet (13.8 miles) would be on private property.

The surface disturbance proposed for the 16-inch gas pipeline would involve a 50-foot-wide permanent ROW and an adjacent variable 25-foot-wide to 75-foot-wide temporary use area to provide adequate construction area. The construction ROW would be situated 25 feet on one side (spoil side) and 50 feet on the other side (working side) of the pipeline centerline. The temporary construction area would vary left to right and right to left depending on the proximity of the pipeline to existing parallel lines, other encroachments, and terrain factors encountered along the pipeline route.

The portion of the Kokopelli II pipeline that would be constructed parallel to the WPX waterlines would affect a combination of new disturbance and WPX's previously disturbed lands. An estimate of total surface disturbance for the Kokopelli Phase II gas pipeline is presented in Table 3. Approximately 208.05 acres of new disturbance would result from Bargath's construction and the 30.24 acres within WPX's construction area would be redisturbed during the construction of the natural gas pipeline.

All of the surface disturbance outlined in this EA would be short-term, since pipeline corridors would be reclaimed and seeded with desirable species and vegetation establishment would occur over a 3 to 5 year period.

A summary of disturbance lengths is presented above in Table 2 in the narrative for the WPX water line. Construction activities require some areas of extra work space and material/equipment staging. These areas are typically laid out parallel and adjacent to the pipeline construction area. Sizes of these ancillary areas would vary in length depending on the specific purpose of the area and site conditions. Surface disturbances associated with the initial waterline construction, later natural gas pipeline construction, and associated temporary use areas are shown and described in Table 3.

<b>Table 3. Surface Disturbance for the Bargath Kokopelli II Pipeline (Acres)</b>					
<i>Land Ownership</i>	<i>Permanent ROW<sup>1</sup></i>		<i>Temporary Use Areas<sup>2</sup></i>		<i>Total Disturbance</i>
	<i>Initial WPX Disturbance</i>	<i>Later Bargath Disturbance</i>	<i>Initial WPX Disturbance</i>	<i>Later Bargath Disturbance</i>	
BLM	14.38	31.11	12.62	25.79	83.90
USFS	0.00	5.58	0.00	4.24	9.82
Private	2.79	78.04	0.45	63.29	144.57
<b>Total</b>	<b>17.17</b>	<b>114.73</b>	<b>13.07</b>	<b>93.32</b>	<b>238.29</b>
<sup>1</sup> Short-term disturbance for the 50-foot permanent ROW area to be authorized with BLM ROW grant.					
<sup>2</sup> Short-term disturbance for the temporary use areas (minimum 25-foot width) to be authorized with BLM TUP.					

Types and general locations of ancillary disturbance areas would include:

- Project beginning and ending staging areas.
- Intermediate project staging areas at points of major project access or designated “skip-sections” or “work reversal” areas.
- Sharp bend widening areas. These are needed to allow turning and movement of trucks, vehicles, and equipment within designated areas; it reduces the potential for disturbance outside the planned construction corridor.
- Roadway crossing extra work space.
- Bore pit set up and staging areas.
- Drainage crossing extra work space.
- Multiple foreign utility crossing extra work space.
- Steep side hill widening. Where steep side slopes are present, two-level grading of the pipeline work corridor is required to provide a safe and convenient work area. This grading work when performed requires additional corridor widening to provide the extra needed space.
- Steep hill ascent and descent staging areas. For each steep hill location, such staging areas are required at both the top and bottom of the hill.
- Other special use and situation areas where required pipeline construction work cannot be safely and efficiently performed in the typical standard construction work width.

### Pipeline Alignment

The pipeline alignment would be constructed adjacent to existing pipelines and/or roads where possible. Staging areas have been designated at the beginning and ending of the pipeline and a variable number of intermediate project staging areas would be used at points of major project access or designated “skip-sections” or “work reversal” areas. Figure 3 shows a cross-section diagram of how the Bargath natural gas pipeline would be installed in relationship to WPX waterlines; each in their respective trenches.

A portion of the proposed Kokopelli II pipeline alignment would follow a previously approved, but unconstructed Energy Transfer Corporation (ETC) pipeline ROW across BLM land in Sections 6, 7, 8, 9, 16, and 24 (T7S, R93W) and Sections 1, 3, 4, 10, 11, and 12 (T7S, R94W) and across NFS land in Section 21 (T7S, R94W). Determination has been made that the first company to construct along this proposed route (ETC or Bargath) would have the first right to occupy the optimal pipeline alignment in relation to existing roads and pipelines.

After discussions with neighboring landowners regarding the use of existing pipeline corridors and failing to arrive at agreement to use adjacent private lands, Bargath indicated that a more direct route between Spruce Creek and Porcupine Creek initially submitted in the Proposed Action was the most feasible and desired route. The BLM, anticipating future well pads and an access road on BLM land in the S½, Section 3 (T7S, R94W), suggested that the proposed Kokopelli II pipeline alignment follow the future access road in an effort to minimize total disturbance expected with the Section 3 Federal lease development. Should the planned pads in Section 3 fail to be submitted to BLM for future permitting or development, it is important to note that the Kokopelli II alignment across Section 3 remains a viable route with no identifiable resource impacts that cannot be mitigated.

### Ancillary Facilities

Major ancillary facilities to be installed at the ends and along the pipeline would include pig launcher assemblies, valve assemblies, compressor station connections, and assemblies for periodic removal of accumulated water and condensate liquids. Other miscellaneous items to be installed include line markers, cathodic protection wire leads and cathodic protection current rectifier stations or sacrificial anodes. None of the major ancillary facilities would be located on Federal lands.

### Construction Access

Access for construction equipment and personnel would be mainly from existing public roads, existing field access roads, existing pipeline ROW, and along the pipeline disturbance corridor. A limited number of access roads may be needed where existing access is not adequate to meet construction requirements. Public roads involved include Interstate 70 and its associated frontage roads, U.S. 6, NFSR 818, and Garfield County Roads 246, 315, 317, 319, 320, 322, 323, 325, 329, and 336. Bargath would enter into operating agreements with the landowners or operators for existing field access roads to be used for construction and operations. Where needed, Bargath would apply for and acquire TUPs for project field access roads located on Federal lands. Bargath’s POD and Location Maps, show the public roads and the field access roads to be used for project construction. A Road Use Permit across NFSR 818 would be issued by the USFS to allow Bargath and its subcontractors to use and maintain the existing road to provide construction access to the Kokopelli II alignment across Section 21, T7S, R93W.

### Clearing and Grading

Vegetation would be cleared and the construction corridor graded to provide for safe and efficient operation of construction equipment and to provide space for temporary storage of spoil material and salvaged topsoil. In general, the width of the corridor clearings would be kept to a practical minimum to

avoid undue disturbance. However, in areas with high visual sensitivity and with the direction of the Authorized Officer (AO), additional trees could be removed alongside the planned disturbance corridor during the tree clearing operations to create a feathered appearance and reduce the visual contrast of the pipeline corridor. Tree and brush clearing would be limited to mowing with hydro-axe equipment, trimming and/or crushing to avoid disturbance of root systems. All brush and other materials that are cleared would be windrowed along the corridor. Where necessary, all brush and other debris cleared would be disposed of in accordance with instructions from the jurisdictional agency or landowner and all applicable laws and regulations. Topsoil removed during the clearing and grading operations would be segregated from subsoils. At a minimum, the first 6 inches of surface soil would typically be separated. These topsoils would be preserved for subsequent restoration activities on the corridor.

Three approaches to topsoil removal are provided in the project POD. These include: 1) full disturbance corridor topsoil removal; 2) trench and spoil area only topsoil removal; and 3) blade width only topsoil removal. The method of topsoil removal to be utilized on the project may vary from location to location. This would depend upon landowner desires, government agency stipulations, conditions encountered on the ground during construction, advisement of any soil and reclamation specialist employed or involved on the work, and the preferences and requirements of the contractor in regard to his adopted plan for successful clearing, grading, restoration, reseeding, and reclamation of the project.

Grading of the construction area would be performed in order to create a suitable work surface for construction vehicles and heavy equipment. On flat to mildly or moderately sloping terrain, a uniform work surface would be graded across the entire disturbance corridor. A bi-level work surface may be necessary in more sloped areas. Side hill cuts would be kept to a minimum to ensure resource protection and a safe, stable surface for heavy equipment use.

When required by controlling agency or the landowner, construction activities would not be conducted during conditions when the soil on the corridor or access roads are too wet to adequately support construction equipment. In such instances and where construction equipment creates excessively deep ruts, construction activities would be discontinued until soil conditions improve.

All survey monuments located within the disturbance corridor would be protected during construction activities. Survey monuments include, but are not limited to, General Land Office and BLM Cadastral survey corners, reference corners, witness points, U.S. Coastal and Geodetic Survey benchmarks and triangulation stations, military control monuments, and recognizable civil survey monuments. In the event of obliteration or disturbance of any of the above, the incident would be duly reported. Where such monuments are obliterated during construction, the services of a registered land surveyor would be employed to restore the monuments in accordance with established procedures. Each such survey would be duly recorded with the appropriate county and other jurisdictional agencies.

### Trenching

Typical pipe cover, trench width, depth, and similar dimensions are detailed in the Facility Design Factors of the POD. In all instances, pipeline burial depths would be in conformance with the requirements of 49 CFR 192 Pipeline Safety Regulations. In general, the standard depth of the pipeline trench for this project would be 4 feet as measured from the top of the buried pipe. Occasionally, the trench would be excavated to depths greater than the general values specified. Such instances include where the trench would be excavated to pass beneath railroads, roads, streams, drainages, and other obstructions.

As a minimum, the trench would be excavated to a depth to allow a clearance of 24 inches between the project pipeline and other pipelines or underground facilities. Machine excavation would not be performed closer than 5 feet from any existing pipeline, communications cable or other such buried

facility encountered in the corridor. Existing pipeline locations would be marked in the field and 48-hour prior notification given to the pipeline or other underground utility operator.

Construction methods employed to excavate a trench would vary depending on soils, terrain, and related factors. Self-propelled trenching machines would be used where possible. Conventional mechanical backhoes would be used on steep slope areas, unstable soils, high water table, and where deep or wide trenches are required. Where rock or rock formations are encountered, tractor-mounted mechanical rippers or rock trenching equipment may be used to facilitate excavation. In areas where rippers or trenchers are not practical or sufficient, blasting may be employed. Strict safety precautions would be taken when blasting. Backhoes would then be used to clean the trench after ripping or blasting.

Unless otherwise required and agreed upon, pipeline crossings of non-surfaced, gravel, lightly traveled, and rural roads would be made using open trench “cut and cover” methods with mechanical ditching machine or backhoe. Installation at these locations, including cleanup and restoration of road surfaces, would usually be completed within one day. Provisions would be made to detour or control passage of traffic during the construction.

#### Livestock Control and Management

Prior to construction, concerns and issues of landowners, lessees, and controlling agencies in regard to pipeline construction would be solicited and addressed to maintain adequate control of domestic livestock. Stipulations, requirements, and reasonable requests developed from such inquiries would be incorporated into planning prior to construction.

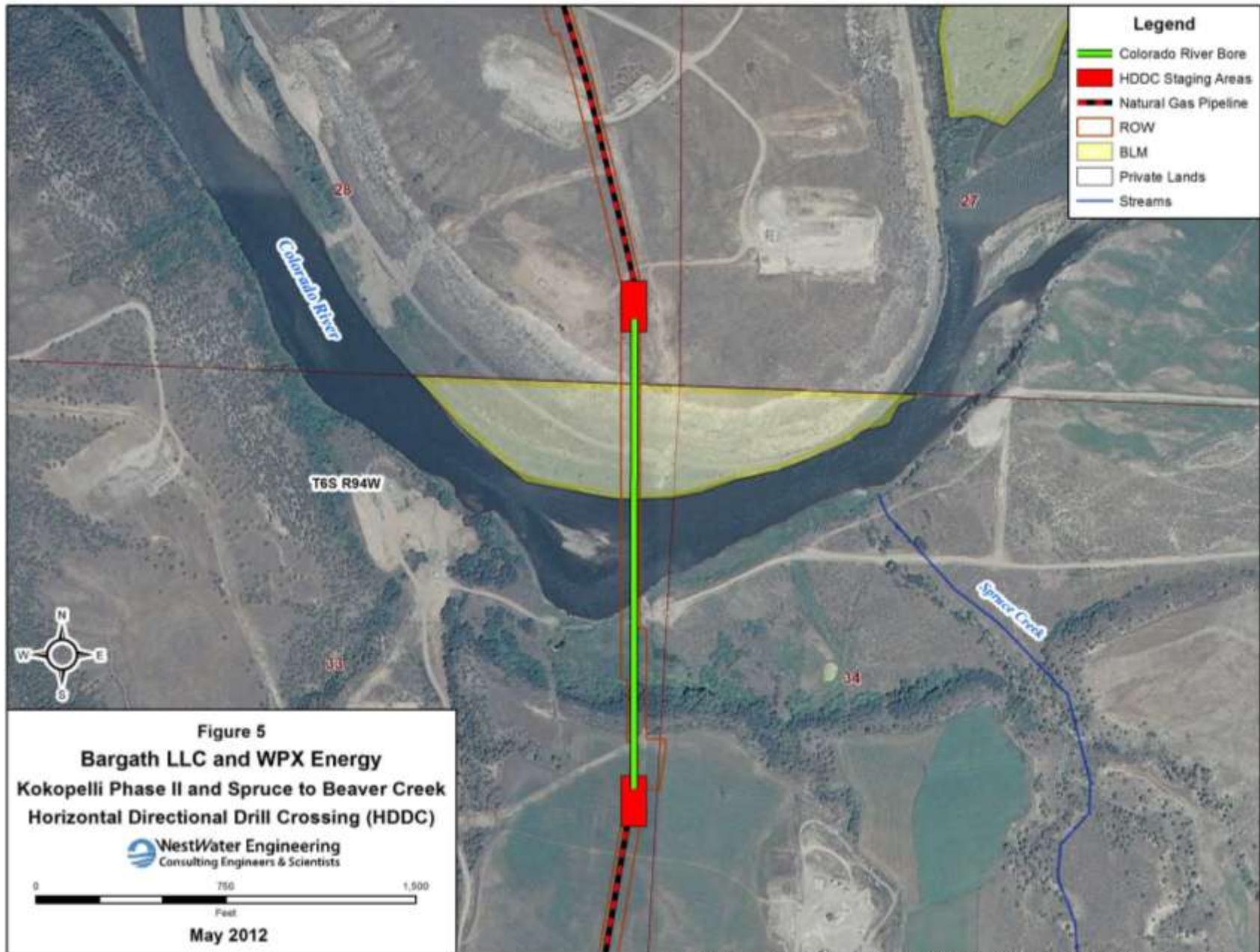
#### Boring and Drilling Techniques

Kokopelli Phase II pipeline construction plans would involve boring under the Colorado River in the SE¼, Section 28 and NE¼, Section 33, T6S, R94W, outside the limits of the 100-year floodplain, using horizontal directional drilling (HDD) techniques with a planned 2,000-foot bore length. Pipeline installation at Beaver Creek and all other streams crossings would employ a cut and cover method using a temporarily flumed flow (culvert pipe), which would divert water around the construction area so as not to impede water flow. These crossings would be planned during periods of the year when stream flows are lowest, such as prior to spring runoff or in the late summer/early fall. Pipeline crossings at more heavily traveled roads, hard-surface roads, railroads, highways and similar crossings would be made by boring.

The proponent would prefer to conduct the river boring work during March and April, 2013 or later, pending approval by Colorado Parks and Wildlife (CPW). If CPW would not grant the permitting exception to allow the springtime work, due to big game timing limitations (TLs), Bargath would complete the Colorado River bore after June 1, 2013, or later.

The planned Colorado River Bore would occur on private land at both ends of the HDD drill. A 200-foot by 100-foot staging area would be established in an irrigated field on WPX’s property on the south side of the river (NE¼ Section 33, T6S, R94W) to accommodate the drilling and support equipment (Figures 5 and 6). The north side of the river would provide the outlet point for the underground bore and feature another similarly sized staging area along with a pipe pullback area of nearly 2,200 feet. The anticipated work period to complete the river bore would be 12 weeks.

In August 2011, BLM issued a TUP (COC75020B)) to Bargath to conduct test coring and sampling of one core hole on BLM land. Four core holes were drilled in total across the accessible length of the planned Colorado River bore. The core hole sampling was conducted in October 2011, and results of the sampling indicated that the subsoils were feasible to proceed with the planned HDD plans for the Colorado River bore.





**Figure 6. View to North across Colorado River from Location of Geotechnical Test Bore #4**

Arrow indicates approximate location of Test Bore #2 drilled on BLM-administered land. Core testing project evaluated feasibility of installing 16-inch-diameter natural gas pipeline beneath the Colorado River along the proposed alignment.

Boring methods may include horizontal slip or slick boring, HDD, or both. The horizontal slip or slick boring method requires the excavation of boring pits at both the entry and exit points of the pipe installation. The depth of the bore pits is one foot or more lower than the pipe installation. Pipe is installed on a straight horizontal and vertical grade line between the bore pit faces. The installation is accomplished by auger drilling a circular hole slightly larger than the pipe being installed. The boring proceeds through a pilot pipe which is advanced by mechanical jacking behind the auger head.

Excavated material is discharged through the rear of the pilot pipe. After the pilot pipe has been advanced to the end, the carrier pipe is welded to its far end. The pilot pipe and carrier pipe pair is then drawn back through the drill excavated hole. When the carrier pipe is in place, the pilot pipe is cut off to be used again for the next bore crossing. Slip boring refers to “dry” drilling. Slick boring refers to the use of drilling fluid or mud to lubricate the process and provide circulation of bore cuttings from behind the auger and out the back of the pilot pipe.

HDD is typically performed with the entry point at the ground surface. The exit point for this method may or may not have a bore pit, but typically does not. Directional drilling does require that small or moderate size mud pits be established at both ends of the drill span. Directional drilling uses a small diameter pilot drill and drill string to establish an initial hole along the bore path. Drilling mud is circulated through the head of the pilot drill and back through the drilled hole. Drilling mud lubricates and cools the drilling head, circulates cuttings out of the hole, and provides hydraulic support of the hole until the carrier pipe is installed. After the pilot hole has been established, reaming heads are attached to the pilot string and passed through the hole to open it up to a diameter of about 1.5 times, or less, of the carrier pipe diameter. The hole may need to be reamed several times depending upon the size of pipe to be installed and earth conditions present. When the hole has been expanded to the required size, one end of a pull block is hooked to the pilot string and the other end is welded to the carrier pipe. The carrier pipe is then pulled back through the hole to complete the drill span. Within the limits of the carrier pipe material to be installed, the bore path is typically curved in vertical alignment and sometimes in horizontal alignment as well. For steel pipe, the rate of installed curvature is about 100 foot of radius for each inch of pipe size (i.e.,  $R = 3,000$  feet for 30-inch carrier pipe,  $R = 800$  feet for 8-inch carrier pipe).

### Pipe Installation

Pipe would be shipped directly from a manufacturer or supplier by rail and truck to offsite storage sites and then be hauled by truck to the pipeline project site. Each individual joint of pipe would be unloaded by cranes or tractors equipped with side booms and slings, and strung parallel to the trench. Sufficient pipe for road crossings would be stockpiled at staging areas near the crossing. Stringing operations would be coordinated with trenching and installation activities in order to properly manage the construction time at a particular tract of land. Gaps would be left at access points across the trench to allow crossing of the disturbance corridor. As construction proceeds, some of the pipe and stringing equipment would be temporarily stored at approved staging and extra workspace areas along the corridor.

After the joints of pipe are strung along the trench but before the joints are welded together, individual joints of the pipe would be bent to accommodate horizontal or vertical changes in direction. Such bends would be made utilizing an approved cold, smooth bending machine having a hydraulically operated shoe that makes the bend. Where the deflection of a bend exceeds the allowable design limits for field-bent pipe, shop fabricated pieces (induction or “hot bends”) or trimmed segmentable forged fittings would be installed.

After the pipe joints are bent, the pipe is lined up end-to-end and clamped into position. The pipeline would then be welded in conformance with 49 CFR Part 192, Subpart E, "Welding of Steel in Pipelines" and API 1104, "Standard for Welding Pipelines and Related Facilities," latest edition. Welds would be visually inspected by a qualified inspector and would be subject to radiographic inspection in

conformance with U.S. Department of Transportation (USDOT) requirements. A specialized contractor certified to perform radiographic inspection would be employed to perform this work. Any defects would be repaired or removed as required under the specified regulations and standards.

Project specifications would require that the pipe be externally coated with fusion bonded epoxy coating prior to delivery. After welding, field joints would be coated with either a tape wrap or shrinkable sleeve wrap. Before the pipe is lowered into the trench, the pipeline coating would be visually and electronically inspected and any detected faults or scratches would be repaired.

### Backfilling

Once the pipe coating operation has been completed, the pipeline would be lowered into the trench. Side-boom tractors would be used to simultaneously lift the pipe, position it over the trench, and lower it in place. Inspection would be conducted to verify that minimum cover is provided, the trench bottom is free of rocks/debris/etc., external pipe coating is not damaged, and the pipe is properly fitted and installed into the trench. In rocky areas, padding material or a rock shield would be used to protect the pipe.

Backfilling would begin after the pipeline has been successfully placed in the trench and final inspection has been completed. Backfilling would be conducted using a bulldozer, rotary auger backfiller, or other suitable equipment. Backfill would generally consist of the material originally excavated. In some cases, backfill material from other areas (borrow material) may be needed. Backfill would be graded and compacted, where necessary for ground stability, by being tamped or walked in with a wheeled or track vehicle. The soils would be replaced in a sequence and density similar to pre-construction conditions. Subsoils would be backfilled first, followed by replacement of stockpiled topsoil. Once the excavation has been filled and compacted, the topsoil would typically be crowned in a berm, 12-inches-high or less, and tapered outward from the center and/or spread uniformly over the disturbed corridor. The material in the berm is intended to compensate for normal settling of backfilled materials. Any excess excavated materials or materials unfit for backfill would be properly disposed of in conformance with applicable laws or regulations, and landowner or jurisdictional agency requirements. Where possible, these surplus materials would be spread out over the disturbance corridor to avoid off-site disposal.

Where required by controlling agencies, landowners, other situations and good cause, controlled compacted backfill would be placed at road crossings and other such locations. Backfill material to be placed shall be inspected and determined suitable for use by a qualified person. The backfill shall be placed at a controlled water content range in level uniform layers not exceeding 8-inches compacted thickness. The resulting backfill density shall not be less than 90% maximum density (or higher if prescribed by permit, agency or landowner) as determined by an established American Association of State Highway and Transportation Officials (AASHTO) or American Society for Testing and Materials (ASTM) procedure.

### Pressure Testing

The entire pipeline would be tested in compliance with 49 CFR Part 192 Pipeline Safety Regulations. This would be accomplished through hydrostatic (water) or pneumatic testing, or both. Some portions of the pipeline may require pneumatic testing due to the steepness of the terrain. Prior to filling the pipeline for a pressure test, each section of the pipeline would be cleaned by passing reinforced poly pigs through the interior of the line. Incremental segments of the pipeline would then be filled with test media, pressurized, and held for the duration of the test. The length of each segment tested would depend on local topography. Typically, the tests of individual segments would be conducted in sequence and the test media would be transferred from one segment to another.

Hydrostatic test water intake and discharge would be done in conformance with all applicable local, state, and Federal requirements. Performance of these operations shall avoid adverse impacts to aquatic, wildlife, and visual resources. The test water would be obtained from an existing well (pending water appropriation permits), a municipal water source or a commercial provider. At discharge points, the release of water would be controlled to prevent erosion. Energy dissipating devices would be employed where needed. When required, discharged waters would be sampled, tested, and filtered in accordance with applicable discharge permit requirements.

Upon completion of pressure testing, the pipeline segment would be dried using compressed dry air, pigs, spheres, or other accepted means. Once dried and fully ready for service, including tie-ins to terminal and online facilities, the pipeline would be purged of air and charged with natural gas. Upon obtaining sufficient gas volume and pressure, the line is typically ready for gas transmission and gathering service. The event is typically called the moment of “Substantial Completion.”

Water requirements for construction and testing are as follows:

- Dust Abatement (extreme conditions).
  - Approximately 200 barrels (bbl) per day
  - 45 calendar days duration
  - 9,000 bbl or 378,000 gallons or 1.19 acre-feet.
- Gas Pipeline Testing – The complete pipeline would be tested to 1.1 or 1.25 times the maximum allowable operating pressure (MAOP) in accordance with applicable regulations. Three pipeline test segments would be tested sequentially. The length and water volume required for each segment is as follows:
  - Test Segment #1: 5.4 miles = 280,600 gallons or 0.85 acre-feet
  - Test Segment #2: 10.7 miles = 555,900 gallons or 1.71 acre-feet
  - Test Segment #3: 5.1 miles = 262,600 gallons or 0.81 acre-feet
- Dust abatement water would not be recoverable for reuse.
- Water for gas pipeline testing may be transferred from one line segment to the next for sequential testing, limiting the total volume of test water to the largest quantity in the list above. Should simultaneous or non-phased testing take place, the total test water volume might equal or slightly exceed the total of the volumes above.

#### Post-Construction Cleanup and Restoration

Upon completion of backfilling, construction work would commence to clean up, restore, and revegetate the disturbance corridor. Efforts would have been taken during the prior work to minimize erosion, restore the natural ground contour, account for trench settling, reestablish plant growth, and allow natural surface drainage. As agreed with the landowner or controlling agencies, all completed construction areas and temporary access roads would be returned as nearly as possible to their original condition and service. All restoration and revegetation would be completed to the satisfaction of the landowners, controlling agencies, and other recognized parties.

Trash, brush, surplus material, or other debris would be cleared from construction areas and disposed of in an appropriate manner. The corridor would then be graded and restored to nearly pre-construction grades. Final restoration of disturbed areas would be accomplished by whatever means are most suited for the particular soils, terrain, vegetation, and climate at a specific site. In general, waterbars would be constructed to prevent erosion of unconsolidated soils and provide drainage away from the disturbed area

and into existing washes or drainages. Where appropriate, slash would be used to control erosion. Where necessary, terracing or other erosion control techniques may be employed.

Reseeding would be accomplished using seed mix or plant species approved by the landowners or controlling agencies. Seedbed preparation and seeding operations would be conducted in accordance with accepted techniques for the particular area and task. In areas with difficult reclamation problems, restoration and revegetation would be considered a special management problem and would be resolved in coordination with the landowner and the respective authorities involved. Advice may be sought from specialty agencies or environmental consultants to fully determine the appropriate mitigation and reclamation measures needed.

### Operations and Maintenance

The pipeline project would be operated and maintained in accordance with standard procedures that would ensure the integrity of the pipeline system. These operation and maintenance (O&M) procedures would be in accordance with safety standards and applicable regulations. O&M of the pipeline would be performed by Bargath and select contract service personnel. Bargath has operations offices in the project vicinity. O&M personnel would be qualified and trained to conduct their respective duties.

The pipeline would be controlled from a single gas control center located at the Bargath Parachute Creek Gas Plant near Parachute, Colorado. Initially, personnel at the gas control center and in the field would monitor and control the pipeline using manual methods. At a later time, the system would have communication and automation connections and facilities integrated with gas control, downstream processing plants, metering stations, inlet and outlet pressure regulators, upstream compressors stations, side valves and other such facilities. Ultimately, the system may be able to monitor and control all flows, pressures, flow conditions, valve open/close positions and compressor on/off states in a fully automated unattended mode.

The entire pipeline project corridor would be clearly marked with pipeline markers and at public roads and other locations specified in applicable regulations. Such markings help reduce the possibility of damage to the pipeline as a result of construction or other activities.

Upon commissioning of the project, ground patrols would be conducted periodically to inspect the pipeline corridor in order to monitor the integrity of the pipeline and the success of restorative measures. Surface travel would generally be limited to periodic valve inspections, corrosion surveys, leak surveys, pipeline maintenance, and any pipeline repairs that may be needed. The frequency of patrols would conform to the requirements of DOT regulations.

An "Emergency Plan" would be developed in conformance with applicable DOT requirements. The plan would establish written procedures that are intended to minimize the hazards in the event of a gas pipeline emergency. It is anticipated that the plan would address topics such as administrative issues, emergency planning, assignment of responsibilities, handling and evaluating emergency calls, responding to and controlling emergency situations, news media communications, restoration of service, obtaining and reporting emergency information, employee training, liaison with public officials, general public information program, location/inventory of pipeline repair materials and equipment, and lists of emergency telephone numbers and key personnel.

### Termination and Restoration

At the end of the pipeline's useful life, Bargath would obtain all necessary authorizations from appropriate landowners and government agencies to salvage or abandon the facilities. At that time, the pipeline would be depressurized and purged of all combustible materials. All aboveground facilities

would be separated and removed. All unsalvageable material would be disposed of at an approved public or private landfill. If the pipeline was to be abandoned in place, open ends of the remaining pipeline would be capped and sealed. The abandoned pipeline would then be filled with an inert media such as water, nitrogen or carbon dioxide at near zero gauge pressure. Alternatively, the decommissioned pipe would be extracted from the ground, cut in to joint lengths, hauled from the site for re-use on other projects or sold for salvage. The sites and corridors from which the above ground facilities and pipe were removed would be re-graded, restored and reseeded as needed to achieve satisfactory reclamation. The abandoned pipeline corridor would revert to the landowners or controlling agencies.

**Surface Disturbance Summary for the Proposed Action**

The Bargath Kokopelli Phase II gas pipeline would require a 75-foot disturbance corridor along its entire alignment with certain segments being widened for temporary use areas. The initial 2012 WPX Spruce Creek to Beaver Creek water pipeline, being only 55 feet wide, would occur entirely within the planned gas line 75-foot disturbance corridor. Table 4 lists the total disturbance acreage for the permanent 50-foot ROW to be authorized with BLM ROW grant as well as the surface disturbance attributed to the expanded temporary use areas (minimum 25-foot width) to be authorized with BLM TUP.

<b>Table 4. Surface Disturbance Summary for the Proposed Action (Acres)</b>			
<i>Land Ownership</i>	<i>Disturbance Within Permanent Right-of-Way<sup>1</sup></i>	<i>Disturbance Within Temporary Use Areas<sup>2</sup></i>	<i>Totals</i>
<b>WPX Spruce to Beaver Creek Waterlines and Bargath Kokopelli II Natural Gas Pipeline</b>			
BLM	45.49	38.41	<b>83.90</b>
USFS	5.58	4.24	<b>9.82</b>
Private	80.83	63.74	<b>144.57</b>
<b>Totals</b>	<b>131.90</b>	<b>106.39</b>	<b>238.29</b>
<sup>1</sup> Short-term disturbance for the 50-foot permanent ROW area to be authorized with BLM ROW grant. <sup>2</sup> Short-term disturbance for the temporary use areas (minimum 25-foot width) to be authorized with BLM TUP.			

**No Action Alternative**

The No Action Alternative would deny the ROW applications for the use of Federally-administered lands, and therefore construction of the pipelines (either the Bargath gas pipeline or the WPX waterlines) would not occur on BLM or USFS land. However, the operators could install the Kokopelli II gas pipeline or the WPX water pipelines entirely across private land, although the routes would be widely circuitous and exceedingly expensive resulting in far more surface disturbance and resource impacts than that associated with the Proposed Action identified in this EA. To avoid Federal land, as assumed with the No Action Alternative, a gas gathering line would need to be constructed in proximity to the Colorado River corridor where the residential population is more concentrated and resource impacts could likely be more pronounced.

In accordance with Council on Environmental Quality (CEQ) regulations, the impacts of this alternative are evaluated in this EA to provide a baseline to compare impacts associated with the Proposed Action. For impact analysis purposes, the potential impacts associated with the No Action Alternative would be cost-prohibitive and most likely result in much higher resource impacts than the Proposed Action presented in this EA.

## **Alternatives Considered but Not Analyzed in Detail**

### **Original Proposed Action presented in December 2011**

The original Proposed Action, which had undergone public review and a comment period in late 2011, included two separate but co-located and concurrently constructed pipelines. The pipelines included the Kokopelli Phase II natural gas pipeline and Spruce to Beaver Creek water pipelines. Subsequent to the initial scoping of the Proposed Action and review of public comments, Bargath in March 2012, indicated that at least a yearlong postponement in construction was necessary due to unfavorable economic conditions relative to natural gas prices. Following Bargath's request for a construction delay, WPX made a business decision to continue with its portion of the project as outlined in the original Proposed Action. WPX's determination to continue was due to the significant financial benefits that would be realized by reducing costs associated with multiple truck trips that are necessary for transport of natural gas production water and other fluids. The decline in natural gas markets has increased the potential value to WPX of improving their operational efficiency by installation of the gathering pipelines.

The developments and market changes described above forced a shift in this EA process. A decision to proceed with separate construction periods, as outlined in the Proposed Action described in this document, obviates the need to consider the original Proposed Action further.

### **Use of Existing Pipeline Corridor in Sections 4, 9, and 10, T7S, R94W on BLM and Private Lands**

As a result of public comments received during the initial Proposed Action scoping in December 2011, BLM asked Bargath and WPX to evaluate and assess the potential for an alternate construction route along an existing pipeline corridor in a previously disturbed area west of Porcupine Creek in Sections 4, 9, and 10, T7S, R94W. In this area, a pipeline corridor currently exists with buried pipelines operated by ETC and WPX.

A series of meetings with the concerned landowners occurred initially in early February 2012 and led to additional meetings in late April and early May 2012. The request was made by the landowners to require Bargath and WPX to use the existing pipeline corridor through Sections 4, 9, and 10 to avoid further oil and gas surface developments within Section 3 (Figure 7). The concerned landowners reside and own property adjacent to WPX Federal lease holding in Section 3. The landowners operate a County-permitted guest ranch / bed-and-breakfast facility in NE<sup>1</sup>/<sub>4</sub> of Section 4. Their motivations for asking that the two proposed pipelines be shifted upslope to the existing pipeline corridor include (1) providing flatter ground and benches allowing the project to be better hidden from view (locally and from Interstate 70); (2) maintaining the pristine, undisturbed qualities of the pinyon-juniper woodlands within Section 3; (3) providing less direct impacts related to noise and dust during the pipeline construction periods; and (4) shifting the bulk of the disturbance to private lands where previous disturbances have occurred.

In responding to the request that the existing pipeline corridor be considered for a possible alternative for this project, Bargath indicated that use of the existing corridor would increase the pipeline lengths by approximately 3,720 feet for the WPX waterlines and 5,593 feet for Bargath's natural gas pipeline. Such additional length would result in costly changes in project surveying, engineering, resource assessments, materials, construction and reclamation - the overall cost of the two pipeline projects would increase, based solely on the increased length, by 15% for the Kokopelli II pipeline and by 6.0% for the WPX water lines. Additionally, the requested route change would involve negotiations with a private landowner and, while the negotiations were amicable, the expected costs of obtaining the rights to cross the private lands were undesirable to the operators. Furthermore, if the pipeline routes were changed to align alongside the existing pipelines in Sections 9 and 10, the future surface disturbances associated with the development of the Federal lease in Section 3—new access road, new pipeline and two new well pads (RWF 23-3 and RWF 33-3)—would still be necessary. In other words, future disturbance within BLM's

Section 3 would occur, and orienting the two pipeline projects alongside the future access road is a legitimate planning consideration while minimizing the project costs for the operators. The route across Section 3 identified in the Proposed Action is the most direct and economical pipeline alignment. Based on these considerations, use of the existing pipeline corridor in Sections 4, 9, and 10 was found to not be a viable consideration for this project.

### **Use of New Proposed Beaver Creek Pipeline across Private Lands as Substitute for WPX Spruce Creek to Beaver Creek Water Pipelines**

A new buried water pipeline running north from the eastern end point of the proposed Spruce Creek – Beaver Creek water line in Section 12 to ongoing private well pad developments in Section 36 is in the planning stages. It was discussed with concerned landowners and BLM if this route could be extended further north and west into Porcupine Creek to connect with an existing buried water line system to replace the need for the Spruce Creek – Beaver Creek water pipelines. After thorough review by WPX, it was determined that the use of a future Beaver Creek water line extension into Porcupine Creek would not meet the water delivery needs planned for the Beaver Creek – Flatiron Mesa fields. WPX has acquired lands in Spruce Creek at considerable investment and constructed a COGCC-permitted water storage facility that provides the key link in storing and staging water volumes for future well development needs through the proposed Spruce Creek – Beaver Creek water line system to the Beaver Creek – Flatiron Mesa field. Furthermore, the extension of a Beaver Creek waterline into Porcupine Creek would require a pumping station to be developed at the base of Porcupine Creek in order to pump water up Beaver Creek for well completion needs.

In assessing the overall validity of using the future Beaver Creek water line extension, the following factors led to the denial of his alternative: (1) the existing infrastructure established in Spruce Creek to support the proposed Spruce Creek – Beaver Creek water line would not be fully used; (2) either a new pumping station or a new storage facility would be needed at the base of Porcupine Creek to support well completions in the Beaver Creek field, incurring additional costs and also shifting impacts associated with facilities closer to residences; and (3) consideration of using a different water line, which is only in the planning stages, again delays WPX's ability to install a water line system that removes considerable traffic from Garfield CRs 317 and 320 (see discussion in Access and Transportation section). The Beaver Creek route would not provide a more desirable alternative for Bargath's Kokopelli II gas pipeline, since the route would be considerably longer, impact more private landowners, and consequently result in considerably more cost.

## **PLAN CONFORMANCE REVIEW**

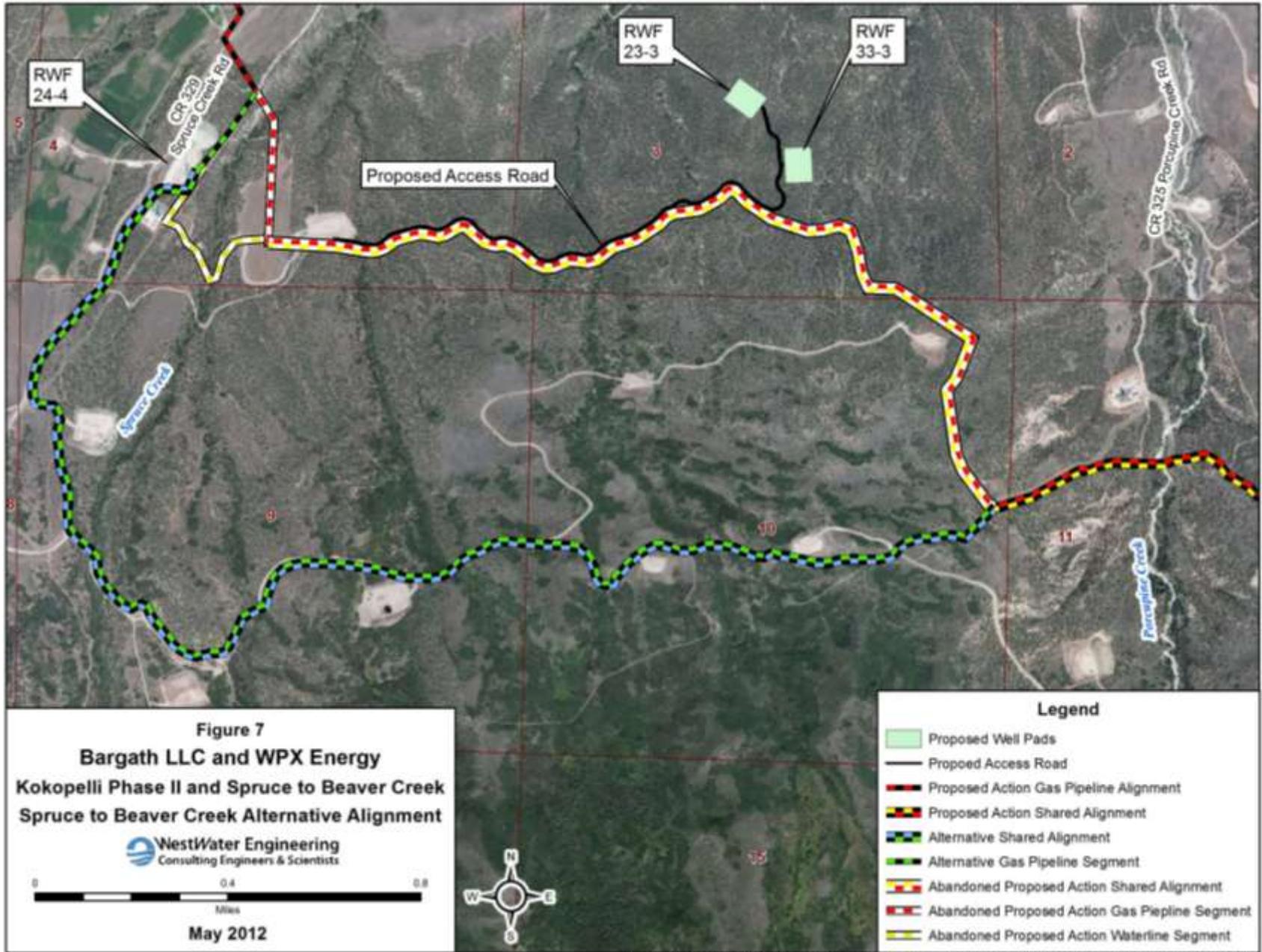
### **CRVFO Land Use Plan**

The Proposed Action and No Action Alternative are subject to and have been reviewed for conformance with the following plans (43 CFR 1610.5, BLM 1617.3):

Name of Plan: Glenwood Springs Resource Management Plan (BLM 1984).

Dates of Relevant Amendments: November 1991 – Oil and Gas Leasing and Development – Final Supplemental Environmental Impact Statement (EIS); March 1999 – Oil and Gas Leasing & Development Final Supplemental Environmental Impact Statement.

Decision Number and Page: Record of Decision, Glenwood Springs Resource Management Plan (RMP) Amendment, November 1991, page 3. Record of Decision, Glenwood Springs Resource Management Plan Amendment, March 1999, page 15.



Map Source: 2. Systems: Bargath-Kokopelli Phase II (Oil) - map 8A Map 8A Maps May 2012 (NEW) Figure 7 Alternative Alignment (May 2012) RW

Decision Language: “697,720 acres of BLM-administrated mineral estate within the Glenwood Springs Resource Area are open to oil and gas leasing and development, subject to lease terms and (as applicable) lease stipulations.” This decision was carried forward unchanged in the 1999 RMP amendment (BLM 1999).

Discussion: The Proposed Action is in conformance with the 1991 and 1999 Oil and Gas RMP amendments because the Federal mineral estate proposed for development is open for oil and gas leasing and development.

### **WRNF Land and Resource Management Plan**

For the portions of the project on USFS lands, the Proposed Action is also subject to and has been reviewed for conformance with the following plans:

Name of Plan: White River National Forest Land (WRNF) and Land Resource Management Plan (LRMP) (“Forest Plan”), 2002 Revision, as amended (USFS 2002).

Date Approved: April 2, 2002; amended in March 2005, January 2006, and March 2006.

Discussion: The WRNF Forest Plan provides long-term, Forest-wide goals and objectives for USFS lands in the WRNF. The Forest Plan includes Management Area (MA) standards and guidelines to define the desired conditions and identify areas where different management activities may be implemented and different types of public are allowed. The Proposed Action was designed to be consistent with all applicable WRNF Plan direction (MA and Forest-wide).

The project supports the WRNF Land and Resource Management Plan (LRMP) (2002 as amended) direction that is applicable to the Proposed Action in the following sections:

- Strategy 2c.5 – Over the life of the plan, respond to requests for leasing, exploration, and development of mineral and energy resources in accordance with regulations and forest plan availability and specific lands decisions (page 1-12).
- Strategy 2c.11 – Over the life of the plan, approve special-use proposals that are consistent with desired conditions, standards, and guidelines (page 1-12).

The project area is within MA 5.41, Deer and Elk Winter Range. These are areas where multiple-use principles are applied to emphasize habitat management for deer and elk. They include lands classified as winter ranges and areas used during average winters. These areas consist of both forested and non-forested habitats, generally in the lower elevation fringes of the forest. Many areas are south-facing slopes where snowmelt and green-up occur earlier in the spring, and snow accumulation does not occur until late autumn. To protect wintering big game, a condition of approval prohibiting construction activities from December 1 to April 14 would be attached to the ROW grant.

The project area is within potential habitat for the sensitive plant species, Harrington’s penstemon. The WRNF Land and RMP has three different standards specific to management of status plant species (USFS 2002). They include the following:

#### Threatened, Endangered, and Proposed Species Standard #2

1. Restrict activities to avoid disturbing proposed, threatened, or endangered species during breeding, young rearing, or at other times critical to survival. Exceptions may occur when individuals are adapted to human activity, or the activities are not considered a threat.

### Regional Foresters Sensitive Species Standard #3

2. Activities will be managed to avoid disturbance to sensitive species that would result in a trend toward Federal listing or loss of viability. The protection will vary depending on the species, potential for disturbance, topography, location of important habitat components, and other pertinent factors. Special attention will be given during breeding, young rearing, and other times that are critical to survival of both flora and fauna.

### Species of Viability Concern Standard #1

3. Survey for the following plant species of viability concern in the identified areas prior to any activities that might impact them:
  - Harrington penstemon in sagebrush areas in the Eagle and Frying Pan River drainages;
  - DeBeque phacelia in the Wasatch Geologic Formation;
  - Sun-loving meadowrue in the Parachute Creek Geologic Formation;
  - Leadville milk-vetch, sea pink, rockcress draba, tundra buttercup, and Colorado tansy-aster in suitable alpine areas;
  - Altai cottongrass, Kotzebue grass-of-parnasus, and Porter feathergrass in suitable riparian and wetland areas;
  - Avoid disturbances that would significantly affect species viability or trend the species towards Federal listing.

Desired Condition: Human activities are managed so that deer and elk can effectively use the area. Activities that may be managed or restricted include burning, rangeland management, timber harvest, habitat manipulation, recreation, minerals exploration and development, and road management. Population herd objectives are established in coordination with the CPW. Herd objectives are established in cooperation with the CPW. To protect wintering big game from disturbance, winter recreation use, both motorized and non-motorized, is generally confined to designated travel-ways or use corridors.

Standards and guidelines from MA 5.41 that are directly related to the project for both project implementation and rehabilitation include “Vegetation management practices will be used to maintain or improve deer and elk habitat objectives” and “Discourage special uses that require access during winter and spring periods.”

Restrict activities that have the potential to impact sage grouse and Brewer’s sparrow breeding activities from April 1 to July 31 in areas where breeding is known or suspected in order to minimize any negative impacts to reproductive success or survival.

The Proposed Action is consistent with these Forest-wide goals and objectives because it would use landscape compatible design of facilities, is proposed on lands available for oil and gas development, and is consistent with the MA desired conditions, standards, and guidelines.

## **STANDARDS FOR PUBLIC LAND HEALTH**

In January 1997, Colorado BLM approved the Standards for Public Land Health. The five standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. The environmental analysis must address whether impacts resulting from the

Proposed Action or alternatives being analyzed would maintain, improve, or deteriorate land health conditions relative to these resources. Analyses are conducted in relation to baseline conditions described in land health assessments (LHAs) completed by the BLM. The Proposed Action would occur in an area that includes the Rifle-West Watershed LHA (BLM 2005) and Divide Creek LHA (BLM 2009a).

## **AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

During its internal scoping process for this EA, pursuant to the NEPA, BLM resource specialists identified the following elements of the natural and human environment as present in the project vicinity and potentially affected by the project:

Access and Transportation	Noise	Special Status Species
Air Quality	Range Management	Vegetation
Cultural Resources	Realty Authorizations	Visual Resources
Fossil Resources	Recreation	Wastes, Hazardous and Solid
Invasive Non-Native Plants	Riparian and Wetland Areas	Water Quality, Surface
Migratory Birds	Socioeconomics	Wildlife, Aquatic and Terrestrial
Native American Religious Concerns	Soils	

### **Access and Transportation**

The Proposed Action would result in phased construction distributed over two separate years with WPX waterlines planned for 2012 and Bargath's pipeline planned for 2013 or later; therefore, impacts associated with construction would occur during two distinct time intervals separated by one or more years. As a result, in the area of the shared ROW corridor, impacts related to Access and Transportation would be experienced twice between Spruce Creek and Beaver Creek. For this section, the analysis of the affected environment and impacts are presented separately for each phase of the Proposed Action to effectively describe the effects of the individual projects.

#### **Affected Environment**

##### **WPX Construction 2012**

Primary access to the western portions of the project area would be from I-70, Exit #81 at Rulison along the Rulison Road (CR323) and the Rifle-Rulison Road (CR320) to either the Spruce Creek Road (CR329) or the Beaver Creek Road (CR317) (Figure 2). Access to the Porcupine Creek area would be gained by traveling approximately 3.5 miles south on the Beaver Creek Road (CR317), traveling west for about 2 miles on BLM and private field development roads to intersect with the upper Porcupine Creek Road (CR325) that leads onto public land in Section 11. Existing traffic throughout most of the project area is heavy due to current natural gas exploration and development activity.

A primary construction staging area would potentially be located on WPX's private holdings (Bernclau Ranch) off CR329 along Spruce Creek; this site would also be used for access to the western portions of the pipeline over to Porcupine Creek. No other staging areas would be needed, since the ROW is large enough to accommodate equipment and materials during pipeline construction.

Access to the pipeline on private lands would be along Garfield County and private roads or along the proposed alignment. Existing spur roads that lead to well pads and other upgraded roads that branch from the main roads would be used as additional access points. NFS lands would not be used for this project. Main access to BLM lands would be located at the following points:

1. East Pipeline Terminus (Beaver Creek area): north from CR320 along the Beaver Creek Road (CR317) to the pipeline ROW, access to the west primarily along the pipeline ROW and private and BLM access roads that lead to Porcupine Creek and CR325.
2. Porcupine Creek: west from Beaver Creek Road (CR317) along BLM and private roads to CR325 at the junction of Porcupine Creek, south on private and BLM access roads to the existing ETC pipeline ROW, then along the ETC ROW for 1,108 feet (0.21 mile) to the project alignment (Figure 8).
3. Spruce Creek: east from Spruce Creek Road (CR329) on WPX private lands to BLM lands with a turnaround and access point leading east along the ROW on BLM lands in Section 4 at WPX's Federal 7-94-S 0-4 well pad. No roads currently exist east of Federal 9-94-S 0-4 well pad. Through traffic would exit the ROW at Porcupine Creek.

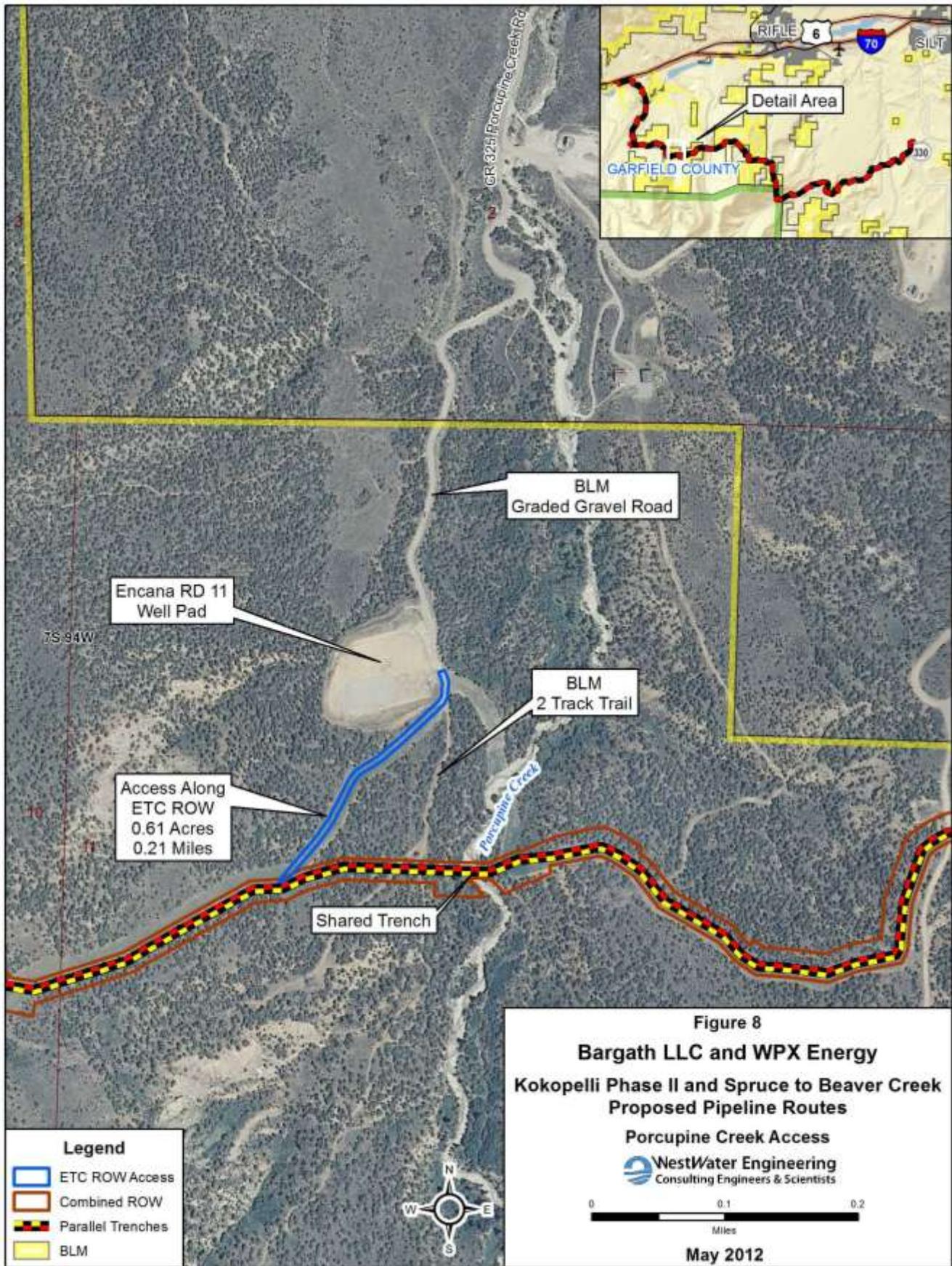
### *Bargath Construction 2013 or Later*

Due to the length of the pipeline, access from I-70 would be required from two main points (Figure 2). Primary access to the eastern portion of the project would be from I-70, Exit #94 at Airport Road east of Rifle, then to Mamm Creek Road (CR315) or the West Mamm Creek Road (CR319). CR322 that traverses south Hunter Mesa would also be used for access and a crossing between CR315 and CR319. Primary access to the western portions of the project area would be from I-70, Exit #81 at Rulison along the Rulison Road (CR323) and the Rifle-Rulison Road (CR320) to either the Spruce Creek Road (CR329) or the Beaver Creek Road (CR317). Access to the Porcupine Creek area would be gained by traveling approximately 3.5 miles south on the Beaver Creek Road (CR317), traveling west for about 2 miles on BLM and private field development roads to intersect with the upper Porcupine Creek Road (CR325) that leads onto public land in Section 11. Existing traffic throughout most of the project area is heavy due to current natural gas exploration and development activity.

Three primary staging areas would be established during construction to provide sites for logistical support for completion of the pipeline project. Staging Area 1 would be located at the Kokopelli I Dry Hollow Compressor Station. Access to this site is by way of a 1.57 mile field access road east off CR336 (Jenkins Cutoff). Staging Area 2 would be within either the WPX's Rulison or Anvil Points Compressor sites and access would be a short distance off U.S. 6. A third Staging Area would potentially be located on WPX's private holdings off CR329 along Spruce Creek; this site would be small and not used as extensively as the other two sites. Smaller project related staging areas would potentially be employed during construction and would include smaller gas field facilities such as well pad locations near the pipeline alignment. Possible uses of the staging areas include, but are not limited to the following:

- Receipt, storage and distribution of partial project materials
- Parking and staging of equipment and vehicles
- Office trailer and administration site
- Fabricated assembly construction yard
- Portable chemical toilet
- Tank truck to equipment fueling point
- Site may be used by both contractor and company construction management and inspection personnel

Access to the pipeline on private lands would be along Garfield County and private roads or along the proposed alignment. Existing spur roads that lead to well pads and other upgraded roads that branch from the main roads would be used as additional access points. Main access to BLM and USFS lands would be located at the following points.



Map Source: 2: \\siena\Bargath\Kokopelli Phase II\3\report maps\EA Maps\EA Maps May 2012\NEW\EA Figure 8 Porcupine Creek Access.mxd May 2012 (bb)

### BLM

1. CR322 (South Hunter Mesa), along private natural gas access roads to the 40-acre BLM parcel (NW¼, Section 24, T7S R93W) at the confluence of West Mamm Creek and Gant Gulch.
2. South Grass Mesa, along a private ranch-BLM access road. This road begins a short distance south of the junction of CR319 and CR322 on the southwest side of Hunter Mesa. This road would provide access to south Grass Mesa into Sections 9 and 16.
3. Flatiron Mesa, east from Beaver Creek Road (CR317) via private ranch and BLM roads.
4. Porcupine Creek, west from Beaver Creek Road (CR317) along BLM and private roads to CR325 at the junction of Porcupine Creek, south on private and BLM access roads to the existing ETC pipeline ROW, then along the ETC ROW for 1,108 feet (0.21 mile) to the project alignment (Figure 8).
5. Spruce Creek, east from Spruce Creek Road (CR329) with a turnaround point on BLM lands in Section 4 at WPX's Federal 7-94-S 0-4 well pad. The WPX water pipeline corridor would be used from CR329 to Porcupine Creek.

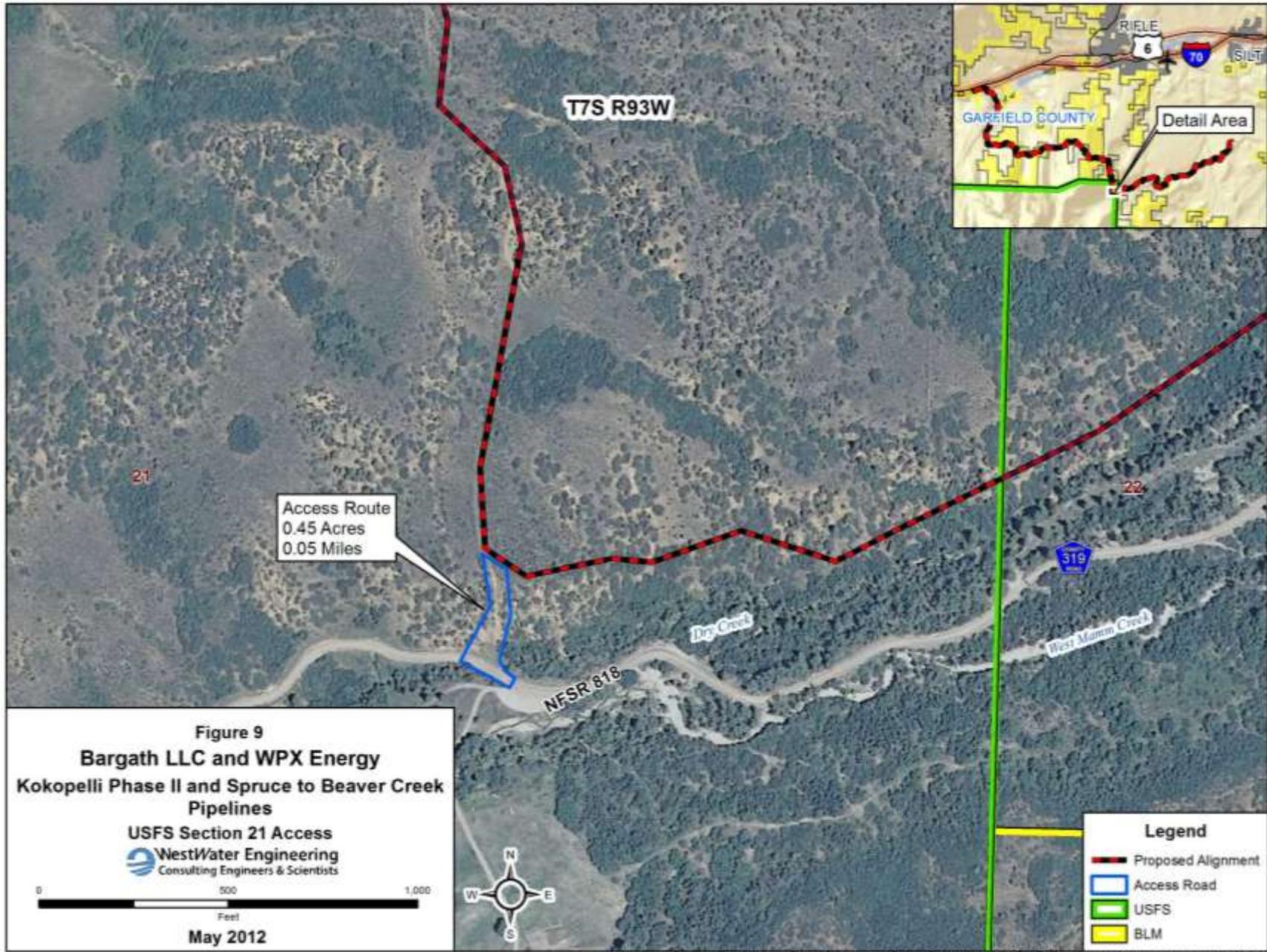
### USFS

1. CR319 to NFSR 818 and north along a short, temporary access road to the pipeline alignment (Figure 9).
2. South Grass Mesa, along the private ranch-BLM access road. This road begins a short distance south of the junction of CR319 and CR322 on the southwest side of Hunter Mesa and travel is to the west. This road would provide access to south Grass Mesa into Section 16 and south along the ROW downhill from BLM lands into USFS Section 21 and would be used by heavy equipment and trucks not capable of uphill travel from NFSR818, due to steep grades.

Access for the purpose of hauling construction equipment, workforce personnel, pipe, and supplies to the pipeline alignment is needed on USFS lands in Section 21. Bargath would be required to obtain a Road Use Permit for access to the pipeline alignment along NFSR818 in Section 21. A component of the permit would include providing a structural analysis of the road based on estimated traffic loads, providing insurance and bonding, submitting an operating plan and a traffic control plan, surface rock replacement, dust abatement, and maintaining the road. As a result of the structural analysis, additional surfacing is not required to be placed to support the increase in traffic for the duration of the project. No spoils from pipeline construction would be placed on the travel-way. Road improvements or betterments would include surface rock replacement, dust abatement, surfacing of the turnout/staging areas next to NFSR 818, access point sight distance clearing, drainage maintenance, and use maintenance during all phases of the project.

Road improvements at the road junction would be authorized with a USFS Road Use Permit and include lengthening of the existing 36-inch diameter culvert, ditch and culvert cleaning, and establishing the interface with the temporary road that would have appropriate curve widening to allow safe passage from "double joint" pipe stringing trucks.

Within the WRNF boundary, trucks and equipment would travel loaded along NFSR818 for approximately 0.3 mile to an alignment access point. From this point, access by vehicles would be along the temporary access road and then along the pipeline alignment to either the north or east. Other than NFSR818, no existing roads cross USFS lands in Section 21 along the pipeline alignment



Environmental Consequences

WPX Construction 2012

The Proposed Action would result in an increase in truck traffic along private, Garfield County, and BLM roads for the duration of the project. Vehicle traffic would include truck trips for delivery of the Flexsteel pipe, fittings and connections, and related materials; mobilization and demobilization of heavy equipment; construction inspection and supervision; reclamation; and daily commuting of the workforce.

The affected roads could be subject to short-term closures for safety. Measures would be taken to minimize these impacts through scheduling of vehicle trips. Roads affected by the increase in traffic include the following:

- CR317 – Beaver Creek Road
- CR320 – Rifle-Rulison Road
- CR323 – Rulison Road
- CR325 – Porcupine Creek Road
- CR329 – Spruce Creek Road
- Private-BLM Porcupine Creek Road
- Interstate Highway 70

Access to the pipeline ROW would typically be along existing roads that occur throughout the project area. However, one new temporary road would be needed to access the pipeline ROW. This site is located in the Porcupine Creek drainage and would involve the temporary use of the existing ETC Canyon pipeline ROW; no new impacts would occur in natural habitats and only existing reclaimed grasses and forbs would be affected (Figure 8). Due to potential BLM resource issues in this area, the ETC Canyon ROW is the preferred route to access the WPX pipeline ROW. Actual construction of the pipeline would take place in five phases; the anticipated increases in traffic for the five phases are shown in Table 5.

<b>Table 5. WPX Anticipated Traffic Increases</b>		
<i>Type of Traffic</i>	<i>Trips per Day <u>1/</u></i>	<i>Total Trips</i>
<b>Phase 1 – Clearing and Trenching (3 weeks)</b>		
Construction Personnel	4	60
Inspection	2	30
Light Truck Traffic	2	30
Heavy Truck Traffic	3	45
<b>Subtotal</b>		<b>165</b>
<b>Phase 2 – Pipe Delivery (1 weeks)</b>		
Construction Personnel	4	20
Inspection	2	10
Light Truck Traffic	2	10
Heavy Truck Traffic	3	70
<b>Subtotal</b>		<b>110</b>
<b>Phase 3 – Crimped Fitted Pipe Connections and Pipe Inspection (2.5 weeks)</b>		
Construction Personnel	4	50
Inspection	2	25
<b>Subtotal</b>		<b>75</b>

<b>Table 5. WPX Anticipated Traffic Increases</b>		
<i>Type of Traffic</i>	<i>Trips per Day <u>1/</u></i>	<i>Total Trips</i>
<b>Phase 4 – Pressure Testing Pipeline (0.5 weeks)</b>		
Construction Personnel	4	10
Inspection	2	5
Light Truck Traffic	2	5
Heavy Truck Traffic	1	2.5
<b>Subtotal</b>		<b>22.5</b>
<b>Phase 5 – Recontouring and Reseeding (2.5weeks)</b>		
Construction Personnel	4	50
Inspection	2	25
Light Truck Traffic	2	25
Heavy Truck Traffic	4	5
<b>Subtotal</b>		<b>150</b>
<b>Total</b>		<b>522.5</b>
<u>1/</u> Trips per day equal one round-trip to and from the work site		

The duration of each phase is based on working 10-hour days and 5 days per week. The phases of construction are not necessarily “start-to-finish” sequentially and there is typically overlapping lead times (1 to 2 weeks typical) as one phase leads to the next. Personnel staffing, vehicles, and equipment loads would increase, peak for a time, and then decrease over the duration of each construction phase. As an example, pipeline installation may be occurring at one end of the project while reclamation may be occurring in the area where work was initially started. Furthermore, the traffic visits would be spread across the entire pipeline project area; only a portion of the traffic estimates would be realized in any one location along the pipeline alignment.

Operating water pipelines are in place for delivery and collection of water from most of WPX’s Spruce Creek wells. The new water lines would primarily provide the opportunity to deliver water to and collect water from the Beaver Creek and Flatiron Mesa areas. The proposed water pipelines would directly reduce traffic on CR320 and CR317 as much as 66 loads per day based on 2012-2013 drilling plans.

Bargath Construction 2013 or Later

The Proposed Action would result in a marked increase in truck traffic along private, Garfield County, BLM, and USFS roads for the duration of the project. Vehicle traffic would include truck trips for delivery of the pipe, fittings, and related materials; mobilization and demobilization of heavy equipment; construction inspection and supervision; reclamation; and daily commuting of the workforce. The affected roads could be subject to short-term closures for safety. Measures would be taken to minimize these impacts through scheduling of vehicle trips. Roads affected by the increase in traffic include the following:

- CR315 – Mamm Creek Road
- CR317 – Beaver Creek Road
- CR319 – West Mamm Creek Road
- CR320 – Rifle-Rulison Road
- CR336 – Jenkins Cutoff
- Grass Mesa: private ranch and BLM Road
- Private-BLM Porcupine Creek Road
- NFSR818 – West Mamm Creek Road

- CR322 – South Hunter Mesa Road
- CR323 – Rulison Road
- CR325 – Porcupine Creek Road
- CR329 – Spruce Creek Road
- U.S. Highway 6
- Interstate Highway 70
- Flatiron Mesa: private ranch and BLM Road

Access to the pipeline ROW would typically be along existing roads that occur throughout the project area. However, two temporary roads would be needed to access the pipeline ROW. The first is located in the Porcupine Creek drainage and would involve the temporary use of the existing ETC Canyon pipeline ROW, which would be used in 2012 for WPX waterline construction access. No new impacts would occur in natural habitats and only existing reclaimed grasses and forbs would be affected (Figure 8). Due to potential BLM resource issues in this area, the ETC Canyon ROW is the preferred route to access the Kokopelli II pipeline ROW. The second temporary road would be in USFS Section 21 and would provide access to the ROW north from NFSR818 for approximately 0.05 mile (Figure 9). This access road would be along a historic 2-track trail that has been closed to motor vehicle traffic by the USFS.

