Proposed Action

Encana's Pumba Natural Gas and Water Pipeline – East Mamm Creek Compressor Station to Rifle Compressor Station BLM Environmental Assessment DOI-BLM-CO-N040-2012-0035-EA

INTRODUCTION

Purpose and Need

Drilling, development, and production of natural gas wells in the portion of Garfield County, Colorado, in the vicinity of the towns of Silt, Rifle, and Parachute produce large volumes of gas that needs to be gathered and transported in pipelines. Existing pipelines and other gathering facilities are inadequate to for adequately gathering and transporting the increased quantities of natural gas expected to result from leases held by Encana Oil and Gas (USA) Inc. in the Mamm Creek area. This project would provide a natural gas gathering trunkline to transport the projected future volumes of raw natural gas to a downstream pipeline and processing plant. From there, the gas would be tied into major interstate pipelines to supply natural gas throughout the country.

The proposed Pumba pipeline project would have the capacity to transport approximately 600 million dry cubic feet (MMcfd) of raw natural gas from the East Mamm compressor station to the Rifle compressor station in Garfield County. The natural gas pipeline would have a diameter of 24 inches to accommodate future estimated gas production by Encana and other producers in the area. This pipeline would transport additional anticipated untreated gas to the existing Enterprise 36-inch pipeline that already transports gas to a central processing facility (the Meeker Gas Plant) and would provide other producers an opportunity to transport their gas to the Meeker Gas Plant. Natural gas liquids are currently transported via existing pipeline from the Meeker Gas Plant to the nearby MAPCO pipeline lateral, and the processed natural gas would most likely be delivered to the Rockies Express Pipeline at the White River hub or other interstate pipeline sales outlets.

A water pipeline, anticipated to be 12 inches in diameter but potentially up to 16 inches, is also needed to support the planned additional development in the Mamm Creek area. The proposed water line would parallel the proposed natural gas pipeline for approximately 6.3 miles, beginning at the Lake Fox Tie-In on Grass Mesa and terminating at the Rifle compressor station. Anticipated flow through this line would be approximately 120,000 barrels per day (bpd). The two pipelines would be constructed in an existing the 75-foot-wide right-of-way (ROW) corridor, with authorization requested for a permanent 50-foot ROW.

The Pumba pipelines would generally be located south of Rifle and cross a series of private and BLM parcels (Figure 1).

Authorizing Actions and Relationship to Statutes and Regulations

Application for Encana's Pumba gas and water 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 natural gas, oil, synthetic liquid or gaseous fuels, or any refined product produced. Section 28 (e) of the MLA further gives Federal agencies authority to allow temporary use of Federal lands for construction, operation, and maintenance of pipelines. The U.S. Department of Interior, Bureau of Land Management (BLM) regulations implementing this portion of the MLA are found at 43 CFR 2800/2880 and 36 CFR 251.

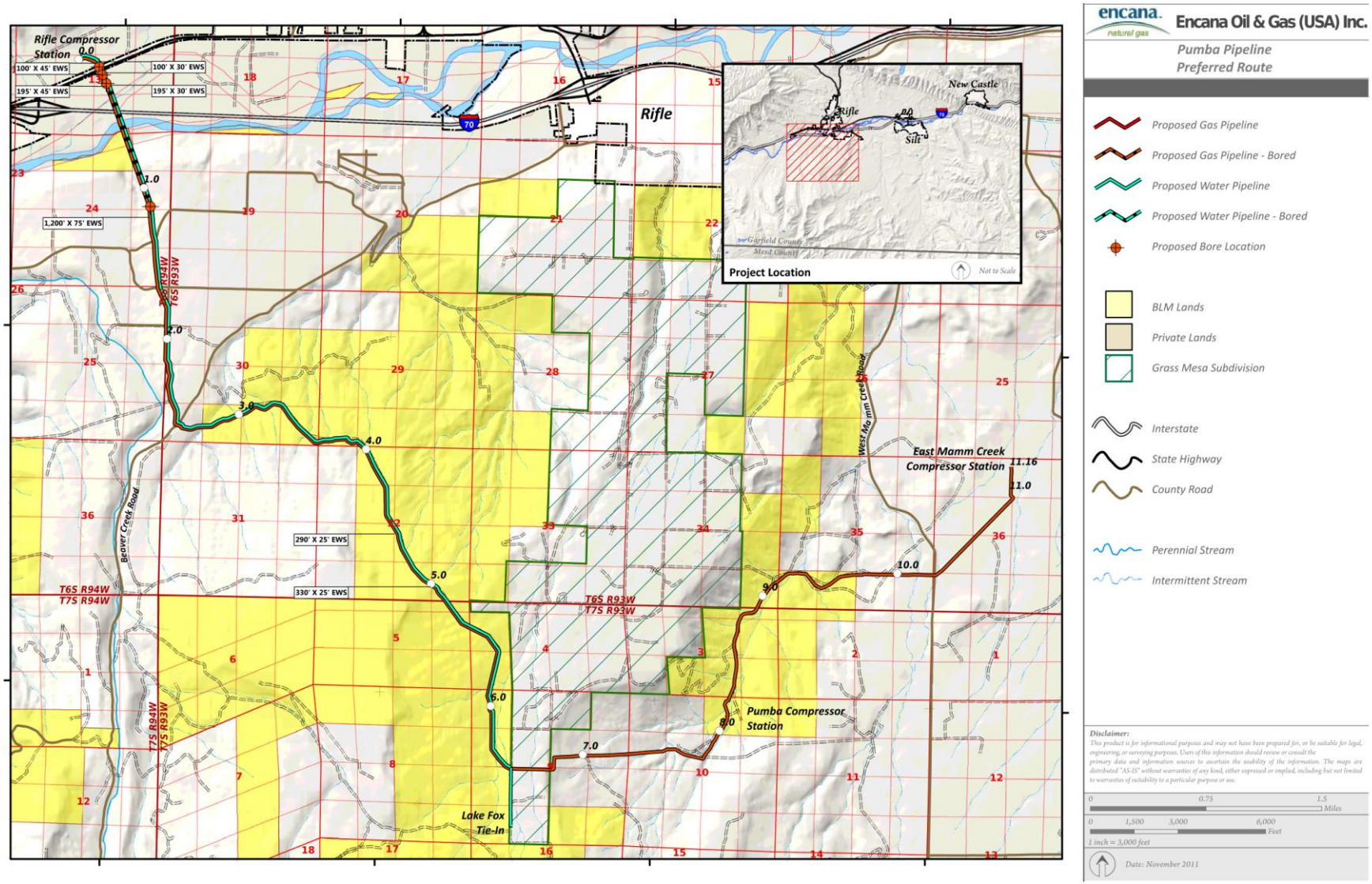

Figure 1. Proposed Pumba Pipeline Route

The MLA directs the agencies to require an applicant to submit a plan of construction, operation, and rehabilitation for ROWs. Encana's submission of a 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:

(A) Requirements for restoration, revegetation, and curtailment of erosion of the surface of the land.

(B) Requirements to ensure that activities in connection with the right-of-way or permit would not violate applicable air and water quality standards or related facility siting standards established by or pursuant to law.

(C) 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

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

The Pumba pipeline 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." Because this project would crosses public lands managed by the BLM, Colorado River Valley Field Office, a ROW grant would be issued by the BLM. The proposed pipelines would be authorized with a ROW grant issued pursuant to Title V of the Federal Land Policy and Management Act of October 21, 1976 (FLPMA)(90 Stat. 2776; 43 U.S.C. 1761).

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

Table 1. Federally Required Permits, Approvals, and Authorizing Actions

Agency	***Permit or Consultation***	***Applicability***
Bureau of Land Management	EA preparation	NEPA compliance
	Separate ROW grants for Pumba natural gas pipeline and water pipeline	Pipeline construction, operation and maintenance on BLM-managed lands
	Antiquities and cultural resource permits	Inventory, excavate, and/or remove cultural or historic resources
U.S. Army Corps of Engineers	Nationwide Permit 12 Pre-construction Notification	Work in waters of the U.S.
U.S. Fish and Wildlife Service	ESA Section 7 consultation	Informal consultation process for threatened and endangered species

Decisions to be Made Based on this Environmental Assessment

Pursuant to the National Environmental Policy Act of 1969 (NEPA), the outcome of this Environmental Assessment (EA) is a Decision Record documenting that the Proposed Action would either significantly affect or not 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 Encana and modified in consultation with BLM, as well as a variety of mitigation measures identified by BLM and attached to the ROW grants as protective stipulations.