Actual construction of the pipeline would take place in five phases; the anticipated increases in traffic for the five phases are shown in Table 6. Anticipated traffic for clearing the ROW would be reduced by approximately 25% as a result of WPX’s waterline construction in 2012. The duration of each phase is based on working 10-hour days and 6 days per week. The phases of construction are not necessarily “start-to-finish” sequentially and there is typically overlapping lead times (1 to 3 weeks typical) as one phase leads to the next. Personnel staffing, vehicles, and equipment loads would increase, peak for a time, and then decrease over the duration of each construction phase. Furthermore, the traffic visits would be spread across the entire pipeline project area; only a portion of the traffic estimates would be realized in any one location along the pipeline alignment.

All vehicles would be licensed to meet DOT regulations. All permits would be obtained as required by Garfield County for trucking of heavy and/or wide loads. Road maintenance would be performed as needed or as required by managing agencies. Dust control would be a daily construction activity to mitigate any public impact (see Air Quality section).

<b>Table 6. Bargath Anticipated Traffic Increases</b>		
<i>Type of Traffic</i>	<i>Trips per Day <u>1</u></i>	<i>Total Trips</i>
<b>Phase 1 – Clearing and Trenching (8 weeks)</b>		
Construction Personnel	18	864
Inspection	8	360
Light Truck Traffic	18	864
Heavy Truck Traffic	7	324
<b>Subtotal</b>		<b>2,412</b>
<b>Phase 2 – Pipe Delivery (4 weeks)</b>		
Construction Personnel	12	288
Inspection	4	96
Light Truck Traffic	6	144
Heavy Truck Traffic	8	192
<b>Subtotal</b>		<b>720</b>
<b>Phase 3 – Welding and Pipe Inspection (10 weeks)</b>		
Construction Personnel	54	3,240
Inspection	24	1,440

<b>Table 6. Bargath Anticipated Traffic Increases</b>		
<i>Type of Traffic</i>	<i>Trips per Day <u>1/</u></i>	<i>Total Trips</i>
Light Truck Traffic/Buses	14	840
Heavy Truck Traffic	6	360
<b>Subtotal</b>		<b>5,880</b>
<b>Phase 4 – Pressure Testing Pipeline (10 days)</b>		
Construction Personnel	9	90
Inspection	1	10
Light Truck Traffic	8	80
Heavy Truck Traffic	3	30
<b>Subtotal</b>		<b>210</b>
<b>Phase 5 – Recontouring and Reseeding (8 weeks)</b>		
Construction Personnel	18	864
Inspection	6	288
Light Truck Traffic	12	576
Heavy Truck Traffic	5	240
<b>Subtotal</b>		<b>1,968</b>
<b>Total</b>		<b>11,994</b>
<u>1/</u> Trips per day equal one round-trip to and from the work site		

Degradation of field development roads may occur due to heavy equipment travel and fugitive dust; noise would be created (see Air Quality and Noise sections). Mitigation measures (Appendix A) would be required as COAs to ensure that adequate dust abatement and road maintenance occur.

*No Action Alternative*

This alternative would not have an impact on access or transportation, because the development activities would not occur.

**Air Quality**

**Affected Environment**

State of Colorado and Federal air quality regulations are enforced by the Colorado Department of Public Health and Environment (CDPHE). Colorado Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS) are health-based criteria for the maximum acceptable concentrations of air pollutants in areas of public use.

Although specific air quality monitoring has not been conducted within the project area, regional air quality monitoring has been conducted in Rifle and elsewhere in Garfield County. Air pollutants measured in the region for which ambient air quality standards exist include carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter less than 10 microns (µ) in diameter (PM<sub>10</sub>), and particulate matter less than 2.5 µ in diameter (PM<sub>2.5</sub>).

The project area for the pipelines lies within Garfield County, which has been described as an attainment area under CAAQS and NAAQS. An attainment area is an area where ambient air pollution quantities are

below (i.e., better than) NAAQS standards. Regional background values are within established standards, and all areas within the cumulative study area are designated as attainment for all criteria pollutants.

Federal air quality regulations adopted and enforced by CDPHE limit incremental emissions increases to specific levels defined by the classification of air quality in an area. The Prevention of Significant Deterioration (PSD) program is designed to limit incremental increases for specific air pollutant concentrations above a legally defined baseline level, as defined by an area's air quality classification. Incremental increases in PSD Class I areas are strictly limited, while increases allowed in Class II areas are less strict.

The project area and surrounding areas are classified as PSD Class II. The PSD Class I areas located within 100 miles of the project area are Flat Tops Wilderness (approximately 30 miles north), Maroon Bells – Snowmass Wilderness (approximately 29 miles south), West Elk Wilderness (approximately 50 miles southeast), Black Canyon of the Gunnison National Monument (approximately 50 miles south), and Eagles Nest Wilderness (approximately 65 miles east). Dinosaur National Monument (In the Colorado portion, approximately 85 miles northwest) is listed as a Federal Class II.

### Environmental Consequences

#### *Proposed Action*

The CDPHE, under delegated authority from the US Environmental Protection Agency (EPA) and in conformance with Colorado's State Implementation Plan (SIP), is the agency with primary responsibility for air quality regulation and enforcement in conjunction with industrial developments and other air pollution sources in Colorado. Unlike the conceptual "reasonable but conservative" engineering designs used in NEPA analyses, any CDPHE air quality pre-construction permitting is based on site-specific, detailed engineering values, which are assessed in CDPHE's review of the permit application.

CDPHE requires an Air Pollutant Emission Notice (APEN) and construction permit for land development activities which disturb greater than 25 contiguous acres. The operating terms and conditions of the construction permit require particulate emissions control measures for all activities associated with the project, including surface disturbance and haul roads. Project proponents are responsible for obtaining permits prior to beginning construction on either pipeline project.

The Proposed Action would result in phased construction distributed over two separate years with WPX waterlines planned for 2012 and Bargath's pipeline planned for 2013 or later. The two separate construction periods for the WPX water lines and the Bargath pipeline would yield similar amounts of air quality impacts in the area of the shared corridor between Spruce Creek and Beaver Creek.

The Kokopelli II and Spruce to Beaver Creek pipelines include construction and operation of natural gas and water lines as part of the production and delivery of natural gas. Although the impacts to air quality from this pipeline project are disclosed in this EA, the construction and operation is permitted with the approval of the ROW grant.

Pipeline construction is expected to take approximately 60 to 90 days for the WPX waterlines in 2012 and at least 150 days for the Kokopelli II gas pipeline in 2013 or later. Activities described in the Proposed Action would result in localized short-term increases in emissions during brush clearing of the ROW, construction of access roads, topsoil stockpiling, trenching, pipe delivery, pipeline installation, backfilling, and reclamation. Pollutants generated during construction activities would include gas and diesel equipment combustion emissions and fugitive dust associated (PM<sub>10</sub> and PM<sub>2.5</sub>) with construction equipment and vehicles. Once construction activities are complete, air quality impacts associated with these activities would cease.

Construction activities for the two projects would occur between the hours of 7:00 a.m. and 6:00 p.m. each day. The width of the ROW clearing will be kept to a practical minimum to avoid undue disturbance to existing vegetation. Where topsoil removal and storage is not necessary, brush clearing will be limited to removal of above ground vegetation to avoid disturbance of root systems, which will help reduce fugitive dust. In addition, BLM would require that Bargath and WPX apply water dust suppressant to access roads during the development phases.

The impacts identified in the Proposed Action for the WPX water pipelines and for Bargath's natural gas pipeline for Air Quality are similar but reduced for WPX construction by approximately 80% due to the shorter length of the construction area for the water pipelines between Spruce and Beaver Creeks. However, the types of pollutants generated during construction activities from combustion emissions and dust for both projects would remain essentially the same but would be extend over a greater time frame due to construction occurring in different years.

#### *No Action Alternative*

Under the No Action Alternative, the project components included in the Proposed Action would not be approved as currently designed. However, it is likely that Bargath and WPX would select an alternative alignment that potentially would have similar or greater effects on air quality than the Proposed Action.

### **Cultural Resources**

#### Affected Environment

Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to take in to account the effects their actions will have on cultural resources. As a general policy, an agency must consider effects to cultural resources for any undertaking that involves Federal monies, Federal permitting/authorization, or Federal lands.

A Class III cultural resource inventory (CRVFO# 1112-6) was conducted specifically for this project and covered the entire proposed pipeline project area. Much of the proposed WPX and Kokopelli Phase II pipeline route was inventoried previously for earlier pipelines. These earlier cultural inventories include CRVFO#16911-1, 16909-1, 1109-1, and thirteen others that are pipeline or oil and gas related. The inventory and pre-field file searches of the Colorado State Historic Preservation Office (SHPO) database and BLM CRVFO cultural records identified eleven cultural sites and eight isolated finds within the project area. Three of the sites (5GF3541, 5GF3755, and 5GF4627) were determined to be eligible for the National Register of Historic Places (NRHP). An "eligible" determination means that the site has characteristics that may make it eligible for inclusion on the NRHP. Isolated finds are by definition not eligible for the NRHP. Eligible or potentially eligible sites are referred to in Section 106 of the National Historic Preservation Act as "historic properties". Much of the project area is within an existing road and/or pipeline corridor and has been previously disturbed by the road and pipeline routes.

#### Environmental Consequences

##### *Proposed Action*

As a result of the Proposed Action, potential impacts associated with construction could occur during two distinct time intervals separated by one or more years. The increased potential for impacts to Cultural Resources, as a result of the two projects, would only be experienced in the area of the shared corridor between Spruce Creek and Beaver Creek. However, since the two pipelines share the same construction ROW, potential impacts to Cultural Resources would not be expected to increase significantly as a consequence to two separate construction periods.

No historic properties will be affected by pipeline construction due to project design. Therefore, the BLM made a determination of “**No Historic Properties Affected.**” This determination was made in accordance with the 2001 revised regulations [36CFR 800.4(d)(1)] for Section 106 of the National Historic Preservation Act (16U.S.C 470f), the BLM/SHPO Programmatic Agreement (1997) and Colorado Protocol (1998)]. As the BLM has determined that the Proposed Action would have no direct impacts to known “historic properties,” no formal consultation was initiated with the SHPO.

A standard Education/Discovery COA for cultural resource protection will be attached to the ROW Conditions of Approval. The importance of this COA should be stressed to the operator and its contractors, including informing them of their responsibilities to protect and report any cultural resources encountered during construction operations.

Although no direct impacts are anticipated, a section of the pipeline ROW is within the 100-meter buffer (normally recommended for all eligible sites within the CRVFO) around the eligible site 5GF4627. As a safeguard, the BLM has inserted a COA for the construction of this section of pipeline outlining additional cultural resource safety precautions. This COA requires that safety fencing be erected along the boundary of the site nearest to construction and that an archaeological monitor be present for all ground disturbances during pipeline construction of this segment. To further protect this site, the Bargath and WPX pipelines would be installed concurrently during the 2012 construction season in the same trench to avoid repeated disturbance when the gas line is installed. The USFS would require an archeological monitor on-site in areas where dense oakbrush thickets precluded the completion of the cultural inventory (Appendix A).

Indirect, long-term cumulative impacts from increased access and the presence of project personnel could result in a range of impacts to known and undiscovered cultural resources in the vicinity of the project location. These impacts could range from accidental damage or vandalism to illegal collection and excavation.

#### *No Action Alternative*

The No Action Alternative would deny the right-of-way applications for the use of Federally administered lands, and therefore construction of the pipelines (either the Bargath gas pipeline or WPXs waterlines) would not occur on BLM or NFS land. However, the operators could install the Kokopelli II gas pipeline or the WPX water pipelines entirely across private land, although the routes would be widely circuitous and exceedingly expensive resulting in far more surface disturbance and resource impacts than that associated with the Proposed Action identified in this EA. Additionally, though the No Action Alternative would stop the potential to expose buried cultural resources on Federal lands, the longer route across private lands would increase the potential to expose buried cultural resources as well as increase the potential for indirect effects from illicit collection or vandalism on private property.

### **Fossil Resources**

#### Affected Environment

The current classification system utilized by the BLM for assessing impacts to fossil resources is the Potential Fossil Yield Classification System (PFYC). This system classifies geologic units based on the relative abundance of vertebrate fossils or scientifically important invertebrate and plant fossils and their sensitivity to adverse impacts. This classification is applied to a geologic formation, member, or other distinguishable unit. This classification system recognizes that although significant fossil localities may occasionally occur in a geologic unit, a few widely spaced localities do not necessarily indicate a higher class. The primary purpose of the PFYC is to assess the possible impacts from surface disturbing activities and help determine the need for pre-disturbance surveys and monitoring during construction.

The project area is underlain and crosses exposures of the Green River and Wasatch Formations (including the Shire Member) of the Piceance Creek Basin. These formations are ranked under the PFYC system as class 3b/4b formations. In Class 3b, units exhibit geologic features and conditions that suggest significant fossils could be present, but little information about the paleontological resources of the unit or the area is known. Class 4b units have high potential of occurrences, but have lowered risks of disturbance due to moderating circumstances such as a protective layer of soil or alluvial material; or outcrop areas are smaller than two contiguous acres. In Class 3 units, fossil content varies in significance, abundance, and predictable occurrence. In Class 4 units, vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur, but may vary in occurrence and predictability.

Paleontological field visits, U.S. Geological Survey (USGS) geologic maps and topographic quadrangles, revealed that the project area is heavily vegetated in grasses, scrub oak and non-contiguous pinyon pine-juniper woodlands. Additionally, an examination of the BLM paleontology database no known fossil deposits in this area. Surface fossils were rare along the proposed ROW; however, the Green River and Wasatch Formations are known for their rich fossil content.

### Environmental Consequences

#### *Proposed Action*

Construction of the proposed pipelines has the potential to adversely affect scientifically important fossils. Both surface and subsurface fossils could be damaged or destroyed. The greatest potential for impacts is associated with excavation of surficial materials and shallow bedrock. The Proposed Action would result in phased construction distributed over two separate years; therefore, potential impacts associated with construction would occur during two distinct time intervals separated by one or more years. However, the increased potential for impacts as a result to two projects would only be experienced in the area of the shared corridor between Spruce Creek and Beaver Creek. Since the two pipelines share the same construction ROW, the impacts identified in the Proposed Action for the WPX water pipelines and for Bargath's natural gas pipeline for Fossil Resources are unchanged and apply similarly to both projects. The standard paleontological COA would apply and is included in Appendix A.

#### *No Action Alternative*

Under this alternative, impacts potentially associated with the Proposed Action would not occur.

### **Invasive Non-Native Plants**

#### Affected Environment

Weeds observed within the Kokopelli II pipeline included twenty different species of noxious weeds listed by the State of Colorado and Garfield County. The most prevalent listed weeds are plumeless thistle (*Carduus acanthoides*), Scotch thistle (*Onopordum acanthium*), cheatgrass (*Anisantha tectorum*), field bindweed (*Convolvulus arvensis*), musk thistle (*Carduus nutans*), Russian knapweed (*Acroptilon repens*), and houndstongue (*Cynoglossum officinale*). These weeds occur along much of the pipeline alignment especially in non-irrigated fields, riparian areas, and Gambel's oak (*Quercus gambelii*) woodlands, road ROWs, and other disturbed areas (WWE 2011b). Cheatgrass is scattered in the pinyon-juniper woodlands and sagebrush shrublands understory. Cheatgrass is a highly invasive non-native annual grass that has become one of the most problematic weeds in arid and semi-arid habitats throughout the region.

Invasive non-native species within the project area not listed as noxious weeds in Colorado but, nonetheless, problematic in terms of overall habitat quality and potentially affecting reclaimed areas included kochia (*Bassia scoparia*), Russian-thistle (*Salsola spp.*), lambs-quarters (*Chenopodium album*),

prostrate knotweed (*Polygonum aviculare*), prostrate pigweed (*Amarantha blitoides*), and prickly lettuce (*Lactuca serriola*).

Generally, weed species were encountered adjacent to or within areas of higher moisture conditions or in sites where ground disturbance had occurred such as along roads or existing pipelines areas. However, some species, such as houndstongue, readily invade undisturbed sites and often occur in dense infestations along wetlands and particularly in dense areas of Gambel's oak and serviceberry (*Amelanchier alnifolia*).

### Environmental Consequences

#### *Proposed Action*

Subsequent to soil disturbances, vegetation communities can be susceptible to infestations of invasive or exotic weed species. Vegetation removal and soil disturbance during construction can create an avenue for the invasion and establishment of invasive non-native species. Because invasive, non-native species are also present in the project area, the potential for increased establishment of these undesirable plants following construction activities is increased. As a result of the construction of the two pipeline projects occurring in separate years, the opportunity for invasive plant species to negatively affect disturbed lands along the ROW may be exacerbated. The successive redisturbance of soils and reclaimed areas in the WPX project area between Spruce and Beaver Creeks by Bargath's construction would increase the chances of the development of invasive non-native plant communities.

Control of invasive species is a challenging task and requires intensive ongoing control measures. The implementation of an integrated noxious weed management plan is an important step in the prevention and management of weed infestation. Care must be taken to prevent damage to desirable plant species during treatments to avoid further infestations by other pioneer invaders. Weed management is best achieved through a variety of methods over a long period of time including inventory (surveys), direct treatments, prevention through BMPs, monitoring of treatment efficacy, and subsequent detection efforts. Weed management is often done primarily to control existing species and to prevent further infestations (existing and new species) rather than eradication. After successful and effective management, decreases in infestation size and density can be expected, and after several years of successful management practices, eradication is sometimes possible.

Construction equipment traveling from weed infested areas into weed free areas can disperse noxious or invasive weed seeds and propagates, resulting in the establishment of invasive species in previously weed free areas. BLM standard COAs would be applied to this project after WPX initial construction and again after final Bargath reclamation, which require periodic monitoring and weed control practices to ensure that these weedy plants are controlled (Appendix A).

#### *No Action Alternative*

Under the No Action Alternative, no surface disturbance would occur on the pipeline alignment and the proposed gas and water pipelines would not be constructed. This would result in no new surface impacts within the proposed pipeline corridor and surrounding lands. Invasive non-native species would not be expected to increase as rapidly as they would under the Proposed Action.

### Analysis on Public Land Health Standard 4 for Plant and Animal Communities (partial, see also Special Status Species, Vegetation, and Aquatic and Terrestrial Wildlife)

This area was meeting the standard, although with problems noted regarding the establishment of invasive, non-native plants, predominantly in disturbed areas, and declines in several plant functional groups, primarily cool-season grasses and forbs. Surface disturbance from this project has the potential to increase

the spread of non-native invasive plants. The revegetation and weed management requirements presented in Appendix A are designed to restore native vegetation to disturbed sites, and remove invasive non-natives. Based on project design components and the protective stipulations presented in Appendix A, the Proposed Action would not jeopardize the viability of any plant population as a result of the proliferation of non-native, invasive species. The project would have no significant adverse effects on habitat condition, utility, or function or on species abundance and distribution at a landscape scale. Consequently, public land health Standard 4 would continue to be met.

## **Migratory Birds**

### **Affected Environment**

The Migratory Bird Treaty Act (MBTA) includes native passerines (flycatchers and songbirds) as well as birds of prey, migratory waterbirds (waterfowl, wading birds, and shorebirds), and other species such as doves, hummingbirds, swifts, and woodpeckers. Within the context of the MBTA, “migratory” birds include non-migratory “resident” species as well as true migrants, essentially encompassing virtually all native bird species. For most migrant and resident species, nesting habitat is of special importance because it is critical for supporting reproduction in terms of both nesting sites and food. In addition, because birds are generally territorial during the nesting season, their ability to access and utilize sufficient food is limited by the quality of the territory occupied. During non-breeding seasons, birds are generally non-territorial and able to feed across a larger area and wider range of habitats.

Numerous migratory bird species occupy, or have the potential to occupy, the project area. Migratory bird species that are Federally listed under the Endangered Species Act of 1973, as amended, or classified by the BLM and USFS as sensitive species or USFS Management Indicator Species (MIS) are addressed under the section on Special Status Species. The current section addresses migratory birds that may inhabit the proposed project area. Emphasizing the need to conserve declining species, the USFWS has published a list of Birds of Conservation Concern (BCC) that deserve prompt conservation attention to stabilize or increase populations or to secure threatened habitats. This section also addresses species within the project area that are listed as BCC species (USFWS 2008). This analysis focuses on BCC species, non-BCC species that are Neotropical (long-distance) migrants, and raptors—three groups highly vulnerable to habitat loss or modification on their breeding grounds.

The proposed Kokopelli II natural gas pipeline and the WPX water pipelines would traverse through several habitat and vegetation types depending on slope, aspect, soils, elevation, and hydrology. Much of the proposed alignment is along level to gently rolling ground on mesa tops, benches, and valley bottoms. Perennial waters and wetlands occurring along the proposed alignment include East Mamm Creek, Middle Mamm Creek, Gant Gulch, West Mamm Creek, Beaver Creek, Porcupine Creek, Spruce Creek, and the Colorado River. The flow pattern of drainages is generally south to north towards the Colorado River. Elevation along the alignment varies from approximately 5,200 feet at the Colorado River to 7,875 feet above sea level (ASL) on Flatiron Mesa.

Dominant vegetation communities include pinyon-juniper woodlands, mountain shrublands, sagebrush shrublands, riparian, and agricultural lands. These vegetation communities provide a variety of habitats important to migratory and resident birds for foraging, nesting, and rearing their young; activities that are essential to the survival of the species.

Habitat and nesting records for BCC species, as described by Kingery (1998), Righter et al. (2004), and in Colorado Birds (Andrews and Righter 1992), near the vicinity of the project area are summarized in Table 7. Species on the BCC list that are potentially present in the project area, based on habitat preferences and known geographic ranges, include Brewer’s sparrow (*Spizella breweri*), juniper titmouse (*Baeolophus griseus*), pinyon jay (*Gymnorhinus cyanocephalus*), Cassin’s finch (*Carpodacus cassinii*), golden eagle

(*Aquila chrysaetos*), and flammulated owl (*Otus flammeolus*). The flammulated owl is also a USFS Sensitive Species while the Brewer’s sparrow is a BLM sensitive species and USFS MIS species (see **Special Status Species**).

<b>Table 7. BCC Species Potentially Present in the Project Area Based on Known Records</b>		
<i>Common Name</i>	<i>Scientific Name</i>	<i>Habitat</i>
Brewer’s sparrow*	<i>Spizella breweri</i>	Sagebrush shrublands
Cassin’s finch	<i>Carpodacus cassinii</i>	Montane and subalpine coniferous forests, also pinyon-juniper woodlands, aspen and cottonwood habitats
Juniper titmouse	<i>Baeolophus griseus</i>	Mature pinyon-juniper woodlands
Pinyon jay	<i>Gymnorhinus cyanocephalus</i>	Mature pinyon-juniper woodlands
Golden eagle	<i>Aquila chrysaetos</i>	Upland habitats and mesas
Flammulated owl**	<i>Otus flammeolus</i>	Montane and subalpine coniferous forests and aspen
*BLM-sensitive and USFS MIS species **USFS sensitive		

Brewer’s sparrow nest primarily in sagebrush stands, usually in extensive, mature stands on level or rolling terrain. This species is expected to occur in the sagebrush dominated portions of the project area such as private lands along West Mamm Creek and in the mixed mountain shrublands on Flatiron Mesa. The habitat for Brewer’s sparrows on WRNF lands is marginal, due to the low density and low height of much of the sagebrush that occurs in that section of the pipeline alignment.

Cassin’s finch nests at higher elevations, primarily in montane and subalpine coniferous forests, but often disperse to lower elevation foothills pinyon-juniper woodlands following the breeding season and may remain there over the winter. This species is potentially present as a winter visitor in the project area, particularly in the West Mamm Creek portion on WRNF lands. Juniper titmouse is common in the pinyon-juniper woodlands throughout the project area where this species typically nests. Titmice are cavity nesters and tend to occupy areas of pinyon-juniper where snags are more abundant. Pinyon jays are common in pinyon-juniper woodlands near Flatiron Mesa, east of Porcupine Creek, Spruce Creek, and West Mamm Creek area where suitable nesting habitat occurs. During biological surveys conducted for this project, several nests in juniper trees were observed east of Porcupine Creek and were of size and structure to have been occupied by pinyon jays.

A variety of other migratory species, including Neotropical migrants, use the upland habitats and riparian habitats found near the tributary creeks draining to the Colorado River. Riparian nesters are expected to include the Cordilleran flycatcher (*Empidonax occidentalis*), American robin (*Turdus migratorius*), house wren (*Troglodytes aedon*), black-capped chickadee (*Poecile atricapillus*), warbling vireo (*Vireo gilvus*), plumbeous vireo (*V. plumbeus*), yellow warbler (*Dendroica petechia*), MacGillivray’s warbler (*Oporornis tolmiei*), orange-crowned warbler (*Oreothlypis celata*), Bullock’s oriole (*Icterus bullockii*), and lazuli bunting (*Passerina amoena*).

Prevalent species nesting in the upland areas may include the dusky flycatcher (*Empidonax oberholseri*), rock wren (*Salpinctes obsoletus*), black-headed grosbeak (*Pheucticus melanocephalus*), lark sparrow (*Chondestes grammacus*), vesper sparrow (*Pooecetes gramineus*), chipping sparrow (*Spizella passerina*), white-breasted nuthatch (*Sitta carolinensis*), blue-gray gnatcatcher (*Polioptila caerulea*), black-throated gray warbler (*Setophaga nigrescens*), mourning dove (*Zenaida macroura*), common nighthawk (*Chordeiles minor*), mountain bluebird (*Sialia currucoides*), scrub jay (*Aphelocoma californica*), western tanager (*Piranga ludoviciana*), Townsend’s solitaire (*Myadestes townsendi*), green-tailed towhee (*Pipilo*

*chlorurus*), spotted towhee (*Pipilo maculatus*), ash-throated flycatcher (*Myiarchus cinerascens*), lesser goldfinches (*Carduelis psaltria*), and wild turkey (*Meleagris gallopavo*).

Thirteen species of raptors may potentially occur in the project area (WWE 2011a, Table 8). Common species typically known to occur in mountain shrub and pinyon-juniper habitat like that found in the project area include the red-tailed hawk, great horned owl, American kestrel, and Cooper’s hawk. The absence of cliffs/bluffs with sufficient height makes it an unlikely area to find falcon or golden eagle nests. Golden eagles are included as possible nesters, since this species sometimes nests in pinyon-juniper woodlands.

<b>Table 8. Raptor Species that May Potentially Occur in the Project Area</b>		
<i>Common Name</i>	<i>Scientific Name</i>	<i>BCC Status</i>
American kestrel	<i>Falco sparverius</i>	--
Bald eagle	<i>Haliaeetus leucocephalus</i>	BCC
Cooper’s hawk	<i>Accipiter cooperii</i>	--
Flammulated owl	<i>Otus flammeolus</i>	BCC
Golden eagle	<i>Aquila chrysaetos</i>	BCC
Great horned owl	<i>Bubo virginianus</i>	--
Long-eared owl	<i>Asio otus</i>	--
Northern goshawk	<i>Accipiter gentilis</i>	--
Northern harrier	<i>Circus cyaneus</i>	--
Northern saw-whet owl	<i>Aegolius acadicus</i>	--
Red-tailed hawk	<i>Buteo jamaicensis</i>	--
Sharp-shinned hawk	<i>Accipiter striatus</i>	--
Swainson’s hawk	<i>Buteo swainsoni</i>	--

Golden eagles typically hunt across open upland habitats such as atop Flatiron Mesa or on the Colorado River Valley floor and nearby hills and mesas. The lack of suitable cliff nesting habitat within the project area reduces the chances of nesting by golden eagles. However, golden eagles sometimes construct nests in cross members of tall power line support structures. Flammulated owls generally nest in montane conifers and aspen (*Populus tremuloides*), which do not occur in the immediate project area but occur at higher elevations south of the proposed alignment.

Raptor nesting habitat within the project area primarily consists of mature pinyon and juniper trees, mature Gambel’s oak woodlands, narrowleaf cottonwoods (*Populus angustifolia*), blue spruce (*Picea pungens*), Douglas-fir (*Pseudotsuga menziesii*), sandstone cliffs/bluffs, and large power line support structures. While a few low sandstone bluffs occur in the project area, most are too low to be suitable raptor nest sites. However, one nest was found along East Mamm Creek in the bluffs north of the alignment and one in a bluff north of West Mamm Creek.

Thirty-four suspected or verified raptor nests were found in the project area during the July-November 2011 field survey (WWE 2011a, Table 9, and Figures 10a and 10b). Twenty-four nests were on private land, and 14 were on Federal lands. Based on biological sign (e.g., whitewash, feathers, down, new nesting materials, or prey items) observed in or around the site, six nests (5 on private lands and 1 on Federal lands) were determined to have been occupied by raptors during the 2011 nesting season. Of the

28 remaining nest sites, there was insufficient biological evidence available to conclude that there had been nesting activity during 2011.

<b>Table 9. Raptor Nests – WPX and Bargath Project Area, 2011 Observations</b>						
<i>Species</i>	<i>Number of Nests</i>	<i>Occupied</i>	<i>Unoccupied</i>	<i>Distance (yds) of nest from ROW &lt; 50</i>	<i>Distance (yds) of nest from ROW 50-100</i>	<i>Distance (yds) of nest from ROW &gt;100</i>
Red-tailed hawk	8	3	5	2	3	3
Cooper’s hawk	3	1	2	2	0	1
American kestrel	2	2	0	1	1	0
Great horned owl	2	0	2	0	0	2
Unknown hawk	1	0	1	1	0	0
Unknown accipiter	18	0	18	7	2	9
<b>TOTAL</b>	<b>34</b>	<b>6</b>	<b>28</b>	<b>13</b>	<b>6</b>	<b>15</b>

Environmental Consequences

*Proposed Action*

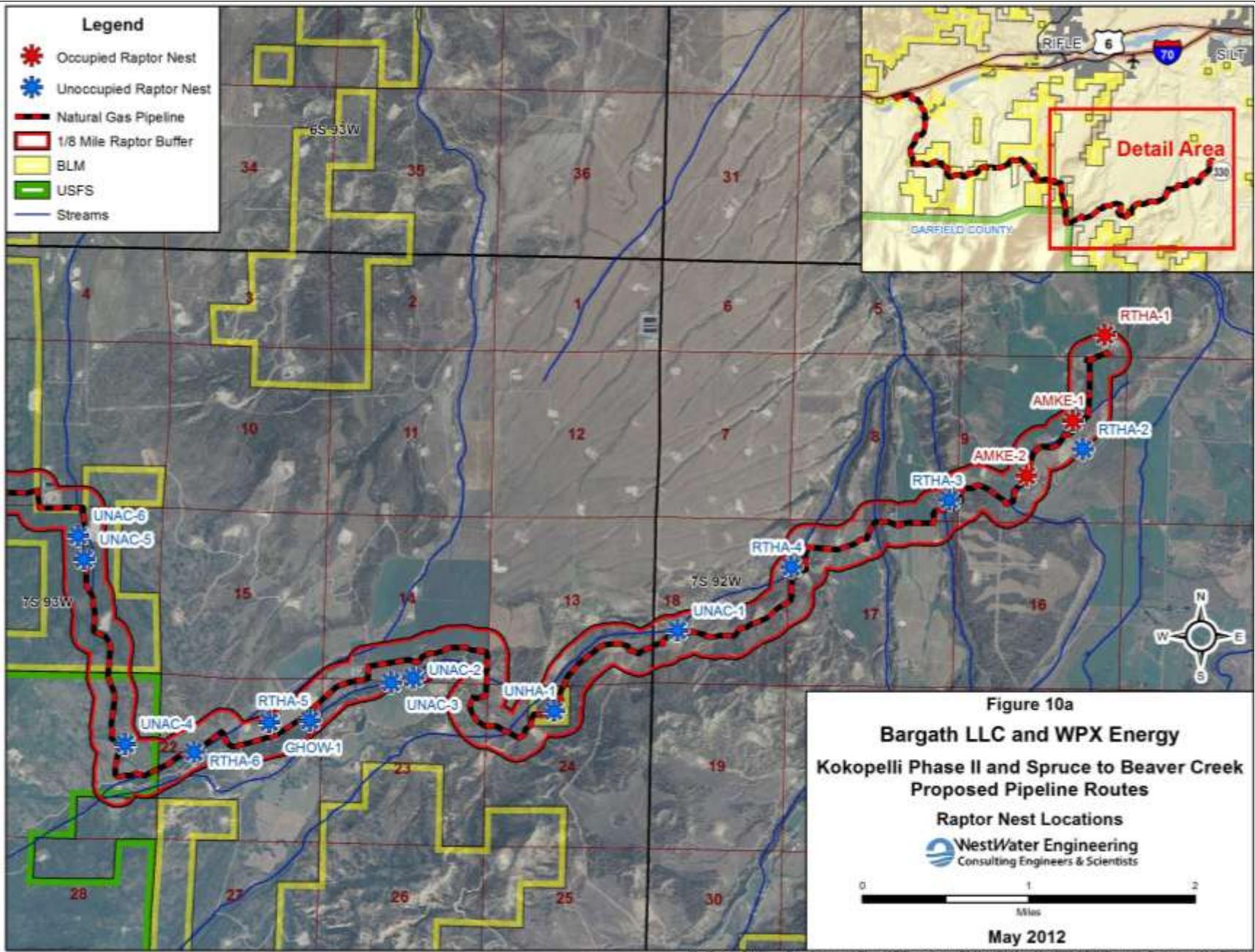
The Proposed Action would result in phased construction and impacts to migratory birds would potentially occur during two distinction time intervals separated by one or more years. In the area of the shared corridor, direct impacts to habitat as a result of the WPX clearing of ROW vegetation would be reduced during Bargath’s pipeline project, since late seral stage woodlands and shrub habitat would not have reoccupied the previously cleared areas. Similar indirect impacts resulting from the presence of equipment and personnel in close proximity to migratory bird habitat would be present during both phases of the two construction periods.

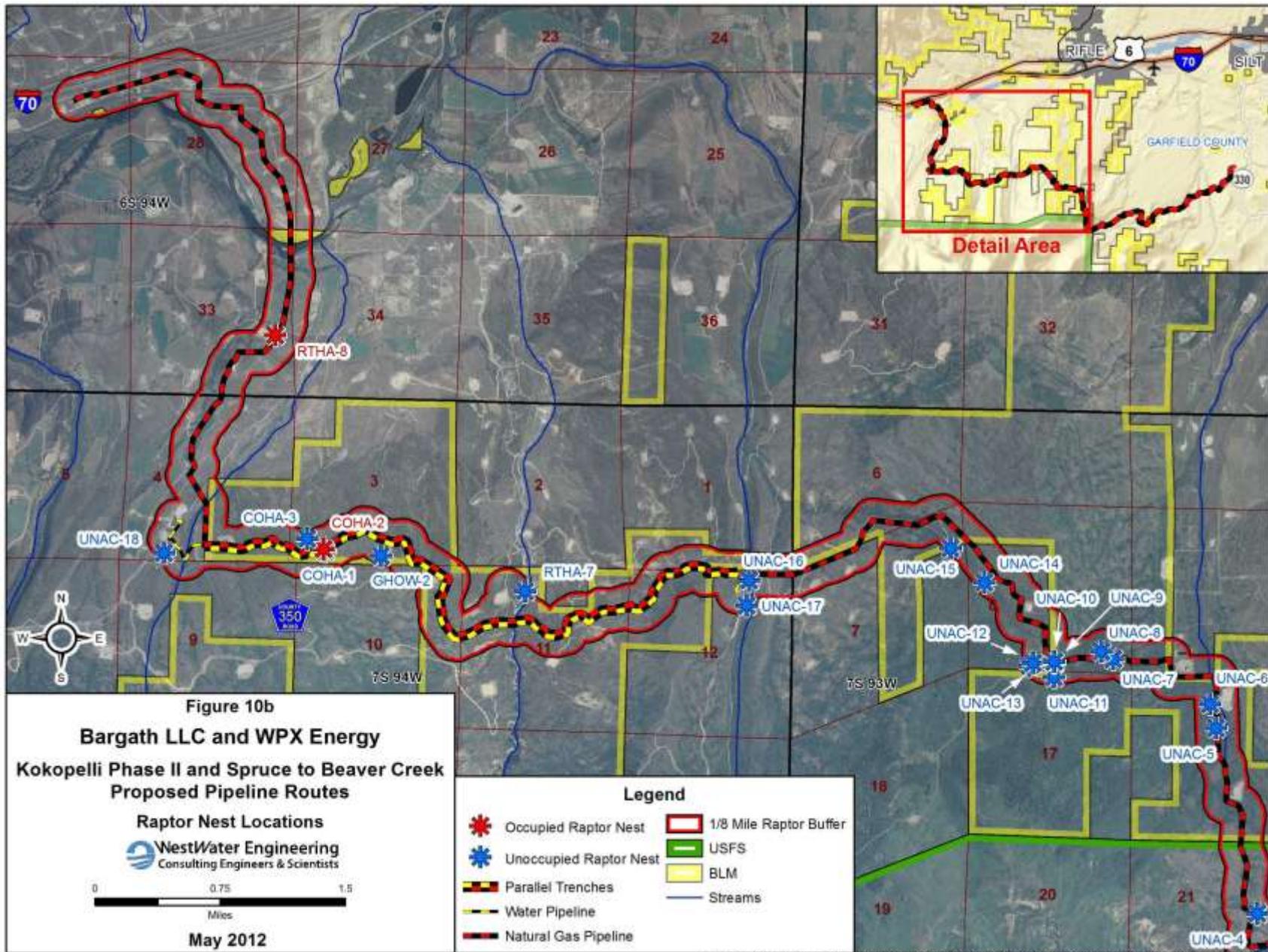
The impacts analyzed for WPX’s Spruce to Beaver Creek pipelines and the Bargath’s Kokopelli pipeline are broadly applicable for the migratory bird species evaluated in the Affected Environment of this Proposed Action. This is due to the fact that most of the species have extensive ranges, which are distributed widely across the landscape in this portion of western Colorado.

Under the Proposed Action, approximately 238 acres of disturbance would occur on private, BLM, and USFS land as a result of pipeline construction. Following successful interim reclamation, the disturbance would return to an early plant seral stage. Removal of vegetation would result in loss of existing and potential nesting sites for perching birds. If construction of the proposed pipelines occurs during the nesting season, visual, and noise disturbance near active nests could cause nest abandonment and failure, reducing the productivity of affected species. Construction activity during the nesting season could also result in the destruction of clutches and/or mortality of nestlings.

WPX Construction 2012

Approximately 30 acres of migratory bird habitat would be directly affected during WPX’s initial construction in 2012. The largest portion of the habitat is mature pinyon-juniper woodlands. Eight known raptor nest sites would potentially be affected along the WPX waterline ROW (Figure 10b from UNAC-16 to UNAC-18). One nest site near Spruce Creek was likely occupied by Cooper’s Hawks (COHA-2) during the 2011 nesting season. This nest is within the construction ROW and may be removed during vegetation clearing for project construction.





**Figure 10b**  
**Bargath LLC and WPX Energy**  
**Kokopelli Phase II and Spruce to Beaver Creek**  
**Proposed Pipeline Routes**  
**Raptor Nest Locations**  
 WestWater Engineering  
 Consulting Engineers & Scientists  
 0 0.75 1.5  
 Miles  
 May 2012

**Legend**

- ✳ Occupied Raptor Nest
- ✳ Unoccupied Raptor Nest
- Parallel Trenches
- Water Pipeline
- Natural Gas Pipeline
- 1/8 Mile Raptor Buffer
- USFS
- BLM
- Streams

Map Source: 2: Williams Bargath/Kokopelli Phase II/US report maps/A Maps/A Maps May 2012 (NEW)/Figure 10b Raptors.mxd May 2012.dwg

*Bargath Construction 2013 or Later*

During this construction period, approximately 208 additional acres of migratory bird habitat would be affected by project construction. Five raptor nest sites occupied during 2011 may be affected by construction activities through the loss of the nest tree during clearing of the proposed pipeline alignment. Three of these were occupied by red-tailed hawks and two by American kestrels.

Raptor nest sites that are occupied during either WPX or Bargath pipeline construction may be affected by disturbance from the operation of equipment and the presence of humans close to nest sites. The primary concern to raptors by disturbance is nest abandonment by adults after eggs have been deposited. Nest abandonment may occur during incubation or during the time when hatchlings are maturing in the nest prior to fledging. The incubation period is the most vulnerable period; adults with chicks are less likely to abandon the nest due to a greater fidelity to hatched young. Nesting raptors that successfully fledge young often return to established nest sites or nesting territories the following year. Therefore, it is more probable that successful nests occupied in 2011 will be reoccupied in 2012 and subsequent years. However, unoccupied nests may be reoccupied or new nests may be constructed within the area of the Proposed Action during the next (2012) or future nesting seasons.

Implementation of the COAs require that a survey be conducted prior to construction, drilling or completion activities that are to begin during the raptor nesting season (**February 1 to August 15**) would decrease the potential impacts to nesting raptors. The survey would include all potential raptor nesting habitat within 0.125 mile of an access road, pipeline, or other surface facility. Additionally, there is a COA that prohibits vegetation removal or completion of clearance surveys during the period May 1 to July 1 (Appendix A), which would mitigate impacts to raptor and migratory bird species.

In addition to the timing limitation (TL), the operator is subject to the MBTA, administered by the USFWS, which precludes the “take” of any raptor or most other native species. Under the Act, the term “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The USFWS interprets “harm” and “kill” to include loss of eggs or nestlings due to abandonment or reduced attentiveness by one or both adults as a result of disturbance by human activity, as well as physical destruction of an occupied nest.

Following construction, the pipeline ROW would be seeded with a mix of native perennial grass species approved by BLM or WRNF, respectively. Potentially, portions of the pipeline on private lands may be seeded with a different mix containing non-native perennial pasture grasses and non-native perennial forbs (e.g., alfalfa or sweetclover), depending on the preference of the surface landowner. Many decades would be required for the ROW to begin to revert to a more native habitat type, even assuming no periodic redisturbance to upgrade the pipeline or add another pipeline.

In addition to direct and indirect habitat loss, is the effect of habitat fragmentation on nesting bird species. While the width of the pipeline corridor would not create a movement barrier to birds—unlike, for example, some small mammal species—it would have the effect of reducing the patch size of some tree or shrub stands and increasing the amount of habitat edge. Thus, habitat-interior species—which include most of the BCC species and Neotropical migrants listed above—would be subject to additional habitat loss due their tendency to avoid the newly created habitat edge along the corridor. While the effective width of a habitat edge varies by bird species and type of habitat, a width of up to 300 feet is possible for some species. Bird species associated with grass/forb rather than shrubland communities, or with habitat edges instead of habitat interiors, would benefit slightly from the habitat modification once reclamation has been achieved. Edge species tend to include habitat generalists, such as the migratory American robin, the resident black-billed magpie (*Pica hudsonius*), and house finch (*Carpodacus mexicanus*).

While habitat loss and fragmentation may affect individual birds, it is not expected to adversely affect the population size of any BCC species or other migratory birds discussed above. This conclusion is based on the small amount of actual habitat loss, the transitory nature of the construction phase, and the presence of existing habitat fragmentation in the project area that already has created smaller habitat patches and greater habitat edges than in an undeveloped area.

#### *No Action Alternative*

Under the No Action Alternative, no surface disturbance would occur on private, BLM or USFS lands, and the natural gas pipeline and two water lines would not be constructed. No additional impacts to existing vegetation would occur and consequently no adverse impacts to Migratory birds would occur.

### **Native American Religious Concerns**

#### Affected Environment

The Proposed Action is located within an area identified by the Ute Tribes as part of their ancestral homeland. A number of Class III cultural resource inventories (see Cultural Resources section) were conducted in the Proposed Action's vicinity to determine if any areas were known to be culturally sensitive to Native Americans. No sensitive areas were identified or are currently known in the proposed project area.

#### Environmental Consequences

##### *Proposed Action*

At present, no Native American concerns are known within the project area and none were identified during the inventories. The Ute Tribe of the Uintah and Ouray Bands, Southern Ute, and Ute Mountain Ute Tribes were notified of the proposed Kokopelli Phase II Pipeline Project on December 8, 2011. No responses, questions, or requests for additional information have been received by January 20, 2012. If new data are disclosed, new terms and conditions may have to be negotiated to accommodate their concerns.

The Proposed Action would result in phased construction distributed over two separate years with WPX waterlines planned for 2012 and Bargath's pipeline planned for 2013 or later. Although the Proposed Action would have no direct impacts, increased access and personnel in the vicinity of the proposed project could indirectly impact unknown Native American resources, ranging from illegal collection to vandalism. The increased potential for impacts would only be expected in the area of the shared corridor between Spruce Creek and Beaver Creek. However, since the two pipelines would occupy the same construction ROW, direct potential impacts to Native American Religious Concerns would not be expected to increase significantly as a result of the two separate projects.

The impacts identified in the Proposed Action for the WPX water pipelines and for Bargath's natural gas pipeline for Native American Religious Concerns apply similarly to both projects.

The NHPA requires that if newly discovered cultural resources are identified during project implementation, work in that area must stop and the agency AO notified immediately (36 CFR 800.13). The Native American Graves Protection and Repatriation Act (NAGPRA), requires that if inadvertent discovery of Native American Remains or Objects occurs, activity must cease in the area of discovery, a reasonable effort made to protect the item(s) discovered, and immediate notice made to the agency AO, as well as the appropriate Native American group(s) (IV.C.2). Notice may be followed by a 30-day delay (NAGPRA Section 3(d)). Further actions also require compliance under the provisions of NHPA and the

Archaeological Resource Protection Act. Bargath and WPX will notify their staffs and contractors of the requirement under the NHPA, that work must cease if cultural resources are found during project operations. A standard Education/Discovery COA for the protection of Native American values would be attached to the COAs (Appendix A). The importance of these COAs would be stressed to the operators and their contractors, including informing them of their responsibilities to protect and report any cultural resources encountered. The proponent and contractors would also be aware of requirements under the NAGPRA.

#### *No Action Alternative*

The No Action Alternative would deny the (ROW) applications for the use of Federally administered lands and, therefore, construction of the pipelines (either Bargath's gas pipeline or WPX's water lines) would not occur on BLM or USFS land. However, the operators could install the Kokopelli II gas pipeline or the WPX water pipelines entirely across private land, although the routes would be widely circuitous and exceedingly expensive resulting in far more surface disturbance and resource impacts than that associated with the Proposed Action identified in this EA. Additionally, though the No Action Alternative would stop the potential to expose buried cultural resources on Federal lands, the longer route across private lands would increase the potential to expose buried cultural resources as well as increase the potential for indirect effects from illicit collection or vandalism on private property.

## **Noise**

### Affected Environment

Noise is generally described as unwanted sound; weighted noise intensity (or loudness) is measured as sound pressure in decibels (dBAs). The decibel scale is logarithmic, not linear, because the range of sound that can be detected by the human ear is so great that it is convenient to compress the scale to encompass all the sounds that need to be measured. Each 20-unit increase in the decibel scale increases the sound loudness by a factor of 10.

Sound levels have been calculated for areas that exhibit typical land uses and population densities. In rural recreational areas, ambient sound levels are expected to be approximately 30 to 40 dBA (EPA 1974, Harris 1991). As a basis for comparison, the noise level during normal conversation of two people 5 feet apart is 60 dBA.

The Proposed Action would lie within a rural setting approximately 4.5 miles south of the town of Rifle, Colorado, at its closest point to the city. Existing noise levels in the project area are presently created by various factors including local ranch and rural residential traffic, farm equipment, natural gas exploration and production, and natural gas compressor stations. This is particularly true at the eastern and western ends of the proposed alignment, which lie in closer proximity to areas of human use. These local sources create an ambient noise level that is high relative to other parts of the project area. The middle portion of the proposed alignment is more remote, and background noise levels are lower. People who would be subject to noise generated in the project area, for the most part, employees of the oil and gas companies and travelers along major county roads. Ranchers, recreational visitors (e.g., hunters or hikers), and wildlife would also be subject to noise generated in the area.

Nineteen residences are located within 1,320 feet (0.25 mile) of the pipeline alignment and sixteen of the residences are less than 1,000 feet from the alignment. Of the 19 residences within 1,320 feet, 11 are located in the eastern portion of the pipeline alignment in the East, Middle, and West Mamm Creek drainage areas. The other eight are in the Spruce Creek area in the western portion of the alignment.

## Environmental Consequences

### *Proposed Action*

The Proposed Action would result in phased construction distributed over two separate years with WPX waterlines planned for 2012 and Bargath's pipeline planned for 2013 or later. Comparable noise impacts would be experienced in the environment of the shared corridor between Spruce Creek and Beaver Creek, during both construction periods, due to use of similar equipment and relative personnel requirements during development of the projects.

Increased levels of noise would occur during all phases of construction and would be in addition to background levels due to current gas developments in the area. The noise would be most noticeable along Garfield County Roads used to haul equipment and along the alignment during all phases of pipeline construction. Elevated noise levels would occur along access roads as vehicles and heavy equipment travel to and from the site. People and wildlife could be disturbed by elevated noise levels during construction. However, elevated noise levels would occur between sunrise and sunset and would be of relatively short duration in any given area.

The revised Colorado Oil and Gas Conservation Commission (COGCC 2008) noise control rules call for noise levels from oil and gas operations at any well site and/or gas facility to comply with the maximum permissible levels (Table 10) at a distance of 350 feet. Operations involving pipeline or gas facility installation or maintenance, the use of a drilling rig, completion rig, workover rig, or stimulation are subject to the maximum permissible noise levels for industrial zones (Table 10). Periodically the noise level may increase to 10 dBA above levels in Table 10 for no more than 15 minutes in one hour period. The COGCC allowable noise level for periodic impulsive or shrill noises is reduced by 5 dBA from the levels shown in Table 10 (COGCC 2008).

<i>Zone</i>	<i>7:00 A.M. to 7:00 P.M</i>	<i>7:00 P.M. to 7:00 A.M</i>
Residential/Agricultural/Rural	55 dBA	50 dBA
Commercial	60 dBA	55 dBA
Light Industrial	70 dBA	65 dBA
Industrial	80 dBA	75 dBA

Table 11 presents typical noise levels for construction equipment, based on the Inverse Square Law of Noise Propagation (Harris 1991), typical noise levels for construction equipment. The majority of these typical construction-related noise sources would exceed the COGCC maximum permissible sustained noise level of 80 dBA for an industrial zone at a distance of 50 feet. Highest noise levels likely to occur during construction would result from the use of bulldozers with a noise level of 89 dBA at 50 feet (Table 11).

Noise impacts from pipeline construction activities would vary depending the type of construction occurring and equipment employed. The longest duration of noise would be associated with the excavation (backhoe) of the pipeline trench, which would likely be only a portion of 1 day in the vicinity of each residence. A backhoe can excavate up to approximately 1 mile per day in suitable soil condition or 1,000 feet in more difficult terrain. Noise would occur only during the daylight construction period. Residences located at distances greater than 150 feet from the alignment would experience noise levels below the COGCC permissible industrial level of 80 dBA (EPA 1974). Increased noise levels would be in addition to noise levels already above background due to current oil and gas developments in the area.

<b>Table 11. Typical Noise Levels at Construction Sites and along Access Roads</b>			
<i>Equipment</i>	<i>Noise Level (dBA)</i>		
	<i>50 feet</i>	<i>500 feet</i>	<i>1,000 feet</i>
Air Compressor, Concrete Pump	82	62	56
Backhoe	85	65	59
Bulldozer	89	69	63
Crane	88	68	62
Front End Loader	83	63	57
Heavy Truck	88	68	62
Motor Grader	85	65	59
Road Scraper	87	67	61
Tractor, Vibrator/Roller	80	60	54
Sources: BLM (1999), La Plata County (2002)			

Traffic noise would also be elevated as a consequence of the Proposed Action. Maintained access roads and travel along the construction alignment during all phase of pipeline construction would have the greatest increase in noise. Based on the La Plata County data presented in Table 11, approximately 68 dBA of noise (at 500 feet) would be created by each heavy truck that travel county roads. Less noise would be created by smaller trucks and passenger vehicles such as pickup trucks and sport utility vehicles. Although the duration of increased noise from increase and decrease during different phases of the project construction.

Construction noise impacts would cease after the pipeline is in place and the reclamation is completed. Operations and maintenance traffic would be limited to smaller vehicles that would tend to monitoring and inspections of the operational pipeline. These noise levels would be similar to vehicular traffic associated with levels of noise that are already above background levels due to current oil and gas developments in the area. Traffic noise levels would affect residences located along county roads that provide primary access into the area.

WPX Construction 2012

No residences are located within 1,320 feet of the pipeline ROW in this portion of the project area. Therefore, potential noise issues would be limited to mainly natural gas industry workers, a limited number of ranchers that manage livestock in the area, and possibly recreationists using the area.

Bargath Construction 2013 or Later

Of the 19 residences within 1,320 feet of the Bargath alignment, six would be within 350 feet of the pipeline alignment (Table 12). Based on 89 dBA (at 50 feet) for a bulldozer, two of the six residences (numbers 9 and 14) would experience noise above the 80 dBA industrial level, and the other four would experience levels at or below 78 dBA, when equipment is operating near those properties.

No Action Alternative

Under the No Action Alternative, no surface disturbance would occur along the pipeline alignment. However, it is likely Bargath and WPX would select an alternative alignment that would result in impacts similar to those under the Proposed Action.

<b>Table 12. Distance and Maximum Noise Levels of 19 Residences within 1,320 feet of the Bargath Alignment</b>			
<i>General Location</i>	<i>Residence (east to west)</i>	<i>Distance from Alignment (feet)</i>	<i>Maximum dBA at residence (bulldozer)</i>
East Mamm Creek	1	833	65
Middle Mamm Creek	2	362	72
Middle Mamm Creek	3	630	67
Gant Gulch	4	581	68
West Mamm Creek	5	724	66
West Mamm Creek	6	209	77
West Mamm Creek	7	1,221	61
West Mamm Creek	8	186	78
West Mamm Creek	9	90	84
West Mamm Creek	10	886	64
West Mamm Creek	11	395	71
Spruce Creek*	12	202	77
Spruce Creek	13	614	67
Spruce Creek*	14	49	89
Spruce Creek	15	193	77
Spruce Creek	16	1,030	63
Spruce Creek	17	732	66
Spruce Creek	18	1,056	63
Spruce Creek*	19	929	64
*Residence on property owned and managed by WPX Energy Rocky Mountain, LLC			

## **Range Management**

### Affected Environment

The proposed pipeline alignments would affect seven grazing allotments: six on BLM lands and one on USFS lands. The BLM grazing permits are small ranching operations, typically cow-calf operations, and are highly dependent on the forage resources in the allotments for spring, summer, and fall grazing. The USFS Hunter Creek allotment is currently vacant of cattle. It has been in “non-use” grazing status for three years but historically ran 118 cow/calf pairs from June 16 to October 15. The USFS is currently developing a proposal to reauthorize grazing on the Hunter Creek domestic cattle grazing allotment.

Livestock management practices are limited to the permit terms of period of use and restrictions on the number and kind of livestock allowed. An exception to this limited management being practiced is on the BLM Beaver Mamm Allotment (BLM 2005). The Beaver Mamm Allotment is divided into three pastures, with livestock rotated from the lowest to the highest pasture during the period of use (BLM 2005). Table 13 summarizes the permitted grazing use on each BLM allotment and the single WRNF allotment in the project areas. Rangeland improvements that could be affected by the project include fences and stock watering sources.

<b>Table 13. Grazing Allotments in the Project Area</b>					
<i>Authorization</i>	<i>Allotment Name and Number</i>	<i>Livestock Kind and Number</i>	<i>Season of Use</i>	<i>Percent Federal</i>	<i>AUMs</i>
<b>WPX Project Components</b>					
0507550	Beaver Creek - #08113	Cattle 73	5/12 – 10/14	11	41
0500001	Porcupine Creek - #08119	Cattle 49	5/7 – 6/20	100	72
0503869	Porcupine Creek - #08119	Cattle 29	5/7 – 6/20	100	43
0507632	Porcupine Creek - #08119	Cattle 11	6/16 – 9/30	84	33
0507632	Porcupine Creek - #08119	Cattle 70	10/1 – 10/15	84	29
0507632	Spruce Gulch - #08121	Cattle 196	5/16 – 6/30	38	113
0507632	Spruce Gulch - #08121	Cattle 25	10/1 – 10/30	38	9
0507516	Spruce Gulch - #08121	Cattle 14	5/15 – 9/30	80	51
<b>Bargath Project Components</b>					
0507544	Couey 1	Cattle 2	5/1 – 5/31	100	2
0507544	Couey 1	Cattle 2	10/16 – 11/15	100	2
0507561	Grass Mesa - #08112	Cattle 32 Cattle 40	5/15 – 6/30 7/1 – 8/15	100 15	49 9
0500001	Beaver Mamm - #08104	Cattle 79	5/15 – 10/15	100	400
0500157	Beaver Mamm - #08104	Cattle 45	5/15 – 10/15	100	228
0507550	Beaver Creek - #08113	Cattle 73	5/12 – 10/14	11	41
0500001	Porcupine Creek - #08119	Cattle 49	5/7 – 6/20	100	72
0503869	Porcupine Creek - #08119	Cattle 29	5/7 – 6/20	100	43
0507632	Porcupine Creek - #08119	Cattle 11	6/16 – 9/30	84	33
0507632	Porcupine Creek - #08119	Cattle 70	10/1 – 10/15	84	29
0507632	Spruce Gulch - #08121	Cattle 196	5/16 – 6/30	38	113
0507632	Spruce Gulch - #08121	Cattle 25	10/1 – 10/30	38	9
0507516	Spruce Gulch - #08121	Cattle 14	5/15 – 9/30	80	51
15-2710 (WRNF)	Hunter Creek (WRNF)*	Horse and Cow 118 cow/calf pairs	6/16 – 10/15	58	623
*This allotment is currently in non-use. It is expected that the permit will transfer within the next year and that the allotment will then be stocked.					

## Environmental Consequences

### *Proposed Action*

As a result of the Proposed Action, potential impacts associated with construction would be dispersed over a time interval of one or more years. However, the increase in potential impacts to forage would only be extended to areas of the shared corridor between Spruce Creek and Beaver Creek.

Surface-disturbing activities associated with pipeline construction would result in the loss of forage on grazing allotments, increased human activities for the short-term, and increase the potential to spread noxious weeds and other invasive non-native species. As a result of the construction of the two pipelines occurring in different years, the impacts to forage availability would increase, since redisturbance of WPX's reclamation would prolong the necessary time period (3-5 years) for recovery of vegetation.

It is anticipated that the level of impacts expected from implementation of the Proposed Action would not require the adjustment of stocking rates over the extended construction period for WPX and Bargath portions of the project. The level of forage utilization would be monitored on affected allotments and, if necessary, adjustments in livestock use would be made to protect land health. An increase in human activity related to construction and maintenance of the Proposed Action would cause cattle to move away from locations where construction is taking place. The negative impact that an increase in human activity would have on grazing livestock would be expected to be minor.

Improved forage utilization may occur along the pipeline alignment where access is improved in areas of dense mountain shrub communities that limit livestock movement. In pinyon-juniper woodlands, livestock forage grass production would likely increase due to site reclamation after the completion of the pipeline construction. Improvement in livestock distribution would also improve forage utilization.

Effects of increased human activity, construction equipment, and ground disturbance would increase the potential for the introduction and spread of noxious weeds and the subsequent degradation of rangeland health. See the section on Invasive Non-Native Plants for a detailed discussion of the potential effects of these plants and of mitigation measures related to the Proposed Action.

Removal of allotment fences and cattle guards during pipeline construction would potentially allow cattle to escape pastures and drift onto other pastures and/or allotments. Bargath and WPX would develop a plan to maintain the integrity of livestock fencing during all phases of construction. Open pipeline trenches could present a hazard to livestock and limit movement within the allotment. BMPs (including constructing trenches with natural egress ramp in the trench) and COAs (Appendix A), including repairing or replacing any range improvements affected by construction would be designed to mitigate impacts to allotments and/or cattle.

### *WPX Construction 2012*

Ground disturbance would result in the loss of 4.25 animal unit months (AUMs) of forage on the BLM allotments during 2012. The disturbance area would be reclaimed including reseeding after construction of the waterlines. Depending on when Bargath construction occurs, which would redisturb WPX's reclamation, the 3 to 5 year time period for reestablishment of livestock forage may be extended.

### *Bargath Construction 2013 or Later*

Ground disturbance would result in the potential loss of approximately 12.2 AUMs of forage on the BLM allotments. Bargath construction would affect previously disturbed rangelands along the WPX pipeline alignment; however, impacts to forage in this area would increase due to the extra ROW construction

space needed for the gas line construction. The available forage lost for Bargath's project may be slightly less than projected depending on when Bargath's construction occurs and the rate of reestablishment of seeded species in WPX's ROW. On lands in Section 21, the WRNF (L. Labelle de Rios 2012 pers. comm.) conservatively estimates that 1,000 lbs/acre of forage is produced in the Ellis Pasture of the Hunter Creek Allotment where the pipeline would be constructed. Pipeline construction would result in a loss 9,520 lbs of forage potentially available to livestock. The Ellis Pasture is 890 acres and, therefore, the production lost would be approximately one% of the available livestock forage.

With implementation of standard COAs (Appendix A), desirable forbs and grasses along the pipeline alignment would be reestablished within 3 to 5 years. A seed mix consistent with BLM standards in terms of species and seeding rate for the specific habitat type shall be used on all BLM and USFS lands affected by the project.

#### *No Action Alternative*

The No Action Alternative would result in no loss of forage or other adverse impacts on livestock or ranching operations, because the pipeline would not be constructed.

### **Realty Authorizations**

#### Affected Environment

Numerous existing Federal realty authorizations involve BLM lands within the project area (Table 14). The lone authorization on NFS lands is Federal oil and gas lease COC61121 in Section 21 (T7S R93W). Energy Transfer Corporation (ETC) was issued a BLM ROW (COC73824) in 2009 to construct a new 12-inch gas pipeline from Beaver Creek east to West Mamm Creek and a 16-inch gas line from Beaver Creek west to Spruce Creek, to be located in the proposed WPX and Kokopelli II corridor. These ETC projects have yet to be constructed and are not planned for construction in 2012. BLM has notified ETC of the planned Kokopelli line being considered for authorization in this EA, and has made the determination that the first pipeline to be constructed would have the next available or most desirable space in that corridor.

As a result of a land exchange in the 1980s, a patent (COC38487PT) was issued for T7S, R94W, Section 11, W $\frac{1}{2}$ , 6<sup>th</sup> P.M. BLM retained the rights to the minerals, ditches and canals underlying these 320 acres.

The Beaver Creek-Grass Mesa ditch originates from a diversion point in Beaver Creek in SW $\frac{1}{4}$ NE $\frac{1}{4}$ , Section 25, T7S R94W and runs north and east across private and BLM land (Sections 8 and 9, T7S R93W) to and through the Grass Mesa Subdivision lots. The ditch has been in existence since 1922; BLM recognizes that maintenance can be conducted on the ditch without prior authorization as long as the work is confined to the existing ditch course. A COA would be stipulated in the ROW (Appendix A) requiring the operator to mitigate construction impacts to the existing ditch on BLM.

#### Environmental Consequences

##### *Proposed Action*

The Proposed Action would result in phased construction distributed over separate years with WPX waterlines planned for 2012 and Bargath's pipeline planned for 2013 or later. As a result, potential impacts to existing Federal realty authorizations associated with construction would occur similarly in the shared pipeline segment, during two distinct time intervals separated by one or more years (Table 14).

<b>Table 14. Existing Realty Authorizations in the Project Area <sup>1,2</sup></b>				
<i>Oil &amp; Gas Leases</i>	<i>Power Lines</i>	<i>Access Roads</i>	<i>Pipelines</i>	<i>Other</i>
<b>Township 7 South, Range 93 West, Sections 5, 6, 7, 8, 9, 16, and 24, Sixth Principal Meridian</b>				
COC41916	COC29423-PSC	COC59786-WPX	COC59787-WPX	COC60636-Dorel Partnership (Fresh Water Pipeline)
COC50128		COC68682-Encana	COC66459-Encana	
COC50944		COC74214-Laramie	COC66794-Encana	
COC54738		COC74411-WPX	COC73824-ETC	
COC55604		COC74732-Rudolph	Corp (ETC)	
COC55972E (PA)			COC74563-WPX	
COC55972X			COC74640-ETC	
COC56298			COC74837-ETC	
COC59786			COC74857-Encana	
COC68997X			COC74858-Encana	
<b>Township 6 South, Range 94 West, Section 33, Sixth Principal Meridian</b>				
COC52584			COC57563-WPX	
COC54740				
<b>Township 7 South, Range 94 West, Sections 1, 3, 4, 10, 11, 12, Sixth Principal Meridian <sup>3</sup></b>				
COC36490		COC40241 – GarCo	COC51003 – ETC	COC71804 – Encana RM11 Pad
COC46029	COC29423 – PSC		COC57234 – ETC	COC71879 – Encana RD 11 Pad
COC46030	COC127108 –PSC		COC67721 – ETC	
COC46032		COC74836 – ETC	COC71881 – ETC	
COC56040			COC72076 – ETC	
COC06935			COC72077 – ETC	
COC07506			COC73824 – ETC	
			COC74837 – ETC	
			COC0127108 – PSC	

<sup>1</sup>The authorizations listed in this table fall within the scope of the entire Bargath Kokopelli II gas pipeline.

<sup>2</sup> PSC = Public Service Company of Colorado; ETC = Energy Transfer Corporation; GarCo = Garfield County.

<sup>3</sup>The authorizations listed in this township and range would apply directly to the WPX water pipelines.

### WPX Construction 2012

The proposed WPX water pipelines would be constructed in parallel alignment with portions of the following reclaimed gas gathering pipelines on BLM:

- Approximately 9,715 feet (1.84 miles) of the ETC gas pipeline corridor (COC51003 et al.) between Beaver Creek and Spruce Creek across Sections 1, 10, 11 and 12, T7S R94W installed in 1990s.

### Bargath Construction 2013 or Later

The proposed Kokopelli II line would be constructed in parallel alignment with portions of the following reclaimed gas gathering pipelines on BLM:

- Approximately 9,715 feet (1.84 miles) of the ETC gas pipeline corridor (COC51003 et al.) between Beaver Creek and Spruce Creek across Sections 1, 10, 11 and 12, T7S R94W installed in 1990s.
- Approximately 3,830 feet (0.73 mile) of Encana Oil and Gas (USA) (Encana's) O18 gas gathering pipeline (COC66459) across Sections 8 and 9, T7S R93W west of Grass Mesa installed in 2002.
- Approximately 250 feet of Encana's F24W gas gathering line across Section 24, T7S R93W near West Mamm Creek installed in 2005 (line located within Hunter Mesa Unit -approved via Sundry Notice).
- Approximately 3,320 feet (0.65 mile) of ETC's Flatiron Mesa gas gathering line (COC74837) across Section 6 and 7, T7S R93W installed in 2010.

In summary, the proposed WPX water pipelines and Kokopelli II gas pipeline would be located alongside approximately 13,035 feet (2.46 miles) of existing ETC pipelines; Kokopelli II would be located along 4,080 feet (0.77 mile) of existing Encana pipelines. A COA would be included in the ROW authorizations requiring Bargath (and WPX as the water line operator in certain cases) to coordinate with ETC, Encana, and other ROW holders regarding pipeline alignments, locations and crossings, and be fully responsible for weed control and reclamation of the disturbed portions of the pipeline corridor. Furthermore, the operator would be responsible for reestablishment of the existing Beaver Creek Grass Mesa ditch course where it enters and leaves the planned Kokopelli II disturbance corridor in a manner that allows ditch water to flow freely without impediments.

### *No Action Alternative*

Under the No Action Alternative, there would be no new realty authorizations issued and no impacts would occur to the various existing authorizations or the existing Beaver Creek Grass Mesa ditch.

## **Recreation**

### Affected Environment

The proposed pipeline would be located on a combination of BLM, USFS, and private lands. The BLM public lands crossed by the proposed alignment are part of the CRVFO Extensive Recreation Management Area (ERMA) where management is for dispersed/undirected recreation activities. The RMP does not have any specific, measurable, or targeted recreation management objectives for ERMAs. However, the RMP does provide a general overview of appropriate experience and activity opportunities that occur by adopted Recreation Setting Characteristics (RSC) class.

The proposed pipeline corridor would be primarily within the Front Country, Open-Deferred opportunity class characterized as being on or near gravel roads, but at least 0.50 mile from low-clearance or passenger vehicle routes. Off-Highway Vehicle (OHV) travel is designated as Open-Deferred where the area is open to vehicle use on and off road with seasonal restrictions, which have not been implemented per the RMP, meaning that the area is open to vehicle use year round. No developed recreation facilities exist within the project area. The primary use is hunting in the fall and early winter. Numerous areas and opportunities exist for dispersed recreation within the project area. The primary dispersed recreation uses are camping, hiking, and wildlife viewing.

The Flatiron Mesa area, located in the vicinity of the western segment of the Kokopelli II pipeline alignment, has a big game TL and is closed to recreational use from December 1 through April 30.

The WRNF lands crossed by the proposed route are in Management Area 5.41 (deer and elk winter range). These management areas emphasize habitat management for deer and elk and include lands classified as winter ranges and areas used during average winters by deer and elk. A TL prohibiting construction activity from December 1 to April 14 is in effect within this Management Area. The Recreational Opportunity Spectrum (ROS) for this management area is semi-primitive non-motorized in the winter and summer. Motorized traffic, including over-the-snow vehicles, is restricted to designated travel-ways at all times. The majority of the use in this area is dispersed camping, hiking, wildlife viewing, and hunting. Dispersed recreation use in this area has increased over the past couple of years because access has improved due to oil and gas development.

A minimum of 12 permitted professional outfitters use either BLM or USFS lands within the project area during a portion of the year. Most of the outfitters provide services for big game, lion hunting, and fishing. However, trail rides, camping, and wildlife viewing services are also provided by some of the outfitters.

### Environmental Consequences

#### *Proposed Action*

The Proposed Action would result in phased construction distributed over separate years with WPX waterlines planned for 2012 and Bargath's pipeline planned for 2013 or later. As a result, potential impacts to existing recreational activities associated with construction of each project would occur during two distinct time intervals separated by one or more years.

#### WPX Construction 2012

The WPX construction would result in increased vehicle traffic, dust, noise, and human activity within the project area, which would potentially affect recreational activities. Due to difficult public access to BLM lands along the WPX pipeline alignment, summer recreation is limited predominantly to private landowners. The lack of desirable destination-type natural features in this area reduces its appeal for public recreational activities. There is the potential to create user conflicts during the fall, if the installation occurs during the big game hunting seasons. Depending on construction timing, the proposal also has the potential to displace deer and elk, which could also affect hunters. The permitted outfitters may also be temporarily indirectly affected during the installation of the pipeline, if it occurs during the big game hunting season. Outfitters may need to relocate their base camps and hunting activity during the proposed pipeline construction.

### Bargath Construction 2013 or Later

In the short-term, the Bargath construction would result in increased vehicle traffic, dust, noise, and human activity within the project area. There is the potential to create user conflicts during the fall if the installation occurs during the fall big game hunting seasons. Depending on timing, the proposal also has the potential to displace deer and elk, which could also affect hunters. The permitted outfitters may also be temporarily indirectly affected during the installation of the pipeline, if it occurs during the big game hunting season. Outfitters may need to relocate their base camps and hunting activity during the proposed pipeline construction.

### *No Action Alternative*

Under the No Action Alternative, the proposed pipeline would not be constructed. Therefore, recreation would not be subject to the adverse impacts associated with the Proposed Action.

## **Riparian and Wetland Areas**

### Affected Environment

Wetland determinations and surveys for Waters of the U.S. were performed by WestWater Engineering (WWE) staff between August and October 2011. The delineation was conducted following technical guidelines set forth in U.S. Army Corps of Engineers (USACE) *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008). These guidelines define wetlands on the basis of three criteria including hydric soils, hydrophytic vegetation, and hydrology.

Wetlands are considered “jurisdictional” under Section 404 of the Clean Water Act if they are hydrologically connected to Waters of the U.S., which include perennial streams and intermittent or ephemeral streams that are hydrologically connected to a perennial stream. Using these criteria, WWE flagged, sequentially numbered, and recorded wetlands on maps using a sub-meter global positioning system (GPS). Field data and GPS data were used to determine approximate disturbance acreages.

Wetlands delineated in the project area consisted of fringe wetlands (Colorado River, East and Middle Mamm Creeks, Beaver Creek, Spruce Creek and an unnamed tributary to Beaver Creek), wetlands created by laminar flow in Gant Gulch, and wetlands associated with a seep in a tributary to Gant Gulch. Wetland indicator status was taken from USACE (1987), which includes the following categories:

- Obligate Wetland (OBL) – occurs almost always in wetlands (>99%)
- Facultative Wetland (FACW) – usually occurs in wetlands (67% to 99%)
- Facultative (FAC) – equally likely to occur in wetlands or non-wetlands (34% to 66%)
- Facultative Upland (FACU) – usually occurs in non-wetlands (67% to 99%)
- Obligate Upland (UPL) – occurs in wetlands in another region but almost always occurs in non-wetlands in the region specified (>99%).
- Non-Indicator (NI) – insufficient information available to determine an indicator status.

Delineated jurisdictional wetlands and/or riparian corridors within or adjacent to the proposed pipeline alignment are described below. Agricultural ditches that the pipeline would cross were not delineated.

**Beaver Creek:** This perennial stream is located on private property and is classified as a jurisdictional Waters of the U.S. Based on dominance by wetland indicator species and the presence of hydric soils and supporting hydrology, the riparian habitat along this segment of Beaver Creek was

delineated as a wetland. The area of delineated wetlands within the pipeline corridor was 1,240 square feet (0.0285 acre). Some delivery of fine sediments into Beaver Creek and adjacent wetlands has already occurred as a result of grazing by cattle and runoff from the adjacent CR317.

The pipeline would cross this perennial stream adjacent to an existing pipeline corridor. The riparian community near the crossing is dominated by a dense canopy of FACW woody plants—box-elder (*Negundo aceroides*), thinleaf alder (*Alnus incana tenuifolia*), and Bebb willow (*Salix bebbiana*)—with lesser amounts of redbud dogwood (*Swida sericea*—FACW), and hawthorn (*Crataegus* cf. *rivularis*—FAC). Associated species in the understory included a non-native but widely naturalized FACW grass, redbud (*Agrostis gigantea*), along with two non-native mesophytic (moist-site) FACU grasses, orchardgrass (*Dactylis glomerata*) and Kentucky bluegrass (*Poa pratensis*), and two non-native mesophytic forbs, Alsike clover (*Trifolium hybridum*—FAC) and common dandelion (*Taraxacum officinale*—FACU).

**Beaver Creek Tributary Channel:** To the east of Beaver Creek along the proposed pipeline alignment is an unnamed ephemeral tributary located on private property. This tributary has a distinct channel that conveys snowmelt and heavy spring rainfall and connects hydrologically to a perennial stream and the fringe supports wetland vegetation. It, therefore, would be considered a jurisdictional Waters of the U.S. The area of delineated wetlands within the pipeline corridor was 290 square feet (0.0067 acre).

Wetland vegetation consisted of common spikerush (*Eleocharis palustris*—OBL), redbud (FACW), and mountain rush (*Juncus balticus*—FACW). Dominant shrub species include non-indicators such as Gambel's oak, serviceberry, and sagebrush, with an understory of non-native mesophytic herbs typical of moist areas in lands grazed by cattle (i.e., Kentucky bluegrass and common dandelion).

**Colorado River:** The floodplain of the Colorado River supports wetland indicator plant species and the presence of hydric soils with supporting hydrology and was delineated as a wetland. The north shore of the Colorado River is managed by the BLM and the south shore is private. There is no expected disturbance to these wetlands as Bargath's intent is to horizontally directional drill for installation of this segment of the pipeline.

The riparian community surrounding the Colorado River crossing is characterized by box-elder (FAC), coyote willow (*Salix exigua*—FACW), reed canarygrass (*Phalaris arundinacea*—FACW), intermediate wheatgrass (*Agropyron intermedium*—FACU), scouringrush horsetail (*Equisetum hyemale*—FACW), and showy milkweed (*Asclepias speciosa*—FACW).

**East Mamm Creek:** This perennial stream is located on private land and is classified as a jurisdictional Waters of the U.S. Based on dominance by wetland indicator species and the presence of hydric soils of supporting hydrology, the fringe along this segment of East Mamm Creek was delineated as a wetland. The area of delineated wetlands within the pipeline corridor was 940 square feet (0.0216 acre).

The riparian community near this perennial stream crossing is composed of narrowleaf willow (FACW) and salt cedar (*Tamarix ramosissima*—FACW) with an understory composed of common spikerush, reed canarygrass (*Phalaris arundinacea*—FACW), prickly lettuce (*Lactuca serriola*—FACU), and saltgrass (*Distichlis spicata*—FAC).

**Gant Gulch:** This perennial stream is located on private land and is classified as a jurisdictional Waters of the U.S. Based on dominance by wetland indicator species and the presence of hydric soils of supporting hydrology, the riparian area along this segment of Gant Gulch was delineated as a

wetland. The area of delineated wetlands within the pipeline corridor was 8,034 square feet (0.1844 acre).

The riparian community surrounding this perennial stream crossing consists of narrowleaf willow, redbot, diamondleaf willow (*Salix planifolia*—OBL), beaked sedge (*Carex utriculata*—OBL), field horsetail (*Equisetum arvense*—FAC), hardstem bulrush (*Schoenoplectus acutus*—OBL), foxtail barley (*Hordeum jubatum*—FAC), and Nebraska sedge (*Carex nebrascensis*—OBL). Shrubs include greasewood, sagebrush, and common snowberry.

**Gant Gulch Tributary Seep:** This wetland is caused by a seep located on private land and is classified as a jurisdictional Waters of the U.S. Based on dominance by wetland indicator species and the presence of hydric soils of supporting hydrology, the riparian area along this segment of Gant Gulch was delineated as a wetland. The area of delineated wetlands within the pipeline corridor was 900 square feet (0.0207 acre).

The riparian community surrounding this perennial stream crossing is characterized by Northwest Territory sedge, mountain rush, foxtail barley, broadleaf cattail (*Typha latifolia*—OBL), prickly lettuce, and annual rabbitsfoot grass (*Polypogon monspeliensis*—FACW). Shrubs include greasewood and sagebrush.

**Middle Mamm Creek:** This perennial stream is located on private land and is classified as a jurisdictional Waters of the U.S. Based on dominance by wetland indicator species and the presence of hydric soils and supporting hydrology, the riparian area along this segment of Middle Mamm Creek was delineated as a wetland. The area of delineated wetlands within the pipeline corridor was 1,960 square feet (0.0450 acre).

The riparian community surrounding this perennial stream crossing is composed of narrowleaf willow, salt cedar, common threesquare (*Scirpus pungens*—OBL), mountain rush, tufted hairgrass (*Deschampsia cespitosa*—FACW), redbot, hoary tansy-aster (*Machaeranthera canescens*—UPL), meadow foxtail (*Alopecurus pratensis*—FACW), and prickly lettuce. Shrubs include yellow rabbitbrush and sagebrush.

**Porcupine Creek:** The proposed pipeline crossing of this perennial stream is located on BLM managed land. Streamside vegetation did not meet the definition of a wetland, due in part to constant shifting of the bed and a natural influx of large amounts of sediment from an outcrop of Green River shale upstream. It is not unusual for riparian corridors to fail to meet the definition of a wetland, because the banks often are elevated sufficiently above the stream that soils are only seasonally saturated at or near the surface. This has precluded the development of hydric (at least seasonally saturated or inundated and generally anaerobic) soils or of shallow-rooted hydrophytic herbaceous species.

The visually and ecologically dominant species in this area was narrowleaf cottonwood, classified as FAC, while understory species were mostly upland grasses, forbs, and shrubs. Although the lack of dominance by FACW or OBL species and the absence of hydric soils did not support delineation of Porcupine Creek in the vicinity of the proposed alignment, as a wetland, the stream is classified as a jurisdictional Waters of the U.S.

**Spruce Creek:** This perennial stream is located on private land and is classified as a jurisdictional Waters of the U.S. Based on dominance by wetland indicator species and the presence of hydric soils and supporting hydrology, the fringe along Spruce Creek was delineated as a wetland. The area of delineated wetlands within the pipeline corridor was 1,280 square feet (0.0294 acre).

The riparian community surrounding this perennial stream crossing is composed of Gambel’s oak, smallwing sedge (*Carex microptera*—FAC), mountain rush, redtop, hoary tansy-aster, sweetclover (*Melilotus officinalis*—FACU), and orchardgrass (*Dactylis glomerata*—FACU). Shrubs include yellow snowberry and sagebrush.

**West Mamm Creek:** At the proposed pipeline crossing of this perennial stream on private land, streamside vegetation did not meet the definition of a wetland, due in part to constant shifting of the bed and a natural influx of large amounts of sediment from an outcrop of Green River shale upstream. It is not unusual for riparian corridors to fail to meet the definition of a wetland, because the banks often are elevated sufficiently above the stream that soils are only seasonally saturated at or near the surface. This has precluded the development of hydric (at least seasonally saturated or inundated and generally anaerobic) soils or of shallow-rooted hydrophytic herbaceous species.

Dominant species include serviceberry and sagebrush along with rabbitbrush. The herbaceous stratum includes orchardgrass and smooth brome (*Bromus inermis*—NI).

Environmental Consequences

*Proposed Action*

The Proposed Action would result in phased construction distributed over separate years with WPX waterlines planned for 2012 and Bargath’s pipeline planned for 2013 or later. Impacts to wetlands and riparian areas are not expected to increase significantly in the area of the shared ROW as a result of two separate projects. The WPX water pipelines affect only one riparian area at Porcupine Creek and no wetlands; Bargath’s project will affect wetlands and riparian areas, due to its increased length and position on the landscape. The locations and areas of impacts to wetlands are presented in Table 15.

<b>Table 15. Kokopelli Phase II Wetland Creek Crossings</b>	
<i>Location</i>	<i>Wetland Area in the Location of the Project, sq. ft.</i>
Colorado River	30,927
Spruce Creek	1,280
Porcupine Creek *	0
Beaver Creek	1,240
Unnamed Tributary of Beaver Creek	290
Seep wetland	900
Gant Gulch	8,034
Middle Fork Mamm Creek	1,960
East Fork Mamm Creek	940
<b>TOTAL</b>	<b>14,644 sq. ft. (1.05 acres)</b>

\*Porcupine Creek has been subject to extreme high flow events that have washed away all adjacent wetland and riparian vegetation; however, the creek is still a perennial stream and jurisdictional Waters of the U.S.

WPX Construction 2012

The WPX pipeline would not affect any wetlands; however, it would cross Porcupine Creek, which is a relatively wide perennial stream. Porcupine Creek is deeply incised along its course and riparian vegetation is marginal to non-existent in the project area. A few narrowleaf cottonwood trees are scattered in the area in the uplands that border the creek. To further protect this site, both WPX's and Bargath's pipelines will be installed concurrently during the 2012 construction season in the same trench to avoid repeated disturbance when the Bargath gas line is installed. The short segment of Bargath's pipeline will be capped until construction of the Kokopelli II begins in 2013 or later.

Bargath Construction 2013 or Later

Direct impacts to wetlands and riparian habitats in the form of vegetation removal and soil disturbance are expected.

The proposed pipeline would cross seven areas with wetland characteristics and two perennial streams without wetland characteristics. All nine crossings support riparian vegetation. Approximately 0.3363 acres of delineated wetlands would be affected. Utility line (including pipeline) crossings fall under USACE Nationwide Permit (NWP) 12, while road crossings are covered under NWP 14.

Indirect impacts to wetlands could occur despite judicious application of BMPs. These impacts to wetlands could include increased delivery of fine sediments from construction of the ROW and from nearby road surfaces. The potential also exists for accidental spills of chemicals into wetlands.

Site-specific reclamation plans have been developed for each of the nine crossing points along the alignment as outlined in the USACE permit documents. At the Beaver Creek crossing, reclamation is planned to replicate (within feasible limits) pre-existing stream channel, bank, and riparian physical conditions. The USACE and CPW have reviewed and approved the construction plan and the habitat mitigation and reclamation plan for the Beaver Creek crossing (WWE 2012a).

The CPW recommends that no construction take place that affects Beaver Creek for the time interval beginning the second week in June through the end of August. Protection of the aquatic environment during this time frame would help protect Colorado River cutthroat trout eggs and fry. Whirling disease is a concern in any trout stream in western Colorado. Mitigation at Beaver Creek would include the use of recommended disinfectants on all equipment, personnel, and any materials used during the construction of the pipeline in this area (Specific COAs, Appendix A).

*No Action Alternative*

Under the No Action Alternative, the project components included in the Proposed Action would not be approved or constructed. Therefore, no impacts to wetlands or riparian areas associated with the proposed pipeline project would occur.

Analysis on Public Land Health Standard 2 for Riparian Systems

The Proposed Action would cross the Divide Creek Landscape and the Rifle-West Watershed Land Health Assessment (LHA) areas. The 2009 Divide Creek LHA determined that all wetland and riparian areas affected by the project were in properly functioning condition and therefore meeting Standard 2. The 2005 Rifle-West Watershed LHA determined that all wetland and riparian areas affected by the project were in properly functioning condition and therefore meeting Standard 2. The Proposed Action would be unlikely to prevent Standard 2 from being achieved. Additionally, the stipulations described in

Appendix A and the installation and of BMPs would help ensure that Public Land Health Standard 2 for wetlands and riparian areas would continue to be met.

## **Socioeconomics**

### **Affected Environment**

The project area is located within Garfield County, Colorado. The total county land area is 2,947 square miles (DOLA 2012). The county seat is Glenwood Springs; other towns include Carbondale, New Castle, Silt, Rifle, Parachute, and Battlement Mesa. The Kokopelli Phase II pipeline alignment would proceed west-northwest from the Dry Hollow Compressor for approximately 22.3 miles and end at the northwest corner of the Rulison Compressor Station. The pipeline transects BLM, USFS and private lands. Interstate 70 transects the county from east to west. A network of county and private roads services the project area.

The population of Garfield County increased 27.4% from 44,259 to 56,389 residents between 2000 and 2010 (DOLA 2012). Population growth in Garfield County is expected to more than double over the ensuing 20 years to 119,979 in 2030 (DOLA 2012). Currently the population density is 19.1 people per square mile, which is low compared to the United States average. The county population in July 2009 was approximately 70% urban and 30% rural (USDOD 2012). In 2005, Garfield County had an estimated 22,950 jobs compared to approximate 22,960 in 2010. Industry groups with the highest percentage of total employment were construction (33%), accommodation and food services (7%), professional, scientific, and technical service (5%), public administration (4%), educational services (4%), administrative services (3%), repair and maintenance (3%). Unemployment was 10.7% in April 2010, slightly more than the State of Colorado, 9.2 percent. The total number of workers employed in oil and gas development is difficult to define since development-related occupations appear in a variety of economic sectors. However, oil and gas drilling and production have been one of the strongest forces driving recent economic growth. Other economic activities that occur in the project area include hay production and livestock grazing.

According to Census 2000, persons describing themselves as Hispanic or Latino represented 28.3% of the Garfield County. Blacks, American Indians, Asians, and Pacific Islanders each accounted for less than two% of the population, below the comparable State figure in all cases. The census counted 4.6% of the Garfield County population as living in families with incomes below the poverty line, compared to 6.2% for the entire state. Both minority and low-income populations are dispersed throughout the area.

Personal income in Garfield County has also risen, growing approximately 6% per year from \$1.3 billion in 2000 to \$2.1 billion in 2009. Annual per capita income has grown in the same period approximately 3% per year, from \$29,080 to \$37,099 (USDOD 2012). There are 23,309 housing units in Garfield County and the homeownership rate is 67.2 percent. The per capita income in 2009 dollars was \$28,038.

Approximately 60% of Garfield County lands are Federally owned (Garfield County 2012). The BLM manages 615,973 acres, the USFS 515,865 acres, and the Bureau of Reclamation 2,335 acres. Activities on public land in the vicinity of the project area are primarily ranching/farming, hunting, OHV travel, and the development of oil and gas resources. Hunters contribute to the economy because many require lodging, restaurants, sporting goods, guides and outfitting services, food, fuel, and other associated supplies. Big-game hunting, in particular, is viewed as critical to Garfield County, and especially the local community economies that depend on BLM and USFS public lands where most hunting occurs.

NEPA requires a review of the environmental justice issues as established by Executive Order 12898 (February 11, 1994). The order established that each Federal agency identify any “disproportionately high and adverse human health or environment effects of its programs, policies, and activities on minority

and low-income populations.” The Latino community is the only minority population of note in the vicinity of the project area. In 2010, 28.3% of the residents of Garfield County identified themselves as Hispanic or Latino; this is slightly higher than for Colorado (20.7%). African Americans, American Indians, and Pacific Islanders account for less than 1.5% of the Garfield County population, which are below state levels (DOLA 2012).

### Environmental Consequences

#### *Proposed Action*

As a result of the Proposed Action, potential impacts associated with construction would occur during a time interval separated by one or more years. The impacts identified in the Proposed Action for the socioeconomic affects are similar in nature but reduced for the WPX water pipelines due to smaller extent of the project. Construction of the WPX water pipelines would require a maximum workforce of up to 20 people and the duration of construction is estimated to between 60 and 90 days (A. Mestas, WPX, pers. comm. 2011). Construction of the Bargath pipeline in 2013 or later could require a maximum workforce of up to 65 people (Bargath 2011). Bargath’s duration of construction is estimated to be up to one hundred fifty (150) calendar days. The Proposed Action would be of limited duration, while the oil and gas industry in Garfield County is relatively large and mature. The influx of people from outside the area would be relatively small and temporary.

The Proposed Action would have minor positive impacts on the local economy of Garfield County through the creation of additional job opportunities in the oil and gas industry and in supporting trades and services. In addition, Garfield County would receive additional tax and royalty revenues. Motels, restaurants, grocery stores, gas stations, and vehicle and equipment repair shops may all experience additional activity. The facilities developed by the Proposed Action would nominally expand the local property tax base. The net effect of these impacts would be considered beneficial, but minor.

The Proposed Action could result in negative social impacts including changing the recreational character of the area, reducing scenic quality, increasing dust levels, and increasing traffic during the pipeline construction.

#### *No Action Alternative*

Under the No Action Alternative, the pipeline alignment would not be built. This would result in a level of development, and associated positive and negative socioeconomic impacts, similar to those under the Proposed Action.

### **Soils**

#### Affected Environment

Soils in the WPX and Kokopelli Phase II Pipeline project area are described by information from the National Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2012). The NRCS information is derived from two primary references: 1) *Rifle Area, Colorado Parts of Garfield and Mesa Counties* (NRCS 2008) and 2) *Holy Cross Area, Colorado, Parts of Garfield, Grand, Mesa, Pitkin, and Summit Counties* (NRCS 2001).

The soils along the pipeline alignment are derived from the material of geologic formations that underlie the general area, as well as alluvium transported by the Colorado River and its tributaries. Geology in the area consists of the Tertiary Green River, Uinta and Wasatch Formations and Quaternary Alluvium, Colluvium and Terrace Gravels (Ellis and Freeman 1984; Hail and Smith 1994).

The Proposed Action would traverse 22 soil units, listed in Table 16. The Bargath pipeline would affect all 22 units, while the WPX pipelines would impact a subset of eight soils units along its 4.7 mile alignment (denoted with an asterisk in Table 16). Table 16 provides the approximate percentage of the total disturbance of each specific soil type within the alignments of pipelines and also provides soils descriptions, slope percent, erosion hazard ratings, depth to bedrock, corrosion ratings for concrete and steel, and surface runoff information. The proposed pipeline alignment would be located on terrain with elevations between approximately 5,200 to 7,875 feet ASL, with slopes ranging approximately 3 to 70 percent. Steeper slopes generally coincide with soils that have depths to bedrock that are less than 3 feet, such as Torriothents-Rock Outcrop Complexes or parent materials of eroded bedrock (paralithic bedrock).

The Morval-Tridell Complex (Soil Unit 45) with slopes ranging from 6 to 25%, comprises the largest portion (31.0% /77 acres) of the project area soils. Approximately 30 acres (12%) of the soils are bedrock outcrops (Soils Units 66 and 67). The soils that remain are in areas of moderate erosion hazard and slopes 45% or less. Specifically, soils in the western-most portion of the alignment have slopes ranging from 3 to 45 percent. These soil units are within 4 miles of the Colorado River and consist of alluvium derived of basalt, sandstone and shale, where terrain is generally level and erosion hazards moderate. The alignment turns to the east and traverses higher elevations on Flatiron Mesa and Grass Mesa, where the soil units are closer to bedrock, the terrain steeper and erosion hazard is rated moderate-severe. In the eastern portion of the project area, where the alignment traverses West, Middle and East Mamm Creek, soils are again closer to bedrock but the terrain is generally level and erosion moderate.

### Environmental Consequences

#### *Proposed Action*

The Proposed Action would result in phased construction distributed over separate years with WPX waterlines planned for 2012 and Bargath's pipeline planned for 2013 or later. Potential impacts related to the handling of soils would occur twice in the area of the shared corridor between Spruce Creek and Beaver Creek as the two separate trenches are approximately 15 feet apart.

The Proposed Action, including WPX and Bargath projects, would result in approximately 238 acres of soil disturbance. This total includes 83.90 acres on BLM lands, 9.82 acres on USFS land and 144.57 acres on private property. The WPX pipelines would affect 30 acres during 2012 construction; 27 acres on BLM lands and 3.24 on private lands. The total disturbance of soils in the shared portion of the project area would be reclaimed following WPX pipeline installation in 2012 and again following Bargath's project in 2013 or later. In general, most of the Proposed Action contains adequate vegetation buffers and moderate (2% to 30%) slopes that would minimize the potential for sediment transport. However, construction activities would cause slight to moderate increases in local soil loss, loss of soil productivity, and sediment available for transport to the Colorado River and its tributaries in the area. Potential for such soil loss and transport would increase as a function of slope, soil type, width of construction corridor, and proximity to streams. There would be a slight alteration of topography as the level placement is optimum for the pipeline alignment.

Approximately 14.4% of the Proposed Action (35 acres) would be on soils with severe to very severe risk of erosion (slope >30%) or slope instability. The project includes a few areas which are susceptible to erosion due to steep slopes (Table 16). The pipeline alignments were positioned in the most optimal location to take advantage of relatively flat topography and avoid disturbances on steep slopes. Topsoil would be stripped to a minimum depth of 6 inches and cut and fill slopes created during project construction. Topsoil disturbed during WPX's initial construction in 2012 would again be stripped and stockpiled during Bargath's construction, which would require a wider ROW for installation of the natural gas pipeline. For both projects, the construction activities described in the Bargath POD (clearing and grading, trenching, and boring and drilling) would cause some mixing of soil horizons and potentially a slight to moderate increases in local topsoil loss.

**Table 16. Soil Types Along the Pipeline Corridors (soils affected by both pipelines are noted with an \*)**

<i>Soil Unit No.</i>	<i>Soil Association and % of Route</i>	<i>Soil Description</i>	<i>Slope (%)</i>	<i>Erosion Hazard</i>	<i>Depth to Bedrock (inches)<sup>1</sup></i>	<i>Concrete /Steel Corrosion</i>	<i>Surface Runoff (Hydrologic Soil Group)<sup>2</sup></i>	<i>Total Disturbance (Acres)</i>
6	Ascalon-Pena 6.5	Fine sandy loam, Alluvium derived from sandstone and shale, Well drained, deep loam. Moderately sloping to hilly soils on sides of valleys and alluvial fans. The complex is used mainly for wildlife habitat and limited grazing.	6-12%	Moderate	>80	Low/Moderate	B	15.93
9	Badland* WPX 0.8 Bargath 0.2	Steep to very steep, nearly barren land dissected by many intermittent drainages. Usually 85% is unvegetated and unstable for plant community development	>50%	Very Severe	0-3 (to paralithic bedrock)	None provided	D	WPX 0.24 Bargath 0.47
12	Bucklon-Inchau Loams 0.3	Well-drained soils on ridges and mountainsides from 7,000 to 9,500 feet. Surface layer is loam 3 to 5 inches thick; upper subsoil, where present, is brown clay loam about 15-inches thick. Permeability is slow to moderate, surface runoff is medium.	25-50%	Severe	20-40	Low/Moderate	D	0.64
16	Cimarron Loam 1.7	Deep, well-drained soil formed in alluvium in narrow valleys from 7,500 to 9,000 feet. Surface layer is loam about 4-inches thick; subsoil is silty clay to silty clay loam up to 30-inches thick. Permeability is slow and surface runoff is medium.	2-12%	Moderate	>80	Low/Moderate	C	4.13
34	Ildefonso stony loam 1.6	Mixed alluvium derived from basalt, stony loam to very stony loam. Hilly to steep soil on mesa breaks, sides of valleys, and alluvial fans. The surface layer is brown stony loam about 8 inches thick; underlying material is white, strongly calcareous very stony loam to 60 inches. Vegetation is mainly piñon-juniper used for grazing and wildlife.	25-45%	Severe	>80	Low/Low	B	3.81
44	Morvall Loam* WPX 1.7 Bargath 0.6	Deep, well-drained soil formed in reworked alluvium on mesas and sides of valleys from 6,500 to 8,000 feet. Surface layer is loam about 5-inches thick; upper subsoil is clay loam about 12-inches thick. Permeability is moderate and surface runoff is slow.	3-12%	Moderate	>80	Low/Moderate	B	WPX 0.52 Bargath 1.58

**Table 16. Soil Types Along the Pipeline Corridors (soils affected by both pipelines are noted with an \*)**

<i>Soil Unit No.</i>	<i>Soil Association and % of Route</i>	<i>Soil Description</i>	<i>Slope (%)</i>	<i>Erosion Hazard</i>	<i>Depth to Bedrock (inches)<sup>1</sup></i>	<i>Concrete /Steel Corrosion</i>	<i>Surface Runoff (Hydrologic Soil Group)<sup>2</sup></i>	<i>Total Disturbance (Acres)</i>
45	Morvall-Tridell* Complex WPX 55.5 Bargath 31.0	Deep, well-drained soils on alluvial fans and mesa sides from 6,500 to 8,000 feet. Surface layer is loam or stony loam up to 10 inches thick; upper subsoil is clay loam to very stony loam about 12 inches thick. Permeability is moderate to moderately rapid, surface runoff is medium.	6-25%	Moderate	>80	Low/Moderate	B	WPX 16.77 Bargath 76.23
46	Nihill channery loam 5.2%	Alluvium derived from sandstone and shale. Deep, well drained, nearly level to gently sloping. The surface layer is light gray and pale brown loam about 11 inches thick. Permeability is moderately rapid, and water capacity is low. Used mainly for grazing and wildlife habitat, some areas are in irrigated has and pasture. Native vegetation is wheatgrass, needle-and-thread and sagebrush.	1-6%	Moderate	>80	High/High	B	12.83
47	Nihill Channery Loam* WPX 1.8 Bargath 3.7	Deep, well-drained soil on alluvial fans and valley sides from 5,000 to 6,500 feet. Surface layer is channery loam about 11 inches thick; upper subsoil is very channery loam about 7 inches thick. Permeability is moderately rapid and surface runoff is slow.	6-25%	Severe	>80	High/High	B	WPX 0.53 Bargath 9.01
50	Olney loam 5.2%	Rolling Loam, Alluvium derived from sandstone and shale, well-drained, depth to water table more than 80 inches. Found on alluvial fans and sides of valleys. Surface layer grayish brown loam 12 inches thick. Soil used mainly for irrigated crops and hay.	3-6%	Moderate	>80	Low/Moderate	B	12.83
51	Olney loam 0.8%	Alluvium derived from sandstone and shale. Deep, well drained on alluvial fans and sides of valleys. Surface is grayish brown loam 12 inches thick. Soil is used mainly for irrigated hay, and grazing. Native vegetation is mainly wheatgrass and sagebrush.	6-12%	Moderate	>80	Low/Moderate	B	1.99
55	Potts loam 4.2%	Alluvium derived from basalt and/or alluvium derived from sandstone and shale. Deep, well drained, moderately sloping on mesas, benches and sides of valleys. Surface layer is brown loam about 4 inches thick. Soil is used mainly for irrigated crops, hay, and dryland farming.	3-6%	Moderate	>80	High/High	B	10.29

**Table 16. Soil Types Along the Pipeline Corridors (soils affected by both pipelines are noted with an \*)**

<i>Soil Unit No.</i>	<i>Soil Association and % of Route</i>	<i>Soil Description</i>	<i>Slope (%)</i>	<i>Erosion Hazard</i>	<i>Depth to Bedrock (inches) <sup>1</sup></i>	<i>Concrete /Steel Corrosion</i>	<i>Surface Runoff (Hydrologic Soil Group) <sup>2</sup></i>	<i>Total Disturbance (Acres)</i>
56	Potts loam 4.8%	Alluvium derived from basalt and/or alluvium derived from sandstone and shale. Deep, well drained on mesas, benches, and sides of valleys. Surface is brown 4-inches thick. Soil is used mainly for grazing, wildlife habitat and dryland farming. Native vegetation wheatgrass and sagebrush.	6-12%	Severe	>80	High/High	B	11.85
57	Potts-Ildefonso 3.1%	Alluvium derived from basalt and/or alluvium derived from sandstone and shale. Gently sloping to rolling soils. Runoff is slow; native vegetation sagebrush, pinyon-juniper, junegrass, and serviceberry. Limited grazing and wildlife habitat.	3-12%	Moderate	>80	High/High	B	7.72
58	Potts-Ildefonso 1.7%	Alluvium derived from basalt and/or alluvium derived from sandstone and shale, well drained, stony loam. Strongly sloping to hilly soils on mesas alluvial fans, and sides of valleys. Surface layer loam 4 inches. Used mainly for limited grazing and wildlife.	12-25%	Moderate	>80	High/High	B	4.22
59	Potts-Ildefonso* WPX 18.1 Bargath 5.5	Alluvium derived from basalt and/or alluvium derived from sandstone and shale, stony loam to very stony loam. Hilly to very steep soils on alluvial fans and sides of valleys. Used mainly for limited grazing and wildlife. Sagebrush, serviceberry, ricegrass and Junegrass.	25-45%	Severe	>80	High/High	B	WPX 5.48 Bargath 13.40
65	Torrifluvents 1.3%	Deep soil formed in floodplain alluvium. Surface layer ranges from loamy sand to clay loam and underlying layers are sandy to stony loam and clay loam. Supports riparian vegetation; water table is 2 to 4 feet subsurface.	0-6%	Moderate - severe	>80	Moderate/ Moderate	D	3.14
66	Torriorthents-Camborthids-Rock Outcrop Complex* WPX 9.1 Bargath 7.4	Exposed sandstone and shale bedrock, and shallow to deep soils formed on foothills and mountainsides. Clay to stony loam, covered by rock eroded from outcrops. Contains variable amounts of gravel and cobbles.	15-70%	Moderate to Severe	4-30 (to lithic bedrock)	Low/High	D	WPX 2.74 Bargath 18.11

**Table 16. Soil Types Along the Pipeline Corridors (soils affected by both pipelines are noted with an \*)**

<i>Soil Unit No.</i>	<i>Soil Association and % of Route</i>	<i>Soil Description</i>	<i>Slope (%)</i>	<i>Erosion Hazard</i>	<i>Depth to Bedrock (inches)<sup>1</sup></i>	<i>Concrete /Steel Corrosion</i>	<i>Surface Runoff (Hydrologic Soil Group)<sup>2</sup></i>	<i>Total Disturbance (Acres)</i>
67	Torriorthents-Rock Outcrop Complex* WPX 4.4 Bargath 5.1	Exposed sandstone and shale bedrock, and shallow to moderately deep soils formed over alluvium on foothills and mountainsides. Stony clay to stony loam, covered with stones weathered from outcrops.	15-70%	Moderate to Severe	4-30 (to lithic bedrock)	Low/High	D	WPX 1.35 Bargath 12.63
69	Vale silt loam 3.6%	Calcareous eolian deposits. Surface layer brown silt loam 7-inches thick. Used mainly for irrigated crops and hay. Native vegetation is wheatgrass, needle-and-thread, Muttongrass and sagebrush.	6-12%	Moderate	>80	Low/Moderate	B	8.73
71	Villa Grove-Zoltay Loams* WPX 8.6 Bargath 5.9%	Deep, well-drained soils on mountainsides and alluvial fans from 7,500 to 7,600 feet. Surface layer is loam 4 to 20-inches thick; upper subsoil is clay loam to cobbly clay 11 to 35-inches thick. Permeability is slow to moderately slow, runoff is slow to medium.	15-30%	Slight to Moderate	>80	Low/Moderate	B	WPX 2.61 Bargath 14.49
72	Wann sandy loam 0.3%	Terraces, valley floors, alluvium derived from sandstone and shale. Poorly drained, nearly level or gently sloping, low-lying soil. Used mainly for grazing, grass or legume hay, and pasture. Native vegetation is mainly alkali sacaton, saltgrass, wheatgrass, sedges, and rabbitbrush.	1-3%	Moderate	>80	Moderate/ Moderate	A	0.77

1 - Depth to bedrock may be the depth to bedrock or alluvium, or another type of restrictive feature

2 - Hydrologic Soil Group:

- A = soils having a high infiltration rate even when thoroughly wetted (estimated range of water infiltration (1.00 – 8.30 inches/hour),
- B = soils having a high infiltration rate even when thoroughly wetted (estimated range of water infiltration (1.00 – 8.30 inches/hour),
- C = soils have a slow infiltration rate when thoroughly wetted (estimated range of water infiltration (0.17 – 0.50 inches/hour),
- D = soils have a very slow infiltration rate when thoroughly wetted (estimated range of water infiltration (0.02 – 0.17 inches/hour)

Infestations of noxious weeds resulting from disturbance would impact soil productivity. Potential for such soil loss and transport would increase as a function of slope, feature (road, or pipeline route) to be constructed, and proximity to streams.

Approximately 30 acres of the soil disturbance would be within the Rock outcrop-Torriorthents complex. This complex consists of exposed bedrock, stony areas, shallow to moderately deep soils over bedrock and small areas of deep soils. Trenching methods in these areas often require a mechanical backhoe, tractor-mounted rippers, or other equipment. The potential exists that blasting would be required for construction in bedrock areas. The Quaternary-Pleistocene and Tertiary bedrock geologic units in the area have the potential to yield fossils (BLM 2007). In the areas mentioned, soils are susceptible to erosion by wind or water and possible slope instability issues and therefore proper erosion control and construction techniques would be required in the site specific COAs (Appendix A). BMPs would be implemented and safe construction techniques would be required if blasting would occur (Bargath 2011).

The BLM surface-use COAs (Appendix A) applicable to all activities within the project area provides for a requirement that surface-disturbing activities include special design or mitigation measures to minimize adverse impacts associated with construction on highly erodible soils and steep slopes. In most of these areas along the proposed corridor, such as the steep slope immediately east of the Porcupine Creek crossing, the pipeline route would be cleared to the minimum possible width with pipe staged and welded at the toe of the slope and pulled into position before being laid into the trench. Additional short stretches (up to 100 feet) within erosive soils may be temporarily steepened beyond 30% during construction. Erosion and soil transport in all areas would also be minimized by proper BMPs incorporated as protective stipulations within the COAs.

Since soils constituents along the pipeline alignment may increase the potential for corrosion of the pipe, project specifications would require that the pipe be externally coated with fusion bonded epoxy coating prior to delivery. After welding, field joints would be coated with either a tape wrap or shrinkable sleeve wrap. Before the pipe is lowered into the trench, the pipeline coating would be visually and electronically inspected and any detected faults or scratches would be repaired.

#### *No Action Alternative*

Under the No Action Alternative, no surface disturbance would occur on BLM lands, USFS lands or private property. Consequently, no impacts to soil resources would occur from the Proposed Action.

#### Analysis on Public Land Health Standard 1 for Upland Soils

The Proposed Action would cross the Divide Creek Landscape and the Rifle-West Watershed Land Health Assessment (LHA) areas. The 2009 Divide Creek LHA determined that all areas affected by the project were meeting Standard 1 for Upland Soils. The 2005 Rifle-West Watershed LHA determined that all areas affected by the project are meeting Standard 1 for Upland Soils. The Proposed Action would be unlikely to prevent Standard 1 from being achieved. Additionally, the mitigations and BMPs described in Appendix A would help ensure that the standard for upland soils would continue to be met.

### **Special Status Species**

#### Federally Listed, Proposed, or Candidate Plant Species

#### Affected Environment

According to the latest species list from the USFWS, the following Federally listed, proposed or candidate plant species may occur within or be impacted by the Proposed Action (Tables 17 and 18).

<b>Table 17. CRVFO Listed, Proposed, or Candidate Threatened or Endangered Plant Species</b>			
<i>Species and Status</i>	<i>Habitat</i>	<i>Area of Influence/Project Site</i>	
		<i>Suitable Habitat</i>	<i>Species Documented</i>
Parachute penstemon Threatened	Sparsely vegetated, south facing, steep, white shale talus of the Parachute Creek Member of the Green River Formation; with other oil shale endemic species, such as Roan Cliffs blazing star, Cathedral Bluff meadow rue, dragon milkvetch, Piceance bladderpod, and oil shale fescue; 8,000 to 9,000 feet.	No	No
DeBeque phacelia Threatened	Sparsely vegetated, steep slopes in chocolate-brown, gray, or red clay on Atwell Gulch and Shire Members, Wasatch Formation. Soils often have large cracks because of the high shrink-swell potential of the clays; desert shrubland with four wing saltbush, shadscale, greasewood, broom snakeweed, bottlebrush squirreltail and Indian ricegrass, grading upward into scattered junipers; 4,700 to 6,200 feet.	No	No
Colorado hookless cactus Threatened	Rocky hills, mesa slopes, and alluvial benches in salt desert shrub communities; often with well-formed microbiotic crusts; can occur in dense cheatgrass; with shadscale, galleta grass, black sagebrush, Indian ricegrass grading upward into big sagebrush and sagebrush/pinyon-juniper; 4,500 to 6,000 feet.	No	No
<b>Ute ladies'-tresses orchid Threatened</b>	Subirrigated alluvial soils along streams, and in open meadows in floodplains; with box elders, cottonwoods, willows, scouring rushes, and riparian grasses, sedges, and forbs; 4,500 to 7,200 feet.	<b>No<sup>1</sup></b>	<b>No<sup>1</sup></b>
<sup>1</sup> Not observed, but suitable habitat documented at four proposed stream crossings of Bargath pipeline on private lands. Under USFWS protocols, species assumed present pending USFWS consultation.			

<b>Table 18. WRNF Listed, Proposed, or Candidate Threatened or Endangered Plant Species</b>			
<i>Species and Status</i>	<i>Habitat</i>	<i>Area of Influence/Project Site</i>	
		<i>Suitable Habitat</i>	<i>Species Documented</i>
Penland alpine fen mustard Endangered	Alpine tundra, stream banks and wetlands. Mosquito Range above 11,800 feet. Dillon Ranger District	No	No
DeBeque phacelia Threatened	Semi desert shrublands and pinyon-juniper. Wasatch Formation. Below 6,700 feet. Rifle Ranger District.	No	No
Colorado hookless cactus Threatened	Semi desert shrublands and pinyon-juniper. Wasatch Formation. Below 6,200 feet. Rifle Ranger District	No	No
<b>Ute ladies'-tresses orchid Threatened</b>	Seasonally moist soils and wet meadows of drainages and margins of ditches. Below 7,200 feet. Suspected in Eagle, Garfield, and Pitkin counties.	<b>No<sup>1</sup></b>	<b>No<sup>1</sup></b>
<sup>1</sup> Not observed, but suitable habitat documented at four proposed stream crossings of Bargath pipeline on private lands. Under USFWS protocols, species assumed present pending USFWS consultation.			

Colorado Hookless Cactus (*Sclerocactus glaucus*). Federally listed as threatened. Colorado hookless cactus occurs on rocky hills, mesa slopes, and alluvial benches in salt desert shrub communities, at elevations ranging from 4,500 to 6,000 feet. It is found along the Gunnison and Colorado River valleys and tributary valleys, including BLM lands west of Parachute, Colorado, within the CRVFO. Common co-occurring plants include shadscale (*Atriplex confertifolia*), black sagebrush (*Artemisia nova*), galleta grass (*Pleuraphis jamesii*), and Indian ricegrass (*Achnatherum hymenoides*), grading upward into big sagebrush (*Artemisia tridentata* ssp. *tridentata*), Utah juniper (*Juniperus osteosperma*), and pinyon pine (*Pinus edulis*). It is often associated with well-formed microbiotic crusts but can also occur in dense cheatgrass (*Anisantha tectorum*). Elevations below 6,000 feet, presence of associated species, and potentially suitable soils occur on private lands in eastern and western portions of the Bargath pipeline alignment. However, the entire WPX pipeline alignment is above the known elevational range of this species, as are all BLM and USFS land potentially affected by the project (WWE 2011a).

Ute Ladies-tresses Orchid (*Spiranthes diluvialis*). Federally listed as threatened. Ute ladies'-tresses occurs in subirrigated alluvial soils along streams, and in open meadows in floodplains, at elevations of 4,500 to 7,200 feet (E. Mayo, USFWS, pers. com.). Common associated species include box-elder (*Acer negundo*), cottonwoods (*Populus* spp.), willows (*Salix* spp.), scouring rushes (*Equisetum* spp.), and riparian grasses, sedges, and forbs. Ute ladies'-tresses is known to occur on USFS lands along the Roaring Fork River south of Glenwood Springs, Colorado. This species was not observed in wetlands bisected by the Proposed Action during the surveys conducted for this project during 2011 (WWE 2011a). However, suitable habitat was noted at proposed crossings by the Bargath pipeline of Gant Gulch and Middle Fork Mamm Creek, with marginally suitable habitat at the proposed crossings of Beaver Creek and East Fork Mamm Creek. Because this species may not flower or develop significant above-ground growth every year, current USFWS protocols require surveys in three consecutive flowering seasons. Absent three consecutive survey years, the species must be assumed to be present and appropriate conservation (mitigation) measures implemented to avoid adverse impacts pending the outcome of the Section 7 interagency consultation process required by Section 7 of the Endangered Species Act (ESA).

DeBeque Phacelia (*Phacelia submutica*). Federally listed as threatened. DeBeque phacelia occurs on sparsely vegetated, steep slopes in chocolate-brown, gray, or red clay soils on Atwell Gulch and Shire Members of the Wasatch Formation, at elevations between 4,700 and 6,200 feet. These soils often have large cracks because of the high shrink-swell potential of the clays. These habitats are found within desert shrubland, and associated plant species include four wing saltbush (*Atriplex canescens*), shadscale (*Atriplex confertifolia*), greasewood (*Sarcobatus vermiculata*), broom snakeweed (*Gutierrezia sarothrae*), bottlebrush squirreltail (*Elymus elymoides*), and Indian ricegrass (*Achnatherum hymenoides*), grading upward into scattered Utah junipers (*Juniperus osteosperma*). DeBeque phacelia is known to occur on BLM lands west of Parachute, Colorado. The closest designated critical habitat is located approximately 18 miles southwest of the western terminus of the Bargath pipeline. No potential habitat was observed along the proposed pipeline alignments during project surveys (WWE 2011a).

Parachute Penstemon (*Penstemon debilis*). Federally listed as threatened. Parachute penstemon occurs on sparsely vegetated, south-facing, steep, white shale talus of the Parachute Creek Member of the Green River Formation, at elevations of 8,000 to 9,000 feet. Common co-occurring species include other oil shale endemic species, such as Roan Cliffs blazing star (*Mentzelia rhizomata*), Cathedral Bluff meadow rue (*Thalictrum heliophilum*), dragon milkvetch (*Astragalus lutosus*), Piceance bladderpod (*Lesquerella parviflora*), and oil shale fescue (*Festuca dasyclada*). It is known to occur on BLM lands west of Parachute, Colorado. Eroded shale from the Green River Formation eroded from Battlement Mesa was observed along Porcupine Creek within the creek channel, which had been carried down by runoff flows. This highly eroded substrate is not typical for this species and it is highly unlikely to be suitable habitat for *P. debilis*; this species has not been documented in the shale cliffs of Battlement Mesa (WWE 2011a).

Penland's Alpine Fen Mustard (*Eutrema penlandii*). Federally listed as endangered. Penland's *Eutrema* is an alpine tundra species that grows above treeline in association with many species of moss, forbs, and graminoids in alpine meadow habitat. It occurs in wetlands with perennial flow from snowmelt, at 11,800 to 13,100 feet in elevation. *Eutrema penlandii* is a narrow endemic known only to occur in the Mosquito mountain range of Colorado in Lake, Park, and Summit counties. It frequently occurs in association with a variety of alpine tundra species including white marsh marigold (*Caltha leptosepala*), water sedge (*Carex aquatilis*), mountain sedge (*Carex scopulorum*), Beering chickweed (*Cerastium beeringianum*), alpine spring beauty (*Claytonia megarhiza*), tufted hairgrass (*Deschampsia caespitosa*), Ross avens (*Geum rossii*), elephant-head (*Pedicularis groenlandica*), Arctic bluegrass (*Poa arctica*), America bistort (*Polygonum bistortoides*), alpine bistort (*Polygonum viviparum*), King's crown (*Rhodiola integrifolia*), Rose crown (*Rhodiola rhodantha*), diamondleaf saxifrage (*Saxifraga rhomboidea*), and alpine meadow-rue (*Thalictrum alpinum*). No potential habitat exists for this species within the project area.

### Environmental Consequences

#### *Proposed Action*

With the exception of the Ute ladies-tresses orchid, no suitable habitat for Federally listed, proposed or candidate plant species occurs on either Federal or private lands along the proposed Bargath and WPX pipeline alignments. With the exception of the Ute ladies'-tresses, the Proposed Action would have “**No Effect**” due to lack of suitable habitat.

For the Ute ladies'-tresses, the lack of three consecutive years of surveys as required by current USFSW protocols makes it impossible to definitely rule out this species along two to four stream crossings of the Bargath pipeline alignment on private lands. Consequently, unless 3 years of surveys are completed prior to construction, this species is assumed to be present based on USFWS requirements, and the initial effects determination for the Proposed Action relative to the Ute ladies-tresses orchid is “**May Affect, Likely to Adversely Affect.**” The mitigation measures in Appendix A specify that no ground-disturbing activities within potential ladies'-tresses orchid habitat would be authorized until conservation measures approved by the USFWS in its Biological Opinion (BO) resulting from ESA Section 7 consultation process have been incorporated into project design.

#### *No Action Alternative*

Under the No Action Alternative, no surface disturbance would occur on the Kokopelli II gas pipeline or the WPX water pipelines. Because there would be no surface disturbance and because no suitable habitat exists for these plants within the project area, no impacts to Federally listed, proposed or candidate threatened or endangered species would occur.

### Federally Listed, Proposed, or Candidate Animal Species

#### Affected Environment

Eight species of Federally listed, proposed or candidate threatened or endangered vertebrate species occur within Garfield County or may be affected by projects within the County (WWE 2011a, 2012b). These species, their status, and their distributions and habitat associations are summarized below:

Canada Lynx (*Lynx canadensis*). Federally listed as threatened. Canada lynx occupy high-latitude or high-elevation coniferous forests characterized by cold, snowy winters and an adequate prey base (Ruggiero et al. 1999). In the western U.S., lynx are associated with mesic forests of lodgepole pine (*Pinus contorta*), subalpine fir (*Abies bifolia*), Engelmann spruce (*Picea engelmannii*), and quaking aspen in the upper montane and subalpine zones, generally between 8,000 and 12,000 feet in elevation. The

preferred prey of Canada lynx throughout their range is the snowshoe hare (*Lepus americanus*). Although snowshoe hares are the preferred prey in Colorado, lynx also feed on alternative prey species such as mountain cottontail (*Sylvilagus nuttallii*), pine squirrel (*Tamiasciurus hudsonicus*), and dusky grouse (*Dendragapus obscurus*).

The USFS has mapped suitable denning, winter, and other habitat for lynx within the WRNF, portions of which are adjacent to BLM lands within the CRVFO. The mapped suitable habitat in the WRNF comprises several areas known as Lynx Analysis Units (LAUs). The Battlement LAU is located on USFS lands south of the proposed pipeline alignment. A portion of this pipeline (0.92 mile) would cross the northeastern corner of this LAU near West Mamm Creek. The habitat in this section of the alignment is classified as non-habitat and consists primarily of pinyon-juniper, scattered oakbrush, and sagebrush. A few cottonwoods and blue spruce occur along Dry Creek and West Mamm Creek. This habitat is not mapped as suitable for denning or foraging but could be used while hunting or dispersing to new areas.

Mexican Spotted Owl (*Strix occidentalis*). Federally listed as threatened. In Colorado, the Mexican spotted owl occurs in lower-elevation forests, mostly in deeply incised, rocky canyons that contain complex coniferous forest structures. The project area does not contain suitable habitat, and this species has not been found in the project area.

Razorback Sucker (*Xyrauchen texanus*), Colorado Pikeminnow (*Ptychocheilus lucius*), Humpback Chub (*Gila cypha*), and Bonytail Chub (*G. elegans*). Federally listed as endangered. These four species of Federally listed big-river fishes occur within the Colorado River drainage basin near or downstream from the project area. Of the four endangered fish species, only the razorback sucker and the Colorado pikeminnow, potentially occur within the project area. Designated Critical Habitat (in Colorado) for the razorback sucker and Colorado pikeminnow includes the Colorado River and its 100-year floodplain west (downstream) from the State Highway 13 Bridge at the town of Rifle to the Colorado-Utah state line. The nearest known habitat for the humpback chub and bonytail is within the Colorado River approximately 80 miles downstream from the project area. Occasionally, the bonytail is found in the Colorado River west of Grand Junction, but its range does not extend east from that point. Only one population of humpback chub, at Black Rocks west of Grand Junction, is known to exist in Colorado (Jackson 2010).

Greenback Cutthroat Trout (*Oncorhynchus clarki stomias*). Federally listed as threatened. The greenback cutthroat trout was not identified on the USFWS list for Garfield County; however, recent surveys have identified a population in a small stream that enters the Colorado River from the south several miles farther east than Parachute Creek. However, this species was not found during electrofishing surveys in Beaver Creek and is not considered potentially present.

Uncompahgre Fritillary (*Boloria acrocnema*). The Uncompahgre fritillary butterfly has one of the smallest ranges of North American butterflies. Its habitat is limited to 11 verified sites in the San Juan Mountains. All known populations are associated with large patches of snow willow (*Salix nivalis*) above 3,658 meters (12,000 feet), which provide food and cover. The species is found primarily on northeast-facing slopes, which are the coolest and wettest microhabitat available in the San Juan Mountains. Females lay their eggs on snow willow, which is also the larval food plant, while adults take nectar from a wide range of flowering alpine plants (USFWS 2012)

## Environmental Consequences

### *Proposed Action*

The Proposed Action would result in phased construction in separate years, with WPX waterlines planned for 2012 and Bargath pipeline planned for 2013 or later. The impacts analyzed in this EA are applicable

for both the WPX and Bargath pipelines. A Biological Assessment completed for this project addresses species potentially affected by the project (WWE 2011b).

The Mexican Spotted Owl is not expected to occur in the project vicinity based on types of habitat present and documented occurrences. Therefore, the Proposed Action would have “**No Effect**” on these species.

The Canada Lynx is unlikely to occur within the project area except during transitory dispersal movements. Some locations along West Mamm Creek have limited riparian vegetation consisting of blue spruce and narrowleaf cottonwoods, which could function as transitory but not suitable lynx habitat. A small population of pine squirrels exists in this area (WWE 2011a); snowshoe hares are not likely to occur in the area due to the low elevation (< 8,000 feet) and lack of preferred habitat. The primary habitat affected by pipeline disturbance in the West Mamm Creek area is Gambel’s oak, serviceberry, and sagebrush. The project area is located at the eastern edge of the Battlement LAU and is not within a mapped lynx linkage area and not within designated lynx critical habitat. The closest identified low intensity lynx use areas are greater than 25 miles south and southeast of the project area (CPW 2009). The project area represents marginal habitat on the periphery of potential home ranges. The habitat observed along the proposed alignment does not support elements necessary to sustain a viable population on a long-term basis; therefore, the Proposed Action would have “**No Effect**” on Canada lynx.

The Endangered Colorado River Fishes could potentially be affected by the consumptive use of water taken from the Colorado River basin. Depletions in flows in the Colorado River and major tributaries are a major source of impacts to these fishes due to changes in the flow regime that reduce the availability and suitability of spawning sites and habitats needed for survival and growth of the larvae. Principal sources of depletion in the Colorado River Basin include withdrawals for agricultural uses, industrial uses, and municipal water supplies and evaporative losses from reservoirs. In 2008, the BLM prepared a Programmatic Biological Assessment (PBA) addressing water-depleting activities associated with BLM’s fluid minerals program in the Colorado River Basin in Colorado. In response to this PBA, the USFWS issued a Programmatic Biological Opinion (PBO) (ES/GJ-6-CO-08-F-0006) on December 19, 2008. The PBO concurred with BLM’s effects determination of “**May Affect, Likely to Adversely Affect**” for the Colorado pikeminnow, humpback chub, bonytail chub, or razorback sucker as a result of depletions associated with oil and gas projects. The calculated mitigation fees are used by the USFWS for mitigation projects and contribute to the recovery of these endangered species through restoration of habitat, propagation, and genetics management, in-stream flow identification and protection, program management, non-native fish management, research and monitoring, and public education.

The Greenback Cutthroat Trout is not found in drainages affected by the project. Consequently, the Proposed Action would have “**No Effect**” on this species.

The Uncompahgre Fritillary does not have suitable habitat in the project area, resulting in “**No Effect.**”

#### WPX Construction 2012

The Proposed Action would use 0.25 acre feet of water for dust abatement; pipelines will be tested using pneumatic pressure techniques and will not require the use of any water. To offset the depletion impacts to Colorado River Fishes, the BLM has signed a Recovery Agreement with WPX, which includes a one-time payment for the project. The estimated depletions from the Proposed Action would be added to the CRVFO tracking log and submitted to the USFWS per the PBA/PBO at the end of the year to account for depletions associated with BLM’s fluid mineral program.

*Bargath Construction 2013 or Later*

The Bargath pipeline project would use 4.55 acre-feet of water for dust abatement and pipeline pressure testing. To offset the depletion impacts to Colorado River Fishes, the BLM has signed a Recovery Agreement with Bargath, which includes a one-time payment for the project. The estimated depletions from the Proposed Action would be added to the CRVFO tracking log and submitted to the USFWS per the PBA/PBO at the end of the year to account for depletions associated with BLM's fluid mineral program. Since Bargath's construction plans call for boring under the river and above the 100-year floodplain, none of the critical habitat for Colorado pikeminnow and razorback sucker would be directly affected.

Other potential impacts to these species from both construction projects would include inflow of sediments from areas of surface disturbance and inflow of accidentally spilled chemical pollutants related to project construction equipment. Stormwater controls required for the protection of surface water quality would also provide protection of aquatic organisms (see COAs in Appendix A). Even if sediment inflow were to occur, including incidental aerial deposition of fugitive dust from roadways and construction areas, these fishes are adapted to the naturally high sediment loads that characterize the Colorado River and its tributaries.

The inflow of chemical pollutants could impact the endangered big-river fishes if concentrations were sufficient to cause acute effects. The potential for adverse impacts would be limited to the Colorado pikeminnow and razorback sucker, the two species known to occur within the CRVFO area. Spills or other releases of chemical pollutants as a result of oil and gas activities are infrequent in the CRVFO area due to the various design requirements imposed by BLM and the State of Colorado.

In the event of a spill or accidental release, the operator is required to implement its Spill Prevention, Control, and Countermeasures (SPCC) plan, including such cleanup and mitigation measures as required by BLM or the State. In addition, stormwater controls (COAs, Appendix A) would reduce the risk of transport of these substances as well as sediments to surface waters, including the Colorado River. For these reasons, and because any spills making their way into the Colorado River would be rapidly diluted to low toxicity levels below those that are deleterious, or even detectable, the potential for adverse impacts from chemical releases is not considered significant. Consequently, the Proposed Action would have “**No Effect**” on the endangered big-river fishes from potential impacts to water quality.

*No Action Alternative*

Under the No Action Alternative, the proposed natural gas pipeline and two water lines would not be constructed and no surface disturbance would occur on BLM, USFS or private lands. No additional impacts to vegetation, soils, and water would occur as a result of the Proposed Action. Consequently, no impacts to Federally listed, proposed or candidate species would occur.

*BLM and USFS Sensitive Plant Species*

BLM sensitive plant species with habitat and/or occurrence records in Garfield County are listed in Table 19. Of these, suitable habitat and known populations are present for only one species, Harrington's penstemon. Debeque milkvetch has been found on the north side of Webster Mesa approximately 1.4 miles north of the west end of project area; north of I-70 in the foothills on the north side of Sharrard Park. This species has not been documented south of the known locations in the Sharrard Park area.

The USFS lists 31 sensitive plant species as occurring or potentially occurring in the WRNF (Table 20). Of these, only one species—again, Harrington's penstemon—is known to occur in habitat types, elevational ranges, and geographical portions of the WRNF within the project vicinity.

<b>Table 19. CRVFO Sensitive Plant Species in Project Area</b>			
<i>Species</i>	<i>Habitat</i>	<i>Area of Influence/Project Site</i>	
		<i>Suitable Habitat</i>	<i>Species Documented</i>
Debeque milkvetch ( <i>Astragalus debequaeus</i> )	Varicolored, fine textured, seleniferous or saline soils of Wasatch Formation- Atwell Gulch Member; pinyon-juniper woodlands and desert shrub; 5,100 to 6,400 feet.	No	No
Naturita milkvetch ( <i>Astragalus naturitensis</i> )	Sandstone mesas, ledges, crevices and slopes in pinyon/juniper woodlands; 5,000 to 7,000 feet.	No	No
Piceance bladderpod ( <i>Lesquerella parviflora</i> )	Shale outcrops of the Green River Formation, on ledges and slopes of canyons in open areas; pinyon-juniper woodlands, shrublands; often with other oil shale endemic species; 6,200 to 8,600 feet. Known sites N & S of CRVFO	No	No
Roan cliffs blazing star ( <i>Mentzelia rhizomata</i> )	Steep, eroding talus slopes of shale, Green River Formation; pinyon-juniper woodlands, shrublands; often with other oil shale endemic species; 5,800 to 9,000 feet.	No	No
<b>Harrington's penstemon (<i>Penstemon harringtonii</i>)</b>	<b>Open sagebrush or sagebrush sites, often with scattered pinyon/juniper. Soils are typically rocky loams and rocky clay loams derived from coarse calcareous parent materials (basalt); 6,200 to 9,200 feet.</b>	<b>Yes</b>	<b>Yes</b>
Cathedral Bluffs meadow-rue ( <i>Thalictrum heliophilum</i> )	Endemic to sparsely vegetated steep shale talus slopes of the Green River Formation; Pinyon-juniper woodlands, shrublands; often with other oil shale endemic species; sometimes with rabbitbrush, snowberry; 6,300 to 8,800 feet.	No	No

<b>Table 20. WRNF Sensitive Plant Species in Project Area</b>			
<i>Species</i>	<i>Habitat</i>	<i>Area of Influence/Project Site</i>	
		<i>Suitable Habitat</i>	<i>Species Documented</i>
Sea pink ( <i>Armeria maritime</i> )	Alpine in grassy tundra slopes with wet, sandy or spongy organic soils; 11,900 to 12,000 feet.	No	No
Park milkvetch ( <i>Astragalus leptaleus</i> )	Riparian, streamside, swales, often amongst sedges and willow or wet aspen; 6,000 to 9,000 feet.	No	No
Trianglelobe moonwort ( <i>Botrychium ascendens</i> )	Riparian among willow and historically disturbed, now stabilized habitats; 8,000 to 10,840 feet.	No	No
Narrowleaf moonwort ( <i>Botrychium lineare</i> )	Clearings and meadows. Historically disturbed, now stabilized habitats; 0 to 11,000 feet.	No	No
Paradox moonwort ( <i>Botrychium paradoxum</i> )	Clearings and meadows. Historically disturbed, now stabilized habitats; above 10,000 feet.	No	No
Smooth rockcress ( <i>Braya glabella</i> )	Alpine. Calcareous soils, lakeshores, scree slopes and solifluction lobes; 11,200 to 13,200 feet.	No	No
Lesser panicled sedge ( <i>Carex diandra</i> )	Fen on peat or on mossy floating logs in spring fed ponds; 6,100 to 8,800 feet.	No	No

<b>Table 20. WRNF Sensitive Plant Species in Project Area</b>			
<i>Species</i>	<i>Habitat</i>	<i>Area of Influence/Project Site</i>	
		<i>Suitable Habitat</i>	<i>Species Documented</i>
Livid sedge ( <i>Carex livida</i> )	Fen on peat. Often calcareous or rich fens; above 6,398 feet.	No	No
Yellow lady's slipper ( <i>Cypripedium parviflorum</i> )	Riparian/wetlands or transitional to Cottonwood, Aspen and conifers; 5,800 to 11,500 feet.	No	No
Clawless draba ( <i>Draba exunguiculata</i> )	Alpine fell fields; 12,000 to 14,000 feet.	No	No
Gray's Peak draba ( <i>Draba grayana</i> )	Alpine in gravelly slopes and fell fields; 11,500 to 14,000 feet.	No	No
Weber's draba ( <i>Draba weberi</i> )	Splash zones, among the rocks along streams and lakes and spruce forests; above 11,000 feet.	No	No
Roundleaf sundew ( <i>Drosera rotundifolia</i> )	Fens which are poor or intermediate poor on floating mats, also in iron fens; 9,100 to 9,800 feet.	No	No
Giant hellebore ( <i>Epipactis gigantea</i> )	Seeps on sandstone cliffs and hillsides; springs, especially hot springs when elevation above 8,500 feet.	No	No
Slenderleaf buckwheat ( <i>Eriogonum exilifolium</i> )	Sagebrush and Barrens in open, sparsely vegetated habitats; 6,900 to 8,600 feet. Dillon RD.	No	No
Altai cottongrass ( <i>Eriophorum altaicum</i> var. <i>neogaeum</i> )	Fen where open grown or partially shaded; 9,500 to 14,000 feet.	No	No
Chamisso's cottongrass ( <i>Eriophorum chamissonis</i> )	Fens where graminoids and forbs dominate the vegetation; 10,400 to 12,000 feet.	No	No
Slender cottongrass ( <i>Eriophorum gracile</i> )	Fens on floating mats of peat. Often calcareous; 6900 to 10,500 feet.	No	No
Hall fescue ( <i>Festuca halli</i> )	Meadows and edges of conifer forests or dry alpine tundra; 6,800 to 11,000 feet.	No	No
Simple kobresia ( <i>Kobresia simpliciuscula</i> )	Fen in flooded marly areas often with <i>Carex simulate</i> and <i>Triglochin</i> spp.; 6,000 to 10,000 feet.	No	No
Colorado tansy-aster ( <i>Machaeranthera coloradoensis</i> )	Mountain parks to dry alpine tundra, little competing vegetation; 8,500 to 12,940 feet.	No	No
Kotzebue grass-of-Parnassus ( <i>Parnassia kotzebuei</i> )	Riparian subalpine and alpine wet, rocky ledges, in mossy streamlets; 10,000 to 12,000 feet.	No	No
<b>Harrington's penstemon (<i>Penstemon harringtonii</i>)</b>	<b>Open sagebrush slopes or among pinyon-juniper. Calcareous parent material. 6,400 to 9,400 feet.</b>	<b>Yes</b>	<b>No</b>
Porter's feathergrass ( <i>Ptilagrostis porter</i> )	Fens on hummocks among willows. Mostly on peat soils. 9,200 to 12,000 feet.	No	No
Ice cold buttercup ( <i>Ranunculus karelinii</i> )	Among rocks and scree on exposed summits, slopes. 12,000 to 14,100 feet.	No	No

<b>Table 20. WRNF Sensitive Plant Species in Project Area</b>			
<i>Species</i>	<i>Habitat</i>	<i>Area of Influence/Project Site</i>	
		<i>Suitable Habitat</i>	<i>Species Documented</i>
Dwarf raspberry ( <i>Rubus arcticus</i> ssp. <i>acaulis</i> )	Riparian/wetland species with willow or wet partially shaded under spruce 8,600 to 9,700 feet.	No	No
Hoary willow ( <i>Salix candida</i> )	Fens which are calcareous, among other willows. 6,600 to 9,200 feet.	No	No
Autumn willow ( <i>Salix serissima</i> )	Fens which are calcareous, among other willows. 6,600 to 9,200 feet.	No	No
Peat moss ( <i>Sphagnum angustifolium</i> )	Fens. High mineral content and alkaline pH calcareous or rich fens. 7,800 to 9,720 feet.	No	No
Baltic bog moss ( <i>Sphagnum balticum</i> )	Fens which are nutrient poor; iron fens and intermediate poor fens. 9,600 to 11,483 feet.	No	No
Cathedral Bluffs meadow rue ( <i>Thalictrum heliophilum</i> )	Steep talus slopes open, hot, dry sites. Soils from Green River Formation; light colored saline/clays. Shifting substrates harsh sites 6,300-8800 feet.	No	No

Harrington's penstemon has been documented in the past in an elevation range between 6,100 feet to 7,880 feet from Grass Mesa to Cache Creek; a large portion of the pipeline alignment falls within this occupied habitat (WWE 2004, 2008, 2011a; BLM 2009b, c, d; 2011b). Harrington's penstemon is a perennial vascular plant found primarily in dry, sagebrush-dominated communities in six counties in northwest Colorado, roughly grouped into three population centers: 1) the Rifle-Rulison area in Garfield County; 2) the Eagle/Grand/Routt/Summit Counties area (Eagle); and 3) the Roaring Fork area in Pitkin County. It forms rosettes, which then develop flowering stalks, and single plants can form multiple rosettes (DeYoung personal communication). NatureServe and the Colorado Natural Heritage Program both rank this species as vulnerable (G3 and S3). U.S. Department of Agriculture USFS, Region 2, has designated Harrington's penstemon a sensitive species; it is also included on the BLM Colorado State Sensitive Species List. It is not listed as threatened or endangered under the Federal Endangered Species Act, nor is it currently a candidate for listing (Panjabi and Anderson 2006).

Biological surveys for this species were conducted between July and November 2011 and again in May 2012 along the proposed pipeline alignments. For this species, a flower with intact anthers is the most reliable method for positive identification (Spackman et al. 1997). Flowering dates for this species range from June-August (Spackman et al. 1997). In 2011, except for surveys conducted in July and August, inventories were conducted during the post-flowering period for Harrington's penstemon. Identification of Harrington's penstemon outside the flowering period may be equivocal due to other penstemon species that have morphological characteristics that are similar to Harrington's penstemon. One of these species, Osterhout's penstemon (*Penstemon osterhoutii*), is known to occur in the project area (WWE 2004, 2008; BLM 2009b). During 2011, over much of the project area, identification of Harrington's penstemon was based on morphological characteristics other than flowers and the known range of this species along the pipeline alignment as reported in previous BLM surveys. Follow-up surveys conducted in May 2012 occurred during a period when both Harrington's and Osterhout's penstemon were in bloom.

Population numbers were based on numbers of rosettes. Individual plants may produce more than one rosette, but differentiation of multiple-rosette plants requires disturbance to the roots. Rosette counts

were used as a surrogate for plant counts to prevent this disturbance, although this method is acknowledged to potentially overestimate true plant numbers.

Harrington's penstemon was most commonly observed growing in flat to gently sloping terrain. Preferred soils include Morval-Tridell and Villa Grove-Zoltay types. The Morval-Tridell complex is the dominant soil type found on Flatiron Mesa, which supports a large and extensive subpopulation of Harrington's penstemon (BLM 2009b). Highest densities are found in open sagebrush shrublands and pinyon-juniper woodlands, typically with scattered areas of bare ground and an understory where competition with grasses and forbs is moderate to low.

During surveys conducted for the Proposed Action, Harrington's penstemon populations were found on BLM, WRNF, and private lands. Subpopulations were identified from the south Grass Mesa area to about 1 mile east of Spruce Creek (WWE 2011a). The largest populations were found on BLM and private lands; however, one small group of about 25 plants was identified in Section 21 on WRNF lands; this small group was located approximately 0.23 miles east of the pipeline alignment.

During 2011, along the pipeline alignment on USFS lands in Section 21, multiple groups of unidentified but suspected Osterhout's penstemon were observed during the survey. Due to the date of the survey, the species of this penstemon was not positively determined; however, physical characteristics support tentative identification as Osterhout's penstemon (WWE 2011a). Surveys conducted in May 2012 confirmed that the unknown plants were Osterhout's penstemon and no Harrington's penstemon would be affected on USFS lands by the Proposed Action.

The number of Harrington's penstemon potentially affected by project construction was determined using direct rosette counts and density estimates derived from sampling done during biological surveys conducted for this project. Comparative Harrington's penstemon density estimates were reviewed from results of previous environmental reports in the project area (WWE 2004, 2008; BLM 2009b, 2009c). Density estimates for this project were similar to those reported in the previous surveys and ranged from 0.11 to 0.47 plants per square meter (m<sup>2</sup>). Counts of individuals were made in areas where preliminary surveys indicated that the number of plants was relatively low. Samples, including 1 m<sup>2</sup> plots and 50-meter by 1-meter belt transects, were taken in areas where Harrington's penstemon populations were high and extended over large areas (WWE 2011a).

## Environmental Consequences

### *Proposed Action*

The Proposed Action would result in phased construction distributed over two separate years with WPX waterlines planned for 2012 and Bargath's pipeline planned for 2013 or later. As discussed in the narrative below, it is unlikely that impacts to Harrington's penstemon would be additive as a result of phased construction, since plants would not readily recolonize habitat disturbed by WPX construction during the interval prior to the time when Bargath's construction would commence.

The number of Harrington's penstemon plants occurring within the project construction disturbance zone is estimated at 15,490 plants in 14 subpopulations on BLM and private lands. The results of the extensive surveys identified five subpopulations (7,286 plants) of Harrington's penstemon along the pipeline alignment on private lands and nine subpopulations on BLM lands (8,204 plants). Approximately 53% of the affected Harrington's penstemon plants are on BLM lands and 47% are on private lands.

The Proposed Action would affect approximately 23.21 acres of occupied Harrington's penstemon habitat. This includes 14.25 acres on BLM lands and 8.96 acres on private lands.

WPX Construction 2012

The proposed WPX project would result in approximately 7.45 acres of occupied Harrington’s penstemon habitat being affected by disturbance to vegetation during ROW clearing and project construction as a result of the Federal action. Approximately 6.90 acres of occupied Harrington’s penstemon habitat would be affected on BLM lands and 0.55 acre would be affected on private land. WPX’s construction would impact approximately 3,758 Harrington’s penstemon plants: 3,623 on BLM and 135 on private lands (Table 21).

Bargath Construction 2013 or Later

The proposed Bargath project would result in approximately 15.76 acres of additional disturbance to Harrington’s penstemon habitat during ROW clearing and project construction as a result of the Proposed Action. It is anticipated that the 7.45 acres of previously disturbed habitat falling within the Bargath ROW but attributed to the WPX construction would be redisturbed. However, it is unlikely that Harrington’s penstemon would have recovered in this area sufficiently such that new regrowth would be affected. As a result, for 15.76 acres of additional impacts, approximately 8.41 acres of occupied Harrington’s penstemon habitat would be affected on private lands, and 7.35 acres would be affected on BLM lands. Bargath’s construction would impact approximately 11,732 plants: 4,581 on BLM lands and 7,151 on private lands (Table 21).

The Federal effects to Harrington’s penstemon would be attributed to impacts for the Proposed Action on BLM lands. Construction of the two pipeline projects is estimated to result in the potential loss of approximately 0.73% of the estimated population of 2,114,000 (BLM 2009b) plants within the BLM Flatiron Mesa Master Development Plan (FMMDP) area boundary. On an ownership basis, reductions in present populations on BLM lands (within the FMMDP) would be 0.39% and 0.34% on private lands. The estimated total population of Harrington’s penstemon within the Rifle-Rulison population center is calculated at approximately 3,719,000 plants (counted as rosettes), based on available survey and monitoring data and an estimated 2,135 acres of potential habitat. Based on this estimate, the Proposed Action would affect approximately 0.42% of the estimated Rifle-Rulison population center (Table 21). A similar estimate for the total species population, including the Eagle and Roaring Fork population centers, was calculated to be approximately 34,474,999 plant rosettes on an estimated total potential habitat of 20,160 acres. The proposed project would impact approximately 0.045% of the total estimated population (BLM data, CRVFO).

<b>Table 21. Potential Project Impacts on Harrington’s Penstemon</b>						
<i>Project</i>	<i>Number of Plant Rosettes Impacted on BLM</i>	<i>Number of Plant Rosettes Impacted on USFS</i>	<i>Number of Plant Rosettes Impacted on Private Lands</i>	<i>Total Plant Rosettes Impacted</i>	<i>Percent Rifle to Rulison Population Impacted<sup>1</sup></i>	<i>Percent Total Species Population Impacted<sup>2</sup></i>
WPX Pipeline	3,623	0	135	3,758	0.10	0.011
Bargath Pipeline	4,581	0	7,151	11,732	0.32	0.034
Total	8,204	0	7,286	15,490	0.42	0.045
<sup>1</sup> Based on estimated population of 3,719,000 rosettes						
<sup>2</sup> Based on estimated population of 34,474,999 rosettes						

To estimate the cumulative impacts of the Proposed Action in combination with previous and planned projects within the Rifle-Rulison population center, pertinent NEPA documents were reviewed and anticipated impacts to Harrington’s penstemon were compiled (Table 22). The% cumulative impacts present in Table 22 additive from one project to the next; therefore, the cumulative percent increase through the successive years. Cumulatively, within the known range of Harrington’s penstemon in the Rifle-Rulison area, an estimated 56,954 plants have been or will be affected in this population center (includes WPX and Kokopelli II projects). The BLM has no jurisdiction over sensitive plants on private land, and survey data on these lands are incomplete. However, cumulative impacts and losses of Harrington’s penstemon are recognized. The estimated cumulative impact from Federal projects on the Harrington’s penstemon within the Rifle-Rulison population center, including known impacts on private lands, is 1.54% mortality (Table 22). The estimated cumulative impact from Federal projects on the entire species range is 0.12% for the WPX pipeline construction and 0.15% mortality for the Kokopelli II pipeline (as separate projects) (BLM data, CRVFO). The cumulative impact for both projects together for the entire species range in Colorado is estimated at 0.17% (Table 22).

<b>Table 22. Number of Harrington’s Penstemon Impacted and umulative Impacts of Federal Projects, 2001-2012</b>							
<i>Project Name</i>	<i>Year</i>	<i>Number of PEHA Impacted by Project</i>				<i>Percent Cumulative Impacts by Project</i>	
		<i>BLM</i>	<i>USFS</i>	<i>Private</i>	<i>Total</i>	<i>Rifle to Rulison Sub-population</i>	<i>Colorado Species Population</i>
Encana Hunter Mesa Gathering Pipeline, West Rifle to Pumba Compressor Station	2003	273			273	0.010	0.001
Canyon Gas/ETC Pipeline	2004	694			694	0.029	0.003
Flatiron Mesa Road Right-of-Way for Well Pad K8W	2005	94			94	0.032	0.003
Rulison Gap	2007	37			37	0.033	0.004
Helmer Gulch	2008	658		8,938	9,596	0.291	0.031
Flatiron Mesa Master Development Plan	2010	25,290		5,230	30,520	1.111	0.120
South Grass Mesa EA, Encana	2011	250			250	1.118	0.121
Proposed Kokopelli II and WPX Spruce to Beaver Creek pipelines	2012	8,204		7,286	15,490	1.535	0.166
<b>Total</b>		<b>35,500</b>	<b>0</b>	<b>21,454</b>	<b>56,954</b>	<b>1.54</b>	<b>0.17</b>

Mitigation on Federal lands would include minimizing the initial loss through project planning and protection from inadvertent-mechanical disturbance during all phases of construction. As part of project development and in conjunction with an analysis of biological surveys conducted as part of the NEPA development, two construction areas that supported high densities of Harrington’s penstemon were reduced in size to mitigate plant losses. Both sites where the construction disturbance area was narrowed were on BLM lands in the Porcupine Creek and Flatiron Mesa areas. As a result, the area of potential disturbance to Harrington’s penstemon on BLM lands was reduced from 15.39 acres to 14.25 (1.14 acres and 966 plants).

A number of indirect effects to Harrington's penstemon could result from the Proposed Action, including an increase in dust, weed invasion, sedimentation and erosion, and loss of pollinators and their habitat. Potential impacts to plants from the accumulation of dust include clogged plant pores and reduced light reception. The clogging of pores can interfere with growth rates and water transpiration (Farmer 1993, Sharifi et al. 1997). The road effect zone contributing to dust affects can extend several times the actual width of a road and as much as 50 meters down slope and has been documented as accounting for approximately 40% of fugitive dust within an area (Forman and Alexander 1998). Impacts from dust would decrease to levels close to current ambient levels after reclamation has been achieved along the pipeline alignment, since no new permanent roads are part of this project. Implementation of best management practices for dust reduction would further decrease dust impacts.

Another indirect effect could be an increase in invasive weeds from ground disturbing activities. Invasive weeds could compete with Harrington's penstemon for water, nutrients, and light or change ecosystem processes, such as increasing fire regimes. Mitigation measures designed to minimize the spread of invasive species are presented in Appendix A.

Construction of the pipelines uphill of Harrington's penstemon populations could lead to indirect impacts from soil erosion and sedimentation. If erosion and sedimentation are determined to be affecting Harrington's penstemon populations, these impacts would be mitigated by requiring the installation of sediment fences above potentially affected plants.

The Proposed Action could reduce the amount or quality of habitat needed by pollinator species. Mitigation to minimize this effect would include reclaiming the disturbed areas using a BLM-approved native seed mix. Mitigation measures designed to minimize the loss of pollinator habitat are presented in Appendix A. During surveys conducted for this project, it was noted that in two areas that small groups of Harrington's penstemon were becoming reestablished in short sections of reclaimed existing pipeline alignments in the Bargath project area (WWE 2011a). This observation suggests that disturbance to Harrington's penstemon populations may be a temporary effect on the local population.

Specific mitigations to increase the probability of Harrington's penstemon reestablishment following pipeline installation would be required (Appendix A). Seed would be collected from Harrington's penstemon plants growing within the disturbance area during the 2012 and 2013 growing seasons, and then planted in the Meeker Plant Materials Center for a seed increase growout. Seed produced from this growout would then be planted along the pipeline corridor within the Harrington's penstemon habitat sites following completion of both pipelines. The reclamation seed mix within the Harrington's penstemon habitat sites would differ from the standard seed mix, excluding highly competitive rhizomatous grasses, but including bunchgrasses, shrubs, and forbs with which Harrington's penstemon is compatible. Noxious weed treatments in these habitat areas would be limited to spot treatments only.

The BLM Colorado State Office guidelines for sensitive plant species recommend that impacts to a population should not exceed a threshold of 2 percent. Including this Proposed Action, cumulative federally associated impacts are estimated to be 1.54% for the Rifle to Rulison Harrington's penstemon population, which is approximately 24% below the threshold guidance recommendation. For the species entire range in Colorado, the cumulative impacts are estimated to be 0.17%. Recent data compiled by the BLM indicate that Harrington's penstemon has a wide range in western Colorado, and the Eagle population center is considered the core area of this species. The cumulative losses in the Rifle to Rulison population have not reached a level that would cause immediate concern that viability of this species is reduced, or that this species is in jeopardy, or that the project will cause a trend towards Federal listing of this species. It is anticipated that construction migration and reclamation that specifically targets regrowth of Harrington's penstemon in disturbance areas will positively affect the impacted population in the Proposed Action project area.

*No Action Alternative*

The No Action Alternative would result in no construction activities along the proposed pipeline corridor because no ROW grants or WRNF permits would be granted. Therefore, this alternative would have no direct, indirect, or cumulative impacts to special status plant species.

Analysis on Public Land Health Standard 4 for Plant and Animal Communities (partial, see also Vegetation; Wildlife, Aquatic; and Wildlife, Terrestrial).

The Proposed Action would not jeopardize the viability of any population of special status plant species due to habitat loss, modification, fragmentation, or indirect effects. The project would have no significant consequence on habitat condition, utility, or function or any discernible effect on species abundance or distribution at a landscape scale. Public land health Standard 4 would continue to be met.

BLM and USFS Sensitive Animal Species and USFS MIS Species

Affected Environment

Sensitive species are considered in management actions to ensure that authorized actions do not cause these species to be listed in the future. MIS are considered in the WRNF Forest Plan to ensure that habitat quality and quantity is maintained and distributed in a manner that provides for interactive, viable populations of wildlife species. BLM and USFS sensitive animal species and USFS MIS species with habitat and/or occurrence records in the portion of the CRVFO that includes the project area and vicinity are listed in Table 23. Management Indicator Species and Biological Evaluation reports were prepared as part of the environmental review for this project (WWE 2012c, d). Species indicated in Table 23 as present or possibly present in the project vicinity are described in the following narrative. All trout and macroinvertebrates are discussed as a single entity since they inhabit similar aquatic environments.

<b>Table 23. BLM and USFS Special Status Wildlife Species Potentially Present</b>			
<i>Common Name</i>	<i>Status</i>	<i>Habitat</i>	<i>Potential for Occurrence</i>
<b>MAMMALS</b>			
Fringed myotis	BLM-S, USFS-S	Roosts in caves or mines near pine forests, oak brush, greasewood or saltbush shrublands at elevations up to 7,500 feet.	Possible
Hoary bat	USFS-S	Roosts in trees along forest borders.	Likely
Spotted bat	USFS-S	Roosts in cliff crevices.	Unlikely
Townsend's big-eared bat	BLM-S, USFS-S	Semi-desert shrublands, pinyon-juniper woodlands, associated with caves or rock crevices. Known in all western Colorado counties.	Possible
<b>BIRDS</b>			
American peregrine falcon	BLM-S, USFS-S	High cliffs near pinyon-juniper woodlands, ponderosa, or spruce-fir forests.	No nesting habitat, hunts for prey in project area.
Bald eagle	BLM-S, USFS-S	The Colorado River riparian corridor, cottonwood galleries includes nesting, roosting, winter range, and winter foraging habitat.	Present along the Colorado River
Black swift	USFS-S	Nest exclusively on vertical rock faces near waterfalls or in dripping caves	No suitable habitat
Brewer's sparrow	BLM-S, USFS-MIS	Large sagebrush shrublands.	Likely nester in sagebrush shrublands

<b>Table 23. BLM and USFS Special Status Wildlife Species Potentially Present</b>			
<i>Common Name</i>	<i>Status</i>	<i>Habitat</i>	<i>Potential for Occurrence</i>
Boreal owl	USFS-S	Occur mainly in Engelmann spruce and subalpine fir above 9,000 feet; after breeding may occur in pinyon-juniper woodlands	Unlikely
Columbian sharp-tailed grouse	USFS-S	Mountain shrublands in Moffat, Routt and Rio Blanco counties	No occupied habitat- outside known range
Ferruginous hawk	BLM-S, USFS-S	Inhabits open, semi-desert shrublands; nests in cliffs or trees.	Unlikely – Outside normal range near Colorado border.
Flammulated owl	USFS-S	Inhabit ponderosa pine forests, Douglas-fir forests, dense shrubs along streams, lodgepole pine forests and old growth pinyon-juniper.	Unlikely – Suitable habitat not present.
Lewis’s woodpecker	USFS-S	Open pinyon-juniper woodlands, riparian, and cottonwood stands.	Possible, most likely at lower elevations along Colorado River.
Loggerhead shrike	USFS-S	Open riparian areas, grasslands, and semi-desert shrublands often with greasewood and sagebrush.	Possible, most likely at lower elevations and along the Colorado River
Northern goshawk	BLM-S, USFS-S	Expansive conifer woodlands and stands of aspen, elevations up to 9,000 feet.	Possible- marginal nesting habitat
Northern harrier	USFS-S	Grasslands, marshes, agricultural lands, shrublands.	Possible in sagebrush and mountain shrub communities.
Olive-sided flycatcher	USFS-S	Mature subalpine spruce/fir and montane Douglas-fir forests, especially on steep slopes.	Unlikely – Habitat marginal
Purple martin	USFS-S	Nests at the edges of old-growth aspen stands, usually near a stream, spring, or pond.	Unlikely – Habitat lacking
Sage sparrow	USFS-S	Nesting is selected; only sizeable, low-elevation stands of big sagebrush or mixed big sagebrush and greasewood; no records of this species breeding in the project area.	Unlikely -- Outside suitable habitat range
Virginia’s warbler	USFS-MIS	Pinyon-juniper woodlands, mountain shrublands, and riparian.	Likely nester in dense mountain shrublands above 6000 feet
White-tailed ptarmigan	USFS-S	Alpine tundra	No suitable habitat
<b>REPTILES</b>			
Midget faded rattlesnake	BLM-S	Habitat varies from riparian to semi-desert shrublands and foothills.	Possible at low elevations in the project area
<b>AMPHIBIANS</b>			
Great Basin spadefoot	BLM-S	Rocky canyons, shrublands, semi-desert shrublands, or pinyon-juniper woodlands with available water sources for reproduction.	Unlikely – Outside range
Northern leopard frog	BLM-S, USFS-S	Wet meadows and the banks and shallow areas of ponds, marshes, lakes, streams, reservoirs, ditches.	Present along Colorado River
<b>FISH</b>			
Bluehead sucker	BLM-S, USFS-S	Small to mid-size tributaries in the upper Colorado River basin.	Present in Colorado River tributaries

<b>Table 23. BLM and USFS Special Status Wildlife Species Potentially Present</b>			
<i>Common Name</i>	<i>Status</i>	<i>Habitat</i>	<i>Potential for Occurrence</i>
Brook trout	USFS-MIS	Cold to cool water perennial streams, including small streams.	In headwaters of streams south of project area
Brown trout	USFS-MIS	Cold to cool water perennial streams, including small streams.	Present in Colorado River & lower Beaver Creek
Colorado River cutthroat trout	BLM-S, USFS-MIS	Cold to cool water perennial streams, including small streams.	Present in Beaver Creek
Colorado roundtail chub	BLM-S	Small to mid-size tributaries in the upper Colorado River basin.	Present in Colorado River
Flannelmouth sucker	BLM-S, USFS-S	Small to mid-size tributaries in the upper Colorado River basin.	Present in Colorado River
Mountain sucker	BLM-S	Rivers and streams with gravel, sand and mud bottoms.	Unlikely in lower Colorado River
Rainbow trout	USFS-MIS	Cold to cool water perennial streams, including small streams.	Present in Colorado River
<b>AQUATIC MACROINVERTEBRATES</b>			
Macroinvertebrates	USFS-MIS	Ponds, lakes, wetlands and streams	Present in all waters
<b>TERRESTRIAL INSECTS</b>			
Nokomis fritillary	USFS-S	Permanent spring-fed meadows, seeps, marshes, and boggy streamside meadows associated with flowing water.	Possible in wetland areas

Fringed Myotis (*Myotis thysanodes*). None was observed during the biological survey conducted for this project (WWE 2011a). Records of occurrence are few in western Colorado, and the species is not common in the state (CPW 2011).

Hoary Bat (*Lasiurus cinereas*). A widespread species; probably occurs throughout Colorado in suitable habitat. In western Colorado, hoary bats occur in Douglas-fir and cottonwood forests and pinyon-juniper woodlands. Hoary bats are a migratory species and migration is northward in May and to the south in August and early September (Hammerson 1999).

Spotted Bat (*Euderma maculata*). This bat is an uncommon species in Colorado. Hammerson (1999) shows isolated records from Moffat and Montezuma Counties in the western portions of each county. Rocky cliffs with cracks and crevices are required for suitable habitat.

Townsend's Big-eared Bat (*Corynorhinus townsendii*). None were observed during the biological survey (WWE 2011a). No known caves or mine adits that would provide suitable habitat for this species are known to occur in the project area.

American Peregrine Falcon (*Falco peregrinus anatum*). A single peregrine falcon was observed flying over the pipeline alignment west of Beaver Creek during 2011 biological surveys (WWE 2011a). The bird appeared to be hunting prey. Suitable cliff habitat occurs in the headwaters of Porcupine, Beaver, and the Mamm Creeks at higher elevations in the Battlements on USFS lands. The observation was within the range of a hunting territory for this bird. No nesting habitat exists for this species within the project area.

Bald Eagle (*Haliaeetus leucocephalus*). An adult bald eagle was observed hunting prey along the Colorado River during the biological survey conducted for this project (WWE 2011a). CPW NDIS (NDIS 2011) records indicate that the alignment would be within a mapped winter range, a winter foraging area, winter roost site buffers, and a summer foraging area. The entire Colorado River corridor from a few miles east of the town of Eagle, Colorado to the Colorado-Utah state line is winter range for bald eagles. NDIS maps show a winter foraging area starts approximately 1.5 miles west of where the pipeline alignment crosses the Colorado River and continues well past the town of Eagle, Colorado. The western terminus of the pipeline alignment is located within 0.25 miles of a winter roost site that is on the south side of the Colorado River. CPW designated winter roost sites are groups of or individual trees that provide diurnal and/or nocturnal perches for less than 15 wintering bald eagles and include a buffer zone extending 0.25 mile around these sites. These trees are usually the tallest available trees in the wintering area and are primarily located in riparian habitats. A summer foraging area is mapped in an area beginning about 1.8 miles upstream and ends near the west terminus of the pipeline alignment.

An active bald eagle nest site is located approximately 0.7 mile upstream of the alignment river crossing. A pair successfully fledged two eaglets at this site during the 2011 nesting season (WWE 2011a). These bald eagles are residents and have occupied the nesting territory along the Colorado River corridor since 2008, fledging eaglets each year (Graham, WWE, pers. comm. 2011). Bald eagles usually begin pre-nesting activities in December and eggs are usually laid by mid-February each year. Fledging of eaglets is usually completed by mid- to late-June each year. The active bald eagle nest site is located greater than 0.5 mile from construction disturbance and is not likely to be affected by project related disturbance. The NDIS database indicates a second bald eagle nest located southwest of the end point of the pipeline. This nest has not been occupied within the last five years and a great blue heron (*Ardea herodias*) rookery is now established in the cottonwood gallery (Graham pers. comm. 2011).

Black Swift (*Cypseloides niger*). Nest on vertical rock faces, near waterfalls or in dripping caves. This species is known to occur at Rifle Falls and in eastern Garfield County in the headwaters of the South Fork of the White River. No suitable habitat occurs in the project area.

Boreal Owl (*Aegolius funereus*). This owl occurs mainly in mature to old-age Engelmann spruce and subalpine fir above 9,000 feet. The species prefers areas near streams, bogs, or wetlands. The species has been known to infrequently occur in pinyon-juniper woodlands. Suitable nesting habitat for this species is not found in the project area.

Brewer's Sparrow (*Spizella breweri*). Brewer's sparrows were not observed during the survey. Brewer's sparrow is a USFWS BCC species (see the section on Migratory Birds), BLM sensitive species and a USFS MIS species. This species is a near-obligate on sagebrush and is common in expansive stands, especially those dominated by Wyoming big sagebrush on level to rolling or undulating terrain. Brewer's sparrow typically nests in sagebrush and sagebrush dominated mixed mountain shrub communities. It is a likely nester in the Flatiron Mesa area and shrublands south of Flatiron Mesa down to and along West Mamm Creek, primarily on private lands. The sagebrush shrublands that parallel West Mamm Creek appear to support habitat suitable for this species. In detailed local Brewer's sparrow studies, population density and trend surveys have been conducted by the Rocky Mountain Bird Observatory for the WRNF (Blakesley 2008). These studies indicate that Brewer's sparrows have not shown evidence of population change state wide from 1999-2007. Furthermore, the studies within ecological units (National Hierarchy of Ecological Units), in which the WRNF falls, showed an increasing trend in population size between 1999 and 2007.

Lewis's Woodpecker (*Melanerpes lewis*). Few records for this woodpecker occur in Garfield County (Kingery 1998). This species would most likely be found along the Colorado River corridor in the riparian area, since this is preferred habitat in Colorado. Most records for Lewis's woodpecker are in the Grand Valley around Grand Junction with nesting occurring in cottonwood tree cavities (Kingery 1998).

No impacts to existing riparian vegetation would occur since the pipeline bore would occur outside the vegetation of the riparian zone. Lewis's woodpeckers also occur in pinyon-juniper woodlands such as those found along the alignment in the Spruce to Porcupine Creek area. The habitat in this area, north of the pipeline alignment, provides suitable foraging range due to the Red Apple wildfire that burned extensive woodlands result in numerous snags and stumps. Burnt-over areas are attractive to Lewis's woodpecker (Kingery 1998).

Loggerhead Shrike (*Lanius ludcovicianus*). Records in Garfield County occur in the sagebrush, greasewood, and salt desert shrublands south of the Bookcliffs near the Utah border (Kingery 1998). Nests are often constructed in scattered shrubs and trees, particularly thick or thorny species (Dechant et al. 1998). Although the project area is farther east (approximately 40 miles) than the primary nesting range in western Colorado, the habitat types within or near the proposed corridor include vegetation with structure suitable for shrike nesting. If this species occurred in the project area, it would likely inhabit the shrublands bordering the Colorado River corridor.

Northern Goshawk (*Accipiter gentilis*). Northern goshawk was not observed during the survey. The Colorado Breeding Bird Atlas (Kingery 1998) indicates a record of confirmed breeding within a survey block that covers a portion of the pipeline alignment. Northern goshawks prefer mature conifer forests, but often nest in aspen stands. The pinyon-juniper woodlands along the pipeline alignment provide marginal, but suitable nesting habitat for this species. However, the amount of suitable habitat is small and this species is unlikely to nest in the project area.

Northern Harrier (*Circus cyaneus*). The Colorado Breeding Book Atlas (Kingery 1998) has records of possible breeding in south-central Garfield County. Northern harrier populations throughout North America have declined over the past 100 years with the major causes being loss of wetlands, implementation of monoculture farming, and reforestation of open farmlands (Garrett and Molina 2011). This species is known to nest in various habitat types that occur in the project area. The agricultural fields and riparian habitats along the Mamm Creek drainages is likely the best habitat for this species. None were observed during surveys conducted for this project. In northwest Colorado, northern harriers sometime nest in sagebrush shrublands – similar habitat which occurs in the upper elevations of the pipeline alignment. This species is a potential nester within the project area.

Sage Sparrow (*Amphispiza belli*). Nesting is selected; only sizeable, low-elevation stands of big sagebrush or mixed big sagebrush and greasewood; no records of this species breeding in the project area.

Virginia's Warbler (*Oreothlypis virginiae*). The breeding range of Virginia's warbler, an USFS MIS species, is limited primarily to the Four Corners states of Colorado, Utah, Arizona, and New Mexico, with minor extensions into bordering states. Virginia's warbler breeds in the foothills of Colorado, generally between 6,000 feet and 9,000 feet in elevation. Nesting habitats include pinyon-juniper woodlands, ponderosa pine forests, and dense shrublands of tall species such as Gambel's oak and riparian areas (Kingery 1998). Breeding is initiated in early May and can continue through late July. The diet of Virginia's warbler is exclusively insects, which they capture by probing and gleaning, hovering, or sallying ("flycatching") among the dense shrubs (Ehrlich et al. 1988, Olson and Martin 1999). Most of the population of Virginia's warbler in Colorado occurs in the western part of the state or in the Front Range foothills. Partners in Flight estimated that the total population of Virginia's warbler in Colorado (approximately 100,000) comprises slightly over 25% of the global population of the species. This species is considered common throughout much of its range in Colorado and likely occurs in various shrublands habitats bisected by the proposed pipeline (Kingery 1998). Audubon (2011) reported that Breeding Bird Survey data from 1966 to 2009 showed there has been a non-significant overall decline of 0.4% per year for this species in Colorado. Rocky Mountain Bird Observatory (Blakesley 2008) data for the WRNF showed no evidence of Virginia's warbler population changing state wide between 1999 and

2005. However, there was evidence for an increasing trend in population size between 1999 and 2007 in portions of ecological units in which the WRNF occurs.

White-tailed Ptarmigan (*Lagopus leucura*). This species occupies alpine areas, primarily in tundra areas above timberline; sometimes venturing as low as 8,000 feet. The Propose Action area does not support suitable habitat.

Midget Faded Rattlesnake (*Crotalus viridis concolor*). The midget faded rattlesnake is sparsely distributed in western Colorado and observations are uncommon. WWE documented a single occurrence of this species in the Kelly Gulch west of Parachute, Colorado, below the Roan Cliffs in 2010 (WWE 2009). This species is typically found at lower elevations (<6,000) in mountain shrubs including sagebrush and deciduous mountain shrubs.

Great Basin Spadefoot (*Spea intermontana*). This toad is uncommon; Hammerson's (1999) records show no occurrences within the project area. This species typically prefers to breed in ephemeral pools and ponds that sustain adequate water for durations long enough for breeding and larval development. Wetlands, seeps, and ponds encountered along the pipeline alignment were searched during biological surveys in an effort to detect this species; no eggs, larvae, or adults were observed in areas of potentially suitable habitat.

Northern Leopard Frog (*Lithobates pipiens*). The northern leopard frog is limited to perennial waters, including ponds and slow-flowing perennial streams or persistent portions of intermittent streams. Northern leopard frogs were observed at only one location along the pipeline alignment. Approximately 10 frogs were observed in a small pond located about 150 feet southwest of the Colorado River and 210 feet west the center line of the pipeline alignment (WWE 2011a). Since the Colorado River will be crossed using a bore beneath the river, no impacts to potential northern leopard frog habitat would occur. Northern leopard frogs were not observed in other wetlands, seeps, or ponds during biological survey conducted for this project.

Flannelmouth Sucker (*Catostomus latipinnis*), Bluehead Sucker (*C. discobolus*), and Roundtail Chub (*Gila robusta*) – Similar to the endangered Colorado River fishes described previously in the section on Federally Listed, Proposed, and Candidate species, these species are vulnerable to alterations in flow regimes in the Colorado River that affect the availability and suitability of spawning sites and habitats needed for development of the larvae. The amount of consumptive water use associated with the Proposed Action would not be expected to cause discernible impacts to flows in the Colorado River.

Colorado River Cutthroat Trout (*Oncorhynchus clarki pleuriticus*). The native trout in the region is known to occur only in Beaver Creek in the vicinity of the project area. BLM inventories have confirmed the presence of this species. Sampling that took place in July 2007 by CRVFO fisheries personnel confirmed the occurrence of Colorado River cutthroat trout in Beaver Creek. The reach of stream that was sampled overlaps the Flatiron Mesa Master Development Plan boundary and was also found to support brown trout (*Salmo trutta*) at a ratio of 3:1 to Colorado River cutthroat trout. The Beaver Creek crossing is on private land. The CPW has mapped Beaver Creek, within the project area boundary, as designated cutthroat trout waters. Designated cutthroat trout waters are sensitive habitats that the CPW has identified and important to management of this species.

All Trouts and Macroinvertebrates. The Proposed Action would cross Spruce Creek, Porcupine Creek, Beaver Creek, an unnamed tributary to Beaver Creek, Gant Gulch, Middle Fork Mamm Creek, and East Fork Mamm Creek using temporary flumed crossing methodology. Each of these stream crossings would occur on either privately owned lands or BLM lands. There are no perennial stream crossings planned for the Proposed Action that would occur on WRNF-managed lands. The pipeline would parallel Dry Creek for approximately 0.28 mile on WRNF lands. Dry Creek is an intermittent drainage and does not support

populations of trout and/or macroinvertebrates on the WRNF lands within the project vicinity. The Colorado River would also be crossed by the Proposed Action; however, an HDD bore would be used, thus, no direct impacts to the Colorado River fisheries and aquatic macroinvertebrates is expected. Within the project area, trout are only present in the Colorado River and Beaver Creek (WWE 2011a).

Nokomis Fritillary (*Speyeria Nokomis*). This butterfly is associated with the Upper Sonoran (pinyon-juniper, various shrubs) and Canadian (fir-spruce-tamarack, some pine, aspen-maple-birch-alder-hemlock) Life Zones of the southwestern United States and northern Mexico (Selby 2007). Habitats are generally described as permanent spring-fed meadows, seeps, marshes, and boggy streamside meadows associated with flowing water in arid country (Selby 2007).

## Environmental Consequences

### *Proposed Action*

The Proposed Action would result in phased construction and impacts to sensitive species would potentially occur during two distinction time intervals separated by one or more years. In the area of the shared corridor, direct impacts to suitable habitat as a result of the WPX clearing of ROW vegetation would be reduced during Bargath's pipeline project, since late seral stage woodlands and shrub habitat would not have reoccupied the previously cleared areas. The impacts analyzed in the Proposed Action for the WPX Spruce to Beaver Creek pipelines and the Bargath Kokopelli pipelines are broadly applicable for the species evaluated in the Proposed Action. This is due to the fact that most of the species occur widely across the landscape in this portion of western Colorado. Populations, distribution, and habitat use remain relatively consistent from year-to-year. However, if specific impacts to a species or group of species differ between the two pipeline projects along the proposed alignments, the site-specific potential biological effects are described in the following narratives.

Fringed Myotis, Townsends Big-eared Bat. The lack of suitable habitat, except for foraging, reduces the likelihood of affects to these species of cave bats. There is an abundance of suitable foraging habitat within the project area and it is unlikely the Proposed Action would impact the ability of these two species to forage successfully.

Hoary Bat, Spotted Bat. These species likely occurs occasionally in the project area and may pass through to forage and roost in nearby trees and shrubs. There is an abundance of suitable foraging habitat within the project area and it is unlikely the Proposed Action would impact the ability of this species to forage successfully.

American Peregrine Falcon. Suitable cliff nesting habitat for this species does not occur within the project area. The relatively small pipeline disturbance area would not likely negatively affect the local passerine prey base that peregrine falcon may potentially exploit in the project area as part of hunting territories.

Bald Eagle. The WPX water pipelines would not impact Bald Eagle habitat along the Colorado River, since its closest point is approximately 1.7 miles south of the river corridor. Since boring of the pipeline for Bargath's pipeline will occur on the benches above the Colorado River floodplain in hay meadows and grassland habitats, construction activities are unlikely to negatively affect bald eagles occupying the river corridor. The construction methods and equipment would be similar to those currently in use in the general project area for natural gas drilling and production. The open terrain at the proposed pipeline boring sites lacks trees and does not provide roosts and only marginally suitable foraging habitat. Based on surveys and monitoring projects, bald eagles nesting and wintering in the Colorado River corridor from New Castle to DeBeque appear to have habituated to indirect disturbance factors associated with routine natural gas development projects (Graham pers. comm. 2011). There are no known records of

nest abandonment or failure due to activities associated with natural gas development. However, since bald eagle habitat use in the area may vary from year-to-year, a resurvey of the Colorado River corridor prior to construction would occur to verify the status of bald eagles in the project area. Application of COAs (Appendix A) would minimize any potential impacts caused by the Proposed Action. Current data indicate that there would be no significant impacts to the existing bald eagle population from the Proposed Action.

Black Swift. No waterfalls or caves or other suitable habitat for this species are present that would be affected by the Proposed Action.

Boreal Owl. The closest know habitat for this species in on Grand Mesa located approximately 15 miles south of the Proposed Action. Suitable nesting habitat for this species is not found in the project area.

Brewer's Sparrow. Potential affects to Brewer's sparrows would be associated with loss of nesting habitat in mature sagebrush and sagebrush-mixed mountain shrubs habitats. Sagebrush habitats account for approximately 23% (56 acres) of the total acreage disturbed by the Proposed Action. Clearing of vegetation along the alignment may affect nesting success, if conducted during the breeding season, which is between May 1 and July each year. However, a large portion the pipeline alignment is adjacent to existing disturbance areas, such as roads. This alignment feature would decrease the extent of additional pipeline construction effects, since Brewer's sparrow populations would have acclimated and adjusted nesting territories in response to the existing levels of disturbance. The COAs in Appendix A would avoid or minimize the potential for impacts to nesting Brewer's sparrows. Consequently, affects to Brewer's sparrow populations would likely be minimal as a result of the Proposed Action.

Lewis's Woodpecker. The use of a bore under the Colorado River would minimize impacts to suitable nesting vegetation potentially used by Lewis's woodpeckers in this portion of the project area. Mature pinyon-juniper woodlands in the area between Spruce Creek and Porcupine Creek would be affected and new fragmentation would occur. However, since this woodland type is extensive, impacts on Lewis's woodpecker populations would likely be minor or even potentially beneficial, since this species prefers open habitat for foraging. The reclamation along the pipeline alignment and fragmentation could potentially provide additional foraging habitat for this species.

Loggerhead Shrike. Based on ornithological records, nesting by loggerhead shrikes within the project is unlikely (Kingery 1998). The COAs in Appendix A would avoid or minimize the potential for impacts to nesting shrikes. As a result, no impacts to loggerhead shrike populations from the Proposed Action are expected.

Northern Goshawk and Northern Harrier. For these raptor species, the proposed pipeline alignment contains no (goshawk) or marginal (harrier) potential nesting habitat. For the goshawk, suitable nesting habitat in montane conifers occurs relatively near the project area at higher elevations, while agricultural fields and riparian areas provide potential nesting habitat. Therefore, both species may make some use of the proposed pipeline corridor, particularly for foraging. However, because of the minor habitat loss and the abundance of suitable habitats throughout the area, combined with the COAs in Appendix A, the Proposed Action may impact individuals of both species but would be unlikely to result in loss of viability within the CRVFO area or cause a trend to Federal listing or loss of species viability Rangewide.

Northern Goshawk. Only marginal nesting habitat for northern goshawk is present in the project area and consequently impacts to northern goshawk populations would not occur from the Proposed Action.

Sage Sparrow. The closest nesting records (Kingery 1998) are from lower Roan Creek, located approximately 20 miles west of the western termini of the Proposed Action.

Virginia's Warbler. Threats to the species include habitat loss and fragmentation due to improvements for livestock, land development, and roads. Wildland fires also affect this species adversely by reducing the height and density of shrub foliage. A large portion the pipeline alignment is adjacent to existing disturbance areas, such as roads, which would decrease the extent of the effects. This alignment feature would decrease the extent of the new pipeline construction effects, since Virginia warbler populations would have acclimated and adjusted nesting territories in response to the existing levels of disturbance. The 60-day TL (COA Appendix A) to prohibit removal of vegetation or to conduct surveys to determine if nesting is occurring during the period May 1 to July 1 would avoid or minimize the potential for impacts to this species.

White-tailed Ptarmigan. No suitable alpine tundra habitat for this species in the project area.

Midget Faded Rattlesnake and Great Basin Spadefoot. Neither of these species is common. Lack of suitable pond or seep habitat decreases the chances that spadefoot toads would be affected.

Northern Leopard Frog. Habitat for the northern leopard frog exists along the Colorado River. However, the use of an HDD bore would eliminate disturbance to these frog habitats. Other wetlands and perennial streams provide potential habitat but impacts to these areas would be minimized by BMPS and COAs (Appendix A). Therefore, no impacts would occur to northern leopard frog populations from the Proposed Action.

Flannelmouth Sucker, Bluehead Sucker, and Roundtail Chub. Also similar to the endangered big-river fishes, these BLM sensitive species are adapted to naturally high sediment loads and therefore would not be affected by increased sediment transport to the Colorado River. However, these species are vulnerable to inflow of sediments into smaller streams by smothering the eggs of these species. The potential for adverse impacts from inflow of chemical pollutants is also greater in small streams due to less dilution and the presence of larval or juvenile fishes, which are more susceptible to mortality from acute toxicity. The COAs for the protection of water quality (Appendix A) would minimize the potential for impacts from inflow of sediments or toxicants. Prompt implementation of the SPCC plan following any spill or other release of hydrocarbons, saline waters, or other contaminants would further reduce the risk of significant adverse impacts to these species and other aquatic life in affected waters. The Proposed Action would have no impacts

Colorado River Cutthroat Trout, All Trout and Macroinvertebrates. The WPX waterlines are not expected to affect trout, since the pipeline alignment does not cross any perennial streams that support trout populations. Similarly, sedimentation is unlikely to impact any streams including Beaver Creek, which does support Colorado River cutthroat trout.

Increased sediment during construction of Bargath's project may degrade water quality at stream crossings. An increase in sediment can affect trout and macroinvertebrate habitats by filling pools needed for over wintering habitat, smothering spawning gravels and developing embryos and larvae, and generally reducing growth and survival of juvenile fish (Suttle et al. 2004). Trout food source reductions result from declines in macroinvertebrate communities from population decreases in sediment intolerant species that are more available to trout as food and from burrowing taxa that could become buried in fines on the stream bottom (Suttle et al. 2004). There is also the potential for spilled chemicals and liquids to runoff into aquatic habitats present in the project area. However, with the installation of erosion control devices and the use of BMPs would minimize or eliminate any impact(s) on streams and downstream aquatic habitats resulting from the Proposed Action.

The use of an HDD bore under the Colorado River would also eliminate disturbance to vegetation and prevent sediment from entering the river. The COAs for the protection of Colorado River cutthroat trout in Beaver Creek and water quality (see Riparian and Wetlands Section and Appendix A) would minimize

the potential for impacts from inflow of sediments or toxicants. Implementation of the prescribed BMPs and COAs would minimize impacts on trout and macroinvertebrate populations from the Proposed Action.

Nokomis Fritillary. This species may potentially occur in suitable wetland areas such as Beaver Creek, Gant Gulch, Middle Mamm Creek, and East Mamm Creek. However, the species has not been documented in Garfield County (Selby 2007), and significant impacts are therefore not anticipated.

#### *No Action Alternative*

Under the No Action Alternative, the proposed natural gas pipeline and two water lines would not be built and no surface disturbance would occur on the proposed 22.3-mile pipeline. Consequently, no impacts to special status species and habitats currently occupied by these species would occur.

#### Analysis on Public Land Health Standard 4 for Special Status Wildlife Species

According to a recent LHA, habitat conditions within this area appear suitable for special status animal species known or likely to occur (BLM 2005). However, large portions of the landscape are being fragmented due to extensive natural gas development. Continued habitat fragmentation is of concern as large blocks of contiguous intact habitat are required by many species. Sustained development and the proliferation of roads, well pads, pipelines, compressor stations, tank farms and other surface facilities will continue to reduce habitat patch size and affect both habitat quality and quantity. The potential to impact some species would increase as development continues. The Proposed Action in conjunction with similar activities throughout this watershed would increase fragmentation and could increase sediment loads. Although the contribution of the Proposed Action is in itself small, it may further trend the area away from meeting Standard 4 for special status wildlife.

Based on the protective stipulations listed in Appendix A, the Proposed Action would not jeopardize the viability of any population of special status animal species due to habitat loss, modification, fragmentation, or indirect effects. The project would have no significant consequence on habitat condition, utility, or function or any discernible effect on species abundance or distribution at a landscape scale. Public land health standard 4 would continue to be met.

## **Vegetation**

### Affected Environment

Much of the proposed pipeline alignments would be constructed along level to gently rolling landscapes on mesa tops, benches, and valley bottoms. The alignments cross moderately sloping to steep terrain near Flatiron Mesa and west of Beaver Creek over to the area west of Porcupine Creek. The proposed pipeline alignment is bisected by numerous ephemeral washes, many of which have their headwaters within or near to the environmental survey area resulting in little opportunity for perennial flows. Perennial waters and wetlands occur along the proposed pipeline alignment and include East Mamm Creek, Middle Mamm Creek, Gant Gulch, West Mamm Creek, Beaver Creek, Porcupine Creek, Spruce Creek and the Colorado River. Numerous agricultural irrigation ditches are crossed in the Mamm Creek drainages. The flow pattern of drainages is generally south to north towards the Colorado River. Elevation along the alignment varies from approximately 7,875 feet ASL on Flatiron Mesa to 5,200 feet at the Colorado River.

Vegetation along the proposed pipeline alignment varies and is dependent on multiple factors including elevation, aspect, soils, rainfall, hydrology, and land management effects of agricultural production and

livestock grazing. Dominant vegetation types include mixed deciduous mountain shrub communities, pinyon pine-Utah juniper (*Pinus edulis-Sabina osteosperma*) woodlands, sagebrush shrublands, agricultural croplands (livestock forage), and rangelands. Riparian communities make up a small (< 1%) portion of the project area.

Fifteen vegetation types were classified along the pipeline proposed pipeline alignments; 12 types are generally in a natural condition (Table 24). Agricultural lands, mostly used for livestock grazing or hay production are also affected by the Proposed Action. Mixed mountain shrublands were the most common type, followed by pinyon-juniper woodlands and sagebrush shrublands.

<b>Table 24. Dominant Vegetation Types Potentially Affected</b>				
<i>Vegetation Types</i>	<i>BLM</i>	<i>USFS</i>	<i>Private</i>	<i>Total</i>
Agriculture: livestock			11.71	11.71
Agriculture: hay			26.70	26.70
Agriculture: pasture			1.76	1.76
Colorado River			0.71	0.71
Existing Facilities/Bare ground			3.92	3.92
Mixed Mountain Shrub	23.74	6.20	20.07	50.01
Mixed Mtn. Shrub/Pinyon-Juniper		2.31	2.44	4.75
Mountain Shrub			1.99	1.99
Native Grasses	0.61	0.34	0.00	0.95
Gambel's oak			2.20	2.20
Gambel's oak/Serviceberry	0.67	0.54	0.33	1.54
Gambel's oak/Serviceberry/Mixed Mtn. Shrub	19.66	0.00	1.95	21.61
Pinyon-Juniper	35.92	0.42	13.18	49.52
Pinyon-Juniper/Sagebrush			2.63	3.63
Riparian	0.66		1.64	2.30
Sagebrush	1.26		37.20	38.46
Sagebrush/Grassland	0.60		16.80	17.40
<b>Total Acres</b>	<b>83.51</b>	<b>9.82</b>	<b>144.85</b>	<b>238.18</b>

**Agriculture:** Hay fields and pastures are found in the eastern and western portions of the proposed pipeline alignment; all are on private lands. Irrigated alfalfa fields occur along the west side of Spruce Creek and extend down to the Colorado River. Adjacent to West Mamm Creek, hay meadows and pastures are mixed within the natural vegetation communities. These fields are irrigated from a series of ditches that divert water from West Mamm Creek. Hay meadows are also found in the East and Middle Mamm Creek areas and near the eastern end of the proposed pipeline alignment in the vicinity of the Dry Hollow Compressor Station. All are irrigated by a system of irrigation ditches and mechanical side-roll sprinklers.

Domestic livestock grazing occurs on public and private lands. During the biological surveys conducted for this project, cattle were observed grazing on BLM, WRNF, and private lands.

**Existing Pipeline ROWs:** Portions of the vegetation along the proposed pipeline alignment have previously been affected by natural gas construction activities. Approximately 4.22 miles or 19% of the

proposed pipeline would be adjacent to existing pipeline alignments. From the west side of Flatiron Mesa to an area about 0.4 mile west of Porcupine Creek, the proposed pipeline alignment (3.25 miles) would be aligned parallel to an existing pipeline corridor; another 0.97 mile south of Grass Mesa would be aligned along an existing pipeline corridor. Along these areas, reclamation has altered the vegetation communities to grass-dominated habitat types. Non-native grasses such as smooth brome (*Bromopsis inermis*), orchardgrass (*Dactylis glomerata*), and intermediate wheatgrass (*Thinopyrum intermedium*) dominate these areas, although native western wheatgrass (*Pascopyrum smithii*) is also present and may have been seeded. A non-native forb, small burnet (*Sanguisorba minor*), and a native shrub, four-winged saltbush (*Atriplex canescens*), were planted along portions of the disturbed area. Noxious weeds such as musk thistle (*Carduus nutans*) and plumeless thistle (*Carduus acanthoides*) are widespread in these areas. Some native forbs such as lupine (*Lupinus caudatus*) and globemallow (*Sphaeralcea* spp.) are also present but uncommon.

**Gambel's Oak and Serviceberry:** In portions of the alignment, the deciduous shrubs are composed of dense stands of mature Gambel's oak and serviceberry. Typically, there is an understory of scattered sagebrush (*Artemisia* spp.), snowberry (*Symphoricarpos rotundifolius*) and grasses, but the composition is dominated by the oak and serviceberry. These communities are often composed of mature oak trees that are up to 30 feet tall with diameters at breast height ranging from 8 to 10 inches. Areas south and west of Flatiron Mesa and south of Grass Mesa are where these mature plant communities are found.

**Pinyon-Juniper:** These woodlands are the dominant habitat type in the upper Spruce Creek portion of the project area on BLM lands; in these woodlands Utah juniper is much more common than pinyon pine. However, pinyon-juniper woodlands occur consistently across the proposed pipeline alignment. Densities decrease in dominance at higher elevations in the Flatiron Mesa-South Grass Mesa area. The woodlands support an understory of scattered stands of sagebrush and small stands of Gambel's oak and serviceberry. Sagebrush openings mixed within the pinyon-juniper woodlands are present in some portions of the alignment. On north- and east-facing slopes, the woodlands are often associated with mixed mountain shrub communities of Gambel's oak, serviceberry, snowberry, mountain mahogany (*Cercocarpus montanus*), bitterbrush (*Purshia tridentata*), and sagebrush. A few Douglas-firs are scattered at higher elevations on Flatiron Mesa, south Grass Mesa, and along Dry Creek-West Mamm Creek near the National Forest boundary but do not form dominant stands. A few Rocky Mountain junipers (*Sabina scopulorum*) occur on WRNF lands along Dry Creek within and near alignment.

**Mixed Mountain Shrubs:** At higher elevations, the mountain shrub community is comprised mainly of Gambel's oak, serviceberry, rabbitbrush (*Chrysothamnus* spp.), snowberry, mountain mahogany, and sagebrush; the pinyon-juniper is scattered in these areas. Along the pipeline alignment in the West Mamm Creek drainage the pipeline alignment would bisect a mix of open sagebrush shrublands and smaller groups of pinyon-juniper woodlands and pockets of Gambel's oak and serviceberry. An understory of older age-class sagebrush, rubber rabbitbrush (*Chrysothamnus nauseosus*), and grasses exists within the pinyon-juniper woodlands and mountain shrublands. Numerous grasses and forbs are common in the shrublands including small-leaf pussytoes (*Antennaria parviflora*), yellow rabbitbrush (*Chrysothamnus viscidiflorus*), mat penstemon (*Penstemon caespitosus*), lupine, yarrow (*Achillea lanulosa*), snakeweed (*Gutierrezia sarothrae*), gumweed (*Grindelia squarrosa*), sulphur-flower buckwheat (*Eriogonum umbellatum*), tapertip onion (*Gutierrezia sarothrae*), brome grass (*Bromus inermis*), bluebunch wheatgrass (*Pseudoroegneria inermis*), western wheatgrass (*Pascopyrum smithii*), bluegrass (*Poa* spp.), Indian ricegrass (*Oryzopsis hymenoides*), junegrass (*Koeleria macrantha*), fescue grass (*Festuca* spp.), squirreltail (*Elymus elymoides*), slender wheatgrass (*Elymus trachycaulus*), elk sedge (*Carex geyeri*), muttongrass (*Poa fendleriana*), and Oregon grape (*Mahonia repens*). Brittle prickly-pear cactus (*Opuntia fragilis*) is also common.

**Riparian:** Riparian vegetation is found along the Colorado River, but the area of proposed pipeline construction (the pipeline would be bored under the Colorado River) is composed mainly of upland

shrubs, grasses and forbs; there is not an overstory component of cottonwoods (*Populus* spp.) or tamarisk (*Tamarix ramosissima*) thickets. Wetlands were delineated along the Colorado River, Spruce Creek, Beaver Creek, one small tributary east of Beaver Creek, Gant Gulch and a tributary to Gant Gulch, Middle Mamm Creek, and East Mamm Creek. Tree-sized Gambel's oaks occur south of the Colorado River on the slopes between the first and second terraces above the river. Porcupine Creek, West Mamm Creek, and Gant Gulch support mature narrowleaf cottonwood riparian communities mixed with tall Gambel's oak. Due to heavy runoff flows, Porcupine and West Mamm Creeks do not support wetlands as a result of scouring from eroded upstream shale deposits. The wetland vegetation along Spruce Creek, Gant Gulch, Middle Mamm Creek, and East Mamm Creek is composed mainly of fringe wetland species such as rushes, sedges, and obligate grasses. West Mamm Creek, in the upper sections on WRNF lands, is dominated by narrowleaf cottonwoods, blue spruce, Gambel's oak, and serviceberry. The riparian vegetation along Beaver Creek is composed of alder (*Alnus incana*) with Rocky Mountain maple (*Acer glabrum*), chokecherry (*Padus virginiana* ssp. *melanocarpa*), Woods' rose (*Rosa woodsii*), hawthorn (*Crataegus rivularis*), red-osier (*Swida sericea*) and Gambel's oaks overhanging the water course.

**Sagebrush:** Sagebrush occurs throughout the project area at all elevations and in various habitat and soil types. In many areas, it is the dominant species, but usually is co-dominant with other deciduous mountain shrub species. At lower elevations and predominantly on private lands, Wyoming sagebrush (*Artemisia tridentata* subsp. *wyomingensis*) is widely distributed and is usually found on the open, flat mesas and benches. Basin big sagebrush (*Artemisia tridentata* subsp. *tridentata*) often occurs along and adjacent to stream courses. Mountain big sagebrush (*Artemisia tridentata* var. *pauciflora*) and black sagebrush (*Artemisia nova*) typically occur in the higher elevations and often are mixed and growing together. On the higher elevation BLM lands are extensive areas where sagebrush occurs without other deciduous mountain shrubs. In Section 21 on WRNF lands, three species of sagebrush occur; mountain and black at higher elevations and Wyoming at lower elevations along Dry Creek. Sagebrush is an understory species in most all pinyon-juniper woodlands where the encroaching conifers have displaced shrublands.

Common grasses include Indian ricegrass, galletagrass (*Pleuraphis jamesii*), western wheatgrass, thickspike wheatgrass (*Elymus lanceolatus*), bluebunch wheatgrass, needle-and-thread grass (*Hesperostipa comata*), and Sandberg bluegrass (*Poa secunda*). On private lands north of the Colorado River, the historic Wyoming sagebrush shrublands have generally been replaced by dense infestations of non-native grasses that include downy brome (*Anisantha tectorum*), annual wheatgrass (*Eremopyrum triticeum*), and crested wheatgrass (*Agropyron cristatum*).

## Environmental Consequences

### *Proposed Action*

The Proposed Action would result in phased construction distributed over separate years with WPX waterlines planned for 2012 and Bargath's pipeline planned for 2013 or later. In the area of the shared corridor, direct impacts to natural vegetation as a result of the WPX clearing of ROW vegetation would be reduced during Bargath's pipeline project, since late seral stage woodlands and shrub habitat would not have reoccupied the previously cleared areas.

Approximately 238 acres of vegetation would be affected by the two pipeline projects. The planned alignments would affect various habitats, some of which are in a relatively natural condition and significant areas that are adjacent to existing disturbance such as Garfield County roads, rural private roads, natural gas production access roads, the Union Pacific Railroad, agricultural fields, and existing natural gas pipelines and production facilities. Approximately 59% of the proposed pipeline alignment is adjacent (for this analysis < 100 feet) to existing disturbance factors and 41% of the proposed pipeline alignment would affect areas where the habitat is generally undisturbed (Table 25). The largest area of

undisturbed BLM lands (approximately 1.85 miles) would extend from a point along the existing pipeline corridor about 0.4 mile west of Porcupine Creek to an existing WPX natural gas well pad about 0.67 mile east Spruce Creek. The vegetation in this area is predominantly dense, mature juniper woodlands with scattered sagebrush shrublands. On WRNF lands, vegetation affected by construction would be in an area that is relatively undisturbed, but with an existing trail (livestock and historic All-Terrain Vehicle) along the north-south portion of the alignment. This segment has been closed to vehicles by the USFS. On private lands, a large portion of the area presented in Table 25 is classified as undisturbed and does not support developed infrastructure; however, large portions have been cleared of native vegetation and improved into some form of agricultural production, predominantly hay and pasture for domestic livestock grazing.

<b>Table 25. Acres Adjacent to Existing Disturbed and Undisturbed Habitats, Bargath</b>			
<i>Land Ownership</i>	<i>Previously Disturbed</i>	<i>Undisturbed</i>	<i>Totals</i>
BLM	50.41	33.18	83.59
USFS	0.08	9.73	9.82
Private	90.17	54.75	144.92
<b>Total</b>	<b>140.66</b>	<b>97.67</b>	<b>238.33</b>

Since both pipelines in the Proposed Action are buried, the disturbed surface area along the proposed pipeline alignments would not be permanent and revegetation is expected after reclamation is completed. However, the disturbance associated with project construction and subsequent reclamation would convert the majority of plant communities to an early seral stage, which typically results in regrowth of seeded grasses and forbs. Shrubs and trees such as sagebrush, Gambel’s oak, serviceberry, pinyon pine, juniper, and snowberry would take longer to become reestablished in areas where root systems would be removed during ROW clearing. Implementation of Bargath and WPX reclamation plans would help mitigate disturbance by encouraging the regrowth of grasses and forbs. Seeding with BLM and WRNF approved (Appendix A) species would facilitate the reestablishment of native communities on Federal lands; reclamation on private holding would be at the discretion of the landowners. Natural colonization of the reclaimed areas by forbs and woody plants from nearby undisturbed areas is expected. Because natural colonization would require many years or decades, periodic reopening of the corridor to replace or add a new pipeline would interrupt this process and restart the revegetation process. Implementation of an aggressive weed management plan would help in the establishment of planted reclamation species (see the section on Invasive Non-Native Plants).

The fragmentation of intact, mature pinyon-juniper and Gambel’s oak woodlands would likely be the most visible affect to the natural vegetation. These habitat types take years to recover as these tree species grow slowly. Both vegetation types are common in the general project area and the effects to this habitat type are not expected to impact the local or regional viability of these communities.

*WPX Construction 2012*

Approximately 30.29 acres of vegetation would be affected by construction in 2012 for the WPX portion of the Proposed Action. The majority of the affected vegetation is composed of natural communities with dominant types including pinyon-juniper woodlands and mixed mountain shrublands. The mixed mountain shrublands are made up of species such as sagebrush, Gambel’s oak, serviceberry, and various gasses and forbs (Table 26).

<b>Table 26. Dominant Vegetation Types Potentially Affected in 2012</b>			
<i>Vegetation Types</i>	<i>BLM</i>	<i>Private</i>	<i>Total</i>
Agriculture Pasture		0.23	0.23
Existing Facilities/Bare Ground		0.25	0.25
Mixed Mountain Shrub	7.60	1.30	8.90
Native Grasses	0.61		0.61
Pinyon-Juniper	18.33	0.43	18.76
Pinyon-Juniper/Sagebrush		1.02	1.02
Riparian	0.23		0.23
Sagebrush	0.25		0.25
<b>Total</b>	<b>27.02</b>	<b>3.23</b>	<b>30.25</b>

Approximately 15.96 acres of the WPX waterlines would parallel ETC’s existing pipeline alignment (Table 27). In the area west of Porcupine Creek west to Spruce Creek, the vegetation is presently undisturbed and composed predominantly of mature pinyon-juniper woodlands with an understory of sagebrush and other mountain shrubs. Therefore, about 47% of the WPX pipeline construction would occur in undisturbed habitat.

<b>Table 27. Acres Adjacent to Existing Disturbed and Undisturbed Habitats, WPX</b>			
<i>Land Ownership</i>	<i>Previously Disturbed</i>	<i>Undisturbed</i>	<i>Totals</i>
BLM	12.77	14.24	27.01
Private	3.24	0.00	3.24
<b>Total</b>	<b>15.96</b>	<b>14.24</b>	<b>30.25</b>

Bargath Construction 2013 or Later

Bargath’s ROW clearing will affect approximately 208 acres of vegetation that was not disturbed during WPX’s initial construction (Table 28). Areas previously disturbed during the WPX water pipeline construction will again be disturbed as a result of Bargath’s project. Therefore, vegetation growing in previously disturbed areas as a result of WPX’s reclamation will be removed during ROW clearing. The degree of the impacts on WPX’s reclamation will depend on the length of time interval elapsed between construction of the two projects. Plant species affected would include early seral stages of grasses and forbs planted during reclamation.

<b>Table 28. Dominant Vegetation Types Potentially Affected in 2013 or Later</b>				
<i>Vegetation Type</i>	<i>BLM</i>	<i>USFS</i>	<i>Private</i>	<i>Total</i>
Ag Livestock			11.71	11.71
Ag Hay			26.70	26.70
Ag Pasture			1.49	1.49
Colorado River			0.71	0.71
Existing Facilities/Bare Ground			3.67	3.67
Mixed Mountain Shrub	16.14	6.20	18.77	41.11
Mixed Mountain Shrub/Pinyon-Juniper		2.31	2.44	4.75

<b>Table 28. Dominant Vegetation Types Potentially Affected in 2013 or Later</b>				
<b>Vegetation Type</b>	<b>BLM</b>	<b>USFS</b>	<b>Private</b>	<b>Total</b>
Mountain Shrub			1.99	1.99
Native Grasses		0.34		0.34
Gambel's Oak			2.20	2.20
Oakbrush/Serviceberry	0.67	0.54	0.33	1.54
Oakbrush/Serviceberry/Mixed Mountain Shrub	19.66		1.95	21.61
Pinyon-Juniper	17.59	0.42	12.75	30.76
Pinyon-Juniper/Sagebrush			1.61	1.61
Riparian	0.43		1.64	2.07
Sagebrush	1.01		37.20	38.21
Sagebrush/Grassland	0.60		16.80	17.40
<b>Total</b>	<b>56.1</b>	<b>9.81</b>	<b>141.96</b>	<b>207.87</b>

*No Action Alternative*

Under the No Action Alternative, no surface disturbance would occur along the pipeline alignment. However, it is likely that Bargath and WPX would construct pipelines along alternative alignments that would result in greater disturbance and affects to areas where human populations are significantly higher. This would result in impacts greater than the Proposed Action.

Analysis on Public Land Health Standard 3 for Plant and Animal Communities (partial, see also Aquatic and Terrestrial Wildlife)

This area was meeting the standard, although problems were noted with the establishment of invasive non-native plants, predominantly in disturbed areas, with a corresponding loss of other functional groups such as native perennial grasses and forbs. Surface disturbance associated with the Proposed Action has the potential to encourage expansion of invasive weeds. Appendix A includes provisions to revegetate the disturbances with native species and to control noxious weeds. If successfully revegetated, the Proposed Action should not contribute to the failure of the area to meet Standard 3. The No Action Alternative would have no bearing on the ability of the area to meet Public Land Health Standard 3 for plant and animal communities because no new development would occur on BLM or USFS lands.

**Visual Resources**

Affected Environment

The Proposed Action is located on private land and lands administered by the USFS and BLM (Figure 11). Two different visual resource management (VRM) systems are used for the USFS and the BLM: the USFS uses the Scenery Management System (SMS), while the BLM uses the Visual Resource Management System (VRM). The effects of the Proposed Action under each system are fairly cohesive, since both VRM systems are based upon the same principles of enhancing and protecting landscapes, viewsheds, and visual integrity. Visual resources in both systems are inventoried, classified, and are prescribed management objectives based upon visibility, scenic quality/scenic attractiveness, scenic integrity, and viewer sensitivity to changes in the landscape. Both systems seek to achieve the highest scenery values possible and that the quality of the existing scenic resources and viewing opportunities are to be maintained or enhanced. Much of the information contained in this EA would be the same under

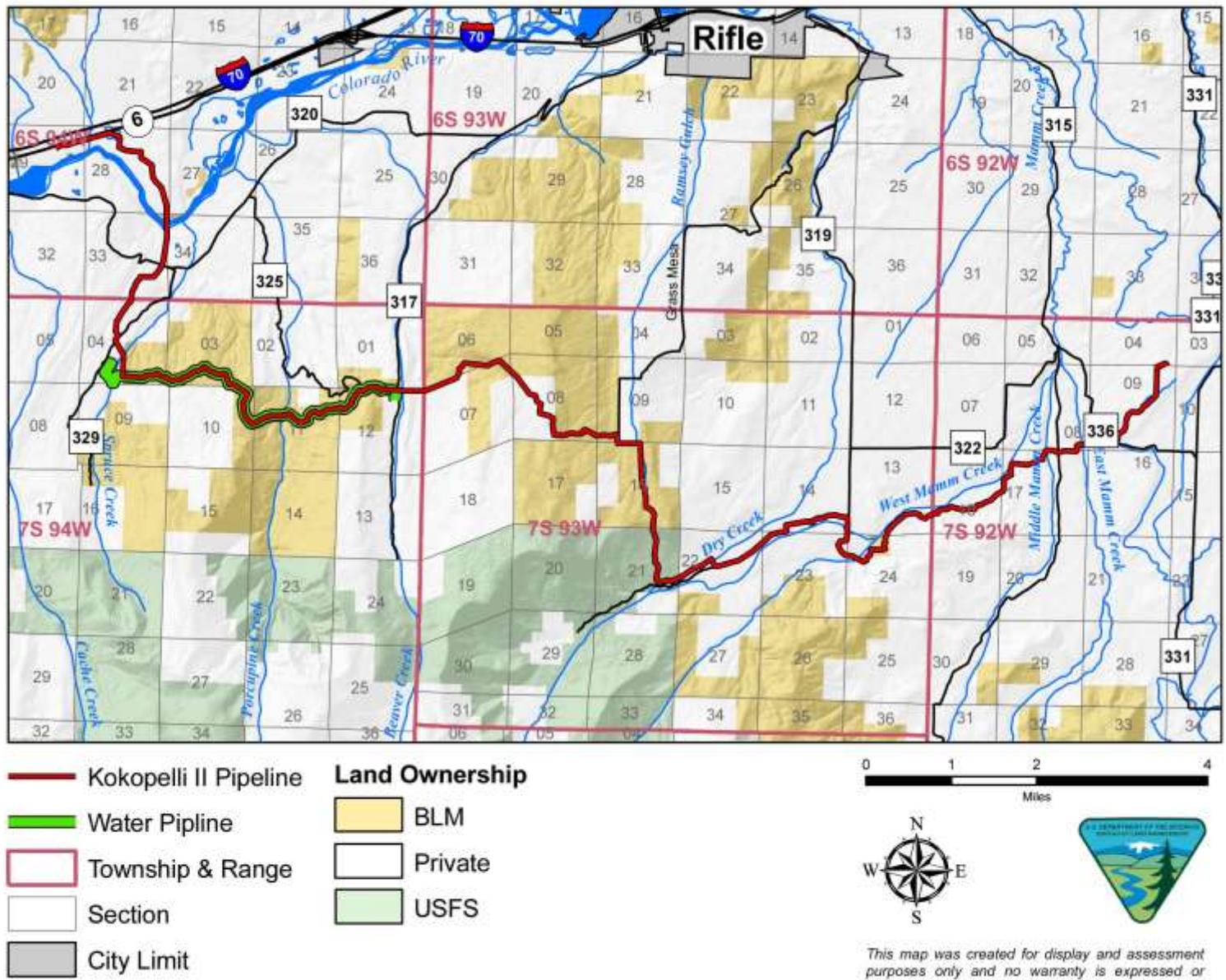


Figure 11. Proposed Action in Relationship to Land Ownership

either system. Appendix B provides an overview of the USFS Scenery Management System process, WRNF Forest-wide guidelines for Scenery Management, and Management Prescriptions pertaining to the protection and enhancement of visual quality and of BLM's Visual Resource Management process.

The Proposed Action would be constructed on private lands and both BLM- and USFSF-administered Federal lands. The USFS requires the application of scenery management to all USFS Lands as defined by Landscape Aesthetics, A Handbook for Scenery Management, Agricultural Handbook No. 701, December 1995 (USFS 1995). The revised Forest Plan for the WRNF (WRNF 2002) establishes acceptable limits of change for Scenic Resources, referred to as Scenic Integrity Objectives (SIO). SIO is one of the components of the desired conditions for scenic quality and is described for each forest plan management area. The SIOs guide the amount, degree, intensity, and distribution of management activities needed to achieve the Landscape Character Goals. SIOs are expressed as Forest Plan objectives, with means to achieve them, described in the standards and guidelines. SIO's are defined by minimally acceptable levels and the direct intent to achieve the highest scenic integrity possible. The SIO for the Proposed Action is mapped as "Low" (Figure 12).

**Low (L) – Moderately Altered:** Low scenic integrity refers to landscapes where the valued landscape character "appears moderately altered." Deviations begin to dominate the valued landscape character being viewed but they borrow valued attributes such as size, shape, edge effect, pattern of natural openings, vegetative type changes, or architectural styles outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed but compatible or complimentary to the character within.

The Proposed Action project area is located adjacent to West Mamm Creek Road (NFSR818), a Concern Level 1 Route. This area is used for commodity and non-commodity opportunities and is an example of a "working forest". Ample evidence of oil and gas exploration and production, timber harvesting and livestock grazing are present in the area. Dispersed recreation occurs throughout the year and includes driving for pleasure, viewing scenery, various types of OHV travel (4-wheel drive trucks, ATVs, motorcycles), snowmobiling, hunting, and dispersed camping. The experiences of the users are affected by the surrounding scenery and the scenic views are important to the users of this area.

Lands administered by BLM CRVFO are classified as VRM Class II, III, and IV (Figure 12), as identified by the 1984 Glenwood Springs RMP and the 2006 Roan Plateau RMP Amendment and Environmental Impact Statement. The objectives for VRM Class II, III, and IV as defined in the BLM Manual H-8410-1 Visual Resource Inventory (BLM 1986), are described below:

**The objective of VRM Class II** is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

**The objective of VRM Class III** is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

**The objective of VRM Class IV** is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of the viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

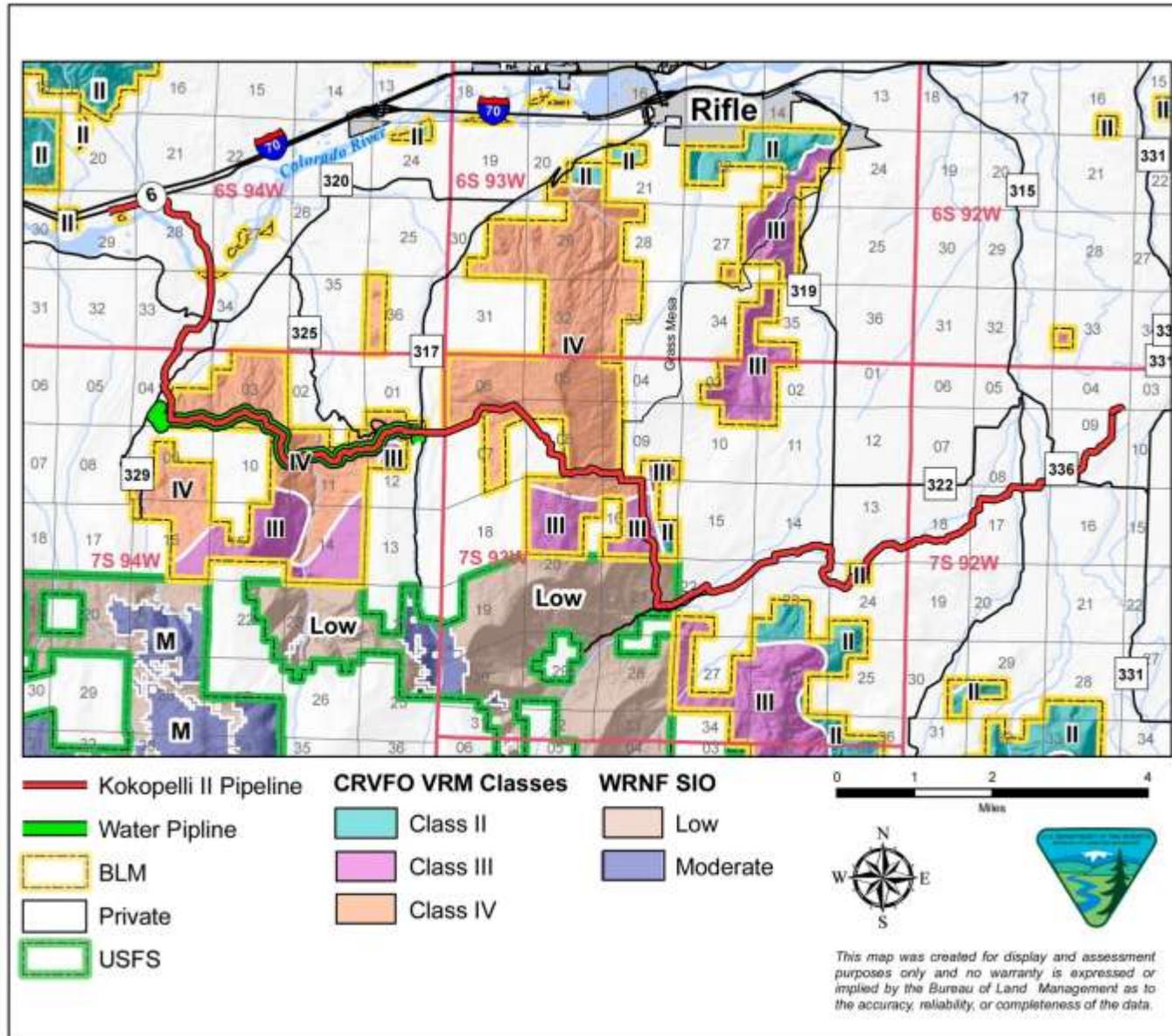


Figure 12. Proposed Action in Relation to BLM Visual Resource Management Classes and USFS Scenery Management Scenic Integrity Objectives

Federal lease terms regarding visual concerns are not applicable on private land. VRM objectives do not apply to non-BLM lands; visual values for those lands are only protected by landowner discretion. Although VRM objectives do not apply to non-BLM lands, the BLM maintains regulatory authority regarding protection of sensitive resources when Federal minerals are transported by a Fee mineral gathering system. Table 29 provides a summary of the BLM VRM and USFS Scenery Management System Designations Applicable to the Proposed Action.

<b>Table 29. Summary of BLM Visual Resource Management and USFS Scenery Management System Designations Applicable to the Proposed Action</b>			
<i>Visual Resource Management System Designation</i>	<i>ROW Centerline (Feet)</i>	<i>ROW Centerline (Miles)</i>	<i>Permanent ROW (Acres)</i>
BLM VRM Class II	2,634	0.5	3.0
BLM VRM Class III	4,690	1.0	5.4
BLM VRM Class IV	32,315	6.1	37.2
USFS SIO "Low"	4,900	0.9	5.6
<b>Total</b>	<b>44,539</b>	<b>8.5</b>	<b>51.2</b>
Calculations are derived using GIS data provided by the operator. Each project component was clipped to its associated BLM VRM Class Designation and WRNF Scenic Integrity Objective and the length in feet and acreage was calculated for each segment.			

The area of the Proposed Action has a variety of landscape character types and varying degrees of alteration from human activities. The topography varies from drainage valley bottoms, to relatively flat mesas, to steep foothills rising to steeper mountain peaks in the background. Numerous side drainages and gulches dissect the landforms adding to the variety and topographic texture. The area is characteristic of rural agricultural/ranching land, scattered rural residences and oil and gas development. Vegetation consists of pastoral land, sagebrush flats, pinyon juniper woodlands, and mixed oak brush/mountain shrub plant communities. The project area is bound by the Colorado River Valley to the north, Dry Hollow Creek Drainage to the East, White River National Forest to the south and Cache Creek to the west. The Landscape Character falls within the Divide-Plateau Creeks Uplands (WRNF 2002). The Divide-Plateau Creeks Uplands represents the western most side of the WRNF; the majority of this subsection is on non-Forested land.

The visual resource analysis focuses primarily on Federal lands and is provided in Appendix B.

### Environmental Consequences

#### *Proposed Action*

The Proposed Action would result in phased construction distributed over two separate years with WPX waterlines planned for 2012 and Bargath's pipeline planned for 2013 or later. It is unlikely that impacts associated with both projects to Visual Resources would be additive in the area of the shared corridors, since vegetation disturbed by WPX construction would not have had sufficient time to recover prior to the time when Bargath's construction would commence. Bargath's requirement for a larger ROW would increase the average disturbance area in the shared corridor by approximately 20 feet.

To avoid or minimize impacts to visual resources, the Proposed Action would run parallel to existing roads and an existing ROW as much as possible. Access for construction equipment and personnel would be mainly from existing public roads, existing field access roads, and along the pipeline disturbance

corridor. A portion of the Proposed Action would follow a previously-approved, but unconstructed pipeline ROW across BLM land and WRNF land.

Some locations along the proposed pipeline alignments involved several site visits where the pipeline alignments were reviewed and modified because of resource concerns. Several site visits were conducted for the WRNF segment. Four alignments were considered in the field but because of resource concerns only one was selected and would be analyzed in detail. In addition, the segment of the Proposed Action that runs from Spruce Creek to Porcupine Creek was modified in two locations to reduce the visual impacts. In these areas the pipeline alignments ran perpendicular to the natural contours. These two locations were realigned to follow the natural contours better to reduce the contrast created by the strong line between the bare ground from construction and the remaining existing vegetation.

The Proposed Action would include: a 16-inch high pressure natural gas pipeline transportation system and two 6-inch water pipelines. The pipelines would be installed in parallel trenches between Spruce Creek and Beaver Creek. The water pipelines would be installed during the first phase of construction (WPX Construction 2012) and the natural gas pipeline would be constructed during the second phase of construction (Bargath Construction 2013 or later). Additional delivery and receipt points may be installed along the new pipeline to accommodate future connections to other gas transporters and producers. The surface disturbance proposed for the 16-inch natural gas pipeline would involve a 50-foot-wide permanent ROW and adjacent 25- to 75-foot-wide temporary use areas to accommodate construction.

The construction ROW would be situated 25-feet on one side (spoil side) and 50-feet on the other side (working side) of the pipeline centerline. The temporary construction area would vary left to right and right to left depending on the pipeline's proximity to existing parallel pipelines, other encroachments, and topography encountered along the pipeline route. The surface disturbance proposed for the two 6-inch water pipelines would involve a 55-foot-wide construction corridor within the area of the 75-foot Bargath ROW along the alignment where the parallel trenches occur. The WPX waterlines will use a 30-foot-wide area of disturbance on the east and west ends on private lands that are outside shared alignment (Figure 4). The construction of the water pipelines would be situated 25 feet on one side (spoil side) and 30-feet on the other side (working side) of the pipeline centerline. The difference between the two pipeline corridor openings would amount to approximately 20 feet (Figure 3). During the second phase of construction, the 55-foot wide reclaimed corridor would be opened again and expanded by 15-feet on one side and 5-feet on the other side to accommodate the construction of the natural gas pipeline.

For construction execution, certain extra work space and staging areas would be required for the work. These are typically parallel areas adjoining the pipeline construction area of finite but variable length and uniform width (25 feet, 50 feet, or 75 feet). These areas are intended for the beginning and ending of the pipeline corridor, at major project access areas, and for safety in areas of steep terrain.

Short-term visual impacts due to pipeline installation would occur in the project area. The existing landscape would be changed by the introduction of contrasting elements within the landscape in the form of new lines, colors, forms, and textures. The new pipelines would increase the presence of heavy equipment, and vehicular traffic with an associated increase in dust and light pollution. The Proposed Action would create 238.29 acres of new short-term surface disturbance with 83.90 acres occurring on BLM, 9.82 acres on the WRNF, and 144.57 acres on private land. Once the pipelines are installed, the pipeline corridor would be recontoured and seeded.

**Bore Location:** No visual impacts would be associated with the Bargath bore on BLM VRM Class II land (Appendix B). The bore itself would go underneath the Colorado River and the parcel of BLM land. Surface disturbance would occur on private land and would be associated with the 200-foot by 100-foot staging areas on the north and south sides of the Colorado River to accommodate the drilling and support equipment. The surface disturbance associated with the actual bore would be minimal and short-

term. More surface disturbance would occur north and south of the bore entry and exit points where the pipeline trench would be located. The standard BMPs related to reclamation and facility paint colors would mitigate the visual impacts created by the installation of the pipelines on private land (Standard COAs Appendix A).

**Spruce Creek to Porcupine Creek:** Although this segment of the Proposed Action is located on BLM VRM Class IV land and can dominate the view and be the major focus of the viewer's attention, every attempt should be made to minimize the visual impact of the Proposed Action from the I-70, U.S. 6, and CR320 viewshed corridors and the private residences below.

This segment of the Proposed Action was designed to parallel an existing ROW and exiting roads when possible. In the undisturbed terrain, the Proposed Action would follow the natural contours as much as possible. However, two areas were modified because they ran perpendicular to the natural contours and would contrast with the natural surroundings (Figure 13).

These two locations, although they are less perpendicular to the natural contours than before, would need further mitigation at the time of construction (for both construction phases 2012 and 2013) to reduce any straight line impacts that would be created by the pipeline corridor. Thinning and feathering within these two areas should be incorporated at the time of clearing for the Proposed Action (Figures 14 and 15). Areas identified for thinning and feathering should be designed to avoid areas with populations of Harrington's penstemon (see site-specific COAs in Appendix A). The standard BMPs related to reclamation, facility paint colors, and screening the pipeline alignments from view would mitigate the visual impacts of the project in the remainder of this section of the pipeline corridor that would run from Spruce Creek to Porcupine Creek (see standard COAs in Appendix A).

**Porcupine Creek to Flatiron Mesa:** Although this segment of the Proposed Action is located on BLM VRM Class IV land and can dominate the view and be the major focus of the viewer attention, every attempt would be made to minimize the impact of the Proposed Action. This segment parallels an existing ROW and is not in view from any of the major travel corridors or viewsheds (Appendix B). Standard BMPs related to reclamation, facility paint colors, and screening the pipeline alignments from view would mitigate the visual impacts of the project in the remainder of this section of the pipeline corridor (see standard COAs in Appendix A).

**Flatiron Mesa – Grass Mesa to the WRNF Boundary:** This segment of the pipeline corridor is located on BLM VRM Class III and IV lands. Although this segment can attract attention, it should not dominate the view of the casual observer. The most visible part of this segment is the east-west alignment that drops down from the top of Flatiron Mesa onto Grass Mesa (Figures 16 and 17). This part of the pipeline is located on BLM VRM Class IV land and would parallel an existing road. As the pipeline descends the slope from Flatiron Mesa, the pipeline would parallel the south side of the existing road. Midway down the slope where the road makes a small switch back the pipeline corridor would then switch to the northern side of the road. Thinning and feathering should be incorporated in this segment of the pipeline to soften the hard line created by construction, exposing the transition from bare ground to vegetation. Locations of thinning and feathering should be coordinated with the results from the biological survey in order to avoid any potential *Penstemon harringtonii* populations.

The Proposed Action follows the natural contours except for the two areas circled, which have been modified from a more perpendicular alignment. In the future, a road may be built that would follow the pipeline corridor to support future well pads. Note: the water pipelines and natural gas pipeline would be in parallel trenches within the 75-foot-wide construction corridor.

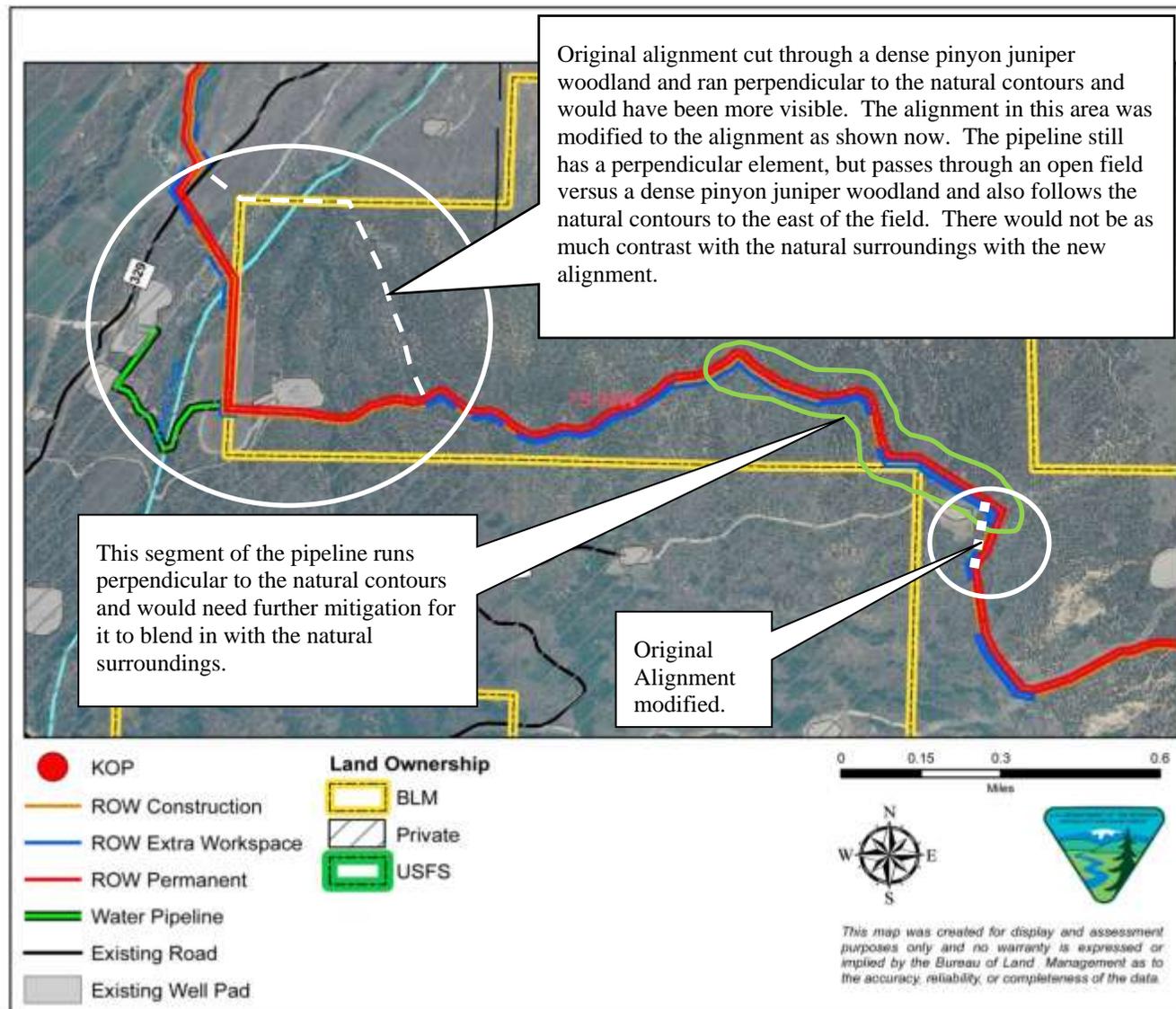
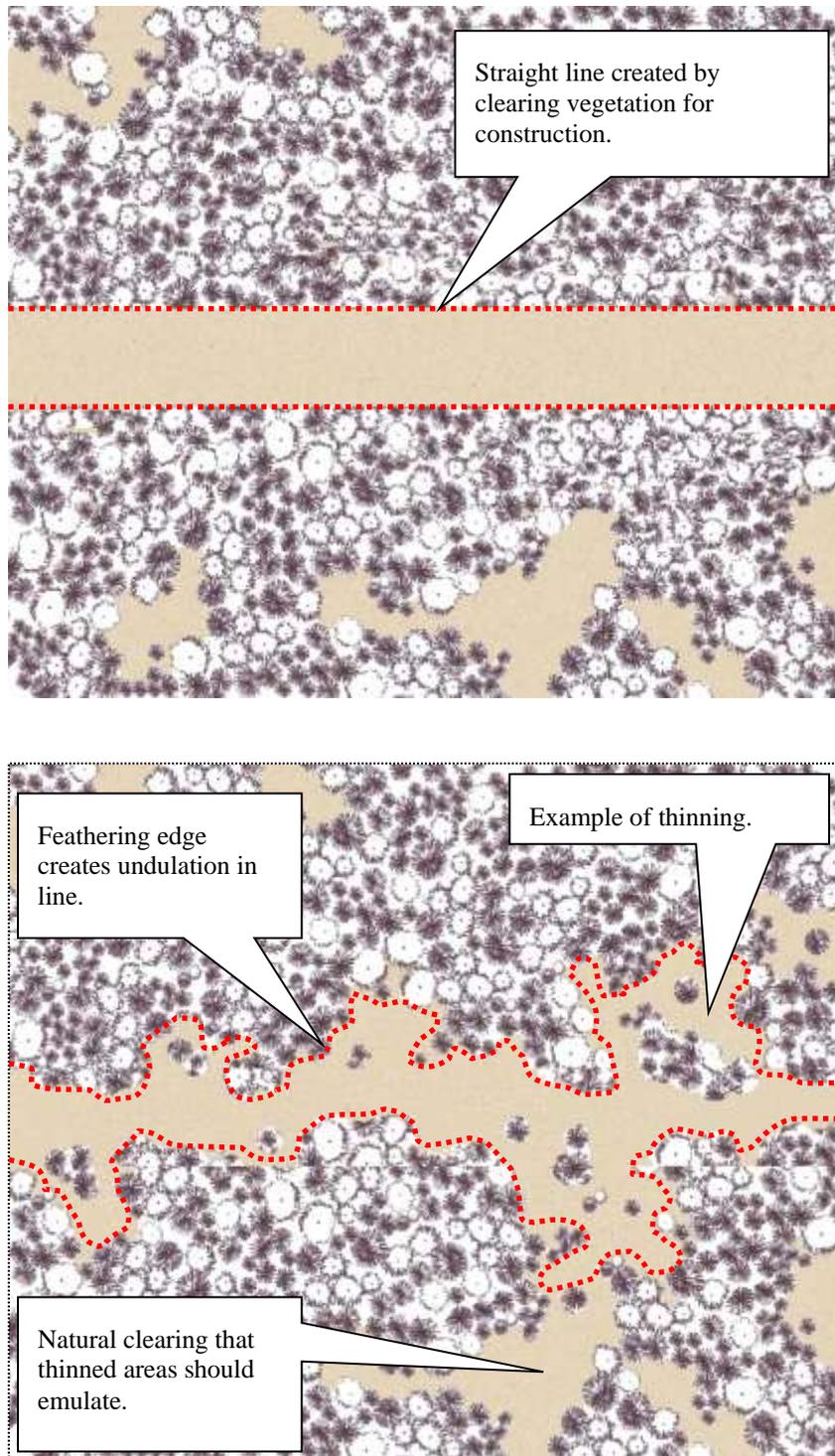
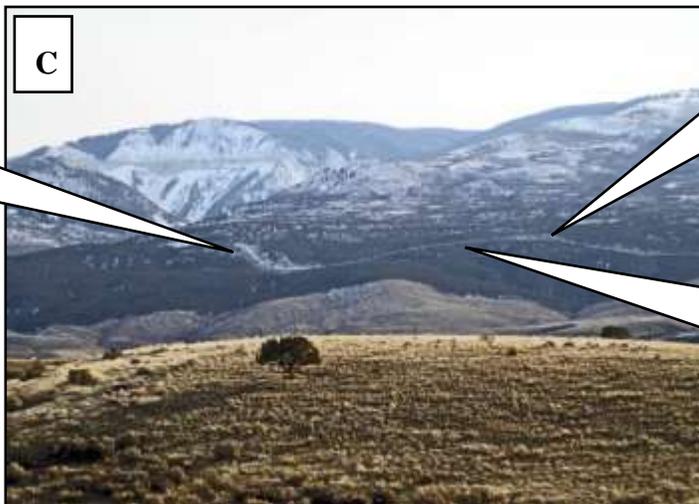


Figure 13. Proposed Action – Spruce Creek to Porcupine Creek



**Figure 14. Proposed Action – Spruce Creek to Porcupine Creek**

The pipeline alignment in the top image shows the straight-line impacts created by the pipeline corridor when vegetation is cleared for the ROW. The pipeline alignment in the lower image shows the undulation created by feathering the adjacent vegetation and opening areas by thinning. Areas for thinning and feathering should blend with adjacent natural openings.



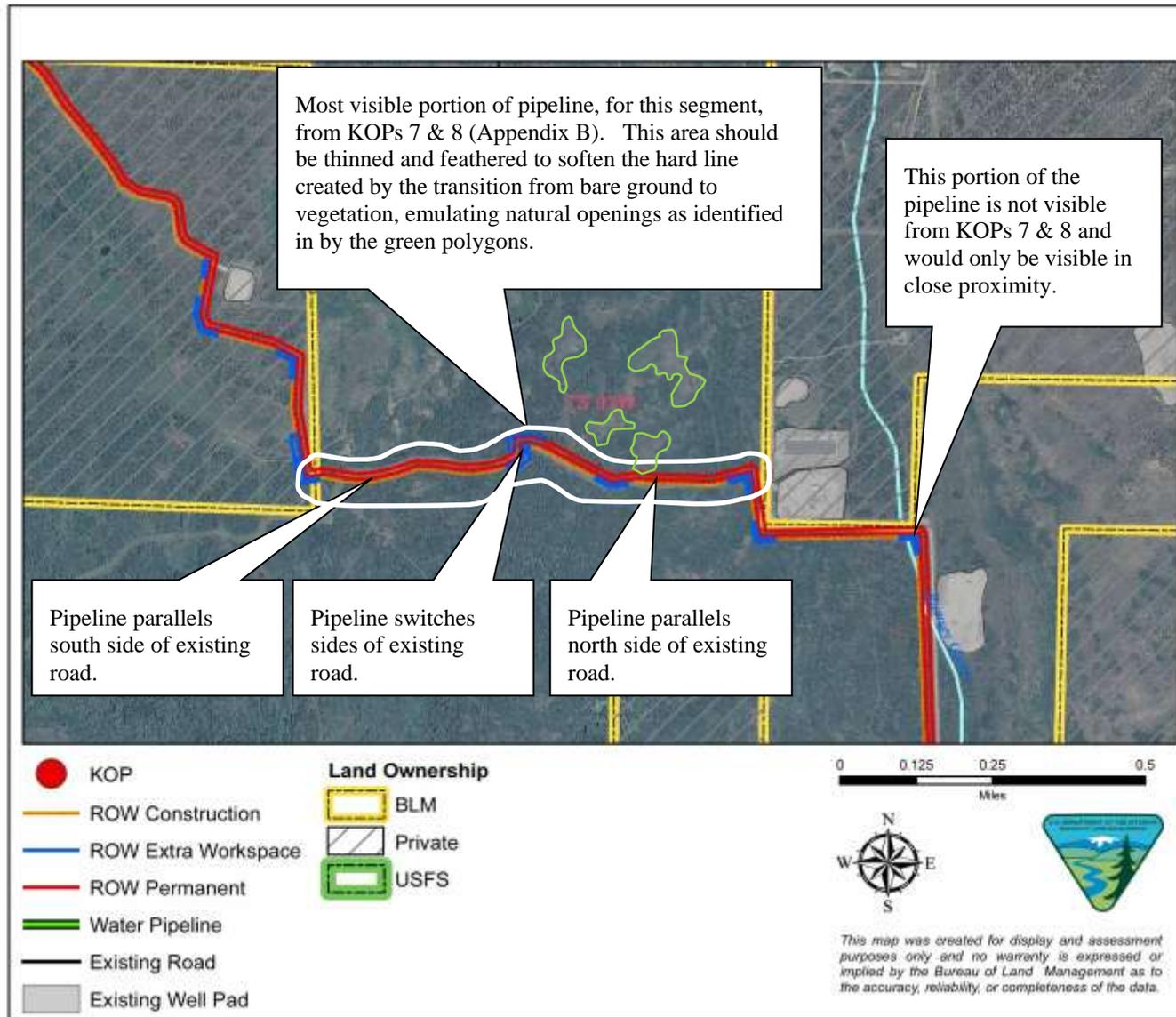
Vegetation surrounding the pipeline corridor is thinned to emulate natural clearings nearby.

Vegetation surrounding the pipeline corridor is thinned to emulate natural clearings nearby and to reduce the strong line created in the landscape.

Vegetation below the pipeline corridor is preserved to provide visual screening from views below.

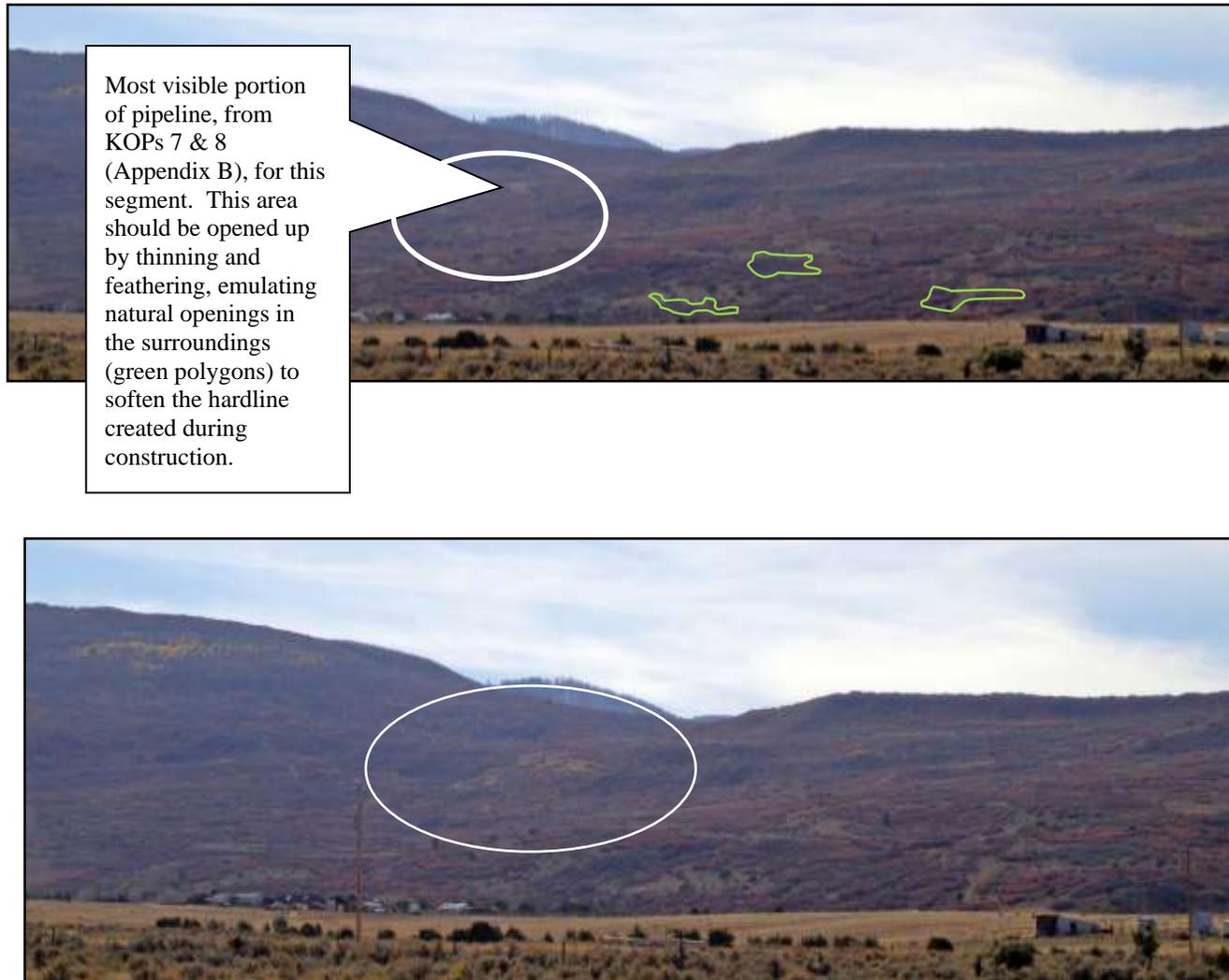
**Figure 15. Proposed Action – Spruce Creek to Porcupine Creek**

The top image (A) illustrates existing conditions. The middle image (B) and lower image (C) are photo-simulations illustrating the pipeline corridor without versus with mitigation.



**Figure 16. Proposed Action – Flatiron Mesa to Grass Mesa (East-West Alignment)**

The green polygons illustrate natural openings in the vegetation that could be emulated as part of the pipeline visual mitigation. The north-south alignment would be visible from only the close vicinity.



**Figure 17. The Proposed Action – Flatiron Mesa to Grass Mesa Simulation (East-West Alignment)**  
Top picture before thinning and feathering. Bottom picture photo-simulation after thinning and feathering.

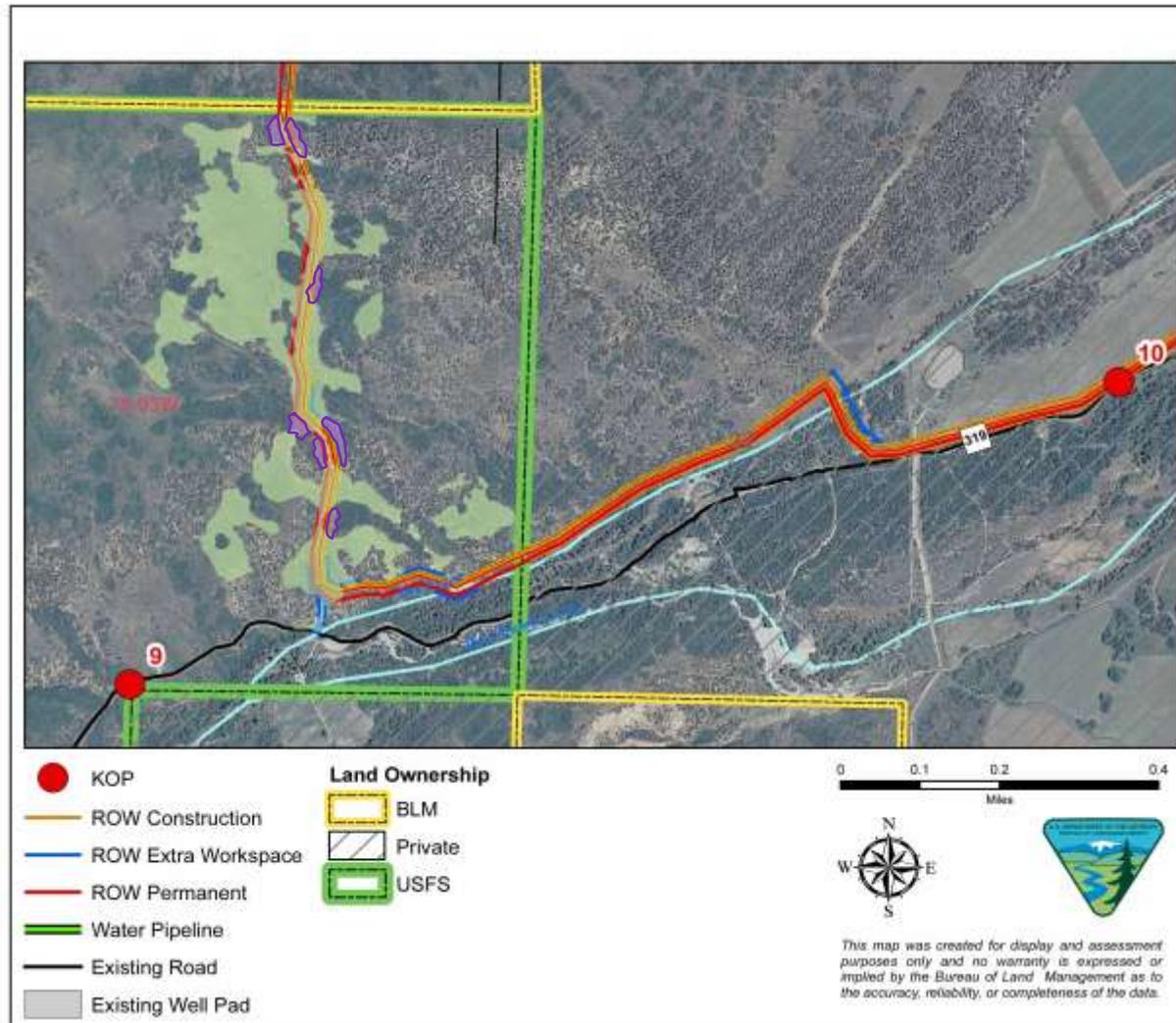
The segment that is less visible to residents on Grass Mesa and CR319 (West Mamm Creek Road) is the north-south alignment. This segment is located on BLM VRM Class III land and would only be visible within close proximity. Rocks and woody debris saved during construction should be replaced on the pipeline corridor to emulate the texture closer to that of the native landscape and to encourage vegetation growth. Placement of rocks and woody debris on the corridor would also deter off-road travel, which would prevent additional surface disturbance, expansion of the corridor, and visual impacts.

**WRNF Proposed Action:** This segment of the Bargath pipeline is located on WRNF land. The Scenery Integrity Objective for this location is designated as “Low.” The pipeline would run perpendicular to the natural contours down the south slope of Grass Mesa. However, the route that the pipeline would follow is within naturally occurring openings of low lying vegetation (sagebrush and forb/grass understory) within patches of larger woody denser vegetation (oakbrush and juniper) (Figure 18). The construction ROW and extra workspaces would also be located in these more open areas of low lying vegetation. This reduces the potential for straight line impacts created by the construction of the pipeline. There would be very little upright/woody vegetation that would be impacted. In areas where the edge of the woody vegetation would be affected, these areas could be thinned and feathered to reduce that hard line between the transitions in vegetation from the construction area to the natural vegetation. The areas that may have more visual impact would be towards the top of the pipeline alignment where the vegetation and would be more visible from multiple locations as seen from Key Observation Points (KOPs) – Appendix B. As the pipeline alignment begins a 90-degree turn toward the east, it would become less visible on WRNF KOPs. Riparian vegetation that parallels Dry Creek would provide visual screening from CR319 (NFSR818) into the project area.

**West Mamm Creek BLM Parcel:** This segment of the Bargath pipeline is located on BLM VRM Class II land (Figure 19). The pipeline corridor would be most visible to viewers traveling east along CR319 from the WRNF (illustrated by KOP 12). Although the Proposed Action may be visible, it should not attract attention of the casual observer. This segment would not be visible to viewers traveling south along CR19 or traveling west along CR322 because adjacent topography would provide screening into the project area. The BLM parcel is covered with dense pinyon-juniper woodland. The pipeline would run at an angle to the viewer (KOP 12), as opposed to being directly in line with the viewer. The angled alignment would be screened from the viewer by the pinyon juniper woodland. A small gap in the vegetation created by the pipeline corridor would be most noticeable as it approaches the road near the western edge of the BLM parcel and where the pipeline corridor parallels the road as it heads south. A narrow band of pinyon-juniper on the western edge of the existing road would provide screening. The pipeline corridor would not be visible in the drainage in the eastern portion of the BLM parcel.

#### *No Action Alternative*

The No Action Alternative would deny the ROW applications for the use of Federally administered lands, and therefore construction of the pipelines (either Bargath’s gas pipeline or WPX’s water pipelines) would not occur on BLM or USFS land. However, the operators could install the Kokopelli II gas pipeline or the WPX water pipelines entirely across private land, although the routes would be widely circuitous and exceedingly expensive resulting in far more surface disturbance and visual resource impacts than that associated with the Proposed Action identified in this Environmental Assessment. To avoid Federal land, as assumed with the No Action Alternative, a gas gathering line would need to be constructed in proximity to the Colorado River corridor where the residential population is more concentrated and visual resource impacts would be more pronounced.



**Figure 18. The Proposed Action on the WRNF**

The pipeline alignment runs perpendicular to the natural contours but is located in naturally occurring openings of low-lying vegetation (indicated in green). In areas where the edge of the woody vegetation would be affected, these areas could be thinned and feathered to reduce that hard line between the transitions in vegetation from the construction area to the natural vegetation (indicated in purple).

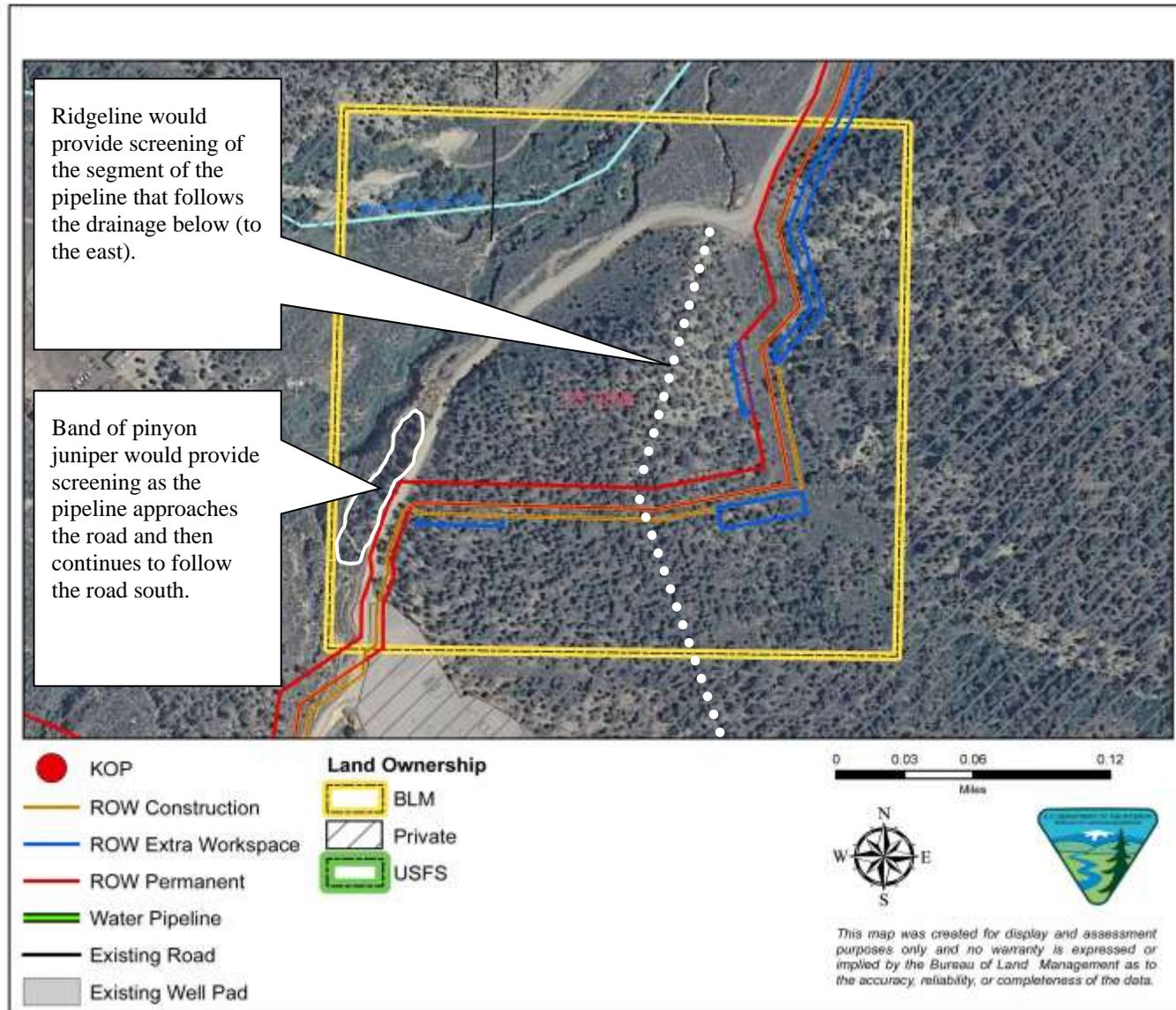


Figure 19. West Mamm Creek BLM VRM Class II Parcel

## **Wastes, Hazardous or Solid**

### Affected Environment

BLM Instruction Memoranda numbers WO-93-344 and CO-97-023 require that all NEPA documents list and describe any hazardous and/or extremely hazardous materials that would be produced, used, stored, transported, or disposed of as a result of a proposed project. Appendix L of the GSFO's Draft Supplemental Oil & Gas Leasing & Development EIS (BLM 1998), Hazardous Substance Management Plan, contains a comprehensive list of materials that are commonly used for oil and gas projects. It also includes a description of the common industry practices for use of these materials and disposal of the waste products. These practices are dictated by various Federal and state laws and regulations and the BLM standard stipulations that would accompany any authorization resulting from this analysis. The most pertinent of the Federal laws dealing with hazardous materials contamination are as follows:

- The Oil Pollution Act (Public Law 101-380, August 18, 1990) prohibits discharge of pollutants into Waters of the U.S., which by definition would include any tributary, including any dry wash that eventually connects with the Colorado River.
- The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Public Law 96-510 of 1980) provides for liability, compensation, cleanup, and emergency response for hazardous substances released into the environment. It also provides national, regional, and local contingency plans.

Applicable emergency operations plans in place include the National Contingency Plan (40 CFR 300, required by section 105 of CERCLA), the Region VIII Regional Contingency Plan, the Colorado River Sub-Area Contingency Plan (these three are EPA produced plans), the Mesa County Emergency Operations Plan (developed by the Mesa County Office of Emergency Management), and the BLM Grand Junction Field Office (GJFO) Hazardous Materials Contingency Plan. The WRNF does not have its own hazardous materials contingency plan. The Resource Conservation and Recovery Act (RCRA) (Public Law 94-580, October 21, 1976) regulates the use of hazardous substances and disposal of hazardous wastes. Note: While oil and gas lessees are partially exempt from RCRA, holders of ROW grants are not. Exempt wastes would include those associated with well production and transmission of natural gas through the gathering lines, and the natural gas itself. Waste generated by construction activities would not be exempt.

Emergency response to releases of hazardous materials or petroleum products on BLM lands are handled through the BLM GJFO contingency plan. BLM would have access to regional resources if justified by the nature of an incident. Non-hazardous, solid wastes that may be encountered in the project area are those commonly associated with construction activities (e.g., construction debris, fuels, and lubricants).

### Environmental Consequences

#### *Proposed Action*

The Proposed Action would result in phased construction distributed over two separate years with WPX waterlines planned for 2012 and Bargath's pipeline planned for 2013 or later. As a result, potential impacts associated with construction would occur during two distinct time intervals separated by one or more years. Two separate construction projects would yield approximately the same relative potential for impacts associated with hazardous wastes, but only in the area of the shared corridor between Spruce Creek and Beaver Creek.

No listed or extremely hazardous wastes, in excess of threshold quantities, would be used or produced by construction or operation of the facilities. Possible pollutants that could be released during the WPX and Bargath construction phases of this project would include diesel fuel, hydraulic fluid, solvents, and lubricants. These materials would be used during construction of the pipelines and associated facilities as well as for refueling and maintaining equipment and vehicles. Explosives may also be used for blasting rock on portions of the pipeline corridors. Smaller quantities of other materials such as herbicides, paints, and other chemicals would be used during project O&M. These materials would be used to control noxious weeds, facilitate revegetation on the ROW, and operate and maintain meter stations during the life of the project. Potentially harmful substances used in the construction and operation would be kept onsite in limited quantities and trucked to and from the site as required. No hazardous substance, as defined by 40 CFR 355 would be used, produced, stored, transported, or disposed in amounts above threshold quantities.

Surface water could be impacted under the Proposed Action. While uncommon, an accident could occur that could result in a release of any of these materials. A release could result in contamination of surface water or soil. In the case of any release, emergency or otherwise, the responsible party would be liable for cleanup and any damages. Depending on the scope of the accident, any of the above-referenced contingency plans apply to provide emergency response. At a minimum, the BLM CRVFO contingency plan would apply on both BLM and USFS lands.

These laws, regulations, standard lease stipulations, and contingency plans and emergency response resources are expected to adequately mitigate any potential hazardous or solid waste issues associated with the Proposed Action.

#### *No Action Alternative*

Under the No Action Alternative, the project components included in the Proposed Action would not be approved or constructed. Therefore, there would be no release of any of these materials associated with the No Action Alternative.

## **Water Quality**

### **Surface Water**

#### Affected Environment

The project area is located within the Colorado Headwaters-Plateau (hydrologic unit code: 14050006) drainage basin unit. The climate of the project area is semiarid with an annual precipitation of approximately 11.5 inches (Western Regional Climate Center 2011) and perennial surface water flow is limited to larger streams.

According to the *Stream Classifications and Water Quality Standards* (CDPHE, Water Quality Control Commission [WQCC] Regulation No. 37)(CDPHE-WQCC 2007), East, Middle, and West Mamm Creeks, Porcupine Creek, Spruce Creek, and all associated tributaries are within segment 4a, described below.

- Segment 4a – This segment has been classified aquatic life cold 2, recreation 2, water supply, and agriculture. Aquatic life cold 2 indicates that this water course is not capable of sustaining a wide variety of cold or warm water biota due to habitat, flows, or uncorrectable water quality conditions. Recreation class 2 refers to waters that are not suitable or intended to become suitable for primary contact recreation. This segment is, however, suitable or intended to become suitable for potable water supplies and agricultural purposes that include irrigation and livestock use.

These drainages within the project area are generally well vegetated, with stable banks and riparian vegetation sufficient to provide cover and habitat for aquatic and riparian fauna. Porcupine Creek does not support wetland characteristics within the project area due to an influx of eroding shale that moves downstream from higher elevations. As a large uplift of Green River shale and sandstone exposed on the northern face of Battlement Mesa erodes, massive amounts of shale and sandstone talus are delivered to Porcupine Creek. The constant shifting and movement of the streambed as this talus is moved by gravity and water precludes the establishment of hydrophytic vegetation or development of hydric soils.

These drainages are not currently on the State of Colorado's *Stream Classifications and Water Quality Standards* (CDPHE, WQCC Regulation No. 37) (CDPHE-WQCC 2007) list. This segment is listed as impaired due to selenium on the State of Colorado's *303(d) List of Water Quality Limited Segments Requiring TMDLS* (CDPHE, WQCC Regulation No. 93) (CDPHE-WQCC 2006a). One creek in segment 4a, Alkali Creek, is on the State of Colorado's *Monitoring and Evaluation List* (CDPHE, WQCC Regulation No. 94) (CDPHE-WQCC 2006b) for *E. coli* and metals; however, this creek is outside the project area and, therefore, not discussed further in this analysis.

A small number (<5) samples of water quality from these perennial streams are available in the public record, all from Porcupine and West Mamm Creeks (USGS 2009). Selenium and *E. coli* were not analyzed in these samples; other parameters appear within acceptable limits.

Beaver Creek is within segment 7a, as described below.

- Segment 7 – This segment has been classified aquatic life cold 1, recreation 1A, water supply, and agriculture. Aquatic life cold 1 indicates that these waters are capable of sustaining a wide variety of cold water biota. Recreation class 1A refers to waters where primary contact uses have been documented or are presumed to be present. This segment is suitable or intended to become suitable for potable water supplies and agricultural purposes that include irrigation and livestock use.

The section of Beaver Creek in the project area is well vegetated, with stable banks and riparian vegetation sufficient to provide cover and habitat for aquatic and riparian fauna. The stream contains brown and Colorado River cutthroat trout (Fresques, BLM, pers. comm. 2011) and is part of the Rifle Municipal Watershed. These drainages are not currently on the State of Colorado's *Stream Classifications and Water Quality Standards* (CDPHE, WQCC Regulation No. 37) (CDPHE-WQCC 2007) list. This segment is listed as impaired due to selenium on the State of Colorado's *303(d) List of Water Quality Limited Segments Requiring TMDLS* (CDPHE, WQCC Regulation No. 93) (CDPHE 2006a), but is not on the State of Colorado's *Monitoring and Evaluation List* (CDPHE, WQCC Regulation No. 94) (CDPHE-WQCC 2006b). Limited water quality data are available for Beaver Creek. All three samples in the public record (from 1976, 1977, and 2007) that analyzed for selenium found levels within CDHPE standards; all other parameters sampled were also predominantly within acceptable limits (Woodling 2008, USGS 2009).

### Environmental Consequences

#### *Proposed Action*

As a result of the Proposed Action, potential impacts associated with construction would occur during two distinct time intervals separated by one or more years. Porcupine Creek and Spruce Creek are the only two surface waters potentially affected by both projects. However, in the area of the shared corridor, the two separate construction projects would not impact surface waters in the similar manners. The initial WPX pipeline construction would directly impact Porcupine Creek, which does not possess the constituent elements necessary to support a wetland but is a perennial stream. Potential impacts to

surface water associated with the Proposed Action would be mitigated by installation of pipelines for both projects in a shared trench during WPX's construction in 2012. Bargath's 16-inch gas line would be installed along with the waterlines but capped on either end for future construction in 2013 or later. At Spruce Creek, WPX's waterline bisects the drainage at a different location outside the shared trench on the west end of the alignment (Figure 20c). In this area, WPX's waterline would avoid disturbance to the bed and banks of Spruce Creek, since the pipeline will be installed within the ROW of an existing road. Bargath's pipeline will affect a wetland and riparian area at Spruce Creek, a short distance north of the WPX pipeline alignment (Figure 20c).

Water quality impacts of the Proposed Action include increased erosion and sedimentation of streams due to changes in channel morphology caused by road and pipeline crossings. Surface waters would be most susceptible to sedimentation during construction activities. Sedimentation and stream channel impacts associated with pipeline installation would be reduced through the implementation of BMPs and other preventive measures. After construction, reclamation activities would substantially reduce surface exposure, decreasing the risk to surface waters over the long term.

#### *No Action Alternative*

Under the No Action Alternative, the project components included in the Proposed Action would not be approved or constructed. Therefore, there would be no new or additional stream crossings, use of access roads, or disturbed surfaces associated with the No Action Alternative.

#### Analysis on Public Land Health Standard 5 for Water Quality

The Proposed Action would cross the Divide Creek Landscape and the Rifle-West Watershed Land Health Assessment (LHA) areas. The 2009 Divide Creek LHA determined that all areas affected by the project were in meeting Standard 5 for water quality. The 2005 Rifle-West Watershed LHA determined that all wetland and riparian areas affected by the project are meeting Standard 5 for water quality. The Proposed Action would be unlikely to prevent Standard 5 from being achieved. With proper techniques for crossing streams, restoring disturbed streambanks and channels, controlling erosion and sedimentation, preventing spills, and revegetating disturbed areas (see COAs in Appendix A), the Proposed Action would not prevent Standard 5 from being met.

#### Waters of the United States

##### Affected Environment

Section 404 of the Clean Water Act requires a Department of the Army permit from the U.S. Army Corps of Engineers (USACE) prior to discharging dredged or fill material into Waters of the U.S. as defined by 33 CFR Part 328. Large discharges require an individual permit; small discharges may be authorized under a Nationwide Permit.

##### Environmental Consequences

###### *Proposed Action*

The Proposed Action would result in phased construction distributed over separate years with WPX waterlines planned for 2012 and Bargath's pipeline planned for 2013 or later. Potential impacts would affect drainages supporting Waters of the U.S. twice in the area of the shared corridor between Spruce Creek and Beaver Creek. At Porcupine Creek, as a result of the pipelines being installed concurrently in a shared trench during 2012 WPX construction (see section on Water Quality, Surface Water), potential direct impacts to Waters of the U.S. would be reduced to only one incursion.

Crossings of Waters of the U.S. or streams that are potentially Waters of the U.S. are included in the Proposed Action. The Proposed Action affects ten perennial streams, seeps, or springs (including the Colorado River; Beaver, East Mamm, Middle Mamm, Porcupine Spruce, and West Mamm Creeks; Gant Gulch; and tributaries to these streams) and 47 intermittent or ephemeral streams that are “Waters of the U.S.” as defined by the USACE in 33 CFR Part 328. The crossings of the jurisdictional waters are presented in Figures 20a, 20b, and 20c. At all stream crossings, construction shall occur as presented in the Nationwide Permit #12 Verification Request and Preliminary Jurisdictional Determination (WWE 2012e).

The WPX water pipelines cross two perennial streams including Porcupine Creek and Spruce Creek. Construction at Spruce Creek will be within the bed of an existing gravel road and above a culvert that carries the flows of Spruce Creek. Porcupine Creek will be crossed using a shared trench in which both WPX and Bargath’s pipelines will be installed during 2012 construction. Ten intermittent or ephemeral streams that are jurisdictional waters are bisected by the WPX water pipeline between Beaver Creek and the western terminus of the pipeline (Figure 20c).

The Bargath pipeline will cross all the same perennial streams but will include a crossing of Spruce Creek at a different location than the WPX water pipelines (Figure 20c). Unlike the WPX construction, the Bargath construction at Spruce Creek will affect a delineated wetland. Three Waters of the U.S. on the western terminus of the WPX pipeline alignment that are outside the Bargath ROW will not be a part of the Bargath construction in 2013 or later.

A COA in Appendix A requires that the operator obtain a formal jurisdictional determination by USACE prior to any construction that could affect Waters of the U.S., and verification that impacts do not require a permit. The jurisdictional stream crossings would require filing of pre-construction notices with the USACE in order to be granted a NWP. Additionally, construction in riparian areas within the Rifle Municipal Watershed would require a permit from the town of Rifle. Refer to Appendix A for protective stipulations to be applied to mitigate the potential for adverse impacts to surface water. Through the use of these stipulations, BMPs associated with construction activities, prompt reclamation, and the implementation of the preventative measures associated with the treatment of fluids, impacts to surface waters would be minimized and should be minor.

#### *No Action Alternative*

Under the No Action Alternative, the project components included in the Proposed Action would not be approved or constructed. Therefore, there would be no new or additional stream crossings, use of access roads, or disturbed surfaces associated with the No Action Alternative.

### **Wildlife, Aquatic**

#### **Affected Environment**

The corridor of the proposed pipelines would cross numerous ephemeral washes and perennial streams with their associated wetlands. Perennial streams crossed include East Mamm Creek, Middle Mamm Creek, Gant Gulch, West Mamm Creek, Beaver Creek, Porcupine Creek, Spruce Creek and the Colorado River. The flow-pattern of drainages is generally south to north towards the Colorado River. Each of these stream crossings would occur on either privately owned lands or BLM lands. No perennial stream crossings are planned on WRNF managed lands. The pipeline would parallel Dry Creek for approximately 0.28 mile on WRNF lands in Section 21. Dry Creek is an intermittent drainage and does not support populations of trout or macroinvertebrates on the WRNF lands within the project vicinity. The Colorado River would also be crossed by the Bargath pipeline action using an HDD bore outside the 100 year floodplain.

In terms of aquatic life, all of the streams that are tributary to the Colorado River are limited primarily by flows, which fluctuate widely and seasonally, and by heavy sediment loads. Other limiting factors include type of substrate and the presence, density, and width of riparian plant communities. These streams are sourced both directly and indirectly from snowpack at higher elevations on the flanks of Battlement Mesa. Much of the recharge from snowpack enters the streams as groundwater inflow from colluvium and shallow bedrock. Substrates vary longitudinally along the streams and include reaches dominated by cobbles, finer sediments, and plant detritus.

Fish surveys by CPW and USFS have documented the presence of greenback cutthroat trout—a Federally-listed threatened subspecies—in the upper reaches of Cache Creek, located west of Spruce Creek. Cache Creek and its watershed would not be affected directly or indirectly by the Kokopelli pipeline project. Another native trout subspecies, the Colorado River cutthroat trout, is known to occur in Beaver Creek but not in any other perennial waters within the project area. This subspecies is listed as sensitive by both BLM and USFS and a species of State special concern by CPW; see the section on Special Status Species for detailed information. No inventories were conducted for this survey; however, BLM inventories have confirmed the presence of this species. Sampling that took place in July 2007 by

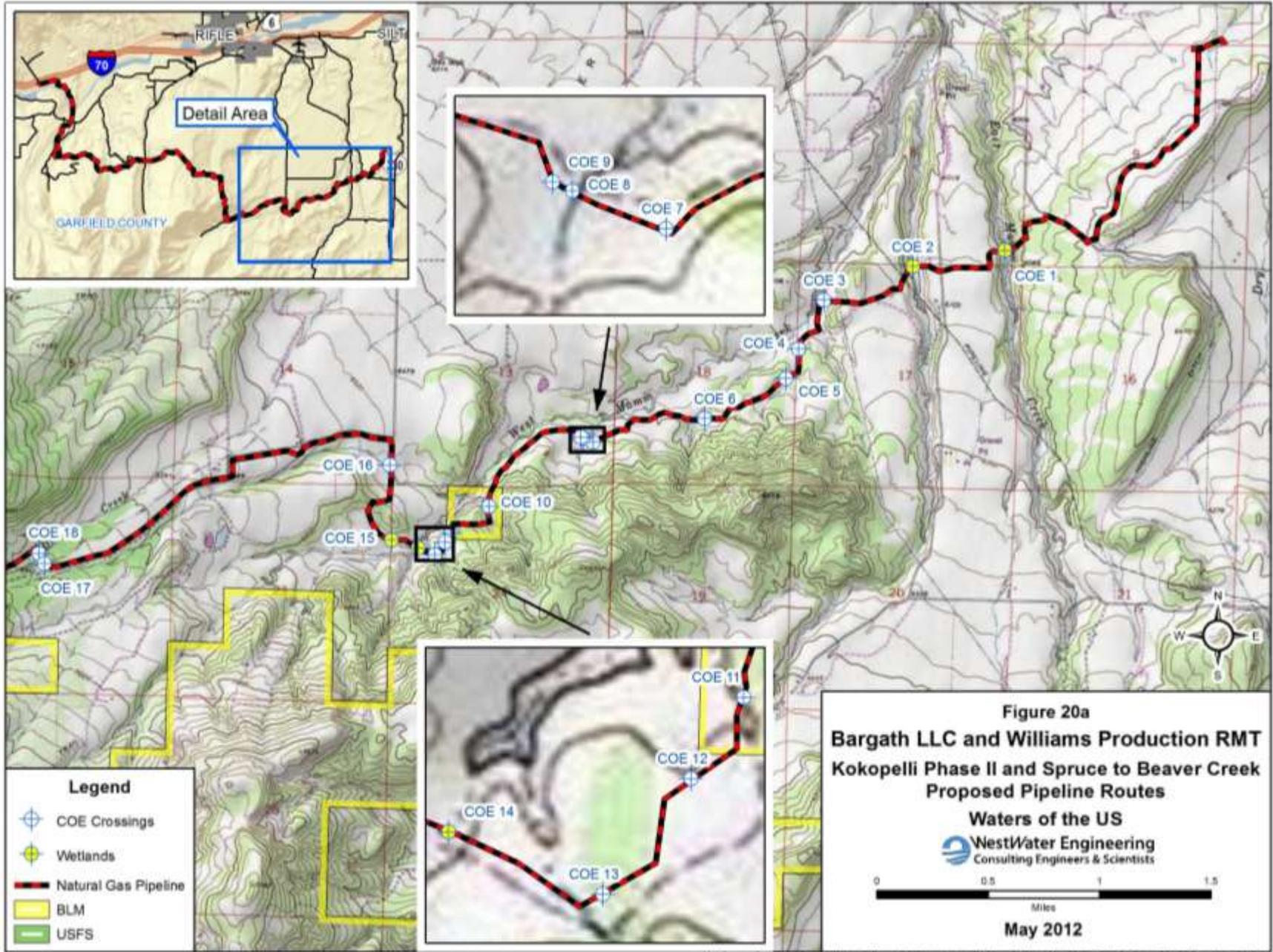
CRVFO fisheries personnel confirmed the occurrence of Colorado River cutthroat trout in Beaver Creek (Fresques pers. comm. 2011). The reach of stream that was sampled overlaps the Flatiron Mesa Master Development Plan boundary and was also found to support brown trout at a ratio of 3:1 to native cutthroat trout (BLM 2009b). This native European trout has been widely introduced in mountainous areas of Colorado because of its tolerance for slightly warmer waters than the cutthroat trout and its ability to reproduce successfully in streams with small flows. The Beaver Creek pipeline crossing is on private land. The CPW has mapped Beaver Creek, within the project area boundary, as designated cutthroat trout waters. Designated cutthroat trout waters are sensitive habitats that the CPW has identified as important to management of this species (NDIS 2011).

Aquatic macroinvertebrates living in perennial streams such as Beaver Creek, during a portion of their lifecycles include larvae of stoneflies, mayflies, and some caddisflies in fast-flowing reaches with rocky or detrital substrates. Both the aquatic larvae and winged adults of stoneflies, mayflies, and caddisflies are probably the main prey for trout in Beaver Creek, along with terrestrial invertebrates that land or fall onto the surface or are carried into the stream in runoff from adjacent uplands. In slow-flowing portions of the Colorado River and its tributary creeks with fine substrates, (Beaver, Porcupine, and West Mamm Creeks), aquatic macroinvertebrates probably include the larvae of midges, mosquitoes, and some caddisflies. These species are able to tolerate relatively warm, turbid, and poorly oxygenated waters, and their more abbreviated larval stages allow them to reproduce in intermittent streams, side channels and in seasonally inundated overbank areas.

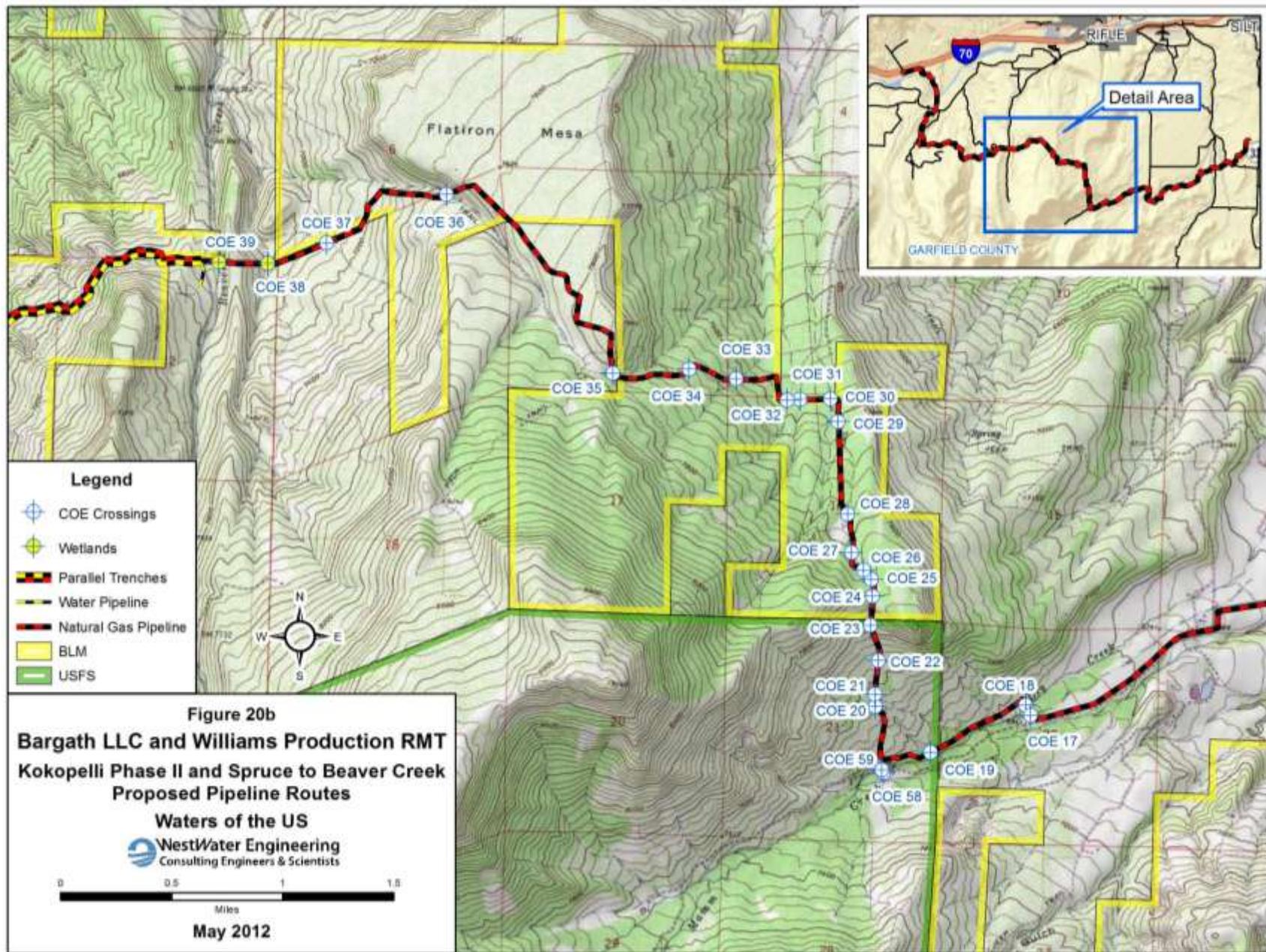
### Environmental Consequences

#### *Proposed Action*

The Proposed Action would result in phased construction distributed over separate years with WPX waterlines planned for 2012 and Bargath's pipeline planned for 2013 or later. The only perennial stream directly affected by WPX's pipeline construction is at Porcupine Creek, which does not support any fish populations. The highly channelized bed and shale substrate are not suitable for fish to survive and reproduce. In the drainage, WPX's 2012 construction will include a shared trench with Bargath's gas pipeline. Bargath's pipeline construction would consist of a short segment pre-installed in 2012 during WPX's pipeline project.



Map Source: Z:\Williams Bargath\Kokopelli Phase II\DR\map\map\EA Maps\EA Maps May 2012 (REV)\EA Figure 20a COE.rvt May 2012.rvt





Bargath's construction at Beaver Creek in 2013 or later, would affect a viable aquatic environment that supports a fish population. None of the other perennial streams along Bargath's ROW sustain fish populations. At this point and all other tributary stream crossings, construction techniques would use a cut and cover method employing a temporarily flumed flow (culvert pipe), which would divert water around the construction area without impeding water flow. The crossings are planned during periods of the year when stream flows are lowest, such as prior to spring runoff or in the late summer/early fall. Construction during these time periods would also avoid the spring spawn of native cutthroat trout at Beaver Creek. The width of the construction corridor would be kept the narrowest minimum possible to limit modification to the streambed. Indirect impacts due to runoff from the construction zone on the approach/departure sides of the stream would also be limited by narrowing the construction corridor and not stockpiling soil or other excavated material in proximity to the stream.

Cut-and-fill slopes along drainages or in areas with high erosion potential would be protected from erosion by using hydromulch designed specifically for erosion control or biodegradable blankets/matting, bales, or wattles of weed-free straw or weed-free native grass hay. A well-anchored fabric silt fence would also be placed at the toe of cut-and-fill slopes along drainages or to protect other sensitive areas from deposition of soils eroded off the slopes. Potential affects to fish and macroinvertebrates from erosion and hazardous spills would be avoided by implementation of these standard stormwater management and erosion control BMPs to protect water quality in tributaries to the Colorado River during project construction. A site-specific Beaver Creek Habitat Enhancement and Restoration Plan was developed for protection of the aquatic environment in Beaver Creek (see the section on Riparian and Wetlands Areas).

#### *No Action Alternative*

Because the No Action Alternative would not involve removal of vegetation, crossing of any stream or installation of a pipeline along any portion of the proposed alignment, no impacts to aquatic wildlife would be expected.

#### Analysis on Public Land Health Standard 3 for Plant and Animal Communities (partial, see also Special Status Species; Vegetation; and Wildlife, Terrestrial)

The Proposed Action would not jeopardize the viability of any aquatic vertebrate species. The project would have no significant consequences on habitat condition, utility, or function or discernible adverse effects on species abundance or distribution at any landscape scale. Public land health standard 3 would continue to be met (BLM 2005).

### **Wildlife, Terrestrial**

#### Affected Environment

##### Mammals

Small mammals associated with habitats that dominate the proposed pipeline corridor area include the rock squirrel (*Spermophilus variegatus*), golden-mantled ground squirrel (*S. lateralis*), least chipmunk (*Neotamias minimus*), and Hopi chipmunk (*N. rufus*) in addition to cottontail rabbits (*Sylvilagus* spp.), the bushy-tailed woodrat or packrat (*Neotoma cinerea*), and a variety of native mice. A small area of spruce/fir near West Mamm Creek also supports some pine squirrels, although the site is near the lower elevational limit of their range.

Small carnivores potentially present in the area include the long-tailed weasel (*Mustela frenata*), western spotted skunk (*Spilogale gracilis*), and ringtail (*Bassariscus astutus*) in addition to the nearly pervasive striped skunk (*Mephitis mephitis*) and raccoon (*Procyon lotor*). These species are most likely to occur

along the drainages, near the margins of dense oakbrush, in pinyon-juniper woodland, or in the small area of aspen and spruce/fir. Larger carnivores expected to occur include the bobcat (*Lynx rufus*), badger (*Taxidea taxus*) and, along shrubland edges and openings, the coyote (*Canis latrans*). Black bears (*Ursus americanus*) make use of oaks and the associated chokecherries and serviceberries for cover and food, while mountain lions (*Felis concolor*) are likely to occur during seasons when mule deer (*Odocoileus hemionus*) and elk (*Cervus elaphus*) are present.

Black bears are especially attracted to stands of Gambel's oak, chokecherry, and serviceberry during the fall period of hyperphagia where increased daily caloric intake adds to fat reserves for the coming winter. Consequently, CPW has mapped a black bear fall concentration area covering approximately 25 square miles in the oakbrush habitats on north-facing slopes south of I-70 in the Rulison area. Mountain lions are found throughout the region in areas with dense cover and that support populations of deer (NDIS 2011).

The mule deer is a recreationally important species that is common throughout suitable habitats in the region. The proposed pipeline falls within mule deer winter range, severe winter range and critical winter range as mapped by CPW (NDIS 2011). Deer sign including fecal pellets, tracks, antler rubs, beds and browsed plants, were common within and near the corridor during surveys (WWE 2011a). Although mapped primarily as winter range, the corridor also receives use by deer during the summer. Some fawning probably occurs in the general area, particularly in areas such as Flatiron Mesa and along the drainages that provide a suitable combination of cover and forage, as well as abundant water to support lactation. During the fall, particularly during hunting seasons, deer are likely to congregate in the middle-elevation areas typified by oakbrush/serviceberry, which provides dense cover and is transitional between lower elevation winter habitats (sagebrush, pinyon-juniper, and hay meadows) along the Colorado River valley and higher elevation summer habitats (aspen, spruce/fir, and mountain meadows) on the nearby WRNF.

The Rocky Mountain elk is also present in the project area and is considered a MIS by the WRNF. The CPW estimates elk herd numbers annually by monitoring hunter harvest success and conducting winter aerial counts. The elk herd has increased significantly since the 1950s in CPW elk management unit, Data Analysis Unit (DAU) E-14. The overall population of this herd increased from approximately 2,500 animals in the early 1950s to an estimated high of over 21,000 in 1990 and 1991. Over the past 10 years the elk population trends are generally declining due to CPW management efforts to reduce the herd size to their objective levels. The CPW has tried many management strategies to decrease the herd number to the objective population which is 10,500 individuals. However, in 2009 during the revision process, the CPW suggested that the objective be increased from 10,500 individuals to a range from 15,000 to 19,000 individuals. A revision to the population size objective would allow the CPW to manage the herd at acceptable levels and incorporate more accurate population estimates while keeping the populations objective in line with the public demand to maintain the elk population size at current levels (CPW 2010).

Approximately 20% of the winter range for this herd occurs on USFS lands, primarily within the Grand Mesa/Uncompahgre/Gunnison (GMUG) National Forest, with the remainder on BLM (25%) or private (54%) lands. Most of the important winter range is on the lower flanks of Battlement Mesa south of Rifle, Silt, and New Castle. The Proposed Action lies entirely within CPW mapped elk winter range. A portion of the pipeline alignment would be located in mapped severe winter range (240 acres) and also within a winter concentration area (119 acres) (WWE 2011a). At this time, no identified major concerns are associated with this portion of the elk population that summers on the WRNF.

### Birds

Perching birds commonly associated with Gambel's oak-serviceberry habitats include migratory nesters such as the dusky flycatcher, American robin (*Turdus migratorius*), Virginia's warbler, MacGillivray's

warbler, lazuli bunting, lesser goldfinch, black-headed grosbeak, and spotted towhee as well as year-round residents such as the black-billed magpie, western scrub-jay (*Aphelocoma californica*), black-capped chickadee, and mountain chickadee (*Poecile gambeli*), the latter mostly in aspen and spruce/fir. Areas of trees support resident woodpeckers such as the northern flicker (*Colaptes auratus*) and the hairy and downy woodpeckers (*Picoides villosus*, *P. pubescens*) as well as a variety of Neotropical migrant species that nest in abandoned woodpecker holes or in the tree canopies (see the section on Migratory Birds).

Passerine birds associated with pinyon-juniper woodlands include species such as juniper titmouse and pinyon jay which commonly nest in this habitat. Juniper titmouse were observed throughout the project area and pinyon jay individuals and flocks were observed near Flatiron Mesa, east of Porcupine Creek, Spruce Creek, and West Mamm Creek area where suitable nesting habitat occurs (WWE 2011a). Other birds including white-breasted nuthatches (*Sitta carolinensis*), blue-gray gnatcatcher (*Poliophtila caerulea*), dark-eyed junco (*Junco hyemalis*), common nighthawk (*Chordeiles minor*), black-throated gray warbler (*Dendroica nigrescens*) and mourning dove (*Zenaida macroura*) were commonly observed and heard in the juniper woodlands (see the section on Migratory Birds).

Birds of prey may nest in sandstone bluffs, pinyon-juniper woodlands, narrowleaf cottonwoods, conifers and aspen, or very tall oaks, found within the project area. A total of 34 nest structures were observed during the field surveys, of which six were determined to be occupied during the 2011 nesting season (WWE 2011a). The raptor species most likely to occur and nest in the area include the red-tailed hawk, Cooper's hawk, great-horned owl, and American kestrel. Other species such as sharp-shinned hawk, long-eared owl, flammulated owl, northern saw-whet owl, northern harrier and golden eagle may forage in the area but are not likely to nest in the project area (see the section on Migratory Birds).

One gallinaceous species, the wild turkey, is also common in mountain shrub habitats, where the acorns, berries, and invertebrate prey in the dense leaf litter provide abundant food. Another upland gamebird, the dusky grouse, is potentially present in aspen and conifer habitats near West Mamm Creek or in the Flatiron Mesa portion of the project area.

### Reptiles and Amphibians

The Western terrestrial garter snake (*Thamnophis elegans*) is the most common snake species within the project area and was observed along the Colorado River and along a tributary of Beaver Creek immediately west of Flatiron Mesa. Green snakes (*Liochlorophis vernalis*) and bull snakes (*Pituophis catenifer*) are also common to the project area and were observed during the surveys (WWE 2011a).

Northern leopard frogs, a BLM and USFS sensitive species, occur within the project area and were observed downstream from the bore crossing of the Colorado River (see the section on Special Status Species). Bull frogs (*Rana catesbeiana*) were also observed in the 100 year floodplain south of the Colorado River.

Lizards common to the area and observed during surveys included sagebrush lizard (*Sceloporus graciosus*), plateau lizard (*Sceloporus undulatus*), and plateau striped whiptail (*Cnemidophorus velox*).

### Environmental Consequences

#### *Proposed Action*

The Proposed Action would result in phased construction distributed over two separate years with WPX waterlines planned for 2012 and Bargath's pipeline planned for 2013 or later. As a result, impacts to terrestrial wildlife species would occur during two distinct time intervals separated by one or more years.

Impacts would be experienced in the area of the shared corridor between Spruce Creek and Beaver Creek, during both phases of the Proposed Action. In this area, direct impacts to habitat as a result of the WPX clearing of ROW vegetation would be reduced during Bargath's pipeline project, since late seral stage woodlands and shrub habitat would not have reoccupied the previously cleared areas.

The impacts analyzed for WPX's Spruce to Beaver Creek pipelines and the Bargath's Kokopelli pipeline are broadly applicable for the aquatic and terrestrial species evaluated in the Affected Environment of this Proposed Action. This is due to the fact that most of the species have extensive ranges, which are distributed widely across the landscape in this portion of western Colorado.

Completed construction of the Proposed Action would affect approximately 238 acres. Construction of the WPX water pipeline is a smaller project and would affect about 30.25 acres. Impacts to wildlife species would occur during both periods of construction for the Proposed Action. However, direct impacts to wildlife habitat would be reduced during Bargath's construction in areas where vegetation was removed during WPX's water pipeline installation.

Construction and reclamation of the proposed pipeline would convert these existing woodlands to an early seral stage consisting of perennial grasses. Through time, forbs and, more slowly, woody plants could colonize the reclaimed areas from nearby undisturbed areas. However, the process of succession from seeded grasses to native forbs, to shrubs and trees would require many years or decades. Initially, the process could be impeded by periodic treatment for weeds, which also would kill or injure any colonizing native forbs and shrub seedlings. Over the long term, colonizing forbs and shrubs would also be removed for periodic maintenance or updating of the pipeline or the addition of another adjacent line.

The conversion of shrubby habitats to grasses would reduce foraging, nesting/breeding, and sheltering habitat for a number of wildlife species. Because no long-term human occupancy of the proposed pipeline alignment (i.e., use as a road or trail, etc.) is expected, few and minor long-term indirect impacts would occur other than direct habitat loss or modification. The disturbance corridor may fragment portions of the route to a level that some species can no longer find suitable habitat in large enough blocks or far enough from habitat edges. However, while the fragmentation of habitats may occur, the relatively minor impact relative to the expanses of similar habitat types nearby is expected to result in no discernible population effects, although individuals may be forced to move to other, less suitable sites (assuming that the more suitable sites are already occupied). This would have the effect of reducing the survival and reproductive success of some individuals.

Species that prefer grass-dominated habitats would benefit from conversion of shrublands to reclamation grasses. Larger mammals such as deer, elk, coyotes, bobcats, and other species may increase their use of the proposed pipeline as a travel corridor. Similarly, while tree or shrub-nesting songbirds and some species of small mammals would suffer from the relatively small area of direct habitat loss, species associated with grassy habitats could increase.

Impacts from disturbance associated with human activity and operation of vehicles and heavy equipment during construction would create a temporary zone of reduced habitat use along the corridor. This zone would vary in width depending on the particular habitat type (and associated density of screening), the sensitivity of the particular species, and the season. Overall, however, the zone of reduced use would remain in a given area for a relatively short time, because construction would progress along the entire length of the pipeline in a few months (< 6 months). Areas of more protracted disturbance (i.e., slower construction pace) would be expected at the trenched crossings of the tributary creeks and the bored crossing beneath the Colorado River. Use of BMPs and COAs (Appendix A) would reduce impacts to terrestrial species, including amphibians, using these riparian zones.

Construction activities, soil disturbance, and traffic could potentially spur the introduction and spread of weed species within the project area. Weed invasion and establishment has become an increasingly important concern associated with surface disturbing activities in the West. Weeds often out-compete native plant species, rendering an area less productive as a source of forage for wildlife. However, implementation of the suggested mitigation measures such as in Appendix A and in the Invasive, Non-Native Plants section of this EA would minimize the potential for invasion and establishment of the project area by undesirable plants.

In terms of the mule deer and elk, two recreationally important big game ungulates, construction would occur outside the winter season, owing to application of a big game winter TL stipulation for the period from December 1 through April 30. Because construction would not occur during fall, impacts to black bears gorging themselves on acorns and berries would not occur. The timing following the big game winter TL would also minimize the potential for disturbance-related impacts to nesting raptors. Additionally, the COA for nesting raptors would suspend construction until completion of nesting by any raptors that may begin to nest within or near the corridor (Appendix A).

Indirect impacts on wildlife, especially big game and raptors, would be the disturbance caused by increased human activity, equipment operation, vehicle traffic, harassment by any dogs brought to the site by contractors, and noise related to pipeline construction activities. Most species of wildlife are relatively secretive and distance themselves from these types of disturbance or move to different areas screened by vegetation screening or topographic features. This avoidance, referred to as displacement, results in underuse of habitat near the disturbance. Avoidance of forage and cover resources adjacent to disturbance reduces habitat utility and the capacity of the affected acreage to support wildlife populations (BLM 1999a).

#### *No Action Alternative*

Because the No Action Alternative would not include clearing of vegetation, trenching, or installation of the proposed pipelines, impacts to terrestrial wildlife species would not occur.

#### Analysis on Public Land Health Standard 3 for Plant and Animal Communities (partial, see also Special Status Species, Vegetation, and Aquatic Wildlife)

The Proposed Action would not jeopardize the viability of any aquatic and terrestrial vertebrate species. The project would have no significant consequences on habitat condition, utility, or function or discernible adverse effects on species abundance or distribution at any landscape scale. Public Land Health Standard 3 would continue to be met in the areas that include the Rifle-West Watershed LHA (BLM 2005) and Divide Creek LHA (BLM 2009a).

### **SUMMARY OF CUMULATIVE IMPACTS**

Historically, habitat loss or modification in the CRVFO areas was characteristic of agricultural, ranching lands, rural residential, with localized industrial impacts associated with the railroad and I-70 corridors and the small communities. More recently, the growth of residential and commercial uses, utility corridors, oil and gas developments, and other rural industrial uses (e.g., gravel mining along the Colorado River) has accelerated the accumulation of impacts in the area. Cumulative impacts have included (1) direct habitat loss, habitat fragmentation, and decreased habitat effectiveness; (2) increased potential for runoff, erosion, and sedimentation; (3) expansion of noxious weeds and other invasive species; (4) increased fugitive dust from construction of oil and gas pads, roads, and pipelines and associated truck travel; (5) increased noise, especially along access and haul roads; (6) increased potential for spills and other releases of chemical pollutants; and (7) decreased scenic quality.

Although none of the cumulative impacts was described in the 1999 FSEIS (BLM 1999a) or EA #CO140-2011-72 as significant, and while new technologies and regulatory requirements have reduced the impacts of some land uses, it is clear that past, present, and reasonably foreseeable future actions have had and would continue to have adverse effects on various elements of the human environment. Anticipated impacts for existing and future actions range from negligible to locally major, and primarily negative, for specific resources.

The primary bases for this assessment are twofold: First, the rate of development, particularly oil and gas development has generally been increasing in the area, resulting in an accelerated accumulation of individually nominal effects. Second, residential and commercial expansion, as well as most of the oil and gas development, has occurred on private lands where mitigation measures designed to protect and conserve resources may not be applied to the same extent as on BLM lands. Recent COGCC regulations have closed considerably the gap between the potential environmental impacts associated with development of private versus Federal fluid mineral resources.

The Proposed Action would contribute to the collective adverse impact for some resources. Although the contribution would be minor, the Proposed Action would contribute incrementally to the collective impact to air quality, vegetation, migratory birds, terrestrial wildlife, and other resources. These cumulative impacts would be in addition to those associated with the nearby pipeline projects proposed by Encana Oil & Gas (USA) Inc. (“Encana”) and Grand River Gathering, LLC (“GRG”). The Encana Pumba 30-inch natural gas pipeline would be approximately 11.2 miles in length with 5.6 miles across BLM land and would be completed no earlier than summer-fall 2012 and perhaps later (BLM 2012a). The GRG South Grass Mesa 8-inch natural gas pipeline would be approximately 2.3 miles in total length with 1.6 miles across BLM land and would be completed in summer 2012 (BLM 2012b).

## **PERSONS AND AGENCIES CONSULTED**

Bargath LLC: Tom Fiore and John Suchar

D.R. Griffin and Associates, Inc.: Larry Bodyfelt and Charlie Wood

Star Valley Engineering, Inc.: Charles Bucans

WPX Energy Rocky Mountain, LLC: April Mestas, Brad Moss, Bryan Hotard, Dan Hoover and Dan Collette

## **INTERDISCIPLINARY REVIEW**

CRVFO and WRNF staff who participated in the preparation of this EA are listed in Table 30. This participation included review of survey results submitted by the operator’s consultants, evaluation of impacts likely to occur from implementation of the Proposed Action, and identification of appropriate COAs to be attached and enforced by the BLM.

<b>Table 30. BLM and WRNF Interdisciplinary Team Authors and Reviewers</b>		
<i>Name</i>	<i>Title</i>	<i>Areas of Participation</i>
<b>BLM, Colorado River Valley Field Office</b>		
DJ Beaupeurt	Realty Specialist	Realty Project Lead, Right-of-Way Permitting
John Brogan	Archaeologist	Cultural Resources, Native American Religious Concerns
Jim Byers	Natural Resource Specialist	EA Project Lead, Access & Transportation, Socioeconomics, Wastes-Hazardous or Solid

**Table 30. BLM and WRNF Interdisciplinary Team Authors and Reviewers**

<i>Name</i>	<i>Title</i>	<i>Areas of Participation</i>
Allen Crockett	Supervisory Natural Resource Specialist	Technical Review, NEPA Review
Shauna Kocman	Hydrologist	Air Quality, Noise, Soils, Surface Water, Waters of the U.S.
Julie McGrew	Natural Resource Specialist	Visual Resources
Judy Perkins, Ph.D.	Botanist	Invasive Non-native Species, Special Status Plants, Vegetation
Isaac Pittman	Rangeland Management Specialist	Range Management
Sylvia Ringer	Wildlife Biologist	Migratory Birds, Special Status Fish and Wildlife, Aquatic and Terrestrial Wildlife
Todd Sieber	Geologist	Fossil Resources
<b>USFS, White River National Forest</b>		
Natasha Goedert	Wildlife Biologist	Migratory Birds, Special Status Fish and Wildlife, and Aquatic and Terrestrial Wildlife Review
Donna Graham	Landscape Architect	Scenic Resources Review
Jason Gross	Natural Resource Specialist	EA Coordination/Review
Rick Haskins	Realty Specialist	Special Use Permitting & Coordination
Mark Lacy	Fish Biologist	Special Status Species (Fish), Threatened and Endangered Species (Fish), Aquatic Wildlife Review
John Proctor	Ecologist	Invasive Non-native Species, Special Status Species (Plants), Vegetation Review
Lydia LaBelle de Rios	Rangeland Management Specialist	Range Management Review
Karla Mobley	Civil Engineer Technician	Road Use Permitting, Pipeline Construction
<b>USFWS, Grand Junction</b>		
Creed Clayton, USFWS	Biologist	Threatened and Endangered Species

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**APPENDIX A**

- I. Standard Surface-Use Conditions of Approval**
- II. Site-Specific Surface-Use Conditions of Approval for WPX Spruce Creek to Beaver Creek Water Pipelines**
- III. Site-Specific Surface-Use Conditions of Approval for Bargath Kokopelli Phase II Natural Gas Pipeline**
- IV. General Terms and Conditions of the Right-of-Way Grants**

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## **STANDARD SURFACE-USE CONDITIONS OF APPROVAL**

### **BLM STANDARD COAs APPLICABLE TO ALL ACTIVITIES FOR THE BARGATH KOKOPELLI PHASE II PIPELINE PROJECT (COC75020) AND WPX SPRUCE CREEK TO BEAVER CREEK WATER PIPELINE (COC75224)**

The following standard surface-use Conditions of Approval (COAs) are in addition to all stipulations attached to the respective ROW Grants and to any site-specific COAs for individual pipelines. Wording and numbering of these COAs may differ from those included in the Environmental Assessment (EA) (BLM-DOI-CON040-2012-0028). In cases of discrepancies, the following COAs supersede earlier versions.

1. Administrative Notification. The operator shall notify the BLM representative at least 48 hours prior to initiation of construction. If requested by the BLM representative, the operator shall schedule a pre-construction meeting, including key operator and contractor personnel, to ensure that any unresolved issues are fully addressed prior to initiation of surface-disturbing activities or placement of production facilities. Project staking including trench centerlines and offset limits along the disturbance corridor shall be completed to the satisfaction of the AO prior to commencing any surface disturbing activities. Furthermore, all old flagging along alternate routes or unnecessary flagging installed during the planning of this project shall be located and removed from the project area prior to construction start-up.
2. Pipeline Construction and Maintenance. Construction methods, techniques and procedures described in the Bargath Plan of Development shall be implemented (Bargath 2011). The disturbance limits of the pipelines shall be staked and /or flagged prior to any commencement of operations. All trees and brush within the disturbance corridor shall be hydro-axed or chipped prior to beginning excavation work unless specific trees along the edge of the corridor have been identified as “save” trees for visual mitigation by the BLM. Topsoil stripping shall not be allowed where topsoil windrowing or stockpiling is to occur along the pipeline corridor to retain the root mass of the brush species and enhance the recovery of the hydro-axed vegetation. No equipment or vehicle use shall be allowed outside the staked disturbance corridor of the pipeline ROW unless authorized by BLM personnel for visual mitigation work.
3. Private Landowners and Existing Rights-of-Way. The operator shall obtain agreements allowing construction with all existing authorized surface users of Federal ROW locations prior to surface disturbance or construction of the location, staging areas, or access across or adjacent to any existing ROW locations. In the case of privately owned surface, the operator shall certify to BLM that a Surface Use Agreement has been reached with the authorized surface user prior to construction.
4. Dust Abatement. The operator shall implement dust abatement measures as needed to prevent fugitive dust from vehicular traffic, equipment operations, or wind events. The BLM may direct the operator to change the level and type of treatment (watering or application of various dust agents, surfactants, and road surfacing material) if dust abatement measures are observed to be insufficient to prevent fugitive dust. Posted speed limits on county and private roads shall be strictly followed during all phases of the pipeline project to reduce vehicle speeds and thereby reduce dust along the access roads.
5. Drainage Crossings and Culverts. Construction activities at perennial, intermittent, and ephemeral drainage crossings (e.g., burying pipelines, installing culverts) shall be timed to avoid high flow conditions. Construction that disturbs any flowing stream shall utilize a piped stream diversion (flumed flows) to divert flow around the disturbed area.

Culverts at drainage crossings shall be designed and installed to pass a 25-year or greater storm event. On perennial and intermittent streams, culverts shall be designed to allow for passage of aquatic biota. The minimum culvert diameter in any installation for a drainage crossing or road drainage shall be 24 inches. Crossings of drainages deemed to be jurisdictional waters of the U.S. pursuant to Section 404 of the Clean Water Act may require additional culvert design capacity. Due to the flashy nature of area drainages and anticipated culvert maintenance, the U.S. Army Corps of Engineers (USACE) recommends designing drainage crossings for the 100-year event. Contact the USACE Colorado West Regulatory Branch at 970-243-1199 ext. 17.

Pipelines installed beneath perennial stream crossings shall be buried at a minimum depth of 7 feet below the channel substrate to avoid exposure by channel scour and degradation. At ephemeral and intermittent washes the pipeline shall be buried at a minimum depth of 4 feet below the channel substrate. Following burial, the channel grade and substrate composition shall be returned to pre-construction conditions.

6. Jurisdictional Waters of the United States. The operator shall obtain appropriate permits from the U.S. Army Corps of Engineers (USACE) prior to discharging fill material into jurisdictional waters in accordance with Section 404 of the Clean Water Act. Waters of the U.S. are defined in 33 CFR Section 328.3 and may include wetlands as well as perennial, intermittent, and ephemeral streams. Permanent impacts to Waters of the U.S. may require mitigation. Contact the USACE Colorado West Regulatory Branch at 970-243-1199 ext. 17. Copies of any printed or emailed approved USACE permits or verification letters shall be forwarded to the BLM.
7. Wetlands and Riparian Zones.
  - a. The operator shall restore temporarily disturbed wetlands or riparian areas. The operator shall consult with the BLM Colorado River Valley Field Office (CRVFO) to determine appropriate mitigation, including verification of native plant species to be used in restoration.
  - b. The Operator will implement a Stormwater Management Plan, as per requirements of Garfield County, the Colorado Department of Public Health and Environment (CDPHE), or the Colorado Oil and Gas Conservation Commission (COGCC).
  - c. Water used for hydrostatic testing will be discharged into areas in a manner such that return flows do not directly enter perennial streams, seeps, or ponds.
  - d. To the extent possible, riparian vegetation removed during trenching operations across streams shall be saved and replanted along the stream bank once construction is completed.
  - e. Crossings of all flowing streams and irrigation ditches that are not directionally bored shall be flumed to prevent any disruption in water flow. The trench shall be cut beneath the flume and a dry trench shall be maintained.
  - f. All pipeline welds shall be x-rayed within the Rifle Municipal Watershed and within 100 feet of any perennial or intermittent stream crossing.
  - g. All available topsoil shall be salvaged and respread onsite during ROW reclamation, with a minimum stripping depth of 6 inches.
  - h. Boulders left on the ROW surface during reclamation shall be placed on the landscape in a generally random arrangement, with occasional short alignments of boulders to act as water bars or to block vehicle access.
  - i. All silt fences left onsite during reclamation shall be removed by the end of the first growing season following ROW reclamation.

8. **Reclamation.** The goals, objectives, timelines, measures, and monitoring methods for final reclamation of oil and gas disturbances are described in Appendix I (Surface Reclamation) of the 1998 Draft Supplemental EIS (DSEIS). Specific measures to follow during interim and temporary (pre-interim) reclamation are described below.
- a. **Reclamation Plans.** In areas that have low reclamation potential or are especially challenging to restore, reclamation plans will be required prior to ROW Grant approval. The plan shall contain the following components: detailed reclamation plans, which include contours and indicate irregular rather than smooth contours as appropriate for visual and ecological benefit; seeding; soil test results and/or a soil profile description; amendments to be used; soil treatment techniques such as roughening, pocking, and terracing; erosion control techniques such as hydromulch, blankets/matting, and wattles; and visual mitigations, if in a sensitive Visual Resource Management (VRM) area.
  - b. **Deadline for Reclamation Earthwork and Seeding.** Reclamation, including seeding, of temporarily disturbed areas along roads and pipelines, and of topsoil piles and berms, shall be completed within 30 days following completion of construction. Any such area on which construction is completed prior to December 1 shall be seeded during the remainder of the early winter season instead of during the following spring, unless BLM approves otherwise based on weather. If pipeline construction occurs discontinuously or continuously but with a total duration greater than 30 days, reclamation, including seeding, shall be phased such that no portion of the temporarily disturbed area remains in an unreclaimed condition for longer than 30 days. BLM may authorize deviation from this requirement based on the season, individual reclamation requirements for sensitive areas including sensitive plant species or ecological sites, and the amount of work remaining on the entirety of the road or pipeline when the 30-day period has expired.

The deadlines for seeding described above are subject to extension upon approval of the BLM based on season, timing limitations (TLs), or other constraints on a case-by-case basis. If the BLM approves an extension for seeding, the operator may be required to stabilize the reclaimed surfaces using hydromulch, erosion matting, or other method until seeding is implemented.

- c. **Topsoil Stripping, Storage, and Replacement.** All topsoil shall be stripped following removal of vegetation during construction of pipelines, access roads, or other surface facilities. In areas of thin soil, a minimum of the upper 6 inches of surficial material shall be stripped. The BLM may specify a stripping depth during the onsite visit or based on subsequent information regarding soil thickness and suitability. The stripped topsoil shall be stored separately from subsoil or other excavated material and replaced prior to final seedbed preparation.
- d. **Seedbed Preparation.** For cut-and-fill slopes, initial seedbed preparation shall consist of backfilling and recontouring to achieve the configuration specified in the reclamation plan. For compacted areas, initial seedbed preparation shall include ripping to a minimum depth of 18 inches, with a maximum furrow spacing of 2 feet. Where practicable, ripping shall be conducted in two passes at perpendicular directions. Following final contouring, the backfilled or ripped surfaces shall be covered evenly with topsoil.

Final seedbed preparation shall consist of scarifying (raking or harrowing) the spread topsoil prior to seeding. If more than one season has elapsed between final seedbed preparation and seeding, and if the area is to be broadcast-seeded or hydroseeded, this step shall be repeated no more than 1 day prior to seeding to break up any crust that has formed.

If directed by the BLM, the operator shall implement measures following seedbed preparation (when broadcast-seeding or hydroseeding is to be used) to create small depressions to enhance capture of moisture and establishment of seeded species. Depressions shall be no deeper than 1 to 2 inches and shall not result in piles or mounds of displaced soil. Excavated depressions shall not be used unless approved by the BLM for the purpose of erosion control on slopes. Where excavated depressions are approved by the BLM, the excavated soil shall be placed only on the downslope side of the depression.

If directed by the BLM, the operator shall conduct soil testing prior to reseeding to identify if and what type of soil amendments may be required to enhance revegetation success. At a minimum, the soil tests shall include texture, pH, organic matter, sodium adsorption ratio (SAR), cation exchange capacity (CEC), alkalinity/salinity, and basic nutrients (nitrogen, phosphorus, potassium [NPK]). Depending on the outcome of the soil testing, the BLM may require the operator to submit a plan for soil amendment. Any requests to use soil amendments not directed by the BLM shall be submitted to the CRVFO for approval.

Seedbed preparation is not required for topsoil storage piles or other areas of temporary seeding.

- e. Seed Mixes. A seed mix consistent with BLM standards in terms of species and seeding rate for the specific habitat type shall be used on all BLM lands affected by the project (see Attachment 1 of the letter provided to operators dated April 6, 2012). Note that temporary seeding no longer allows the use of sterile hybrid non-native species.

For private surfaces, the menu-based seed mixes are recommended, but the surface landowner has ultimate authority over the seed mix to be used in reclamation. The seed shall contain no noxious, prohibited, or restricted weed seeds and shall contain no more than 0.5% by weight of other weed seeds. Seed may contain up to 2.0% of "other crop" seed by weight, including the seed of other agronomic crops and native plants; however, a lower percentage of other crop seed is recommended. Seed tags or other official documentation shall be submitted to BLM at least 14 days before the date of proposed seeding for acceptance. Seed that does not meet the above criteria shall not be applied to public lands.

- f. Seeding Procedures. Seeding shall be conducted no more than 24 hours following completion of final seedbed preparation.

Where practicable, seed shall be installed by drill-seeding to a depth of 0.25 to 0.5 inch. Where drill-seeding is impracticable, seed may be installed by broadcast-seeding at twice the drill-seeding rate, followed by raking or harrowing to provide 0.25 to 0.5 inch of soil cover or by hydroseeding and hydromulching. Hydroseeding and hydromulching shall be conducted in two separate applications to ensure adequate contact of seeds with the soil.

If interim revegetation is unsuccessful, the operator shall implement subsequent reseeds until interim reclamation standards are met.

- g. Mulch. Mulch shall be applied within 24 hours following completion of seeding. Mulch may consist of either hydromulch or of certified weed-free straw or certified weed-free native grass hay crimped into the soil.

NOTE: Mulch is not required in areas where erosion potential mandates use of a biodegradable erosion-control blanket (straw matting).

- h. Erosion Control. Cut-and-fill slopes shall be protected against erosion with the use of water bars, lateral furrows, or other measures approved by the BLM. Cut-and-fill slopes along drainages or in areas with high erosion potential shall also be protected from erosion using hydromulch designed specifically for erosion control or biodegradable blankets/matting, bales, or wattles of weed-free straw or weed-free native grass hay. A well-anchored fabric silt fence shall also be placed at the toe of cut-and-fill slopes along drainages or to protect other sensitive areas from deposition of soils eroded off the slopes. Additional BMPs shall be employed as necessary to reduce soil erosion and offsite transport of sediments.
- i. Monitoring. The operator shall conduct annual monitoring surveys of all sites categorized as “operator reclamation in progress” and shall submit an annual monitoring report of these sites to the BLM by **December 31** of each year. The monitoring program shall use the four Reclamation Categories defined in Appendix I of the 1998 DSEIS to assess progress toward reclamation objectives. The annual report shall document whether attainment of reclamation objectives appears likely. If one or more objectives appear unlikely to be achieved, the report shall identify appropriate corrective actions. Upon review and approval of the report by the BLM, the operator shall be responsible for implementing the corrective actions or other measures specified by the BLM.
9. Weed Control. The operator shall regularly monitor and promptly control noxious weeds or other undesirable plant species as set forth in the Glenwood Springs Field Office *Noxious and Invasive Weed Management Plan for Oil and Gas Operators*, dated March 2007. **In locations where Harrington’s penstemon occurs, only directed spot-spraying or wicking shall be used for pesticide application, in order to protect reestablishing plants, and a BLM botanist shall be on site during treatments.** A Pesticide Use Proposal (PUP) must be approved by the BLM prior to the use of herbicides. Annual weed monitoring reports shall be submitted to BLM by **December 1**.
10. Big Game Winter Range. In conformance with the current land use plan that governs ROW actions, all activities related to pipeline construction on the Federal portion of the pipeline route are prohibited from **December 1 to April 30**.
- The operator shall report spills that might affect wildlife (in particular spills that impact water) to the local CPW District Wildlife Manager within 24 hours of detection.
11. Bald and Golden Eagles. It shall be the responsibility of the operator to comply with the Bald and Golden Eagle Protection Act (Eagle Act) with respect to “take” of either eagle species. Under the Eagle Act, “take” includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest and disturb. “Disturb” means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle; (2) a decrease in its productivity by substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior. Avoidance of eagle nest sites, particularly during the nesting season, is the primary and preferred method to avoid a take. Any oil or gas construction, drilling, or completion activities planned within 0.5 mile of a bald or golden eagle nest, or other associated activities greater than 0.5 miles from a nest that may disturb eagles, should be coordinated with the BLM project lead and BLM wildlife biologist and the USFWS representative to the BLM Field Office (970-876-9051).
12. Raptor Nesting. Raptor nest surveys in the project vicinity resulted in the location of one or more raptor nest structures within 0.125 miles of an access road, pipeline, or other surface facility. To protect nesting raptors, a 60-day TL shall be applied to construction activities within the buffer width specified above, if the activities would be initiated during the nesting period of April 1 to June 1. An

exception to this TL may be granted for any year in which a subsequent survey determines one of the following: (a) the nest is in a severely dilapidated condition or has been destroyed due to natural causes, (b) the nest is not occupied during the normal nesting period for that species, (c) the nest was occupied but subsequently failed due to natural causes, or (d) the nest was occupied, but the nestlings have fledged and dispersed from the nest. If project-related activities are initiated within the specified buffer distance of any active nest, even if outside the 60-day TL period, the operator remains responsible for compliance with the Migratory Bird Treaty Act (MBTA) with respect to a “take” of birds or of active nests (those containing eggs or young), including nest failure caused by human activity (see COA for Migratory Birds).

13. Migratory Birds. It shall be the responsibility of the operator to comply with the Migratory Bird Treaty Act (MBTA) with respect to “take” of migratory bird species, which includes injury and direct mortality resulting from human actions not intended to have such result. All mortality or injury to birds shall be reported immediately to the BLM project lead and to the USFWS representative to the BLM Field Office at 970-243-2778 x28 and visit <http://www.fws.gov/mountain-prairie/contaminants/oilpits.htm>.
14. Birds of Conservation Concern. Pursuant to BLM Instruction Memorandum 2008-050, all surface-disturbing activities are prohibited within potential habitat for nesting BCC species from **May 1 to July 1** to reduce impacts to Birds of Conservation Concern (BCC). An exception to this TL will be granted if nesting surveys conducted no more than one week prior to surface-disturbing activities indicate that no BCC species are nesting within 30 meters (100 feet) of the area to be disturbed. Nesting shall be deemed to be occurring if a territorial (singing) male is present within the distance specified above. Nesting surveys shall include an aural survey for diagnostic vocalizations in conjunction with a visual survey for adults and nests. Surveys shall be conducted by a qualified breeding bird surveyor between sunrise and 10:00 AM under favorable conditions for detecting and identifying a BCC species. This provision does not apply to ongoing construction, drilling, or completion activities that are initiated prior to May 1 and continue into the 60-day period at the same location.
15. Range Management. Range improvements (fences, gates, reservoirs, pipelines, etc.) shall be avoided during development of natural gas resources to the maximum extent possible. If range improvements are damaged during exploration and development, the operator will be responsible for repairing or replacing the damaged range improvements. If a new or improved access road bisects an existing livestock fence, steel frame gate(s) or a cattle guard with associated bypass gate shall be installed across the roadway to control grazing livestock.
16. Fossil Resources. All persons associated with operations under this authorization shall be informed that any objects or sites of paleontological or scientific value, such as vertebrate or scientifically important invertebrate fossils, shall not be damaged, destroyed, removed, moved, or disturbed. If in connection with operations under this authorization any of the above resources are encountered the operator shall immediately suspend all activities in the immediate vicinity of the discovery that might further disturb such materials and notify the BLM of the findings. The discovery must be protected until notified to proceed by the BLM.

Where feasible, the operator shall suspend ground-disturbing activities at the discovery site and immediately notify the BLM of any finds. The BLM will, as soon as feasible, have a BLM-permitted paleontologist check out the find and record and collect it if warranted. If ground-disturbing activities cannot be immediately suspended, the operator shall work around or set the discovery aside in a safe place to be accessed by the BLM-permitted paleontologist.

17. **Cultural Education/Discovery.** All persons in the area who are associated with this project shall be informed that if anyone is found disturbing historic, archaeological, or scientific resources, including collecting artifacts, the person or persons will be subject to prosecution.

Pursuant to 43 CFR 10.4(g), the BLM shall be notified by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4 (c) and (d), activities shall stop in the vicinity of the discovery, and the discovery shall be protected for 30 days or until notified by the BLM to proceed.

If in connection with operations under this contract, the operator, its contractors, their subcontractors, or the employees of any of them discovers, encounters, or becomes aware of any objects or sites of cultural value or scientific interest such as historic ruins or prehistoric ruins, graves or grave markers, fossils, or artifacts, the operator shall immediately suspend all operations in the vicinity of the cultural resource and shall notify the BLM of the findings (16 USC 470h-3, 36 CFR 800.112). Operations may resume at the discovery site upon receipt of written instructions and authorization by the BLM. Approval to proceed will be based upon evaluation of the resource. Evaluation shall be by a qualified professional selected by the BLM from a Federal agency insofar as practicable. When not practicable, the operator shall bear the cost of the services of a non-Federal professional.

Within five working days, the BLM will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places
- what mitigation measures the holder will likely have to undertake before the site can be used (assuming that *in-situ* preservation is not necessary)
- the timeframe for the BLM to complete an expedited review under 36 CFR 800.11, or any agreements in lieu thereof, to confirm through the SHPO State Historic Preservation Officer that the findings of the BLM are correct and that mitigation is appropriate

The operator may relocate activities to avoid the expense of mitigation and delays associated with this process, as long as the new area has been appropriately cleared of resources and the exposed materials are recorded and stabilized. Otherwise, the operator shall be responsible for mitigation costs. The BLM will provide technical and procedural guidelines for relocation and/or to conduct mitigation. Upon verification from the BLM that the required mitigation has been completed, the operator will be allowed to resume construction.

Antiquities, historic ruins, prehistoric ruins, and other cultural or paleontological objects of scientific interest that are outside the authorization boundaries but potentially affected, either directly or indirectly, by the Proposed Action shall also be included in this evaluation or mitigation. Impacts that occur to such resources as a result of the authorized activities shall be mitigated at the operator's cost, including the cost of consultation with Native American groups.

Any person who, without a permit, injures, destroys, excavates, appropriates or removes any historic or prehistoric ruin, artifact, object of antiquity, Native American remains, Native American cultural item, or archaeological resources on public lands is subject to arrest and penalty of law (16 USC 433, 16 USC 470, 18 USC 641, 18 USC 1170, and 18 USC 1361).

18. **Visual Resources.** Existing woody vegetation outside the ROW corridor shall be preserved when clearing and grading for the pipeline corridor. The BLM may direct that cleared woody vegetation and rocks within the ROW corridor be salvaged and redistributed over reshaped cut-and-fill slopes

and along the highly visible sections of the pipeline corridor to emulate the texture closer to that of the native landscape and to encourage vegetation growth

To assist with revegetation, root systems shall be left in place where feasible and only removed in the trench construction. Above-ground facilities shall be painted **Shadow Gray** to minimize contrast with adjacent vegetation or rock outcrops.

During construction, the BLM, USFS, and WPX and/or Bargath representatives shall jointly review construction measures to determine effectiveness in meeting visual resource mitigation measures, and if subtle changes in construction techniques are warranted, they could be directed by the BLM Authorized Officer.

19. Windrowing of Topsoil. Topsoil shall also be windrowed, segregated, and stored along pipelines and roads for later spreading across the disturbed corridor during final reclamation. Topsoil berms shall be promptly seeded to maintain soil microbial activity, reduce erosion, and minimize weed establishment.
20. Soils. Cuts and fills shall be minimized when working on erosive soils and slopes in excess of 30 percent. Cut-and-fill slopes shall be stabilized through revegetation practices with an approved seed mix shortly following construction activities to minimize the potential for slope failures and excessive erosion. Fill slopes adjacent to drainages shall be protected with well-anchored silt fences, straw wattles, or other acceptable BMPs designed to minimize the potential for sediment transport. On slopes greater than 50 percent, BLM personnel may request a professional geotechnical analysis prior to construction.

When saturated soil conditions exist on or along the proposed ROW, construction shall be halted until soil material dries out or is frozen sufficiently for construction to proceed without undue damage and

#### **BLM SITE-SPECIFIC COAS APPLICABLE TO BARGATH KOKOPELLI PHASE II GAS PIPELINE**

1. Cultural Resources. Although the pipeline alignment has been rerouted to avoid all known eligible sites, a portion does come very near to the site boundary for the National Register of Historic Places (NRHP) eligible site 5GF4627, and is within the standard 100 meter buffer zone the BLM CRVFO usually requires around eligible or potentially eligible sites. Therefore, safety fencing shall be erected along the boundary of the site nearest to construction.

Archaeological monitoring will be required during all ground disturbing activities in the pipeline right-of-way in the vicinity of 5GF4627 (NW $\frac{1}{4}$  and NW $\frac{1}{4}$ SE $\frac{1}{4}$ , Section 11, T7S, R94W) to determine if subsurface components of this site extend beyond the current site boundary. Monitoring shall be conducted by an archaeological firm qualified and permitted to do such archaeological work within the CRVFO area. To further protect this specific site, both the WPX and Bargath pipelines shall be installed concurrently in the same trench during the 2012 construction season to avoid repeated disturbance when the gas pipeline project is installed in 2013 or later.

No ground-disturbing construction activities (clearing, grading, trenching, etc.) shall begin prior to the archaeologist's arrival. The proponent is responsible for notifying the archaeological firm at least 72 hours in advance of any ground disturbance in the specified area. The proponent is responsible for all construction delays and or damage to cultural manifestations due to insufficient notification of the Archaeological Contractor, noncompliance with the following procedures, or damage to cultural manifestations.

Archaeological monitoring will involve on the ground visual inspection of all construction for the pipeline within the above specified area. If a cultural feature(s) is identified, all ground disturbing activities in the vicinity of identified feature(s) will be halted and a buffer area at least 100 feet from the identified feature(s) will be protected from any additional disturbance until which time as the feature(s) are mitigated via data recovery. Appropriate samples for analyses to determine cultural/temporal affiliation, subsistence, will be taken as appropriate, including at least one stratigraphic profile for each feature identified.

Once all ground disturbing activity is complete the archaeological contractor will produce and submit one draft written report. Upon acceptance of the report, two reports will be submitted, one for the BLM and one for the SHPO. This report must be in a contextual framework that is compatible with known archaeological knowledge of the area and the Northern Colorado River Basin Context.

2. Realty Authorizations.

Agreements with Other Holders. Potential impacts to the existing BLM ROWs from the lease operations proposed by WPX Energy or by the rights-of-way to be authorized to Energy Transfer in the FMMDP would be mitigated based on written maintenance and use agreements between Bargath, WPX Energy, Energy Transfer, and the existing ROW holders. Such agreements shall be obtained and verified with the BLM prior to any disturbance or construction across or adjacent to an existing right-of-way.

Restoration of Beaver Creek Grass Mesa Ditch. Prior to initiating construction across or alongside this ditch, representatives for Bargath, BLM and the ditch owners shall meet at the site, identify the ditch course and identify specific reclamation measures following pipeline construction so the ditch course is well-established and allowed to flow water freely without impediments. The length of the existing ditch alongside the pipeline corridor could reach 1,200 feet. Pipeline locations and marking along this stretch of ditch course and pipeline right-of-way will be required prior to any surface disturbance.

3. Stream Crossings. At all stream crossings, construction shall occur as presented in the Nationwide Permit #12 Verification Request and Preliminary Jurisdictional Determination (WWE 2012e).
- a. Crossings shall be accomplished during low flow periods (prior to April 15, or after spring runoff). In addition, no construction shall take place that affects Beaver Creek for the time interval beginning the second week in June through the end of August. Protection of the aquatic environment during this time frame will help protect cutthroat trout eggs and fry. Whirling disease is a concern in any trout stream in western Colorado.
  - b. Along steep slopes and/or riparian areas, the width of disturbance shall be reduced to the maximum degree possible.
  - c. Reclamation at Beaver Creek shall be directed by the site-specific Habitat Enhancement and Restoration Plan (WWE 2012) and shall include the use of recommended disinfectants on all equipment, personnel, and any materials used during the construction of the pipeline in this area.
  - d. All other perennial creeks shall be crossed via a temporary flumed crossing method. At flumed crossings, the ditch will be dug 7-foot deeper than the lowest part of the channel for pipe placement. Non-flowing stream crossings shall be crossed using the typical open-cut crossing method. Revegetation and recontouring shall be accomplished to approximate original conditions.
  - e. Equipment mats shall be used under all vehicles in wetland areas to minimize disturbance.
  - f. All soil removed from the ditch shall be placed in uplands until the pipeline is in place and back filling begins. Stockpiled soils shall be returned to the trench in reverse order of excavation.

- g. Vegetation and topsoil shall be distributed once the ditch has been backfilled and the channel returned to its pre-existing condition. Wetland vegetation shall be placed at the surface upon completion. Stream banks leading into the channel shall be graded no steeper than 2:1 after completion of construction.
- h. The proponents shall submit before and after photos to the COE for verification of stream and wetland remediation once it has been completed, if required. Existing contours below the ordinary high water mark shall be restored at all crossings.
4. Seed Mixes. For all BLM lands disturbed by the proposed project, Bargath shall use a seed mix consistent with BLM standards in terms of species and seeding rate for the Pinyon-Juniper Woodland and Mixed Mountain Shrub habitat types (Tables A-1 and A-2).

<b>Table A-1. Pinyon-Juniper Woodland</b>					
<i>Common Name</i>	<i>Scientific Names</i>	<i>Variety</i>	<i>Season</i>	<i>Form</i>	<i>PLS lbs/acre*</i>
<b>Plant Both of the Following (15% Each, 30% Total)</b>					
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	VNS	Cool	Bunch	2.0
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i>	Secar, P-7, Anatone, Goldar	Cool	Bunch	2.8
<b>and Two of the Following (20% Each, 40% Total)</b>					
Thickspike Wheatgrass	<i>Elymus lanceolatus ssp. lanceolatus</i>	Critana, Bannock, Schwendimar	Cool	Sod-forming	3.4
Slender Wheatgrass	<i>Elymus trachycaulus</i>	Revenue, Pryor	Cool	Bunch	3.3
Western Wheatgrass	<i>Pascopyrum smithii</i>	Rosana, Arriba	Cool	Sod-forming	4.8
<b>and Two of the Following (15% Each, 30% Total)</b>					
Indian Ricegrass	<i>Achnatherum hymenoides</i>	Paloma, Rimrock	Cool	Bunch	2.8
Galleta	<i>Pleuraphis jamesii</i>	Viva florets	Warm	Bunch/ Sod-forming	2.5
Muttongrass	<i>Poa fendleriana</i>	VNS	Cool	Bunch	0.4
Sandberg Bluegrass	<i>Poa sandbergii, Poa secunda</i>	VNS	Cool	Bunch	0.4
*Based on 60 pure live seeds (PLS) per square foot, drill-seeded. Double this rate (120 PLS per square foot) if broadcast or hydroseeded					

<b>Table A-2. Mixed Mountain Shrub</b>					
<i>Common Name</i>	<i>Scientific Names</i>	<i>Variety</i>	<i>Season</i>	<i>Form</i>	<i>PLS lbs/acre*</i>
<b>Plant Both of the Following (20% Each, 40% Total)</b>					
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	VNS	Cool	Bunch	2.7
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i>	Secar, P-7, Anatone, Goldar	Cool	Bunch	3.7
<b>and Two of the Following (15% Each, 30% Total)</b>					
Thickspike Wheatgrass	<i>Elymus lanceolatus ssp. lanceolatus</i>	Critana, Bannock, Schwendimar	Cool	Sod-forming	2.5

<b>Table A-2. Mixed Mountain Shrub</b>					
<i>Common Name</i>	<i>Scientific Names</i>	<i>Variety</i>	<i>Season</i>	<i>Form</i>	<i>PLS lbs/acre*</i>
Slender Wheatgrass	<i>Elymus trachycaulus</i>	San Luis	Cool	Bunch	2.5
Western Wheatgrass	<i>Pascopyrum smithii</i>	Arriba, Rosana	Cool	Sod-forming	3.6
<b>and One of the Following (10% Total)</b>					
Big Bluegrass	<i>Poa ampla</i>	Sherman	Cool	Bunch	0.3
Canby Bluegrass	<i>Poa canbyi, P. secunda</i>	Canbar	Cool	Bunch	0.3
Muttongrass	<i>Poa fendleriana</i>	VNS	Cool	Bunch	0.3
<b>and One of the Following (10% Total)</b>					
Letterman Needlegrass	<i>Achnatherum lettermanii</i>	VNS	Cool	Bunch	1.7
Columbia Needlegrass	<i>Achnatherum nelsonii, Stipa columbiana</i>	VNS	Cool	Bunch	1.7
Green Needlegrass	<i>Nassella viridula</i>	Lodorm, Cucharas	Cool	Bunch	1.4
<b>and One of the Following (10% Total)</b>					
Indian Ricegrass	<i>Achnatherum hymenoides</i>	Nezpar, Paloma, Rimrock	Cool	Bunch	1.9
Junegrass	<i>Koeleria macrantha</i>	VNS	Cool	Bunch	0.1
*Based on 60 pure live seeds (PLS) per square foot, drill-seeded. Double this rate (120 PLS per square foot) if broadcast or hydroseeded					

5. Protections for Special Status Plant Species.

Ute Ladies'-tresses Orchid (Federally listed as Threatened) – No ground-disturbing activities shall occur in areas of the pipeline alignment that would cross drainages on private lands providing suitable habitat for the Ute ladies'-tresses orchid (*Spiranthes diluvialis*), as indicated on project maps to be provided by the BLM, until completion of Section 7 consultation with the USFWS and incorporation into project design of conservation (mitigation) measures resulting from the Section 7 process.

Harrington's Penstemon (Listed by BLM and USFS as Sensitive) – The Operator shall incorporate the following steps to avoid and minimize impacts to Harrington's penstemon:

- a. Prework Meeting Regarding Restricted Pipeline Working Area. A pre-construction onsite meeting with the BLM ecologist shall be held with field representatives of WPX during 2012 and Bargath during 2013 or later to review and make final determinations regarding the following locations along the ROW, which shall be narrowed to a 50-foot disturbance width to minimize impacts to Harrington's penstemon. Such locations shall be flagged or otherwise delineated prior to or during the pre-construction meeting and shall be approved by the BLM ecologist.

*Flatiron Mesa Population*

- o Reduce construction width from 75 feet to the permanent ROW width of 50 feet from STA 599+40 to STA 608+75 (50 feet width x 935 feet length = 1.073 acre)
- o Reduce construction width from 100 feet to 75 feet from STA 608+75 to STA 609+65 (75 feet x 90 feet = 0.155 acre).

- Shift centerline of revised alignment workspace southwesterly starting with an offset of 33 feet at STA 599+40 and tapering to an offset of 9 feet at STA 608+75. This centerline shift will allow the modified construction workspace on the southwesterly side to coincide with the northwesterly edge of the existing well location access road. This will serve to consolidate and combine existing and new disturbance areas and prevent an undisturbed sliver gap to be created between the two.
- The proposed modification presumes that construction work activities pertaining to travel lane use (movement of stringing trucks, equipment and work vehicles) shall be allowed without restriction on both the existing road and on the reduced width permitted pipeline ROW. As the well location access road present at this ROW section is the only project access available to serve the pipeline ROW between the Grass Mesa ridge line and the Flatiron Mesa/Rudolph Property well location, it is important that full travel lane utility and function be maintained in this area.

*West Porcupine Population.*

- Reduce construction width from 125 feet to 75 feet from STA 809+00 to STA 813+85 (75 feet x 425 feet = 0.732 acres).
  - STA 815+85 to STA 817+85 is to remain unchanged at a width of 75 feet. (75 feet x 460 feet = 0.792 acres). For reasons stated above (terrain, geometry, multiple pipelines installation), reduction of pipeline construction work width less than 75 feet is not reasonable, practical, or safe. This is especially factual in consideration of the need to maintain and establish an exclusive travel lane at this location. The closest points of access to the pipeline ROW are about 0.4 mile back to Porcupine Creek and 1.38 miles ahead to a Spruce Creek area well location.
- b. Weed Control. Pre-treat noxious weeds in the survey area where Harrington's penstemon presence is confirmed prior to construction to minimize the threat to Harrington's penstemon in the area. The BLM Botanist shall be present to monitor the pre-treatment activities in survey areas where the presence of Harrington's penstemon is confirmed.
- Obtain a Pesticide Use Permit (PUP), specific to Harrington's penstemon sites, from the BLM prior to any herbicide treatment of noxious weeds within occupied Harrington's penstemon habitat.
  - Limit noxious weed treatments within occupied Harrington's penstemon habitat to spot spraying or wicking. No broadcast spraying is permitted.
- c. Sensitive Plant Mitigation.

Harrington's Penstemon (BLM and USFS Sensitive) – The operator shall fund the propagation of seed for Harrington's penstemon (*Penstemon harringtonii*). A total of \$25,000 shall be paid by the operators to cover the costs of seed collection in the impacted areas, seed cleaning and testing, nursery planting and five years of seed-increase grow-out, cleaning and testing of produced seed, and field sowing of seed on reclamation sites. The percentage of this \$25,000 shall be divided based on the percentage of anticipated impact on Harrington's penstemon by each operator, so that \$10,500 shall be paid by WPX, and \$14,500 shall be paid by Bargath. Mitigation planting sites shall be within the reclaimed pipeline corridor at or near the locations of impacted Harrington's penstemon occurrences, or, if agreed upon by both the BLM and the operator, in wildlife habitat improvement sites occurring within Harrington's penstemon habitat. Harrington's penstemon seed shall be collected from those plants to be impacted within the pipeline corridor, one year prior to the start of construction.

Within sections of the pipeline corridor occupied by Harrington’s penstemon, the seed mix shown in Table A-3 shall be used instead of CRVFO’s standard menu-based seed mix.

<b>Table A-3. Seed Mix for Initial Seeding of Harrington’s Penstemon Sites<sup>1</sup></b>				
<i>Common Name</i>	<i>Scientific Name</i>	<i>Variety</i>	<i>Season</i>	<i>Form</i>
<b>Choose Five Grasses (50% of Total PLS)</b>				
Bottlebrush Squirreltail	<i>Elymus elymoides, Sitanion hystrix</i>	VNS	Cool	Bunchgrass
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata, Agropyron spicatum</i>	Secar, P-7, Anatone, Goldar	Cool	Bunchgrass
Indian Ricegrass	<i>Achnatherum [Oryzopsis] hymenoides</i>	Paloma, Rimrock	Cool	Bunchgrass
Needle and Thread Grass	<i>Hesperostipa [Stipa] comata</i>	VNS	Cool	Bunchgrass
Junegrass	<i>Koeleria macrantha</i>	VNS	Cool	Bunchgrass
Columbia Needlegrass	<i>Achnatherum nelsonii, Stipa columbiana</i>	VNS	Cool	Bunchgrass
Muttongrass	<i>Poa fendleriana</i>	VNS	Cool	Weakly Rhizomatous
<b>Choose Three Forbs (30% of Total PLS)</b>				
Arrowleaf Balsamroot	<i>Balsamorhiza sagittata</i>	Rocky Mountain Beeplant	<i>Cleome serrulata</i>	
Silverleaf Lupine	<i>Lupinus argenteus</i>	Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	
Fernleaf Biscuitroot	<i>Lomatium dissectum</i>	Sulphur Flower Buckwheat	<i>Eriogonum umbellatum</i>	
<b>Include One Shrub (20% of Total PLS)</b>				
Fourwing Saltbush	<i>Atriplex canescens</i>	NA	NA	
<sup>1</sup> Because Harrington’s penstemon was confirmed along the pipeline route: (a) it shall be broadcast seeded into formerly occupied areas using seeds from the Meeker Plant Materials Center when available; and (b) mountain big sagebrush ( <i>Artemisia tridentata</i> spp. <i>vaseyana</i> ) shall be broadcast seeded into the reclaimed area prior to snowfall using seeds collected along corridor.				

A minimum of five grass, three forb, and one shrub species shall be included in the seed mix initially installed by drill-seeding or hydroseeding (Table A-3). Seeding shall be at the rate of 60 pure live seeds (PLS) per square foot if drill-seeded and 120 PLS per square foot if broadcast-seeded or hydroseeded where drill-seeding is impracticable. If hydroseeding is used, application of seeds shall be performed as a separate step from application of hydromulch. In addition, seeds of mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) shall be collected from plants in the vicinity of the pipeline corridor and seeded within 6 months of collection. Sagebrush seeding shall occur prior to winter snowfall, or on top of snow. Sagebrush may be sown either by broadcast seeding, or, if not on snowpack, by placing the seed in the fluffy seed box of a seed drill, with the drop tube left open to allow seed to fall out on the ground surface.

6. Visual Resources

Spruce Creek to Porcupine Creek (STA 806+00 to 916+00)

Prior to construction, areas where dense vegetation will be cleared shall be identified and staked so that the adjacent vegetation can be thinned during pioneering of the pipeline corridor to soften the

strong linear line created between new the construction and existing vegetation. The woody debris from the thinned areas shall be stockpiled for dispersing over seeded areas during interim reclamation.

Areas identified for thinning and feathering should be designed to avoid areas where there are populations of *Penstemon harringtonii*. (Stationing 809+00 to 813+85 where the Kokopelli II corridor is not to exceed 75 feet in width).

All woody vegetation (live and dead) shall remain standing at the toe of the fill slope and the top of the cut slope to provide visual screening. Care shall be taken to preserve the integrity of the stands.

#### *Flatiron Mesa-Grass Mesa to the WRNF Boundary*

East-west alignment (STA 505+00 to Station 546+00) - prior to construction, areas where dense vegetation will be cleared shall be identified and staked so that the adjacent vegetation can be thinned during pioneering of the pipeline corridor to soften the strong the strong linear line created between new the construction and existing vegetation. The woody debris from the thinned areas shall be stockpiled for dispersing over seeded areas during interim reclamation.

North-south alignment (STA 459+00 to 505+00) - Rocks saved during construction shall be placed "white side down" on the pipeline corridor during interim reclamation to reduce the amount of color contrast with the surrounding landscape and to deter off-road travel. Rocks and woody debris shall be replaced on the pipeline corridor to emulate the texture closer to that of the native landscape and to encourage vegetation growth. Placement of rocks and woody debris on the pipeline corridor will also deter off-road travel, which will prevent additional surface disturbance, expansion of the corridor and visual impacts.

#### *West Mamm Creek BLM Parcel*

The existing stand of pinyon and juniper trees along the western edge of the existing Encana F24W pad access road (SW1/2 SW1/4 Section 24 T7S R93W; near STA 277+00) shall be preserved and remain undamaged during construction to provide visual screening into the project area from the west.

All woody vegetation (live and dead) shall remain standing at the toe of the fill slope and the top of the cut slope to provide visual screening (STA 268+00 to Station 280+00). Care shall be taken to preserve the integrity of the stands.

### 7. Livestock Grazing Controls.

#### *Grass Mesa Allotment Fencing and Steel Frame Gate Installation*

At STA 500+00 the proposed pipeline crosses an existing range fence that is planned for new alignment change in summer 2012. Depending on the progress of the new BLM fence line along the Grass Mesa Road in 2012, the existing fence shall be abandoned if the new fence alignment is installed. If the new range fence along Grass Mesa Road is not installed when the pipeline is constructed, the fence that is breached at this stationing shall remain operational if grazing livestock are present and reestablished during reclamation in its present location.

Furthermore, the existing wire gate across the 2-track road and pipeline corridor located at approximate STA 508+00 shall be relocated near the Grass Mesa Road and upgraded to a steel frame

gate with supporting H-braces. Actual location of the new gate will be determined in the field by BLM. The new gate location is intended to be installed directly into the new 2012 BLM fence alignment planned along the Grass Mesa Road. Moving the gate to the new location will provide better vehicle control onto the reclaimed pipeline corridor and establish the gate for the new BLM allotment boundary fence. The steel frame gate with H-brace supports shall be installed across the existing 2-track which parallels the existing pipeline and near the Grass Mesa Road.

*Porcupine Creek Allotment Fencing.*

Near STA 805+35 where the Kokopelli II line leaves the existing ETC pipeline corridor, a typical 4-strand barb wire drift fence shall be installed across the existing pipeline ROW and along the existing Kokopelli II alignment to the north to deter grazing livestock from drifting down the new and existing pipeline corridors into Porcupine Creek. The final location of the range drift fence shall be determined by livestock permittee or BLM range staff. Additionally, the existing range allotment fence to be bisected by the proposed pipeline near STA 834+00 shall be repaired and remain in functioning form after the pipeline is installed. If grazing livestock are present during the pipeline construction, efforts shall be made to keep livestock from passing through the breached fence with temporary fencing.

*Access Road to Federal 7-94 Well Pad (T7S R94W Section 4, SW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>).*

To reduce livestock trespass on nearby private land, WPX and Bargath shall ensure that the existing steel frame gates installed across the Federal 7-94 pad access road shall remain closed during active livestock grazing season except when vehicles or equipment are passing through the gates.

8. Construction Coordination with Nearby Projects. During the pre-construction meeting for the Kokopelli II pipeline, Bargath shall supply a projected work schedule itemizing the construction plans and time period (in weeks) that work would occur on NFS land in Section 21, T7S, R93W and BLM land in Sections 8, 9, and 16, T7S, R93W. This notification is requested to gauge if other pipeline or well drilling plans involving these areas are also planned at the same time period. Should other construction projects be ongoing during the projected pipeline work, particularly pipeline trenching, pipe delivery and welding, than coordination with other users shall be required to provide orderly traffic control and minimize impacts to nearby users and residents.
9. Noise and Traffic Calming. To mitigate noise impacts to recreational users in the area, Bargath shall instruct its employees and contractors that use of engine braking by trucks serving the project area is not allowed on BLM roads. To avoid conflicts with vehicular traffic accessing nearby private land, Bargath shall implement signing and traffic control measures during pipeline construction. Bargath shall obtain approved access, overweight load, and utility permits from Garfield County and shall adhere to Garfield County safety and road maintenance requirements including dust abatement.
10. Porcupine Creek Project Access. Truck and equipment access to the planned pipeline alignment in vicinity of Porcupine Creek shall be limited only to the existing ETC pipeline corridor. No use of the existing 2-track route south of Encana's RD11 pad shall be authorized.
11. Treatment of Boulders. It is difficult to predict the amount of boulders that will be generated by the pipeline excavation work. However, boulders that are generated on the project shall be used to armor and line drainages, provide impediments to motorized travel onto or along the pipeline right-of-way, or in the vicinity of the Grass Mesa ditch, possibly used to line or armor the ditch course if that proves amenable to the parties. Boulders shall always be bedded into the ground with the white or lightest

side of the rock face facing down or away from the viewing area. In certain instances, boulders shall be scattered across the pipeline disturbance corridor as directed by the BLM Authorized Officer.

12. Environmental Monitoring. Third-party Environmental Inspector(s) (EI) shall be retained by Bargath to inspect the construction and pipeline contractors' operations for compliance with all provisions of this plan. In addition, Federal, state, county, and local fire control agencies may perform inspections in areas under their jurisdiction and at their discretion.
  - a. The contractor shall inform all crews of requirements relating to resource protection. All construction personnel who operate ground-disturbing equipment will receive special instruction as to the types of possible environmental situations that may be encountered, including but not limited to, Threatened and Endangered (T&E) plant or wildlife species, erosion controls, wetlands, and other environmental concerns. They shall be aware of the correct the procedures to be followed if they encounter any concerns. All employees on the project shall be informed of the BLM's and the EI's authority to halt work. All personnel shall be informed that they are subject to prosecution for knowingly disturbing any environmentally sensitive species or areas. Violation may result in removal from the project and/or may result in civil or criminal penalties.
  - b. The EI shall document daily monitoring activities on appropriate daily monitoring report forms. Documentation may include digital photographs, as deemed appropriate. A copy of the daily report shall be delivered the BLM the following day, either in the form of a hard copy or electronically delivered.
  - c. The EI shall have a visible presence on the project. During construction, the EI shall observe and document environmental compliance, as well as actively identify and anticipate potential environmental compliance concerns ahead of construction.
  - d. Environmental and construction representatives shall interact daily and shall ensure that verbal discussions and written documentation are responsive at all times. All project personnel shall interact as frequently as necessary to ensure that environmental information, concerns, and issues requiring resolution are communicated in a timely manner. The EI shall represent the BLM during environmental oversight and coordinate on a regular basis with the construction inspectors to ensure that they are aware of the status of environmental issues in their respective areas.
  - e. If the EI has any concerns that are not being adequately addressed, the EI shall meet with the BLM to discuss the situation and determine what, if anything, needs to be addressed in order to maintain the appropriate environmental compliance.
  - f. The holder shall not fire, lay off, or suspend the EI without prior permission of the BLM and shall not interfere with or attempt to influence the EI in his/her performance of the duties related to this project.

#### **USFS-WRNF SITE-SPECIFIC COAS APPLICABLE TO BARGATH KOKOPELLI PHASE II GAS PIPELINE**

1. Drainage Crossings and Culverts. On U.S. Forest Service (USFS) land, the minimum diameter of culverts in roads shall be 18 inches for ditch relief and 24 inches for side drainage relief. Culvert inlets and outlets shall be armored; outlets in cross drainages shall be armored a distance of 10 feet along the drainage.
2. Archeological Monitoring during Construction (Section 21). Cultural monitor with an archaeological firm qualified and permitted to do such archaeological work within the Colorado River Valley Field

Office (CRVFO) area would be required during initial surface disturbance work including topsoil stripping and final trenching on National Forest land within dense oakbrush thickets that were not included in the original cultural resource Class III inventory which would generally cover the pipeline alignment from STA 417+25 west to STA 430+00 as shown on D.R. Griffin's Pipeline alignment sheet 10 of 26 (dated 11/7/11).

No ground disturbing construction activities (topsoiling, grading, ditching, etc.) will begin prior to the archaeologist's arrival. The proponent is responsible for notifying the archaeological firm at least 72 hours in advance of any ground disturbance in the specified areas. The proponent is responsible for all construction delays and/or damage to cultural manifestations due to insufficient notification of the Archaeological Contractor, noncompliance with the following procedures, or damage to cultural manifestations.

Archaeological monitoring will involve on-the-ground visual inspection of all construction for the pipeline within the above specified area. All ground disturbing activities in the vicinity of any identified cultural feature(s) will be halted and a buffer area at least 100 feet from the identified feature(s) will be protected from any additional disturbance until such time as the feature(s) are mitigated via data recovery. Appropriate samples for analyses to determine cultural/temporal affiliation, subsistence, at least one stratigraphic profile will be made for each feature identified. Reporting to the BLM archaeologist of progress and findings will be conducted as deemed necessary by the BLM AO.

Once all ground disturbing activity is complete the archaeological contractor will produce and submit one draft written report. Upon acceptance of the report, two reports will be submitted, one for the BLM and one for the SHPO. This report must be in a contextual framework that is compatible with known archaeological knowledge of the area and the Northern Colorado River Basin Context.

3. Seed Mixes. For all WRNF lands disturbed by the proposed project, Bargath shall use a seed mix consistent with BLM standards in terms of species and seeding rate for the Mixed Mountain Shrub habitat type, plus 0.1 PLS lbs/acre of mountain big sagebrush.
4. Road Use Permit. Prior to use of the West Mamm Creek Road (NFSR 818), a Road Use Permit must be obtained from the USFS.
  - a. Components of the permit include the following:
    - A structural analysis of NFSR 818 based on estimated traffic loads. The structural analysis must be prepared and signed by a Professional Civil Engineer licensed in the State of Colorado.
    - The survey and design of the curve and stream crossing (just prior to the temporary access road) for the purpose of accommodating trucks turning off or onto NFSR 818. The design must be prepared and signed by a Professional Civil Engineer licensed in the State of Colorado.
    - An operating plan and a traffic control plan prepared and signed by a Professional Civil Engineer licensed in the State of Colorado must be submitted and approved by the USFS designated representative.
    - Proof of liability insurance and a performance bond or other surety must be submitted prior to approval of the Road Use Permit.

- b. Reconstruction of the curve and stream crossing must occur prior to use of NFSR 818 by any vehicle larger than a pickup truck accessing the temporary access road.
  - c. The entire length and width of the turnout located just prior to the temporary access road will be surfaced with 3 inch minus pit run material meeting the specifications as outlined in the Road Use Permit.
  - d. No pipeline related traffic will be allowed past the temporary access road (approximately 0.3 miles from the forest boundary) without written approval.
  - e. Except in an emergency, no over-legal vehicles will be allowed to travel on NFSR 818 without written approval.
  - f. Bargath will be responsible for structural reinforcement of the travel way (if needed), surface rock replacement and road maintenance at intervals as determined by the USFS designated representative. If road damage occurs and is not repaired by Bargath in a timely manner, the performance bond will be used.
  - g. No spoils from pipeline construction will be allowed to be placed on the travel way.
5. Range Management. The stock pond located adjacent to the pipeline ROW in Section 21 would be cleaned by Bargath when equipment capable of performing the maintenance is working in the vicinity. The USFS will be notified prior to performing the work to allow for personnel to be on-site during pond maintenance.
6. Visual Resources (Station 417+00 to Station 459+00). Slash should be lopped and randomly scattered over disturbed areas to mimic the adjacent environment. Lop and scatter slash consisting of trees, shrubs, and limbs to no higher than 18 inches in height. Excess slash may be buried, burned, or used for firewood gathering. Forest Plan guidance regarding coarse woody debris will be met.
- a. Stumps should be cut as low as possible to the ground to minimize visual impact. Stumps adjacent to the West Mamm Creek Road (NSFR 818) and within 100 feet should be 8 inches or less. Beyond 100 feet and all other areas should be 12 inches or less.
  - b. Root wads created by any tree clearing activities that are visible in the foreground of open system roads shall be buried or otherwise removed from sight.
  - c. All equipment and construction debris (human-caused debris and trash, including old culverts) caused by pipeline construction operations shall be removed from the site at project completion.
  - d. All facilities including the metering facility, launcher/receiver, and associated valve set at a given site shall be painted the same color, as follows: Federal Standard colors 34095 for aspen/oak/sagebrush sites and 34083 for spruce/fir sites in a “flat” finish so it is non-reflective. Any existing facilities that do not match standard colors should be repainted. This applies to all above surface structures. If possible, the metering facility shall be located to utilize vegetation for screening off the road.
  - e. To assist with revegetation, root systems shall be left in place where feasible and only removed in the trench construction. The herbaceous vegetative crown shall be maintained to the extent possible where blading of the ROW and extra workspaces are not necessary.

**BLM-CRVFO SITE-SPECIFIC COAS APPLICABLE TO SPRUCE CREEK – BEAVER CREEK WATER PIPELINES**

1. Cultural Resources. Although the pipeline alignment has been rerouted to avoid all known eligible sites, a portion does come very near to the site boundary for the National Register of Historic Places

(NRHP) eligible site 5GF4627, and is within the standard 100 meter buffer zone the BLM CRVFO usually requires around eligible or potentially eligible sites. Therefore, safety fencing shall be erected along the boundary of the site nearest to construction. Archaeological monitoring will be required during all ground disturbing activities in the pipeline right-of-way in the vicinity of 5GF4627 (NW1/4 of the SE1/4 of the NW1/4 of Section 11, T. 7 S., R. 94 W) to determine if there are subsurface components of this site which extend beyond the current site boundary. Monitoring will be conducted by an archaeological firm qualified and permitted to do such archaeological work within the CRVFO area. To further protect the site, both WPX's and Bargath's pipelines shall be installed concurrently in the same trench during the 2012 construction season to avoid repeated disturbance when the gas pipeline project is installed in 2013 or later.

No ground disturbing construction activities (clearing, grading, trenching, etc.) will begin prior to the archaeologist's arrival. The proponent is responsible for notifying the archaeological firm at least 72 hours in advance of any ground disturbance in the specified area. The proponent is responsible for all construction delays and or damage to cultural manifestations due to insufficient notification of the Archaeological Contractor, noncompliance with the following procedures, or damage to cultural manifestations.

Archaeological monitoring will involve on the ground visual inspection of all construction for the pipeline within the above specified area. If a cultural feature(s) is identified, all ground disturbing activities in the vicinity of identified feature(s) will be halted and a buffer area at least 100 feet from the identified feature(s) will be protected from any additional disturbance until which time as the feature(s) are mitigated via data recovery. Appropriate samples for analyses to determine cultural/temporal affiliation, subsistence, will be taken as appropriate, including at least one stratigraphic profile for each feature identified.

Once all ground disturbing activity is complete the archaeological contractor will produce and submit one draft written report. Upon acceptance of the report, two reports will be submitted, one for the BLM and one for the SHPO. This report must be in a contextual framework that is compatible with known archaeological knowledge of the area and the Northern Colorado River Basin Context.

2. Agreements with Other Right-of-Way Holders. Potential impacts to the existing BLM ROWs from the lease operations proposed by WPX Energy or by the rights-of-way to be authorized to Energy Transfer in the FMMDP would be mitigated based on written maintenance and use agreements between WPX Energy, Energy Transfer, and the existing ROW holders. Such agreements shall be obtained and verified with the BLM prior to any disturbance or construction across or adjacent to an existing right-of-way.
3. Stream Crossings: At all stream crossings, construction shall occur as presented in the Nationwide Permit #12 Verification Request and Preliminary Jurisdictional Determination (WWE 2012e).
  - a. Crossings shall be accomplished during low flow periods (prior to April 15, or after spring runoff). Along steep slopes and/or riparian areas, the width of disturbance shall be reduced to the maximum degree possible.
  - b. All perennial creeks shall be crossed via a temporary flumed crossing method. At flumed crossings, the ditch will be dug 7-feet deeper than the lowest part of the channel for pipe placement. Non-flowing stream crossings shall be crossed using the typical open-cut crossing method. Revegetation and recontouring shall be accomplished to approximate original conditions.
  - c. Equipment mats shall be used under all vehicles in wetland areas to minimize disturbance.
  - d. All soil removed from the ditch shall be placed in uplands until the pipeline is in place and back filling begins. Stockpiled soils shall be returned to the trench in reverse order of excavation.

- e. Vegetation and topsoil shall be distributed once the ditch has been backfilled and the channel returned to its pre-existing condition. Wetland vegetation shall be placed at the surface upon completion. Stream banks leading into the channel shall be graded no steeper than 2:1 after completion of construction.
  - f. The proponents shall submit before and after photos to the COE for verification of stream and wetland remediation once it has been completed, if required. Existing contours below the ordinary high water mark shall be restored at all crossings.
4. Seed Mixes. For all BLM lands disturbed by the proposed project, WPX Energy shall use a seed mix consistent with BLM standards in terms of species and seeding rate for the Pinyon-Juniper Woodland and Mixed Mountain Shrub habitat types (Table A-1 and Table A-2).

<b>Table A-1. Pinyon-Juniper Woodland</b>					
<i>Common Name</i>	<i>Scientific Names</i>	<i>Variety</i>	<i>Season</i>	<i>Form</i>	<i>PLS lbs/acre*</i>
<b>Plant Both of the Following (15% Each, 30% Total)</b>					
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	VNS	Cool	Bunch	2.0
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i>	Secar, P-7, Anatone, Goldar	Cool	Bunch	2.8
<b>and Two of the Following (20% Each, 40% Total)</b>					
Thickspike Wheatgrass	<i>Elymus lanceolatus ssp. lanceolatus</i>	Critana, Bannock, Schwendimar	Cool	Sod-forming	3.4
Slender Wheatgrass	<i>Elymus trachycaulus</i>	Revenue, Pryor	Cool	Bunch	3.3
Western Wheatgrass	<i>Pascopyrum smithii</i>	Rosana, Arriba	Cool	Sod-forming	4.8
<b>and Two of the Following (15% Each, 30% Total)</b>					
Indian Ricegrass	<i>Achnatherum hymenoides</i>	Paloma, Rimrock	Cool	Bunch	2.8
Galleta	<i>Pleuraphis jamesii</i>	Viva florets	Warm	Bunch/ Sod-forming	2.5
Muttongrass	<i>Poa fendleriana</i>	VNS	Cool	Bunch	0.4
Sandberg Bluegrass	<i>Poa sandbergii, Poa secunda</i>	VNS	Cool	Bunch	0.4
*Based on 60 pure live seeds (PLS) per square foot, drill-seeded. Double this rate (120 PLS per square foot) if broadcast or hydroseeded					

<b>Table A-2. Mixed Mountain Shrub</b>					
<i>Common Name</i>	<i>Scientific Names</i>	<i>Variety</i>	<i>Season</i>	<i>Form</i>	<i>PLS lbs/acre*</i>
<b>Plant Both of the Following (20% Each, 40% Total)</b>					
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	VNS	Cool	Bunch	2.7
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i>	Secar, P-7, Anatone, Goldar	Cool	Bunch	3.7
<b>and Two of the Following (15% Each, 30% Total)</b>					
Thickspike Wheatgrass	<i>Elymus lanceolatus ssp. lanceolatus</i>	Critana, Bannock, Schwendimar	Cool	Sod-forming	2.5

<b>Table A-2. Mixed Mountain Shrub</b>					
<i>Common Name</i>	<i>Scientific Names</i>	<i>Variety</i>	<i>Season</i>	<i>Form</i>	<i>PLS lbs/acre*</i>
Slender Wheatgrass	<i>Elymus trachycaulus</i>	San Luis	Cool	Bunch	2.5
Western Wheatgrass	<i>Pascopyrum smithii</i>	Arriba, Rosana	Cool	Sod-forming	3.6
<b>and One of the Following (10% Total)</b>					
Big Bluegrass	<i>Poa ampla</i>	Sherman	Cool	Bunch	0.3
Canby Bluegrass	<i>Poa canbyi, P. secunda</i>	Canbar	Cool	Bunch	0.3
Muttongrass	<i>Poa fendleriana</i>	VNS	Cool	Bunch	0.3
<b>and One of the Following (10% Total)</b>					
Letterman Needlegrass	<i>Achnatherum lettermanii</i>	VNS	Cool	Bunch	1.7
Columbia Needlegrass	<i>Achnatherum nelsonii, Stipa columbiana</i>	VNS	Cool	Bunch	1.7
Green Needlegrass	<i>Nassella viridula</i>	Lodorm, Cucharas	Cool	Bunch	1.4
<b>and One of the Following (10% Total)</b>					
Indian Ricegrass	<i>Achnatherum hymenoides</i>	Nezpar, Paloma, Rimrock	Cool	Bunch	1.9
Junegrass	<i>Koeleria macrantha</i>	VNS	Cool	Bunch	0.1
*Based on 60 pure live seeds (PLS) per square foot, drill-seeded. Double this rate (120 PLS per square foot) if broadcast or hydroseeded					

5. Protections for Special Status Plant Species.

Ute Ladies'-tresses Orchid (Federally listed as Threatened) – No ground-disturbing activities shall occur in areas of the pipeline alignment that would cross drainages on private lands providing suitable habitat for the Ute ladies'-tresses orchid, as indicated on project maps to be provided by the BLM, until completion of Section 7 consultation with the USFWS and incorporation into project design of conservation (mitigation) measures resulting from the Section 7 process.

Harrington's Penstemon (Listed by BLM and USFS as Sensitive) – The Operator shall incorporate the following steps to avoid and minimize impacts to Harrington's penstemon :

- a. Pework Meeting Regarding Restricted Pipeline Working Area. A pre-construction onsite meeting with the BLM ecologist shall be held with field representatives of WPX during 2012 and Bargath during 2013 or later to review and make final determinations regarding the following locations along the ROW, which shall be narrowed to a 50-foot disturbance width to minimize impacts to Harrington's penstemon. Such locations shall be flagged or otherwise delineated prior to or during the pre-construction meeting and shall be approved by the BLM ecologist.

*West Porcupine Population.*

- o Reduce construction width from 125 feet to 75 feet from STA 809+00 to STA 813+85 (75 feet x 425 feet = 0.732 acres).
- o STA 815+85 to STA 817+85 is to remain unchanged at a width of 75 feet. (75 feet x 460 feet = 0.792 acres). For reasons stated above (terrain, geometry, multiple pipelines installation), reduction of pipeline construction work width less than 75 feet is not

reasonable, practical, or safe. This is especially factual in consideration of the need to maintain and establish an exclusive travel lane at this location. The closest points of access to the pipeline ROW are about 0.4 mile back to Porcupine Creek and about 1.38 miles ahead to a Spruce Creek area well location.

- b. Weed Control. Pre-treat noxious weeds in the survey area where Harrington’s penstemon presence is confirmed prior to construction to minimize the threat to Harrington’s penstemon in the area. The BLM Botanist shall be present to monitor the pre-treatment activities in survey areas where the presence of Harrington’s penstemon is confirmed.
- Obtain a Pesticide Use Permit (PUP), specific to Harrington’s penstemon sites, from the BLM prior to any herbicide treatment of noxious weeds within occupied Harrington’s penstemon habitat.
  - Limit noxious weed treatments within occupied Harrington’s penstemon habitat to spot spraying or wicking. No broadcast spraying is permitted.
- c. Special Mitigation. The operator shall fund the propagation of seed for Harrington’s penstemon (*Penstemon harringtonii*). A total of \$25,000 shall be paid by the operators to cover the costs of seed collection in the impacted areas, seed cleaning and testing, nursery planting and five years of seed-increase grow-out, cleaning and testing of produced seed, and field sowing of seed on reclamation sites. The percentage of this \$25,000 shall be divided based on the percentage of anticipated impact on Harrington’s penstemon by each operator, so that \$10,500 shall be paid by WPX, and \$14,500 shall be paid by Bargath. Mitigation planting sites shall be within the reclaimed pipeline corridor at or near the locations of impacted Harrington’s penstemon occurrences, or, if agreed upon by both the BLM and the operator, in wildlife habitat improvement sites occurring within Harrington’s penstemon habitat. Harrington’s penstemon seed shall be collected from those plants to be impacted within the pipeline corridor, one year prior to the start of construction.

Within sections of the pipeline corridor occupied by Harrington’s penstemon, the seed mix shown in Table A-3 shall be used instead of CRVFO’s standard menu-based seed mix.

<b>Table A-3. Seed Mix for Initial Seeding of Harrington’s Penstemon Sites</b>				
<i>Common Name</i>	<i>Scientific Name</i>	<i>Variety</i>	<i>Season</i>	<i>Form</i>
<b>Choose Five Grasses (50% of Total PLS)</b>				
Bottlebrush Squirreltail	<i>Elymus elymoides, Sitanion hystrix</i>	VNS	Cool	Bunchgrass
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata, Agropyron spicatum</i>	Secar, P-7, Anatone, Goldar	Cool	Bunchgrass
Indian Ricegrass	<i>Achnatherum [Oryzopsis] hymenoides</i>	Paloma, Rimrock	Cool	Bunchgrass
Needle and Thread Grass	<i>Hesperostipa [Stipa] comata</i>	VNS	Cool	Bunchgrass
Junegrass	<i>Koeleria macrantha</i>	VNS	Cool	Bunchgrass
Columbia Needlegrass	<i>Achnatherum nelsonii, Stipa columbiana</i>	VNS	Cool	Bunchgrass
Muttongrass	<i>Poa fendleriana</i>	VNS	Cool	Weakly Rhizomatous

<b>Table A-3. Seed Mix for Initial Seeding of Harrington’s Penstemon Sites</b>				
<i>Common Name</i>	<i>Scientific Name</i>	<i>Variety</i>	<i>Season</i>	<i>Form</i>
<b>Choose Three Forbs (30% of Total PLS)</b>				
Arrowleaf Balsamroot	<i>Balsamorhiza sagittata</i>	Rocky Mountain Beeplant		<i>Cleome serrulata</i>
Silverleaf Lupine	<i>Lupinus argenteus</i>	Scarlet Globemallow		<i>Sphaeralcea coccinea</i>
Fernleaf Biscuitroot	<i>Lomatium dissectum</i>	Sulphur Flower Buckwheat		<i>Eriogonum umbellatum</i>
<b>Include One Shrub (20% of Total PLS)</b>				
Fourwing Saltbush	<i>Atriplex canescens</i>			
<sup>1</sup> Because Harrington’s penstemon was confirmed along the pipeline route: (a) it shall be broadcast seeded into formerly occupied areas using seeds from the Meeker Plant Materials Center when available; and (b) mountain big sagebrush ( <i>Artemisia tridentata</i> spp. <i>vaseyana</i> ) shall be broadcast seeded into the reclaimed area prior to snowfall using seeds collected along corridor.				

A minimum of five grass, three forb, and one shrub species shall be included in the seed mix initially installed by drill-seeding or hydroseeding (Table A-3). Seeding shall be at the rate of 60 pure live seeds (PLS) per square foot if drill-seeded and 120 PLS per square foot if broadcast-seeded or hydroseeded where drill-seeding is impracticable. If hydroseeding is used, application of seeds shall be performed as a separate step from application of hydromulch. In addition, seeds of mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) shall be collected from plants in the vicinity of the pipeline corridor and seeded within 6 months of collection. Sagebrush may be sown either by broadcast seeding or by placing the seed in the fluffy seed box of a seed drill, with the drop tube left open to allow seed to fall out on the ground surface.

5. Visual Resources

Spruce Creek to Porcupine Creek (STA 806+00 to 916+00)

Prior to construction, areas where dense vegetation will be cleared shall be identified and staked so that the adjacent vegetation can be thinned during pioneering of the pipeline corridor to soften the strong linear line created between new the construction and existing vegetation. The woody debris from the thinned areas shall be stockpiled for dispersing over seeded areas during interim reclamation.

Areas identified for thinning and feathering should be designed to avoid areas where there are populations of *Penstemon harringtonii*. (Stationing 809+00 to 813+85 where the Kokopelli II corridor is not to exceed 75 feet in width).

All woody vegetation (live and dead) shall remain standing at the toe of the fill slope and the top of the cut slope to provide visual screening. Care shall be taken to preserve the integrity of the stands.

6. Livestock Grazing Controls.

*Porcupine Creek Allotment Fencing.*

Near STA 805+35 where the Kokopelli II line leaves the existing ETC pipeline corridor, a typical 4-strand barb wire drift fence shall be installed across the existing pipeline ROW and along the existing Kokopelli II alignment to the north to deter grazing livestock from drifting down the new and existing pipeline corridors into Porcupine Creek. The final location of the range drift fence shall be

determined by livestock permittee or BLM range staff. Additionally, the existing range allotment fence to be bisected by the proposed pipeline near STA 834+00 shall be repaired and remain in functioning form after the pipeline is installed. If grazing livestock are present during the pipeline construction, efforts shall be made to keep livestock from passing through the breached fence with temporary fencing.

*Access Road to Federal 7-94 Well Pad (T7S R94W Section 4, SW¼SE¼).*

To reduce livestock trespass on nearby private land, WPX and Bargath shall ensure that the existing steel frame gates installed across the Federal 7-94 pad access road shall remain closed during active livestock grazing season except when vehicles or equipment are passing through the gates.

7. Noise and Traffic Calming. To mitigate noise impacts to recreational users in the area, WPX shall instruct its employees and contractors that use of engine braking by trucks serving the project area is not allowed on BLM roads. To avoid conflicts with vehicular traffic accessing nearby private land, WPX shall implement signing and traffic control measures during pipeline construction. WPX shall obtain approved access, overweight load, and utility permits from Garfield County and shall adhere to Garfield County safety and road maintenance requirements including dust abatement.
8. Porcupine Creek Project Access. Truck and equipment access to the planned pipeline alignment in vicinity of Porcupine Creek shall be limited only to the existing ETC pipeline corridor. No use of the existing 2-track route south of Encana's RD11 pad shall be authorized.
9. Treatment of Boulders. It is difficult to predict the amount of boulders that will be generated by the pipeline excavation work. However, boulders that are generated on the project shall be used to armor and line drainages, provide impediments to motorized travel onto or along the pipeline right-of-way, or in the vicinity of the Grass Mesa ditch, possibly used to line or armor the ditch course if that proves amenable to the parties. Boulders shall always be bedded into the ground with the white or lightest side of the rock face facing down or away from the viewing area. In certain instances, boulders shall be scattered across the pipeline disturbance corridor as directed by the BLM Authorized Officer.

## **GENERAL TERMS AND CONDITIONS OF THE RIGHT-OF-WAY GRANT**

These General Terms and Conditions are applicable to all activities within the Bargath Kokopelli Phase II Pipeline Project (COC75020) and WPX'S Spruce Creek - Beaver Creek Water Pipeline (COC75224), unless otherwise specified.

**COMMON CARRIER:** Common carrier provisions shall be applied, per **43 CFR2885.11(b)** construct, operate, and maintain the pipeline as a common carrier. This means that the pipeline owners and operators must accept, convey, transport, or purchase without discrimination all oil or gas delivered to the pipeline without regard to where the oil and gas was produced (*i.e.*, whether on Federal or non-Federal lands).

1. Administrative Notification. The operator shall not initiate any construction or other surface disturbing activities on the ROW without prior written authorization of the BLM. Such authorization shall be a written *Notice to Proceed* (Form 2800-15). Any *Notice to Proceed* shall authorize construction or use any as therein expressly stated and only for the particular location or use therein described.
2. Pre-construction Meeting. The operator shall schedule and conduct a pre-construction meeting with BLM prior to the operator's commencing construction and/or surface disturbing activities on the

ROW. The operator, its agent, its contractor(s), and other parties involved with construction and/or any surface-disturbing activities associated with the ROW shall attend this meeting to review the stipulations of the ROW grant, including the POD as applicable, as well as required safety regulations, if appropriate.

3. Gold Book Standards. The pipeline shall be installed to industry and BLM “Gold Book” standards. The pipeline(s) shall be buried with at least 36 inches of cover from the top of the pipe to the surface, and within the 50-foot ROW corridor. Overall construction width including the 25-foot temporary use permit, shall not exceed 75 feet except for those extra workspaces (EWSs) identified in the Proposed Action and noted on the plans. The centerline of the ROW and the exterior limits shall be clearly flagged prior to any construction activity.
4. Limits of Disturbance. The operator shall conduct all activities associated with the construction, operation, and termination of the ROW within the authorized limits of the granted ROW.
5. Saturated Soils Conditions. When saturated soil conditions exist on or along the proposed ROW prior to removal of vegetation or stripping of topsoil in an area, construction in that areas shall be halted until soil material dries out or is frozen sufficiently for construction to proceed without undue damage and erosion to soils.
6. Copy of Stipulations Maintained Onsite. A copy of these stipulations, including exhibits and the Plan of Development, if required, shall be kept on the project area and made available to persons directing equipment operation.
7. Utilities Locations. All existing pipelines, surface valves, and other utilities shall be field located, clearly marked, and the appropriate Utility Notification Center ([www.unc.org](http://www.unc.org)) shall be notified before any construction/surface work occurs. All publicly owned underground facilities shall be marked according to the APWA color code.
8. Warning Signs. Pipeline warning signs shall be installed within 5 days of completion of construction and prior to use of the pipeline for transportation of product. Pipeline warning shall be installed at all road crossings and shall be visible from sign to sign along the ROW. For safety purposes each sign shall be permanently marked with the operator’s name and shall clearly identify the owner (emergency contact) and purpose (product) of the pipeline.
9. Sanitary Site Conditions. Construction sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be disposed of promptly at an appropriate waste disposal site. “Waste” means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment. Disposal of all liquid and solid wastes produced during construction or operation of the pipeline shall be in an approved manner so as to not adversely affect the air, soil, water, vegetation, or wildlife.
10. Other Required Approvals and Permits. This authorization is contingent upon receipt of and compliance with all appropriate Federal, state, county and local, permits. The operator shall be responsible for obtaining all necessary environmental clearances and permits from all agencies (U.S. Army Corps of Engineers, Colorado Parks and Wildlife, U.S. Fish and Wildlife Service, Colorado Department of Transportation, Colorado Department of Public Health and Environment, Garfield County Road and Bridge, and City of Rifle) before commencing any work under this permit. Without all clearances and permits, this permit shall be not in effect. Operator shall assume all responsibility and liability related to potential environmental hazards encountered in connection with work under this permit.

11. Compliance with Federal Regulations. This grant amendment is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations parts 2800 and 2880.
12. Compliance with Laws. The operator shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the operator shall comply with the Toxic Substances Control Act of 1976 (TSCA), as amended (15 U.S.C. 2601 *et seq.*) with regard to any toxic substances that are used, generated by, or stored on the ROW or on facilities authorized under this ROW grant (40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193). Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release of spill of any toxic substances shall be furnished to the BLM concurrently with the filing of the reports to the involved Federal agency or State government.
13. Hold Harmless Clause. The operator agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601 *et seq.* or the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6901, *et seq.*) on the ROW (unless the release or threatened release is wholly unrelated to the operator's activity in the ROW). This agreement applies without regard to whether a release is caused by the operator, its agent, or unrelated third parties.
14. Paint Color. All above ground structures not subject to safety requirements shall be painted by the operator to the specifications of the BLM in order to meet the Visual Resource Management (VRM) requirements for the area.
15. As-Built Survey. An "as-built" center line survey of the right-of-way crossing Federal land, provided by a Certified Land Surveyor licensed to work in the State of Colorado, shall be provided to the BLM within 2 months of completion of the project.
16. Open Trenches. All open trenches shall be maintained in a safe condition to ensure no side-wall collapsing occurs and that all personnel, livestock, and wildlife are safe from falling into an open trench or being trapped or injured within the trenches.

Some protective systems may include (*Reference: OSHA 29 CFR 1926.650*):

- Shoring by installing supports to prevent soil movement for trenches that do not exceed 20 feet in depth.
- Shielding to protect workers by using trench boxes or other types of supports to prevent soil cave-ins.
- Always provide a way to exit a trench, such as a ladder or ramp, no more than 25 feet of lateral travel for personnel, livestock, or wildlife in the trench.
- Keep spoils at least 2 feet back from the edge of a trench.
- Make sure that trenches are inspected by competent personnel prior to entry and after any hazard-increasing event such as a rainstorm, etc.

Trenches adjacent to access roads and/or public or private dwellings shall be covered and/or warning barriers erected upon completion of daily construction or at any time personnel are not present on the construction site.

17. Welding of Pipeline. All wells shall be X-rayed 100% and reviewed and approved by a level 2 or 3 qualified inspector per 49 CFR 192. All welders shall be appropriately certified. (Ref. 49 CFR 192.227, *Qualifications of Welders*).
18. Fire Suppression. Welding or other use of an acetylene or other torch with open flame shall be operated in an area barren or cleared of all flammable materials at least 10 feet on all sides of equipment. Internal combustion engines must be equipped with approved spark arrestors which meet either (a) the USDA Forest Service Standard 5100-1a or (b) Society of Automotive Engineers (SAE) recommended practices J335(b) and J350(a).
19. Pipeline Testing. The entire pipeline shall be tested in compliance with DOT regulations (49 CFR Part 192). Incremental segments of the pipeline shall be filled to the desired maximum pressure and held for the duration of the test (8 hours minimum). (Ref. 49 CFR 192.503.c).

Notification to all nearby residents as well as the appropriate County Dispatch Center shall be made no less than 24 hours prior to the pressure test and blow down. All necessary and reasonable precautions shall be taken to ensure the safety of the employees and the general public, the lands, domestic animals and wildlife, etc. This may include, but not be limited to, restriction of access to the pipe being tested, temporary warning signs installed in appropriate locations, effective communication.

20. Notification of Other ROW Holders. The holder shall notify all existing ROW holders in the project area prior to beginning any surface disturbance or construction activities. It is the holder's responsibility to coordinate with all other ROW holders and resolve any conflicts.
21. Restrictions on Onsite Materials Storage. The operator shall not store hazardous materials, chemicals, fuels, lubricating oils, or perform concrete coating activities within 200 feet of any water body or dry drainage. Equipment or vehicles that are crossing or working within 200 feet of water bodies shall not be refueled unless the Environmental Inspector gives a specific exception. If any hazardous material must be temporarily stored or transferred within 200 feet of a water body (i.e., stationary pumps), it must be placed within a secondary containment structure that is capable of containing 110% of the volume of the stored material.
22. Traffic Control. Appropriate precautions for traffic control on public lands shall be in place and conform to the guidelines of the "Manual on Uniform Traffic Control Devices (MUTCD): Temporary Traffic Control Elements". A copy of the traffic control plan shall remain on site at all times during construction activities.
23. Survey Monuments. All survey monuments, witness corners, and/or reference monuments must be protected against destruction, obliteration, removal, or damage. Any damaged or obliterated markers must be reestablished in accordance with accepted survey practices at the expense of the holder.
24. Transportation/Road Maintenance. Commuting construction crews shall car pool to reduce the number of vehicle trips on local area roads and associated wear and tear. Operator shall ensure the commuting construction crews comply with posted speed limits on public roads and limit driving speeds to 20 mph on more primitive access roads to reduce the potential for vehicle collisions as well as to reduce traffic related noise and air pollution.

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**APPENDIX B**

**Visual Resource Analyses  
and  
Overview of the BLM and USFS Visual Resource Management Systems**

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## **Visual Resource Analyses and Overview of the BLM and USFS Visual Resource Management Systems**

The visual resource analysis area includes CR319 (West Mamm Creek Road), the Grass Mesa Homeowners Association Road and CR320, U.S. 6, and I-70 viewshed corridors. These viewsheds are important, as they are viewed by people who live, work, and recreate in the area. The Proposed Action would be located in the viewer's foreground/middle ground, within 5 miles from each of the travel corridors listed previously. BLM and USFS guidance states that lands with high visual sensitivity are those within five miles (USFS equivalent of 4 miles) of a primary travel corridor and of moderate to very high visual exposure, where details of vegetation and landforms are readily discernible and changes in visual contrast can easily be noticed by the casual observer.

The visual impact analysis for this project is based on the views from 13 Key Observation Points (KOPs) representing 11 linear viewer locations and 2 stationary locations representing the viewing angle and direction with the highest frequency of viewers. Some of the KOPs and associated photos are not located in areas with a high frequency of visitors, but are used to illustrate the route the proposed pipeline would follow. This route, in many cases, parallels an existing ROW or existing roads.

For purposes of analyzing the visual impacts in greater detail, the Proposed Action is split into six separate maps (see Figure B-1). Each map includes KOPs and associated photos to describe the Proposed Action.

Map 1 illustrates (Figure B-2) the location of the Proposed Action where the pipelines would be bored under the Colorado River. The staging areas for the bore would be located on private land; whereas the actual bore would go underneath private and BLM Visual Resource Management (VRM) Class II land (Figure B-3).

Map 2 illustrates (Figure B-4) the location of the Proposed Action that would be within the I-70, U.S. 6, and CR320 viewshed corridors. This segment runs from Spruce Creek to Porcupine Creek and would be visible to viewers traveling east and west and would be in view for a longer duration than other segments of the pipeline corridor (Figures B-5 through B-8). In this area the pipelines would cross private land and BLM VRM class IV land.

Map 3 (Figure B-9) represents the location of the Proposed Action that would be within the eastern extent of the I-70, U.S. 6, and CR320 viewshed corridors. This segment runs from Porcupine Creek to the top of Flatiron Mesa. As this segment begins to approach Flatiron Mesa it begins to fade from view to travelers heading east and is out of view to travelers heading west (Figures B-10 through B-11). This segment of the pipeline corridor would cross private land and BLM VRM class IV land.

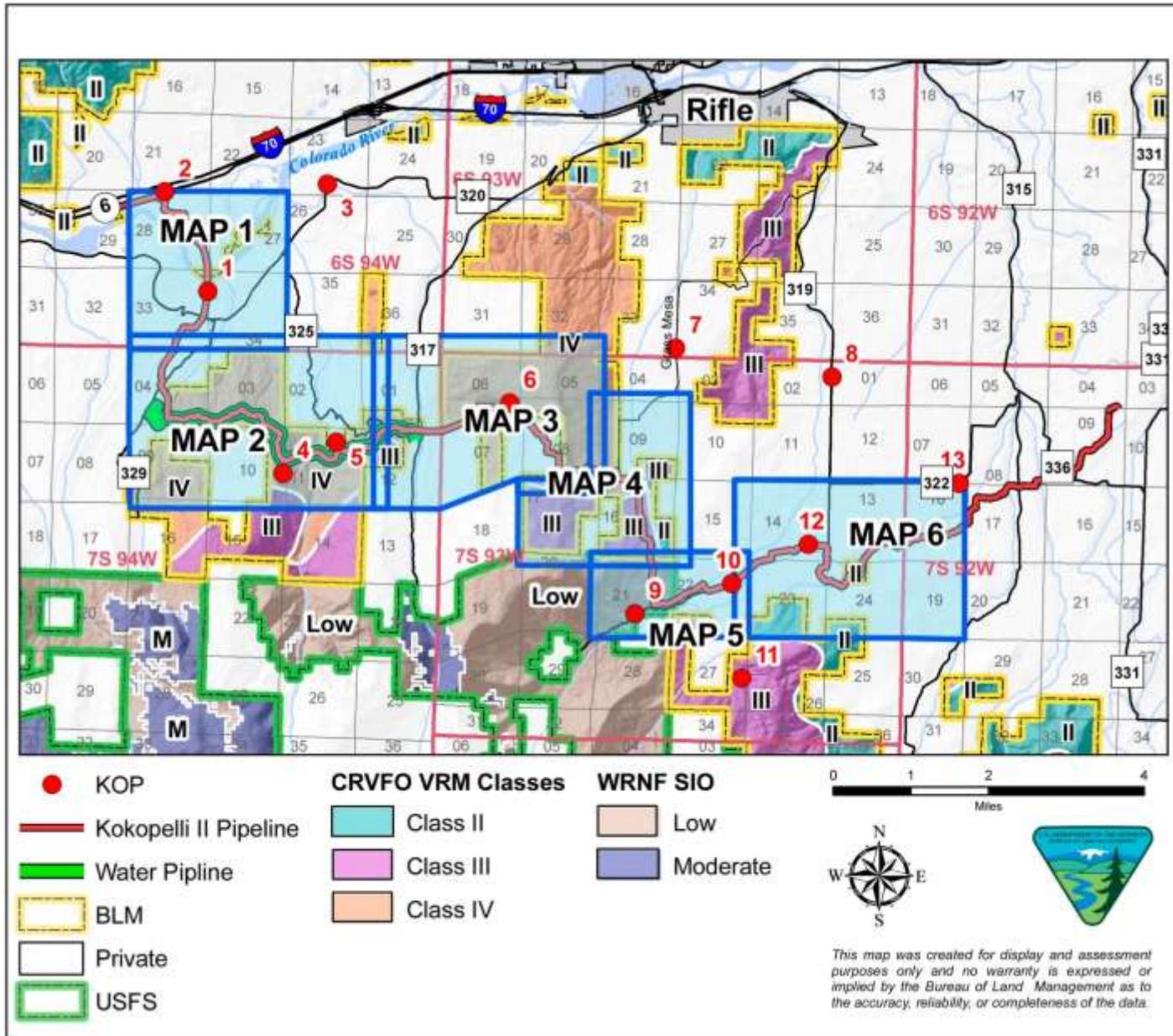


Figure B-1: Proposed Action Map Series for Detailed Visual Impact Analyses

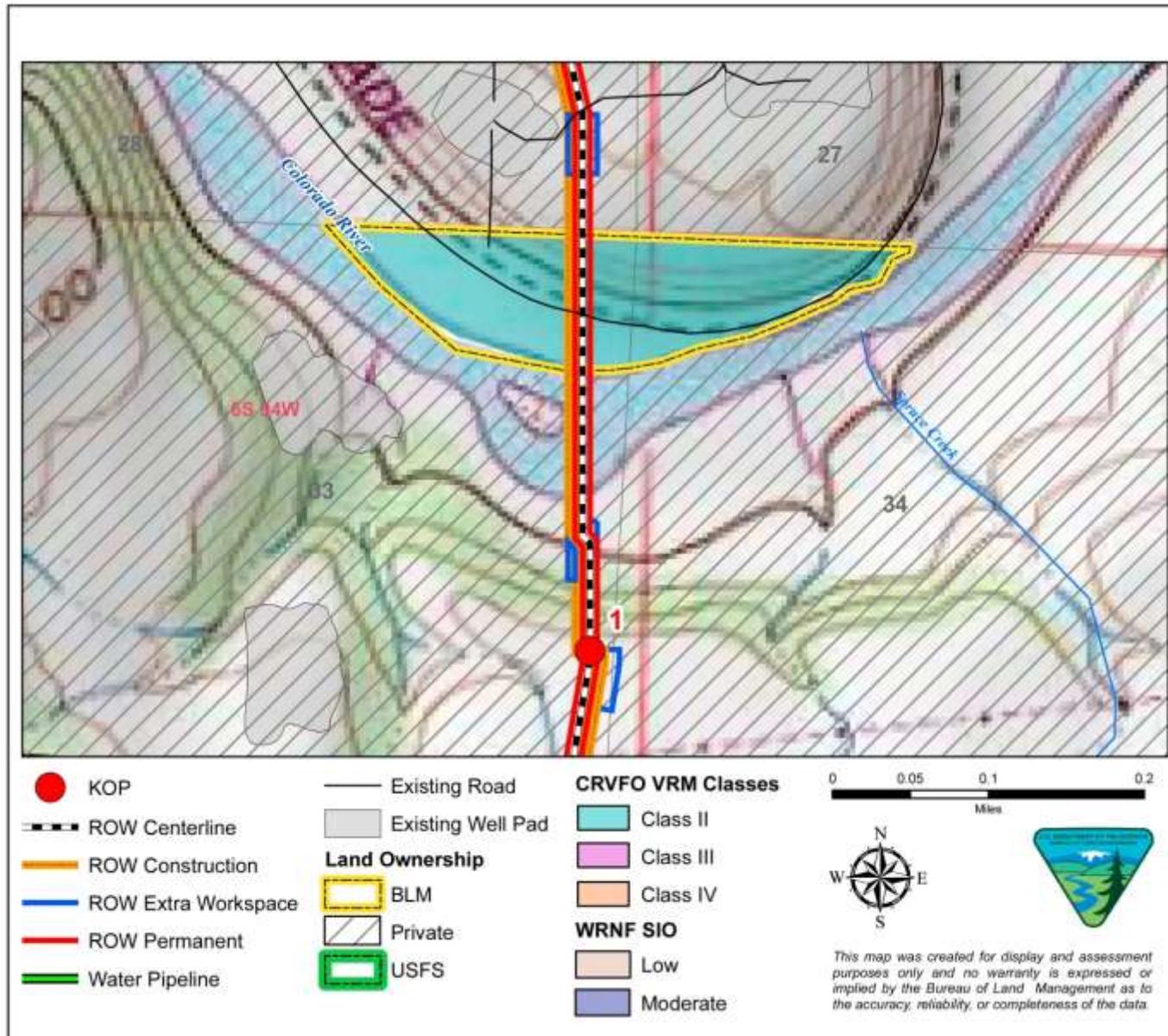


Figure B-2: Map 1 – Showing KOP 1 in Relationship to the Proposed Action



**Figure B-3: KOP 1**

View north to bore location (Note: Dotted line indicates approximate location of bore under the Colorado River). KOP 1 is located on private land; thus would have a lower frequency of viewers. The viewer would be above the bore location, but equal to the pipeline corridor as it approaches the Colorado River from the north and south.

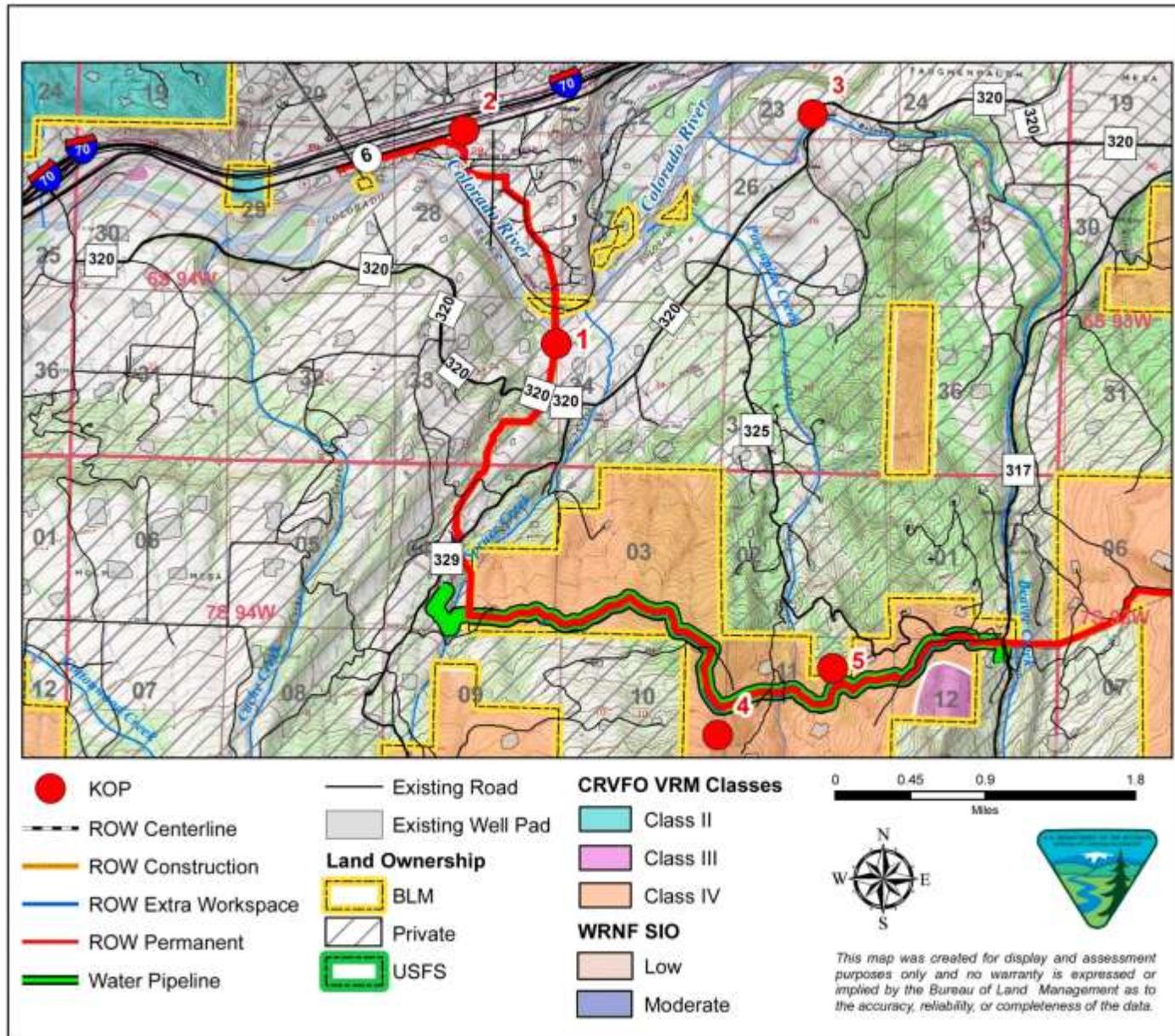


Figure B-4: Map 2



**Figure B-5: KOP 2**

View to the south of the pipeline corridor (approximate location) from Porcupine Creek to where the pipeline would be bored under the Colorado River. Note: The Water line would follow the same alignment as the natural gas pipeline (red), only deviating slightly on the western end (blue). Viewers would be looking up toward the Proposed Action, but would be equal to the lower portion of the pipeline corridor on the northern end of the Colorado River bore.



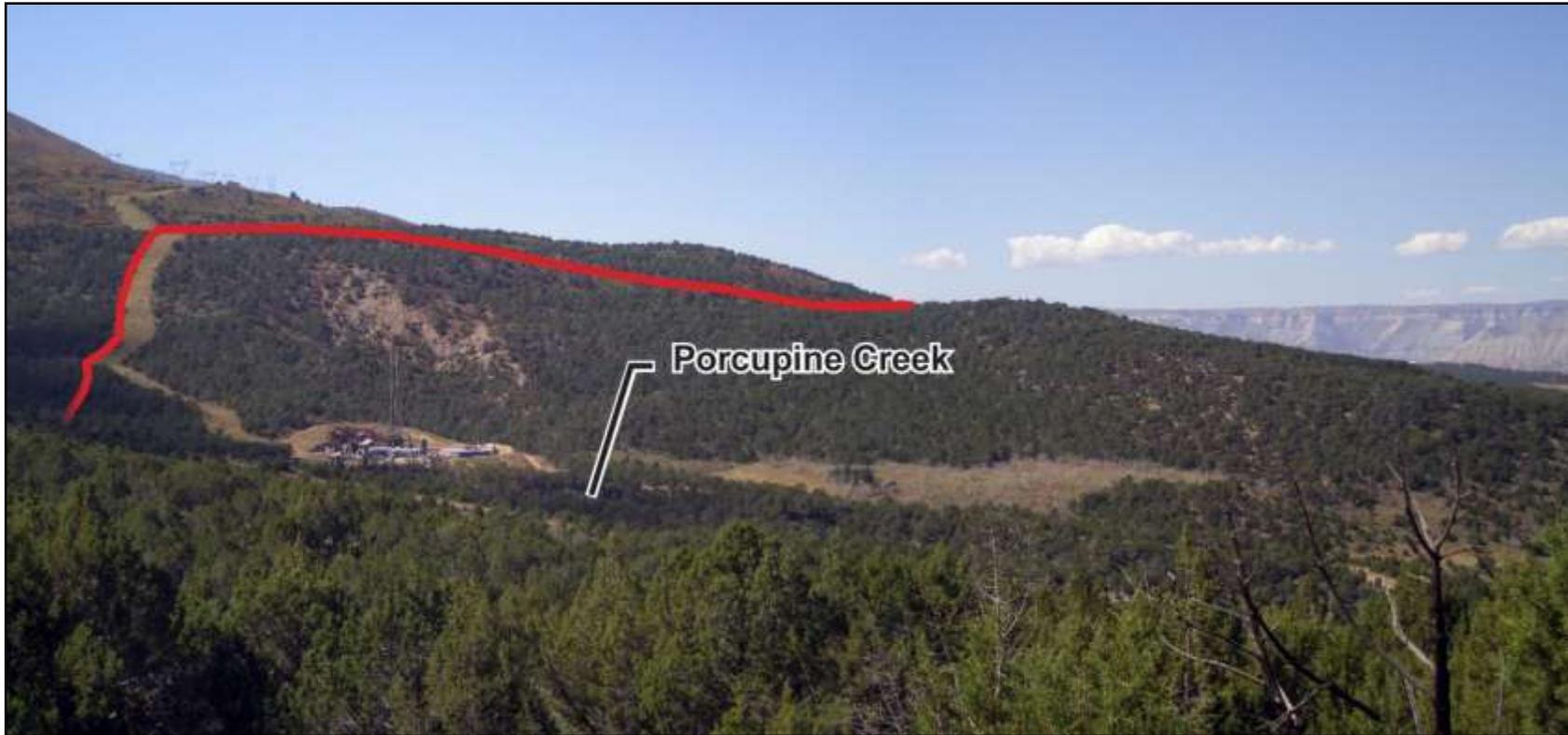
**Figure B-6: KOP 3**

View south from CR320 of the pipeline corridor (approximate location). Viewers would be slightly inferior to equal to the pipeline corridor and would be looking directly at the Proposed Action from this location.



**Figure B-7: KOP 4**

View east showing the pipeline corridor running parallel to an existing ROW from Porcupine Creek.



**Figure B-8: KOP 5**

View west showing the pipeline corridor running parallel to an existing ROW as it travels up slope. As the pipeline begins to head north it follows, to some extent, an existing 2-track road.

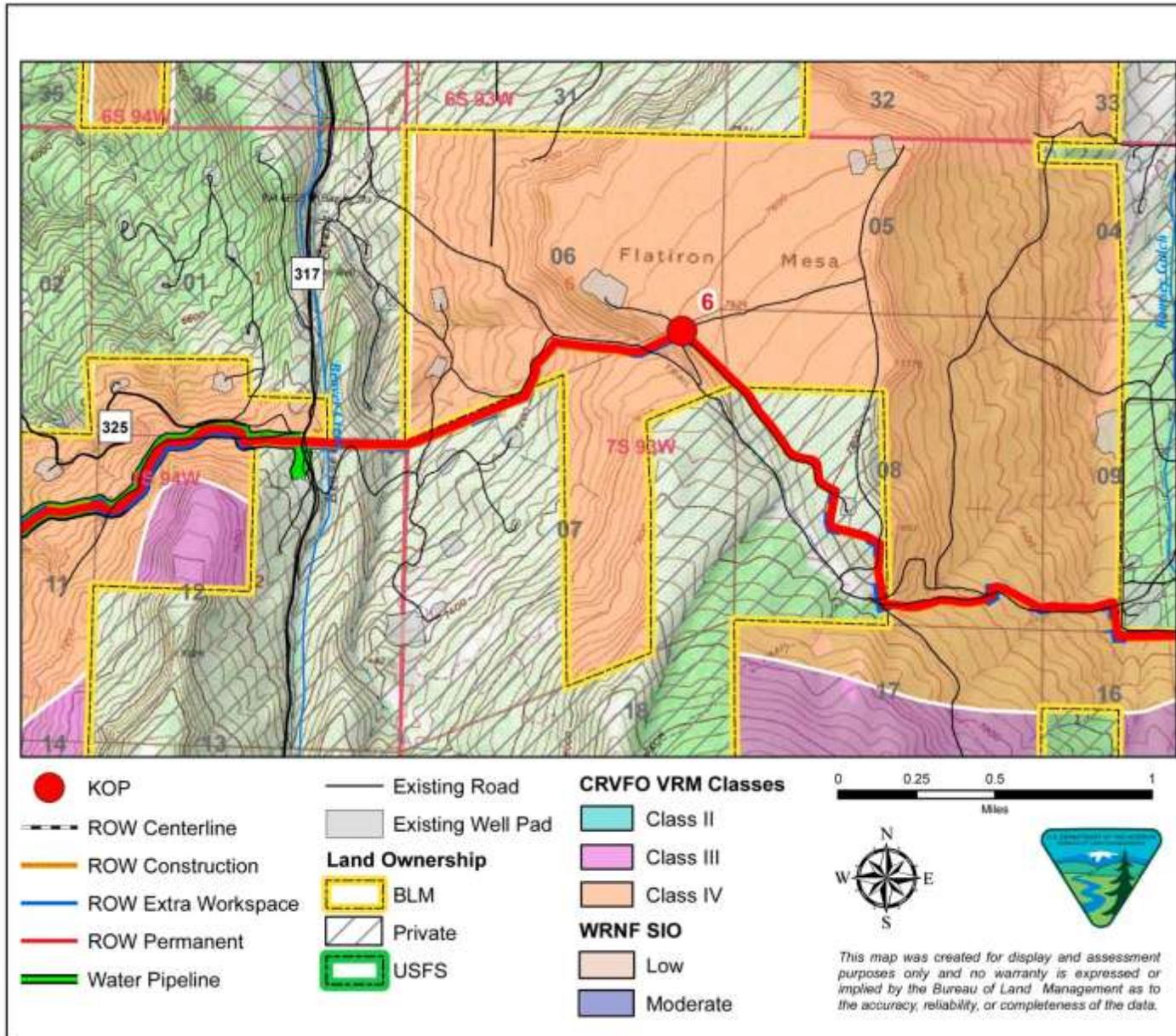
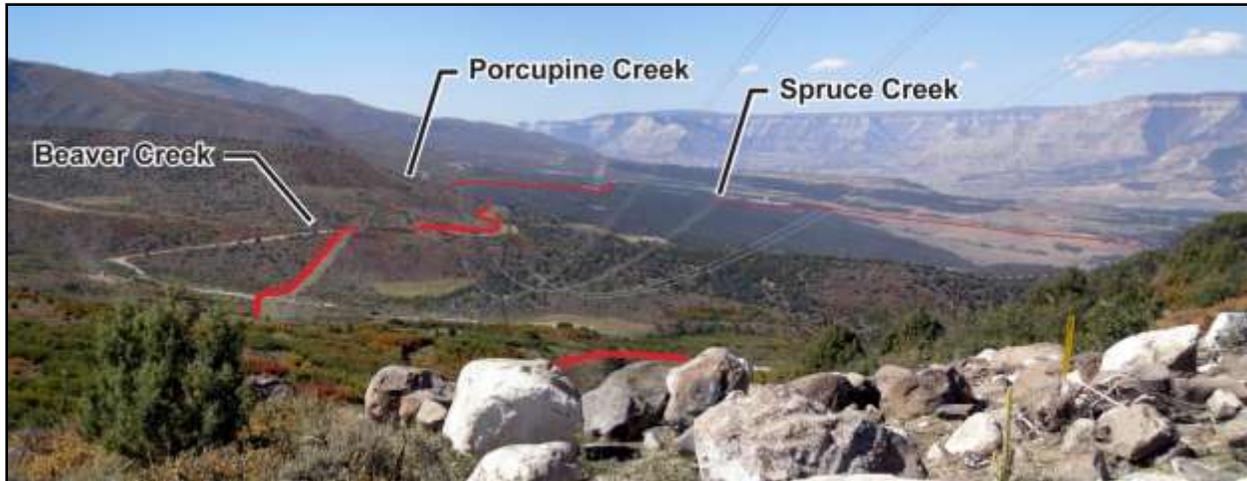


Figure B-9: Map 3



**Figure B-10: KOP 6**

View west showing the pipeline corridor running parallel to an existing ROW. Note: this area would not have a high frequency of viewers. Viewers would typically be oil and gas workers traveling being project locations and potentially seasonal use by hunters.



**Figure B-11: KOP 6**

View southeast as the pipelines begin to cross flatiron Mesa, it would parallel an existing road.

Map 4 (Figure B-12) represents the location of the Proposed Action that would be within view of residents on Grass Mesa and to travelers heading north and south on CR319 (West Mamm Creek Road). This segment runs from the top of Flatiron Mesa to the WRNF boundary. In this area the pipelines would cross BLM VRM Class III and IV land. The viewers would be viewing this segment from an inferior position, which limits the extent of the corridor that would be visible. Only the east-west alignment of the pipeline corridor, as it travels up slope, would be visible to viewers. The north-south alignment is parallel to the edge of Grass Mesa and would only be visible within close proximity to the alignment (Figures B-13 through B-14).

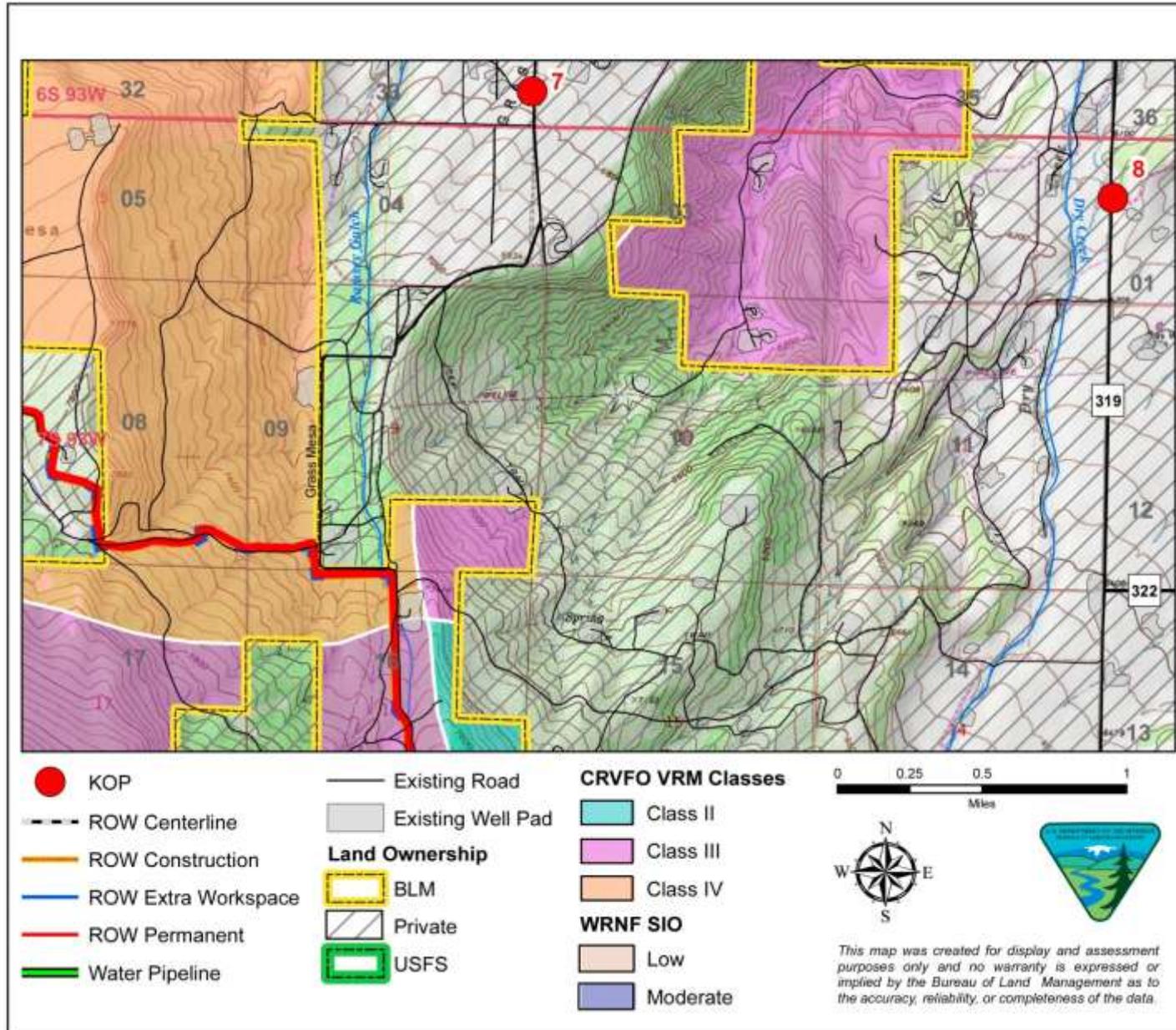
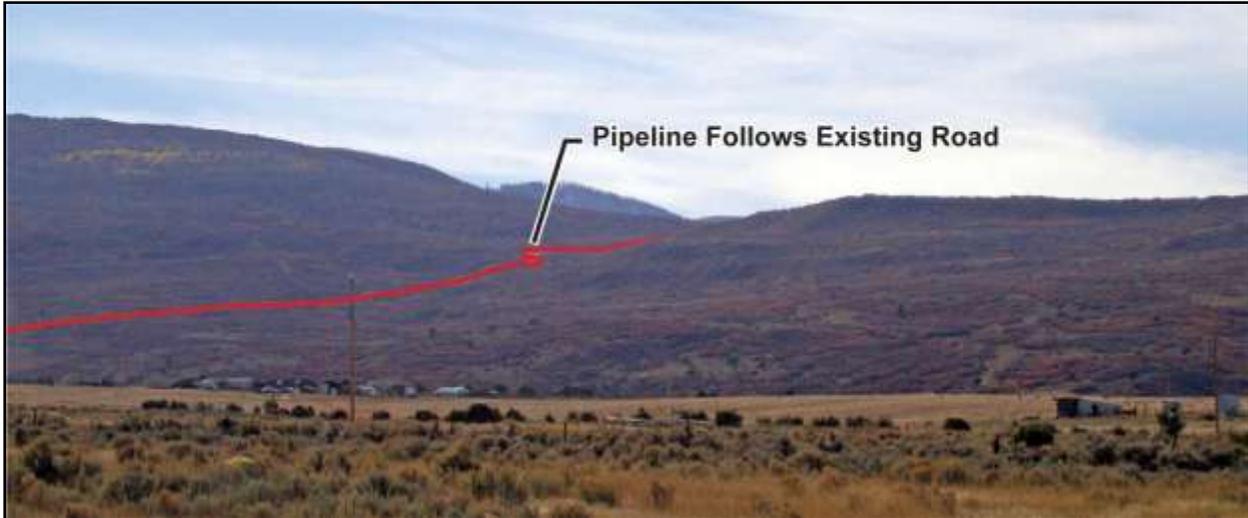
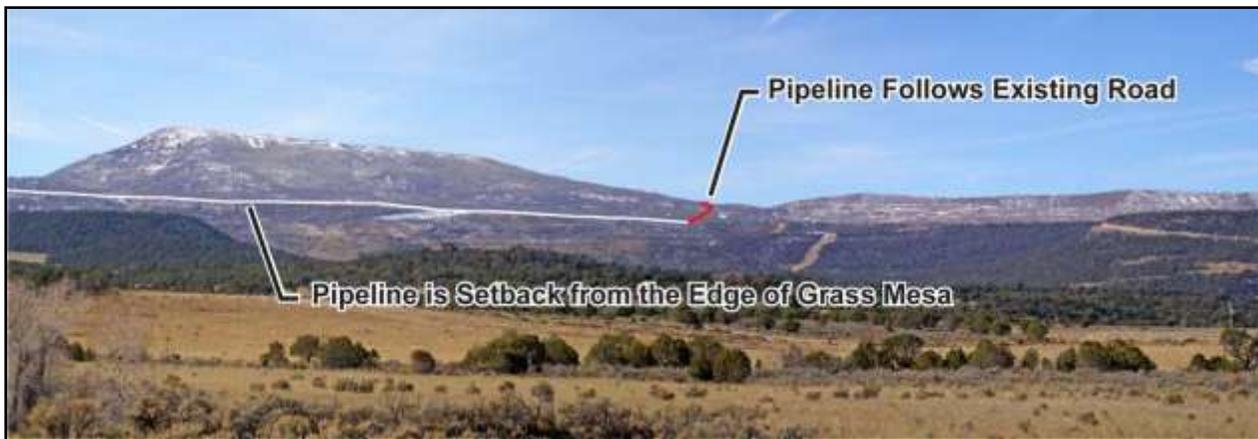


Figure B-12: Map 4



**Figure B-13: KOP 7**

View southwest from on top of Grass Mesa. Note: The east-west alignment would be the most visible segment of the pipeline for viewers on Grass Mesa.



**Figure B-14: KOP 8**

View from CR319. Note: the east-west alignment would be visible from this location as it runs perpendicular to the natural contours (indicated in red); whereas the north-south alignment is parallel to the edge of Grass Mesa and follows the natural contours and parallels an existing road (indicated in white).

Map 5 (Figure B-15) represents the location of the Proposed Action that crosses private land and WRNF land. This segment of pipeline would have a lower frequency of viewers. Viewers would have an inferior view of the Proposed Action as they travel east and west along West Mamm Creek Road (NFSR818 and CR319) (Figures B-16 through B-18).

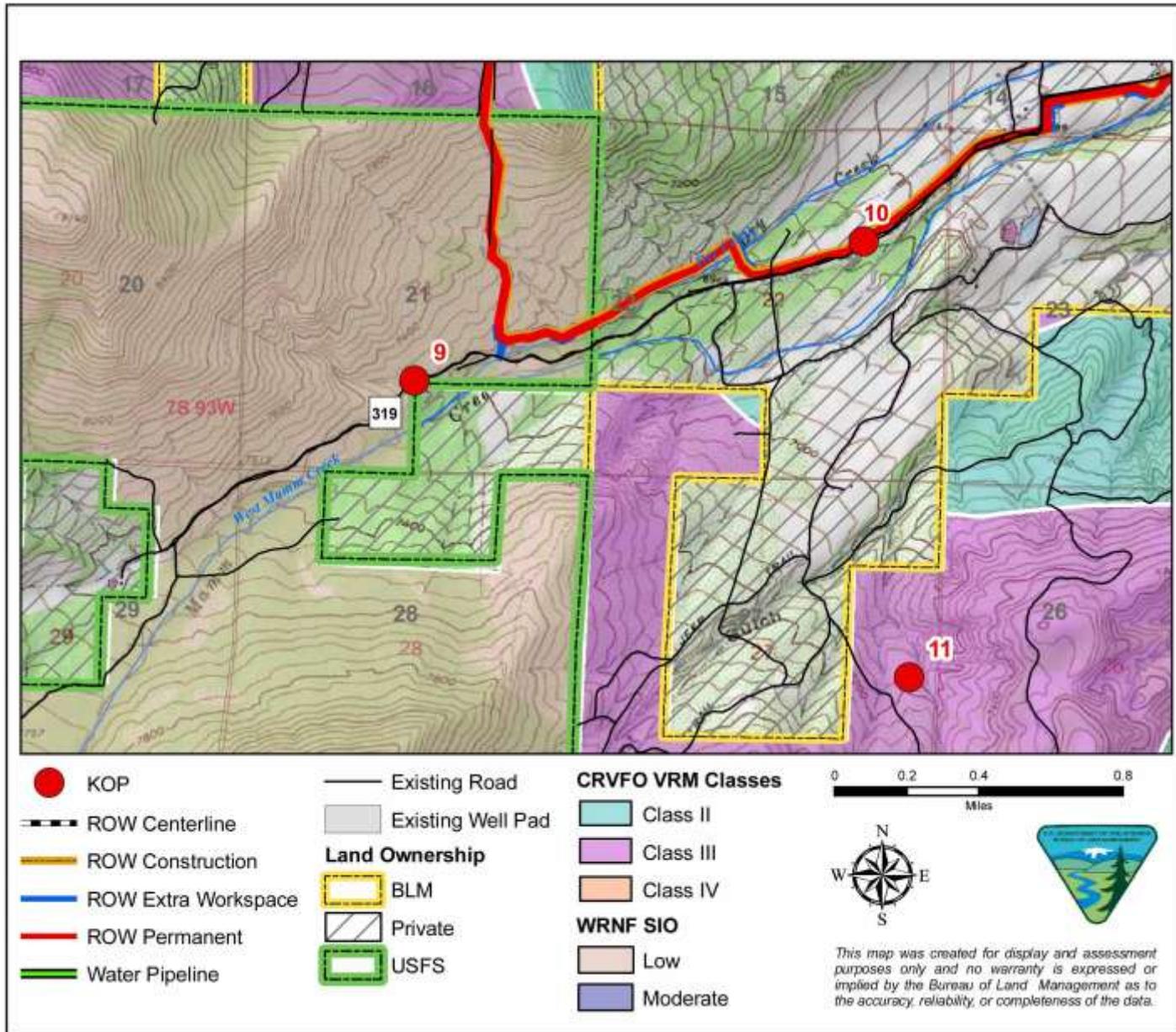
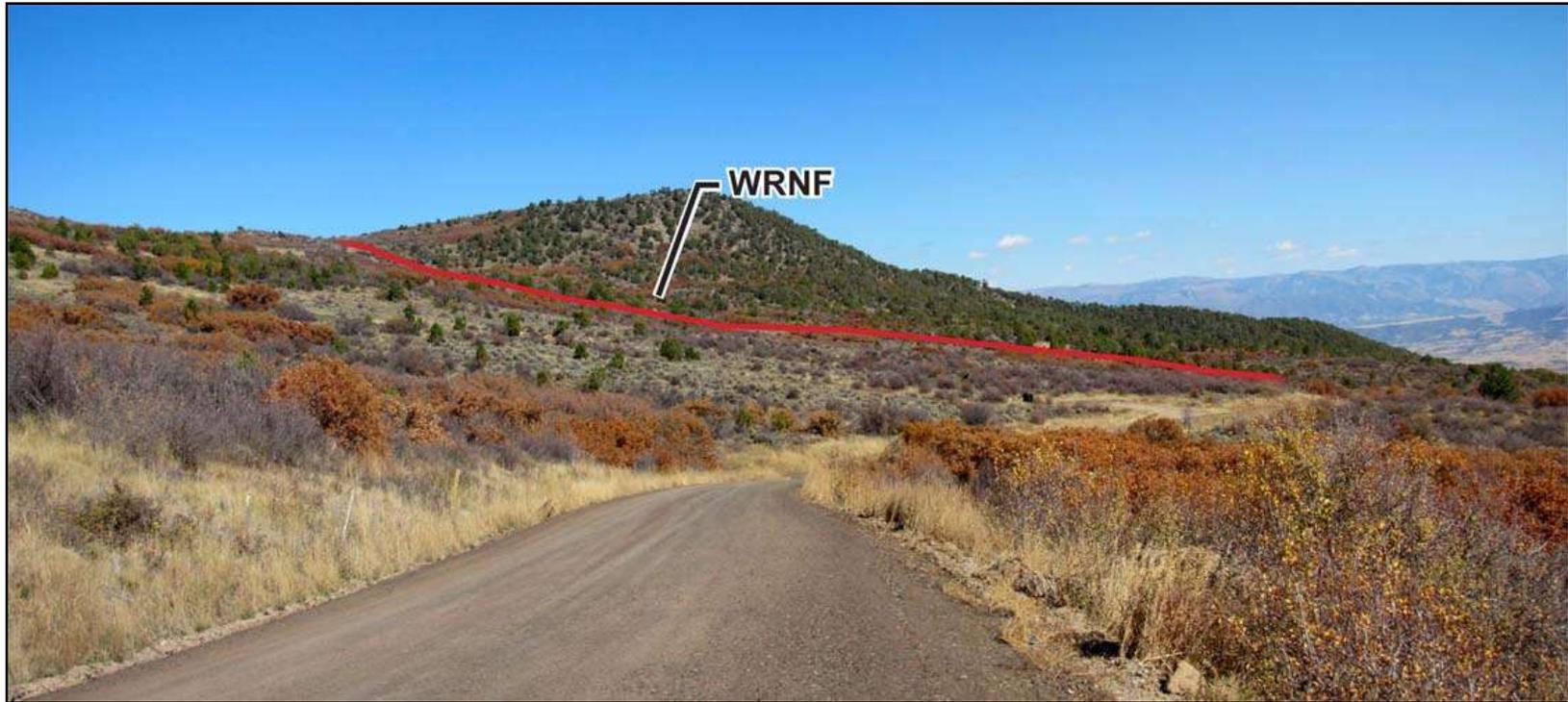
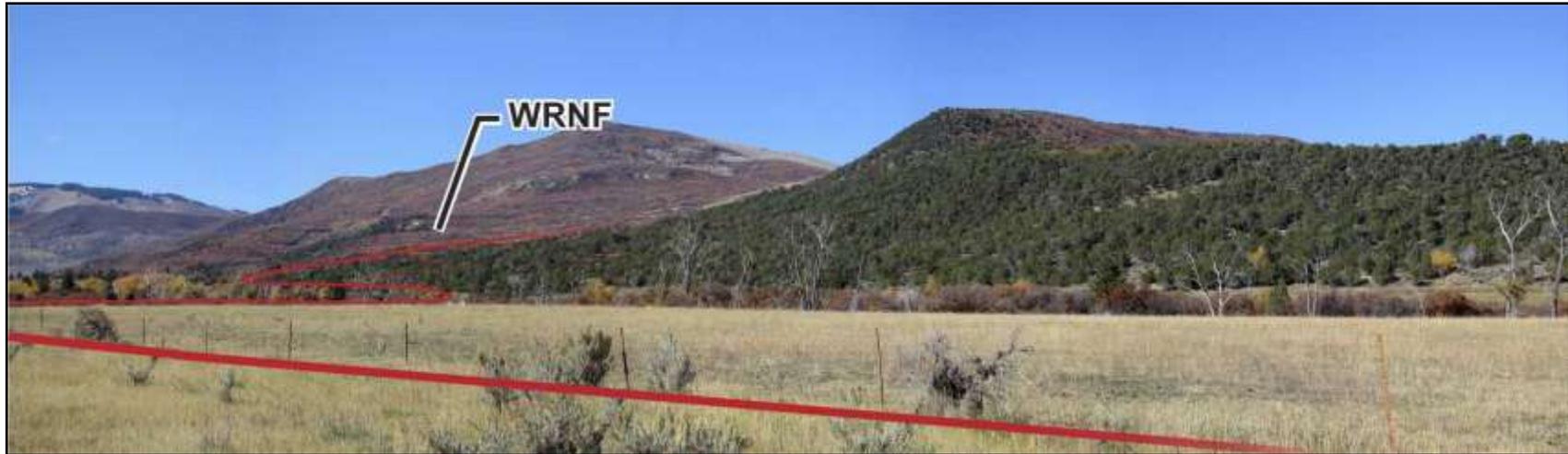


Figure B-15: Map 5



**Figure B-16: KOP 9**

View northeast from NFSR818 Road. Note: This is the Segment of the pipeline that crosses WRNF land. Viewers would be equal to the Proposed Action from this location. This would be the typical view a casual observer would have as they were traveling northeast on CR319 (NFSR818).



**Figure B-17: KOP 10**

View southwest from CR319. Note: This is the segment of the pipeline that crosses WRNF. Viewers would be equal to slightly below the Proposed Action from this location. This would be the typical view a casual observer would have as they were traveling southwest on CR319.



**Figure B-18: KOP 11**

View north from an existing well pad location. Notice: Riparian vegetation surrounding Dry Creek would provide some screening as the pipeline begins to parallel CR319 (NFSR818) and begins to travel northeast.

Map 6 (Figure B-19) represents the location of the Proposed Action that crosses private land and BLM VRM Class II land. This segment of pipeline would have a lower frequency of viewers. Viewers would be looking directly at the Proposed Action as they travel east along CR319 (West Mamm Creek Road) and west along CR322 (Figures B-20 through B-21).

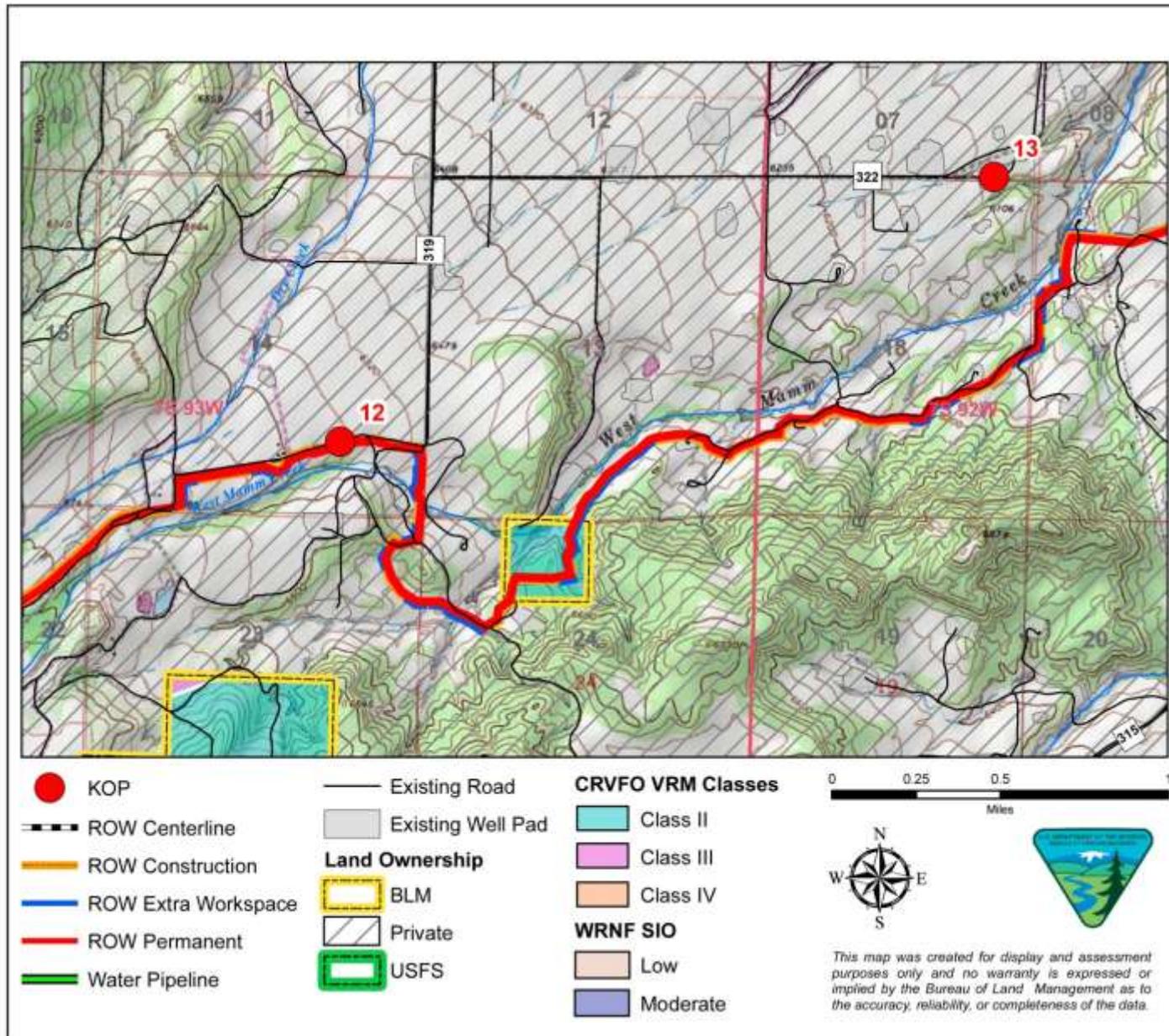
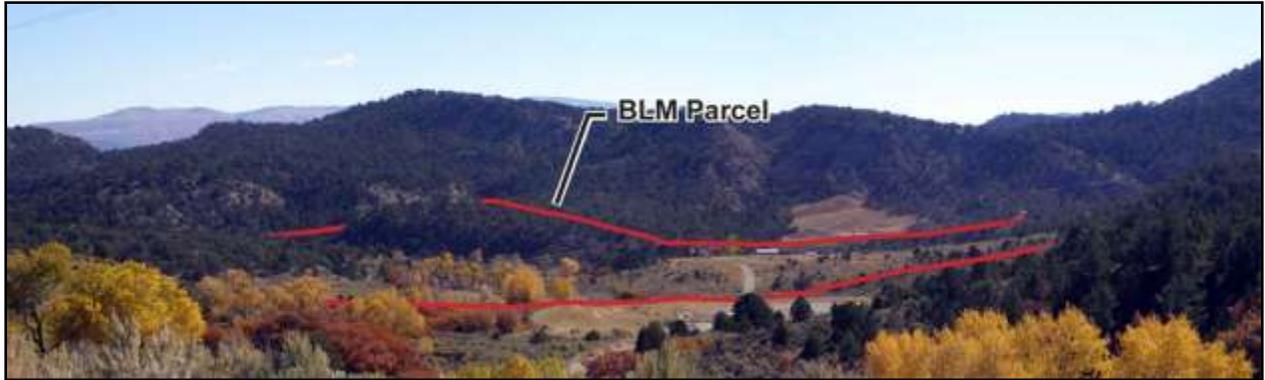


Figure B-19: Map 6



**Figure B-20: KOP 12**

View southeast from CR319 (West Mamm Creek Road). Note: The pipeline corridor would begin to disappear from view to the left and right of the picture.



**Figure B-21: KOP 13**

View southwest from CR322. Note: The pipeline would not be visible from this location, as the surrounding topography provides visual screening. This would also represent a typical view the casual observer would have traveling south or west on CR319.

## **Overview of the WRNF and BLM Visual Resource Management Systems**

### **WRNF Scenery Management System**

#### *Goals of the Scenery Management System Process:*

- Define the scenery management system process
- Determine the landscape character descriptions based on the subsection or equivalent unit of the national ecological hierarchy.
- Determine the existing scenic integrity level of the Forest.
- Determine scenic attractiveness utilizing land form/geology, water features, vegetation, and topography.
- Determine landscape visibility utilizing road and trail travel routes and use area concern levels.
- Rate Forest lands with a scenic class value (representing the level of public value for scenery) to be used as a management tool.
- Determine the scenic integrity objectives for the Forest.

#### *Overview of the Scenery Management System Process*

The scenery management system process involves identifying scenic components as they relate to people, mapping these components and assigning a value for aesthetics. The value unit provides information to planning teams to assist them in making a decision relative to scenery as a part of ecosystems and at project levels.

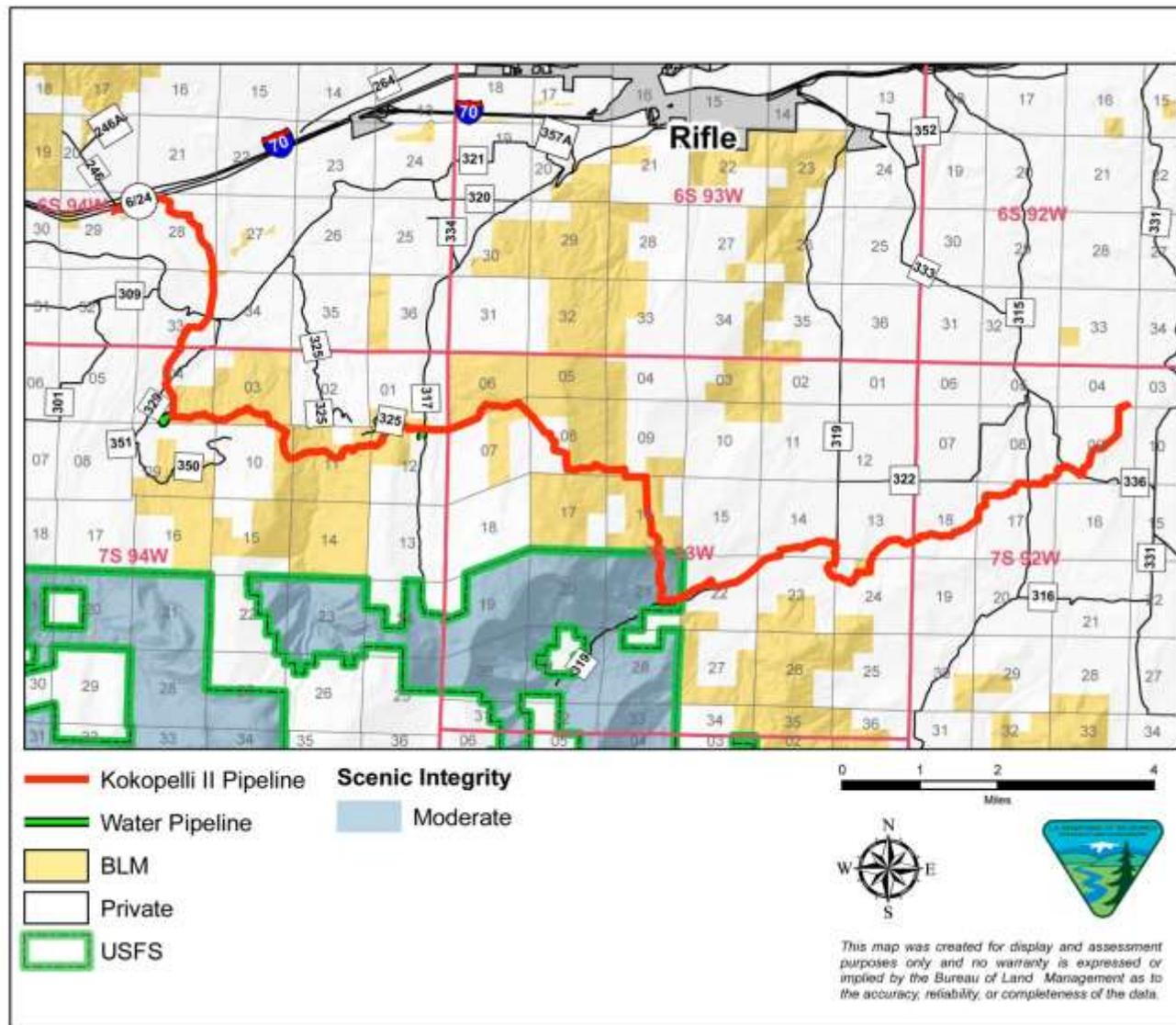
Ecological Unit Description – A mapping unit description. The ecological mapping unit used to describe the Divide-Plateau Creeks Uplands administrative unit on the White River National Forest is based on general terrestrial ecological unit (GTES) information described in the General Ecosystem Survey by Carlton. Combining the GTES units into two larger units is equivalent to a subsection. An objective description of the biological and physical elements is drawn from the data available at the subsection unit and combined with identified landscape character attributes in combination with the human elements to develop the Landscape Character Description. Landscape Character creates a “Sense of Place,” and describes the image and feel of an area. The Landscape Character Description provides the frame of reference for defining the Scenic Attractiveness classes.

The Landscape Character Description gives a geographic area its visual and cultural image, and consists of the combination of physical, biological and cultural attributes that make each landscape identifiable or unique. The description includes the valued attributes of the landscape, human habitat of the social environment, environmental regimes, and landscape stability.

The landscape character description is used as a reference for the Existing Scenic Integrity of all lands. Existing Scenic Integrity (ESI) indicates the degree of intactness and wholeness of the Landscape Character. Conversely, ESI is a measure of the degree of visible disruption of the Landscape Character. A landscape with very minimal visual disruption is considered to have high ESI. Those landscapes having increasingly discordant relationships among scenic attributes are viewed as having diminished Existing Scenic Integrity.

#### *ESI (see Figure B-22) and Scenic Integrity Objectives (SIO) Values.*

Six terms are used to describe the levels of existing scenic integrity and proposed scenic integrity as well as scenic integrity objectives. These levels are expressed and mapped as follows:



**Figure B-22: WRNF Scenic Integrity**

Mapped as Moderate: The valued landscape character appears slightly altered. Noticeable deviations must remain visually subordinate to the landscape character being viewed.

**Very High** – The valued landscape character is intact with only minute if any deviations. The existing landscape character and sense of place is expressed at the highest possible level.

**High** – The valued landscape character appears intact. Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so that they are not evident.

**Moderate** – **The valued landscape character appears slightly altered. Noticeable deviations must remain visually subordinate to the landscape character being viewed.**

**Low** – The valued landscape character appears moderately altered. Deviations begin to dominate the valued landscape character being viewed, but they borrow valued attributes such as size, shape, edge effect, and pattern of natural openings, changes in vegetation types, or architectural styles outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed, but they should be compatible or complementary to the character within.

**Very Low** – The valued landscape character being viewed appears heavily altered. Deviations may strongly dominate the valued landscape character. They may not borrow from valued attributes such as size, shape, edge effect, and pattern of natural openings, changes in vegetation types, or architectural styles within or outside the landscape being viewed. However, deviations must be shaped and blended with the natural terrain so that elements such as unnatural edges, roads, landings, and structures do not dominate the composition.

**Unacceptably Low** – The valued landscape character being viewed appears extremely altered. Deviations are extremely dominant and borrow little if any form, line, color, texture, pattern, or scale from the landscape character. Landscapes at this level of integrity need to be rehabilitated. This level should only be used to inventory existing integrity. It must not be used as a management reference.

Scenic Attractiveness Classes are developed to determine the relative scenic value of lands within a particular Landscape Character (see Figure B-23). The three scenic attractiveness classes are: Class A- Distinctive; **Class B- Typical**; Class C- Indistinctive. The landscape elements of landform, vegetation, rocks, cultural features and water features are considered when determining each of these classes.

Landscape Visibility is composed of two parts: Human values as they relate to the relative importance to the public of various scenes and the relative sensitivity of scenes based on distance from an observer. Human values that affect perceptions of landscapes are derived from constituent analysis. Constituent Analysis serves as a guide to perceptions of attractiveness, helps identify special places, and helps to define the meaning people give to the landscape. Constituent analysis leads to a determination of the relative importance of aesthetic to the public. This importance is expressed as a concern level. Sites, travel ways, special places and other areas are assigned a concern level value of 1, 2, or 3 to reflect the relative high, medium or low importance.

Seen Areas and Distance Zones are mapped from these 1, 2 or 3 areas to determine the relative sensitivity of scenes based on their distance from an observer (see Figure B-24). These distance zones are identified as:

- **Foreground** – up to 0.5 mile from observer
- **Middle ground** – 0.5 to 4 miles from the observer
- **Background** – 4 miles from the observer to the horizon

Seldom Seen Areas are areas not seen from travel routes. These areas are assigned a concern level 3, and may occur in any distance zone or scenic attractiveness class.

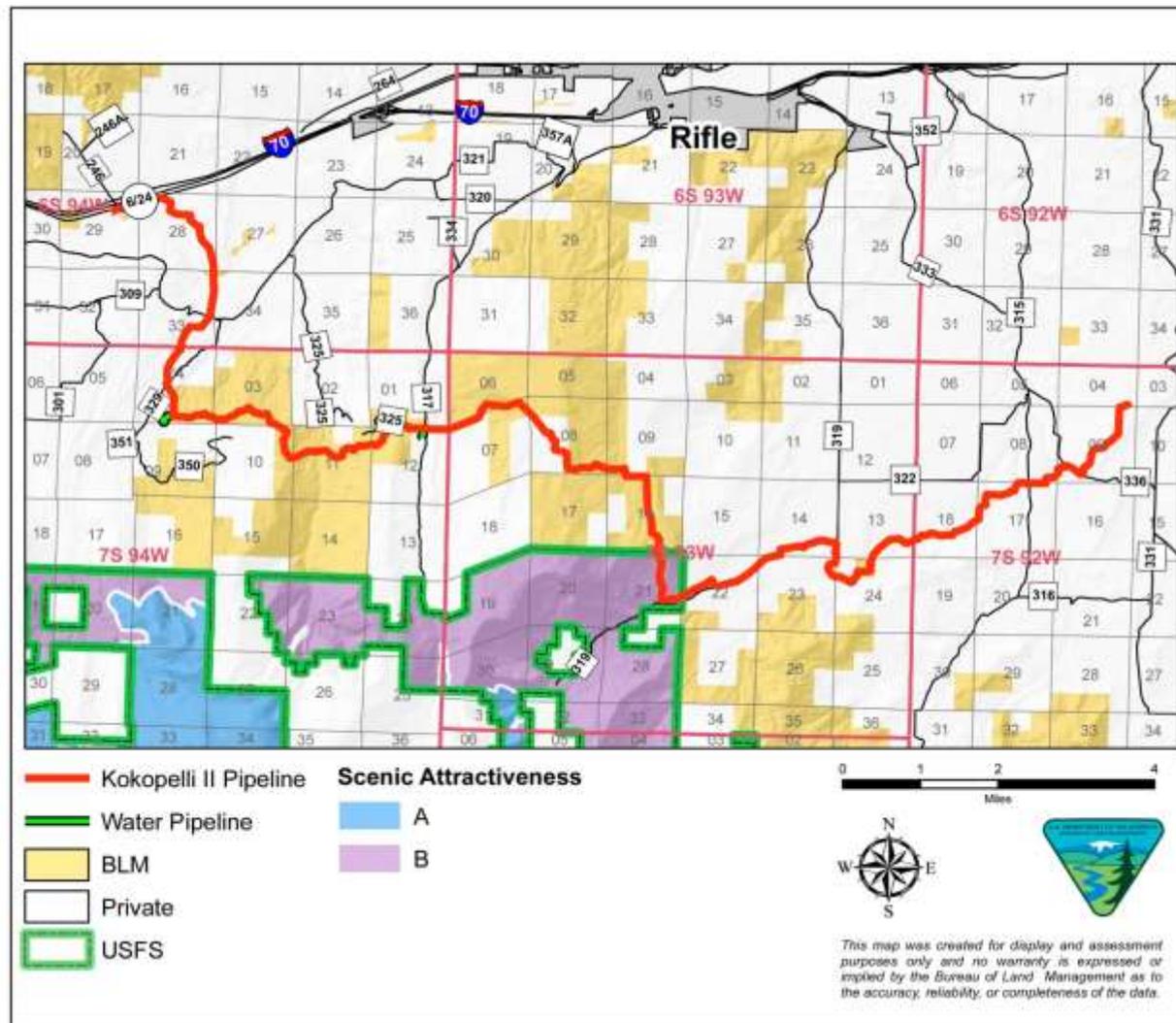
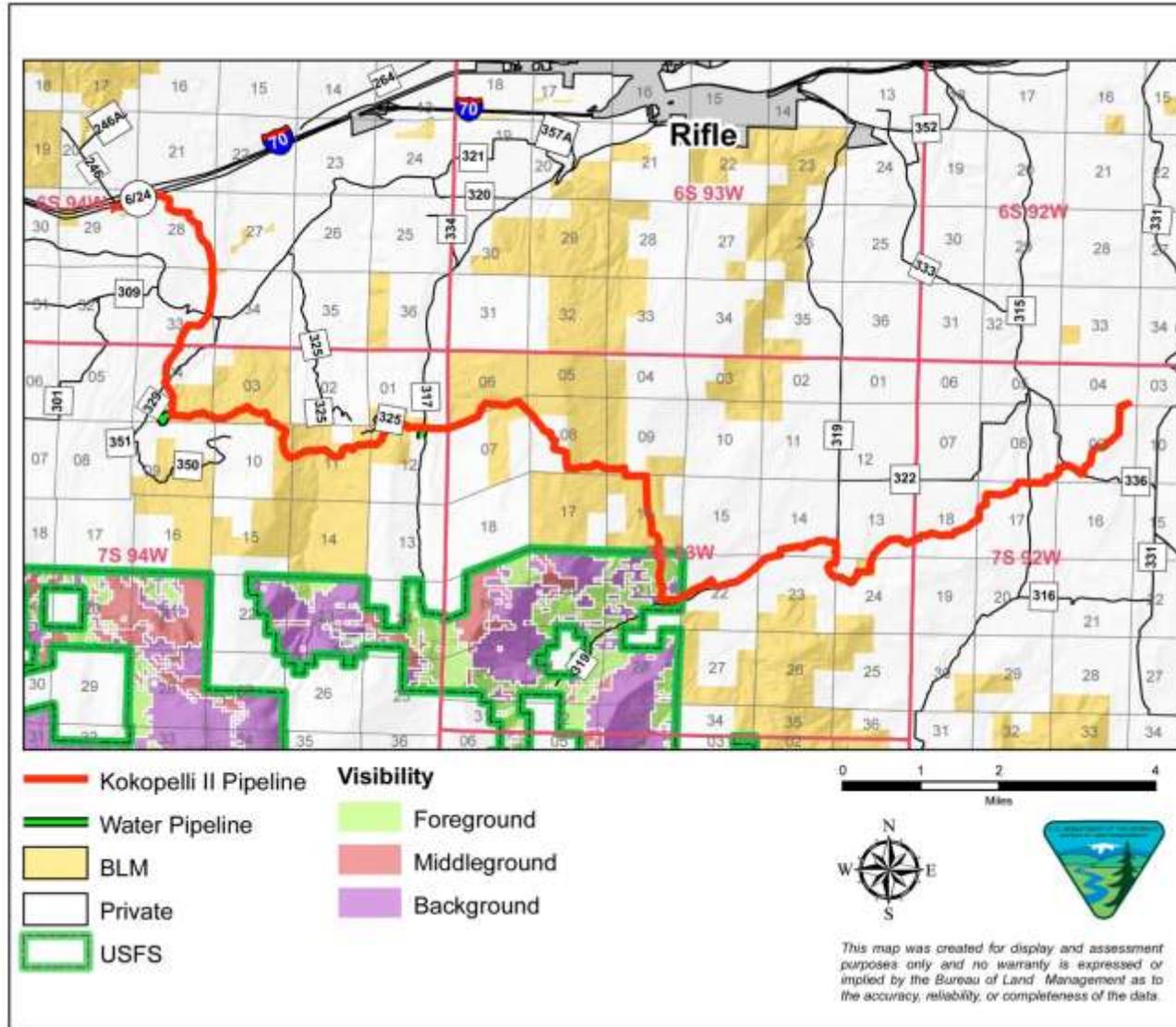


Figure B-23: WRNF Scenic Attractiveness

Mapped as Class B – Typical: Areas where landform, vegetation patterns, water characteristics, and cultural features use combine to provide ordinary or common scenic quality. These landscapes have generally positive, yet common, attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance. Normally they would form the basic matrix within the ecological unit.



**Figure B-24: WRNF Visibility**

Mapped as Foreground and Background. Specifically: Foreground-concern level 2 and Background-concern level 1. The most restrictive concern level as determined by the Distance Zone and Concern Level Combination Matrix is Foreground-concern level 2.

Using the data gathered and mapped for scenic attractiveness and landscape visibility, a numerical Scenic Class value is assigned to Forest lands. The ratings 1-5, indicate the scenic importance of landscape areas. Mapped scenic class values are used during forest planning and project planning to compare the value of scenery with other resources.

### **Issues and Criteria for Determining the Visual Impacts**

The factors considered in determining impacts on visual resources typically include (1) landscape character and viewer exposure of the project site and vicinity; (2) scenic integrity of the existing visible landscape; (3) the degree of visual change that would be caused by implementation of the proposed project (in terms of project-induced visual contrast, dominance, and view blockage); and (4) the level of public interest in the existing landscape characteristics and concern over potential changes. This determination includes both direct and indirect effects as well as short-term, long-term, and cumulative effects.

The criteria used to assess the extent of visual impacts resulting from the project take into consideration the factors described above, as well as Federal and State policies and guidelines pertaining to visual resources. The management plans establish guidance pertaining to the protection and enhancement of visual resources on each management unit.

For the purposes of this project, an impact on visual resources may be considered major (depending on the nature of the impact and viewing circumstances) if it results in one or more of the following:

- Long-term inconsistency with established USFS Management Plan Direction including Management Direction, Forest-wide Standards and Guidelines and Management Prescriptions.
- Long-term effect considered potentially major
  - A substantial adverse effect on a scenic vista;
  - Substantial degradation of the existing visual character or quality of the site and its surroundings; and
  - Creation of a new source of light or glare that would adversely affect day or nighttime views in the area.

The following questions are considered in assessing whether a project would cause a major impact:

- Would the project substantially alter the existing viewshed, including any changes in natural terrain?
- Would the project deviate substantially from the form, line, color, and texture of existing elements of the viewshed that contribute to visual quality?
- Would the project eliminate or block views of valuable visual resources?
- Would the project result in major amounts of backscatter light into the nighttime sky?
- Would the project be in conflict with directly identified public preferences regarding visual resources?
- Would the project result in a major reduction of sunlight, or the introduction of shadows, in areas used extensively by the community?

*WRNF Forest-wide Guidelines for Scenery Management*

- Scenery Management Guidelines #1 p. 2-34, WRNF LRMP: Management activities should be designed and implemented to achieve, at a minimum, the level of scenic integrity shown on the scenic integrity objective map.
- Scenery Management Guidelines #2 p. 2-34, WRNF LRMP: Rehabilitate all existing projects and areas that do not meet the scenic integrity objectives. Set priorities for rehabilitation considering the following:
  - Relative importance of the area and the amount of deviation from the scenic integrity objectives;
  - Foreground of high public use areas has highest priority;
  - Length of time it would take natural processes to reduce the visual impacts so that they meet the scenic integrity objective(s);
  - Length of time it would take rehabilitation measures to meet the scenic integrity objectives; and
  - Benefits to other resource management objectives to accomplish rehabilitation.
- Scenery Management Guidelines #3 p. 2-34, WRNF LRMP: Plan, design, and locate vegetation manipulation on a scale that retains the color and texture of the landscape character, borrowing directional emphasis of form and line from natural features.
- Scenery Management Guidelines #4 p. 2-34, WRNF LRMP: Choose facility and structure design, scale, color of materials, location, and orientation to meet the scenic integrity objective on the Scenic Integrity Objective Map.
- Scenery Management Guidelines #5 p. 2-34, WRNF LRMP: Facilities, structures, and towers with exteriors consisting of galvanized metal or other reflective surfaces would be treated or painted dark non-reflective colors that blend with the forest background to meet an average neutral value of 4.5 or less as measured on the Munsell neutral scale.
- Scenery Management Guidelines #6 p. 2-34, WRNF LRMP: Rehabilitate areas classified as “unacceptable alteration” in the existing scenic integrity inventory to the scenic integrity objective on the Scenic Integrity Objective Map.

*WRNF Management Prescriptions – Desired Conditions*

- Management Area 5.41: Deer and Elk Winter Range - Scenery is managed to provide a range of scenic integrity objectives from low to moderate.
- Management Area 5.43: Elk Habitat - Scenery is managed to provide a range of scenic integrity objectives from low to moderate.
- Management Area 8.32: Designated Utility Corridors – Existing and Potential - Scenery is managed to provide a range of scenic integrity objectives from low to very high.

Standards and Guideline for Scenery Management in 8.32 Designated Utility Corridors – Existing and Potential

- **Standard:** 1. Vegetation management plans, for new or reissued permits, are designed to minimize and rehabilitate visual impacts.
- **Guideline:** 1. The boundaries of the cut areas bordering utility corridors are blended into the surrounding vegetation in locations visible from key viewpoints.

### BLM Visual Resource Management (VRM ) System

- Different levels of scenic values require different levels of management. For example, management of an area with high scenic value might be focused on preserving the existing character of the landscape, and management of an area with little scenic value might allow for major modifications to the landscape.
- Determining how an area should be managed first requires an assessment of the area's scenic values.
- Assessing scenic values and determining visual impacts can be a subjective process. Objectivity and consistency can be greatly increased by using the basic design elements of form, line, color, and texture, which have often been used to describe and evaluate landscapes, and to describe proposed projects. Projects that repeat these design elements are usually in harmony with their surroundings; those that don't create contrast. By adjusting project designs so the elements are repeated, visual impacts can be minimized.

BLM's VRM system provides a way to identify and evaluate scenic values to determine the appropriate levels of management. It also provides a way to analyze potential visual impacts and apply visual design techniques to ensure that surface-disturbing activities are in harmony with their surroundings and meet VRM objectives established in land use plans. Basically, BLM's VRM system consists of two stages:

- Inventory (Visual Resource Inventory)
- Analysis (Visual Resource Contrast Rating)

#### Inventory Stage

The inventory stage involves identifying the visual resources of an area and assigning them to inventory classes using BLM's visual resource inventory process. The inventory process is described in detail in BLM Handbook H-8410-1, Visual Resource Inventory. Classes are assigned based on a combination of scenic quality, sensitivity level, and distance zones. This process involves rating the visual appeal of a tract of land, measuring public concern for scenic quality, and determining whether the tract of land is visible from travel routes or "Key Observation Points" (KOPs).

Visual values are considered throughout the Resource Management Planning (RMP) process, and the area's visual resources are then assigned to management classes with established objectives. The RMP establishes how the public lands would be used and allocated for different purposes, and is developed through public participation and collaboration. VRM management classes for all public lands are based on an inventory of visual resources and management considerations for other land uses. VRM management classes may differ from VRM inventory classes, based on management priorities for land uses. All lands within the Glenwood Springs Resource Area were inventoried and assigned visual resource management classes in the 1984 Resource Management Plan.



**APPENDIX C**  
**Legal Descriptions**



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**Right-of-Way Grant**

**Bargath LLC Kokopelli II Natural Gas Pipeline (COC75020)**

LEGAL DESCRIPTION

BLM and National Forest System Lands

June 2012

6TH PRINCIPAL MERIDIAN, GARFIELD COUNTY, COLORADO

Township 7 South, Range 93 West:

Section 6, SE $\frac{1}{4}$ SW $\frac{1}{4}$ , SW $\frac{1}{4}$ SE $\frac{1}{4}$ ;

Section 7, NW $\frac{1}{4}$ NE $\frac{1}{4}$ ; NE $\frac{1}{4}$ NE $\frac{1}{4}$ ;

Section 8, NW $\frac{1}{4}$ NW $\frac{1}{4}$ , SW $\frac{1}{4}$ SE $\frac{1}{4}$ , SE $\frac{1}{4}$ SE $\frac{1}{4}$ ;

Section 9, SW $\frac{1}{4}$ SW $\frac{1}{4}$ ;

Section 16, NE $\frac{1}{4}$ NW $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ , SW $\frac{1}{4}$ NE $\frac{1}{4}$ , NW $\frac{1}{4}$ SE $\frac{1}{4}$ , SW $\frac{1}{4}$ SE $\frac{1}{4}$ ;

Section 21, NW $\frac{1}{4}$ NE $\frac{1}{4}$ , SW $\frac{1}{4}$ NE $\frac{1}{4}$ , NW $\frac{1}{4}$ SE $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$ ;

Section 24, NE $\frac{1}{4}$ NW $\frac{1}{4}$ ;

Township 6 South, Range 94 West:

Section 33, NE $\frac{1}{4}$ NE $\frac{1}{4}$ ;

Section 34, NW $\frac{1}{4}$ NW $\frac{1}{4}$ .

Township 7 South, Range 94 West:

Section 1, SE $\frac{1}{4}$ SW $\frac{1}{4}$ ;

Section 3, SW $\frac{1}{4}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$ SW $\frac{1}{4}$ , SW $\frac{1}{4}$ SE $\frac{1}{4}$ ; SE $\frac{1}{4}$ SE $\frac{1}{4}$ ;

Section 4, SE $\frac{1}{4}$ SW $\frac{1}{4}$ , SW $\frac{1}{4}$ SE $\frac{1}{4}$ , SE $\frac{1}{4}$ SE $\frac{1}{4}$ ,

Section 10, NE $\frac{1}{4}$ NE $\frac{1}{4}$ , SE $\frac{1}{4}$ NE $\frac{1}{4}$ ,

Section 11, SW $\frac{1}{4}$ NW $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ , SW $\frac{1}{4}$ NE $\frac{1}{4}$ , SE $\frac{1}{4}$ NE $\frac{1}{4}$ ; NE $\frac{1}{4}$ NE $\frac{1}{4}$ ;

Section 12, NW $\frac{1}{4}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ NW $\frac{1}{4}$ ;

**KOKOPELLI PHASE II PIPELINE Right-of-Way Summary:**

7.6 miles (39,934 feet) in length on BLM

Acres of Disturbance:

Permanent ROW, 50 feet wide: BLM = 45.49 acres;

Temporary use Area, Variable width with minimum 25-foot width: BLM = 38.41 acres

0.9 mile (4,930 feet) in length on USFS

Acres of Disturbance:

Permanent ROW, 50 feet wide: USFS = 5.58 acres;

Temporary use Area, Variable width with minimum 25-foot width: USFS = 4.24 acres

**Right-of-Way Grant**  
**WPX Energy Rocky Mountain, LLC (COC75224)**  
**Spruce to Beaver Creek Water Pipelines**

LEGAL DESCRIPTION

BLM Land

June 2012

6TH PRINCIPAL MERIDIAN, GARFIELD COUNTY, COLORADO

Township 7 South, Range 94 West,

Section 1, S $\frac{1}{2}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ ;

Section 3, S $\frac{1}{2}$ S $\frac{1}{2}$ ;

Section 4, S $\frac{1}{2}$ SE $\frac{1}{4}$ ;

Section 10, Lot 1, SE $\frac{1}{4}$ NE $\frac{1}{4}$ ;

Section 11, S $\frac{1}{2}$ N $\frac{1}{2}$ ;

Section 12, Lots 3 and 4, SW $\frac{1}{4}$ NW $\frac{1}{4}$

SPRUCE CREEK TO BEAVER CREEK PIPELINE Right-of-Way Summary:

3.97 miles (20,900 feet) in length on BLM

Acres of Disturbance :

Permanent ROW, 35 feet wide): BLM = 16.97 acres;

Temporary use Area, 20 feet wide: BLM = 9.60 acres

**APPENDIX D**

**Public Comments and Agency Responses**

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## **PUBLIC COMMENTS AND RESPONSES**

A Public Notice requesting comments on the initial Proposed Action was published on December 15, 22, and 29, 2011, in the *Post Independent* (Glenwood Springs, Colorado) and *The Citizen Telegram* (Rifle, Colorado). For the revised Proposed Action, a Public Notice was published in the same newspapers on April 12, 19, and 26, 2012.

In addition, Public Notice letters were mailed initially on December 7, 2011 and for the revised Proposed Action on April 2, 2012, directly to adjacent landowners, City of Rifle, Colorado Mountain Club, Colorado Parks and Wildlife, Colorado Mule Deer Association, Colorado Oil and Gas Conservation Commission (NW Area Engineer), Encana Oil and Gas (USA), Garfield County Board of County Commissioners, Garfield County Road and Bridge Department, Garfield County Oil and Gas Liaison, Grand Valley Citizens Alliance, Grass Mesa HOA, Honorable Scott R. Tipton (US Representative), U.S. Forest Service (USFS) Rifle Ranger District, Western Colorado Congress, Wilderness Workshop, and WPX Energy Rocky Mountain, LLC. In addition, the Public Notices were posted on the Bureau of Land Management (BLM), Colorado River Valley Field Office (CRVFO) web site.

The first 30-day public comment period expired on January 20, 2012; the second 30-day public comment period expired on May 2, 2012. The following comments are arranged with other agencies first, followed by private citizens in the order of the date of the comment.

### ***PUBLIC COMMENTS AND RESPONSES FOR THE FIRST 30-DAY PUBLIC COMMENT PERIOD***

#### **Colorado Parks and Wildlife (CPW) – Letter from J.T. Romatzke, Area Wildlife Manager, Dated January 20, 2012**

*Comment: Much of the pipeline route falls within severe or critical winter range for mule deer and elk. Minimizing disturbance to mule deer and elk between December 1 and April 15 to encourage maximum use of winter range is of great importance to CPW. CPW strongly supports completing construction of the pipeline before the end of November and preferably before big game rifle hunting season begins in October.*

*Response: With the exception of the planned Colorado River bore work, a standard 5 month big game winter timing limitation from December 1 through April 30 will be enforced for all construction activities on public land (BLM and USFS) associated with the Kokopelli gas pipeline and the Spruce Creek to Beaver Creek water pipelines. The river boring work is scheduled to commence, as soon as BLM and County permits are authorized, to establish that the pipeline bore is successful providing the basis for proceeding with the remainder of the Kokopelli pipeline installation during the 2012 field season. No actual surface disturbance would occur on public lands during the Colorado River bore project, although the underground bore would penetrate through Federal minerals.*

*Comment: Beaver Creek is designated cutthroat trout habitat. CPW requests that Bargath, LLC, schedule construction of the Beaver Creek crossing to occur in late September to avoid sedimentation impacts to young-of-the-year cutthroat trout and avoid impacts to critical life stages of cutthroat trout in June, July, and August. CPW also requests that following dewatering of the stream, the dewatered segment should be searched for stranded fish to be replaced downstream of the project.*

*Response: These recommendations will be included in a Condition of Approval (COA) to be attached to the BLM right-of-way (ROW) grant for the Kokopelli Pipeline.*

*Comment: Development of a new pipeline in previously undisturbed habitat has the potential to create a significant amount of linear habitat fragmentation. Prior to pipeline development, Bargath should*

*establish baseline vegetation conditions and inventories to provide a basis for post-development habitat restoration to mimic pre-disturbance conditions.*

Response: The referenced baseline inventory has been conducted and is summarized in a Biological Report for the Kokopelli Phase II and Spruce to Beaver Creek Pipelines prepared by WestWater Engineering (WWE) in December 2011. The report provides assessments of vegetation, soils, plants and wildlife species including sensitive species, noxious weeds, and Waters of the United States.

Comment: *CPW would like to see grazing management practices that support reclamation efforts to include reductions or elimination of grazing at reclamation sites, fencing of reclamation areas, and frequent moving of animals away from reclamation areas.*

Response: As outlined in the Vegetation and Range Management sections of the Environmental Consequences, the expected reclamation of the proposed pipelines would occur in a manner that does not warrant eliminating grazing or requiring fencing of reclamation areas. Historically, the disturbed sites along adjacent or nearby pipelines have successfully revegetated within the outlined 3 to 5 year timeframe described in the impact analysis.

Comment: *CPW would like the BLM to clarify and set a standard for “excessively deep ruts” and include the language in the COA’s and that all Bargath personnel, contractors, and subcontractors be informed and follow the terms of the COA’s.*

Response: BLM has a condition of approval for saturated soil conditions which halts construction activities until soil dries or is frozen sufficiently for construction to proceed without undue damage or erosion to soils (Appendix A). Some rutting from wheeled and tracked equipment can be expected during construction, particularly during inclement weather. Knowing that the operator is required to fill the pipeline trench, rip and reshape the corridor to natural grade, spread the stockpiled topsoil and apply seed with a crimped straw component across the area of disturbance, the saturated soil COA will continue to be the benchmark COA for protection of the soil resource.

Comment: *Streams and associated riparian areas are some of the most highly productive and valued wildlife habitats in Colorado. This project crosses Beaver Creek. CPW recommends using the minimum right-of-way width where pipelines cross streams and riparian areas and retain as much native riparian canopy or stream bank vegetation as possible. Construction staging areas should not be located closer than 300 feet from any creek and entirely out of any riparian areas.*

Response: The planned construction ROW at the Beaver Creek crossing is 75 feet wide for approximately 70 feet across the creek channel as shown on Sheet 16 of 26 Alignment sheet. No construction staging areas are planned within 300 feet of any creek or in the vicinity of riparian vegetation.

Comment: *CPW requests notification of hazardous materials spills, especially those that occur near a riparian area.*

Response: Hazardous material spills on BLM land are reported to BLM Hazardous Materials Coordinator in Grand Junction, Colorado. A COA has been developed to outline the procedures in the event of a spill during construction or operation of the Kokopelli II gas pipeline or the WPX Spruce Creek to Beaver Creek water pipelines. Reference the CERCLA COAs and reporting requirements in General Terms and Conditions section of Appendix A.

Comment: *CPW requests that any illegal activity related to wildlife be reported immediately.*

*Response:* Project inspectors, including BLM personnel can notify the operator and BLM or USFS that illegal activities have occurred, but the responsibility for the enforcement of illegal activities is incumbent upon the law enforcement jurisdiction for the related offense. Hunting, fishing or wildlife-related offenses would certainly be reported to CPW officials.

*Comment:* CPW's first season big game rifle hunting season begins on October 1; county, BLM, and forest service roads may see an increase in traffic due to hunters being in the field. CPW encourages Bargath, LLC, contractors and subcontractors to use extra caution when using secondary and back roads this time of year.

*Response:* Agreed and duly noted that extra caution and slower speeds will be followed during the fall big game hunting seasons.

**Rick Blotter (private citizen) – Email dated December 15, 2011**

*Comment:* I am opposed to this project. There is no risk worth taking that could possibly lead to contamination of the Colorado River. I do not want to have what happened on the Yellowstone River last year happen on the Colorado. As a country we need to protect our environment not subject it to disaster.

*Response:* Thank you for your comment; your concern regarding this pipeline project has been duly noted.

**Jack C. Hamm (private citizen) – Email dated December 20, 2011**

*Comment:* This project should be allowed to proceed. There will be no long-term environmental impact since the pipe will be buried, and the reduction in truck traffic should be welcome to everyone. We need to support the natural gas industry both for the energy produced and for the local employment it provides. Thank you.

*Response:* Thank you for your comment; your concern regarding this pipeline project has been duly noted.

**Chad Gilbert (on behalf of Western Ranchers) – Email dated December 24, 2011**

*Comment:* In our opinion a green contractor should be used to do this project.

*Response:* Thank you for your comment; your concern regarding this pipeline project has been duly noted.

**George Bauer (landowner in project vicinity and Professional Land Surveyor) – Letter dated January 5, 2012**

*Comments/Questions:* I have the following concerns of the construction impact that is proposed to occur adjacent and under the Grass Mesa Ditch and historical access route. Bargath pipeline to cross under said ditch 2 times; is the depth of the proposed pipes going to be adequate for the ditch use and maintenance, and for how many years?

*Response:* The depth of the pipeline below the ditch course will be determined in a field meeting to be attended by Bargath, BLM, and ditch owner representatives. As stated in Realty Authorizations section of EA, BLM recognizes the pre-existing right of the historic ditch and will ensure that the pipeline operator shall accommodate the ditch rights and reestablishment of the ditch course within and across the planned ROW corridor of the pipeline. It will be incumbent upon the ditch owners to maintain, over time,

the ditch course across the pipeline ROW knowing that there is a high-pressure pipeline buried in proximity. Pipeline locations and marking along this stretch of ditch course and pipeline ROW will be required prior to any surface disturbance.

Comment/Question: *If said pipeline/ditch crossing is not backfilled correctly the ditch may blow-out; how long is Bargath/Williams liable for this portion of the ditch with reference to its integrity to flow water?*

Response: As required in the site-specific conditions of approval, a field meeting with the parties involved will be the time and place to resolve these types of issues.

Comment/Question: *With the construction of the pipeline so close to the ditch and access road, 50 feet to 75 feet distant in most situations; will the ditch and road be free of rocks and construction debris during and after construction?*

Response: Keeping the access road and ditch free of obstructions shall be required at all times with exception of the limited time that the pipeline trench is open during installation, or when the ditch course has been removed to accommodate the pipeline trenching process. During the planned field meeting identified in the COAs (Appendix A), each party is to relay to the other their planned work schedules (Bargath pipeline trenching and pipe installation vs. planned 2012 ditch maintenance work to be conducted by ditch owners) so that work at same ditch course location within the pipeline corridor is not planned at the same general time period.

Comment/Question: *Does this pipeline require any new permanent access roads, other than what presently exists?*

Response: There are no new planned access roads, particularly in proximity to the Grass Mesa ditch course, related to the Kokopelli II pipeline project.

Comment/Question: *Relative to all of the proposed pipelines situated within BLM grounds; are there going to be more surface rocks that presently exist on the reclaimed ground or will they be buried or removed?*

Response: It is difficult to predict the amount of boulders that will be generated by the pipeline excavation work. However, as outlined in Appendix A, boulders that are generated on the project shall be used to armor and line drainages, provide impediments to motorized travel onto or along the pipeline ROW, or in the vicinity of the Grass Mesa ditch, possibly used to line or armor the ditch course if that proves amenable to the parties.

Comment/Question: *Will we have an opportunity to review, discuss, mitigate or inspect, within the ditch limits, before construction and upon reclamation*

Response: Yes, the ditch owners will be invited to a planned field meeting with Bargath and BLM representatives prior to any surface disturbance along the pipeline ROW in vicinity of the Grass Mesa ditch. Objective of the meeting is to inspect, review, discuss and mitigate the planned work by both parties and reach agreement in principle on timing and scope of work to be conducted by both parties as it relates to the pipeline trenching across or along the ditch course.

#### **Halene Burklow (private citizen) – Email dated January 14, 2012**

Comment/Question: *As you know everything deteriorates, so how [will] these gas field companies ensure to protect the water and soil that our friends and families will be using when the pipeline bursts/breaks?*

Response: As far as pipeline integrity, Bargath is designing the line to comply with Department of Transportation (DOT) requirements. On portions of the line where housing density warrants, the pipeline will be certified as a DOT gathering line. The pipe will be designed to API 1104 standards and will be properly engineered to handle the pressure and service we specify. Typically this line will be designed to have a MAOP of 1440 psig, but in reality will operate at closer to 1000 psig. We will also have cathodic protection on the line that will insure the long term integrity of the pipeline.

Comment/Question: *How far down would this pipeline be buried? It doesn't matter how far down it is, it could still leak. The farther down the harder it will be to dig it up to fix the leak. The higher up, the worse to [sic]. Pipelines are a way of life for some, but for most it is a hazardous situation waiting to happen.*

Response: As noted in the Plan of Development submitted by Bargath, the typical depth of the pipeline is 4 feet as measured from the top of the pipe.

Comment/Question: *As far as water lines go, where would the water be coming from? Is this water that would normally be delivered to the surrounding cities, and now be going to the gas fields instead?*

Response: As stated in the Proposed Action, the two 6-inch pipelines would serve the water delivery and collection needs for WPX's field development in the Spruce Creek, Flatiron Mesa, and Beaver Creek areas and drastically reduce water truck use on the nearby county, BLM and private access roads. The targeted waters to be collected and delivered would typically comprise produced water generated from producing wells.

Comment/Question: *"Untouched" land, once it has something built on it, structural wise, especially with contaminants going through the soil, you cannot [sic] use the land for anything else [i.e., farming]. Obviously oil leaking will destroy the soil and ecosystem on that land.*

Response: As identified in the Vegetation section of the EA, reclamation of the disturbed areas along the pipeline is expected to occur within 3 to 5 years. The traditional uses of the land that the line crosses will revert to its original vegetative condition over time, whether it is rangeland and wildlife habitats on BLM lands to agricultural and rural residential uses on nearby private lands.

Comment/Question: *If such royalties are to be paid to certain persons and entities in areas where the pipelines are to run, who's to say Williams Production RMT Company will pay the correct royalties?*

Response: The issue of land agreements and payments for such agreements are matters that occur under contract terms between Bargath and the respective landowner(s), and are of no concern to the BLM.

#### **Bret Closs (Grass Mesa ditch owner and private citizen) – Letter dated January 19, 2012**

Comment: *My main concern is with the Kokopelli pipeline is its direct impact on the Grass Mesa Ditch, co-owned by myself and George Bauer. I know of at least two places where the proposed pipeline will cross the ditch, possibly more. The ditch will remain open at all times during any pipeline construction. It is BLM and Williams responsibility to see that it does so.*

*George Bauer and I will require a pre-construction meeting on-site before any construction begins. Also, periodic meetings during construction to see that our ditch is not compromised in any way. Past pipeline construction above and below ground by Encana has shown complete disregard of the ditch. It will not happen again.*

Response: Prior to commencement of pipeline construction work in the vicinity of the Beaver Creek Grass Mesa ditch, a field meeting to be attended by Bargath, BLM, and ditch owner representatives will be required to discuss these issues.

Comment: *It is my opinion that the BLM does not have the legal right to allow companies other than Encana to use Grass Mesa Roads, (private) to allow any non-mineral rights owners' use of our roads for construction traffic.*

Response: The BLM is in no position to authorize any company or contractor to use any private roads for construction traffic.

Comment: *Weed control is another huge issue that has been a problem in the past on other pipeline rights-of-way.*

Response: Appendix A has a specific Weed Control COA to address this concern.

Comment/Question: *Will there be any above ground risers, valves, etc. that will need constant maintenance?*

Response: There certainly will be valve risers along the Kokopelli II pipeline. The final location of such features has not yet been determined.

Comment: *Much of the pipeline is in pristine elk and deer habitat; above ground equipment should be located elsewhere.*

Response: The terrestrial wildlife section of the EA addresses impacts related to deer and elk habitat along the Kokopelli II pipeline. Final location of valve risers has not yet been determined.

Comment/Question: *Will there be access to the general public from the Mamm Creek side [of Grass Mesa] after construction? Will there be gates? Will they be locked?*

Response: The planned pipeline construction corridor from West Mamm Creek is not at all intended to serve as a public access point to National Forest land in Section 21 (T7S R93W) or BLM lands further north in Section 16. Reclamation of any temporary access roads built to deliver pipe joints to the job site (including placement of impediments to vehicle use) shall be the preferred method to deter motorized use on the Kokopelli II pipeline corridor north of West Mamm Creek.

Comment/Question: *During which months of the year will construction take place?*

Response: At this point in the planning process, the most accurate statement regarding the construction period for the Kokopelli II gas pipeline is that the earliest it could commence on BLM land, provided the proper permitting has been granted, is May 1, 2012. Construction work on National Forest land is not authorized until after the results of the sensitive plant surveys have been documented in a survey report.

**Spruce Creek Ranch – Letter from Arnold and Darleen Mackley and Craig and Dianne Boe, dated January 20, 2012**

Comment: *County Road 329 (Spruce Creek Road) is inadequate for this type of major plan; it is narrow, dangerous, and cannot be broadened without affecting a deep natural water drainage below the road.*

Response: Spruce Creek Road (CR329) is the jurisdiction of Garfield County and the county permits oil and gas related traffic through its transportation permitting which addresses oversize and overweight

loads. Spruce Creek is designated as a preferred haul route per Resolution #2003-113 adopted by the Board of County Commissioners.

Comment: *During the winter almost all vehicles must use chains on County Road 329—this further damages the road and then the drivers use unauthorized “pull-offs” on private land to remove the chains causing additional damage.*

Response: This authority to use CR329 is the jurisdiction of Garfield County. Matters regarding chain-up locations should be taken up with the Garfield County Road and Bridge Department.

Comment: *The traffic “math” for Williams Spruce Creek Master Development Plan is astounding; roughly 1,425,000 round trips on this narrow road by Williams contractors alone and this will add to those numbers.*

Response: As outlined in the Access and Transportation sections of the Environmental Assessment (EA), the traffic numbers attributed to the proposed pipeline projects are presented and analyzed, particularly in Table 5. These expected traffic numbers during the peak of construction are far less than speculated. Furthermore, with the installation of the Spruce Creek to Beaver Creek water pipelines, water truck traffic serving existing and future wells up Spruce Creek could be expected to reduce drastically.

Comment: *The view shed from I-70 and existing resident’s property is an area of concern. It is vital that all of these companies coordinate construction due to shallow topsoil that exposes a bright white deep layer of caliche beneath. Cuts into this terrain made over 50 years ago still have not healed as the caliche soil is inert, making it a strict requirement that the companies must import quality topsoil where needed [for reclamation]. The view from I-70 will be a checkerboard of white gashes, forever changing this beautiful mountain.*

Response: The Visual Resources section of the EA, and further supported in the visual analysis presented in Appendix B, specifically outlines the expected viewshed impacts from the construction of these proposed pipelines. While it may be true that the pipelines would be visible after their installation, it is projected that the impacts, once fully mitigated with the establishment of reclaimed vegetation, would satisfy BLM’s Visual Resource management objectives.

Comment: *The roadways and rights-of-way that will be necessary to construct pipelines and laydown areas will make it impossible to control cattle on the grazing permits. BLM should require wing fencing and cattle guards to control cattle movement on the permits that have been active for decades.*

Response: Conditions of approval are presented in Appendix A to require drift fencing across the pipeline and its adjacent slopes, particularly at allotment boundaries between Porcupine and Spruce Creeks to control grazing livestock moving along the planned pipeline corridor.

Comment: *The dust that will be activated by this much activity is a concern and it is obvious that without mandatory dust control (magnesium chloride, gravel, or paving) in addition to frequent monitoring, the view shed and our health and comfort are at risk.*

Response: Dust abatement COA presented in Appendix A will be a requirement for the operators and its subcontractors to reduce air quality impacts including dust from moving vehicles.

Comment: *We too ask that all of the different heritages be protected like other historical sites located on BLM lands. Historical markers should be placed at the sites so that all can appreciate the efforts of the homesteaders, and not just bulldoze the last of our heritage on this mountain.*

Response: Review of the cultural resource inventory prepared for the pipeline projects indicates no known historical sites within the planned construction area. Any new information provided to the BLM regarding historical homesteads on or in the vicinity of public lands would be appreciably received and included in the historical record by the BLM archeologist.

Comment/Question: *We ask that BLM force existing landowners and Williams to work together on using existing roads and rights-of-ways instead of just proposing a new one and making a new scar. There is a road, County Road 350, with an existing pipeline right-of-way in place that already has scarred this area. Why not put the Kokopelli Phase II pipeline along this road as it is going to the same destination?*

Response: BLM's role in the approval of the proposed pipeline project is not to leverage an operator into choosing any route on private land – those negotiations are strictly between the private landowner and the operator. BLM's role is to identify and assess impacts and create rules or conditions for any authorizations for pipeline installations on BLM.

### ***PUBLIC COMMENTS AND RESPONSES FOR THE SECOND 30-DAY PUBLIC COMMENT PERIOD***

#### **Colorado Parks and Wildlife (CPW) – Letter from J.T. Romatzke, Area Wildlife Manager, Dated April 27, 2012**

Comment: *CPW recognizes and appreciates BLM's and Williams/Bargath's proactive planning efforts to address our wildlife and wildlife habitat concerns.*

*The locations of the natural gas and water pipelines fall within severe or critical winter range for mule deer and elk, and the gas pipeline also crosses a restricted surface occupancy Cutthroat Trout habitat at Beaver Cree, and sensitive Bald Eagle winter/night roost site habitats. CPW believes that the EA and BMPs referenced, along with the Beaver Creek Restoration Plan and the Weed Management Plan adequately address our concerns regarding habitat alteration and disturbance.*

*CPW especially appreciates Williams Bargath's plan to enhance the Beaver Creek habitat that was negatively impacted by the installation of an earlier gas pipeline by another company. Their proactive steps, BMPs adopted, and the BMPs that CPW provided to the Plan of Development will enhance some of the project area, and greatly minimize impacts along the overall pipeline routes.*

Response: Thank you for your comment; your concern regarding this pipeline project has been duly noted.

Comment: *Since the Kokopelli Phase II project now entails two separated construction and restoration periods, one beginning in 2012 and the other starting no earlier than 2013, we are concerned about the spread of noxious weeds during the interim. In order to control noxious weeds and minimize impact on wildlife, we submit the following recommendations:*

- *Perform construction outside the winter concentration period of 1 December through 15 April.*
- *Aggressively implement the Williams Bargath Kokopelli Phase II noxious and invasive weed management plan throughout the entire pipeline project where ever soil disturbance occurs.*
- *Seed any disturbed surface areas within 30 days of disturbance.*
- *Utilize soil roughening and mechanical seed bed preparation techniques, and apply no more than 24 hours prior to seeding – to increase water filtration, and minimize erosion and invasive species.*

*Response:* Thank you for your comment; your concern regarding this pipeline project has been duly noted. We will consider the inclusion of these recommendations in the specific Conditions of Approval for these projects.

**George Bauer (landowner in project vicinity and Professional Land Surveyor) – Letter dated April 2, 2012**

*Comment:* Bargath's proposal to not construct their 16 inch natural gas pipeline at the same time as the WPX water pipelines is not a very prudent thing to do in my opinion. Due to the rough topography of the Spruce Creek and Porcupine Creek valleys, as well as the very rocky soil, demand that this project be completed at the same time to minimize the disruption of soils, views and wildlife. As typical with the pipeline constructors, once a pipeline is in place in rocky soil, the new line to be constructed must be offset from the previous lines to minimize impact due to excavation, meaning more disturbed right of way. With the thought of additional pipeline right of way comes the inevitable, more surface rock, more visual disturbance, more wildlife impact, more weeds and more impact, period.

*Response:* Thank you for your comment. The separate installations of the two pipeline projects is well documented in this Environmental Assessment. BLM cannot control the timing of projects, but must analyze the impacts associated with the separate construction schedules and require appropriate mitigation measures. The Proposed Action clearly identifies the initial corridor construction with a 55-foot width to be then expanded to a minimum 75-foot width.

*Comment/Question:* Will there be additional right of way needed?

*Response:* The initial Proposed Action when the pipelines were to be installed concurrently in the same trench required a minimum 75-foot wide disturbance corridor. With the reconsideration for the timing of these projects, the WPX buried water lines would be installed initially during Summer 2011 with a maximum 55-foot wide disturbance corridor. When the Bargath gas pipeline is installed in 2013 or beyond, the then-reclaimed WPX corridor would be redisturbed for its full width of 55 feet with an additional 20 feet of new disturbance allowed (to arrive at the full disturbance width of 75 feet).

*Comment/Question:* Will this project be completed in 2013 or can it be delayed again and again?

*Response:* As it stands today, Bargath has requested the issuance of the BLM right-of-way providing authorization and permitting to proceed with the project when economic conditions warrant. The expected construction start-up date is no sooner than 2013.

*Comment/Question:* Is there to be final reclamation left that resembles past pipelines, (nothing but surface rock, rutted trails and weeds)?

*Response:* As the stipulations outlined in this document describe, the operators will be required to reestablish desirable vegetation, provide for reestablishment of drainages, stream courses and ditches, and control weed infestations. There will be rocks that are exposed during the trenching process for these pipelines, and special stipulations have been developed to address the measures to deal with excess rocks along the right-of-ways.

*Comment/Question:* If the gas pipeline can be delayed for a year presently, with less wells drilled and depleting reserves, is this pipeline even necessary at all?

*Response:* The future market conditions will dictate the need for this pipeline. Bargath forecasts that such a need would arise by 2013 or later.

**Marilyn Oden (private citizen) – Email dated April 9, 2012**

Comment: *We have had several such pipelines built across the county. I am in support of this venture. Reclamation overseen by combination of county commissioners, land owners and BLM has proven both stunning and quite successful results. Wildlife flock there to feed along pipelines.*

Response: Thank you for your comment; your concern regarding this pipeline project has been duly noted.

**David Ludlam, West Slope Colorado Oil and Gas Association – Letter dated April 18, 2012**

Comment: *The proposed action benefits all interested parties including landowners, industry, federal partners and the state of Colorado. These benefits manifest themselves in the completion of 4.1 miles of new water pipelines and in the radical reduction in truck traffic as a result. This reduction in traffic protects surrounding landowners as well as wildlife.*

*Most importantly, the project will be yet another incremental increase in operational efficiency – a dynamic continuing to make production from the Rocky Mountains cost effective.*

Response: Thank you for your comment; your concern regarding this pipeline project has been duly noted.