If the Proposed Action is not approved, the result would be denial by BLM of Encana's application (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 itself constitute approval of the Proposed Action but instead provides a basis for BLM to issue the respective ROW grants, which in turn would authorize the commencement of ground-disturbing activities on Federal lands.

PROPOSED ACTION

Encana proposes to construct approximately 11.2 miles of up to 24-inch-diameter buried steel natural gas pipeline and related above-ground facilities as well as 6.7 miles of up to 16-inch buried steel water pipeline. The surface disturbance proposed for the pipelines would involve a 50-foot-wide permanent ROW and an adjacent 25-foot-wide temporary construction area. The pipeline ROWs would be constructed across private and Federal lands including the BLM (Table 2 and Figure 1). The project would be situated entirely within Garfield County and would require permits and approvals from BLM and the appropriate departments of Garfield County. Construction would begin upon receipt of the necessary agency approvals and permits. The anticipated duration of construction is approximately 18 months, with periods of no construction activity over the winter of 2012-13.

Table 2. Pipeline Summary across BLM and Private Lands (Miles)

Component	*Pipe Length*	*Parallel Alignment*	*Parcel Crossings*		*Existing ROW*	
			BLM Land	*Private Land*	*Within ROW*	*Outside ROW*
Gas Pipeline	11.2	6.3	7.2	4	9.6	1.4
Water Pipeline	6.7	6.3	5.5	1.2	5.3	1.4

The natural gas pipeline would begin at the East Mamm compressor station and traverse across Hunter Mesa to the Pumba compressor station. From there, the gas pipeline would cross the southern end of Grass Mesa and follow the eastern and northern slopes of Flat Iron Mesa to Taughenbaugh Mesa. From Taughenbaugh Mesa, the pipeline would be bored under the Colorado River and would terminate at the Rifle compressor station. Approximately 87% of the proposed natural gas pipeline and 78% of the proposed water line follows an existing ROW in which all existing lines have been located. The existing ROW from the East Mamm compressor station to the Pumba compressor station is approximately 50 feet wide and was most recently reclaimed in 2011. The existing ROW from the Pumba compressor station to the Rifle Compressor Station is approximately 50 feet wide and was reclaimed in 2004.

The water pipeline would begin at the Lake Fox Tie-in and continue north to where it would parallel the natural gas pipeline for the remaining alignment, including a bore under the Colorado River, and would terminate at the Rifle compressor station. These pipelines would be installed adjacent to existing pipelines and/or road corridors where possible. Existing roads would be used to access the construction workspace to the extent possible.

Willow Creek Construction has an existing 20.5-acre yard in Rifle where they base their equipment, maintenance, and office personnel. Encana uses Willow Creek Construction as their preferred pipeline construction vendor and has made an agreement with WCC for the use of this location to support the Pumba pipeline project throughout construction. Most equipment and material for pipeline construction would be delivered directly to the project area, although some may be stored at the WCC yard. In addition to the permanent and temporary ROWs, Encana has identified nine areas as Extra Work Spaces (EWSs) to facilitate construction of the pipelines. These are necessary in areas of challenging terrain and to allow additional room for staging at the bore locations. These same areas would be used for installation of both pipelines. These areas and their sizes are indicated on Figure 1; the amount of associated surface disturbance is included in Table 3.

Table 3. Proposed Action Surface Disturbance Summary (Acres)

Land Status	*Permanent ROW*	*Temporary ROW*	*Extra Workspaces (EWS)*	*Totals*
BLM				
Gas/water line	22.47	11.22	0.35	34.04
Natural gas only	10.67	5.32		15.99
Water only	0.95	0.01		0.96
Subtotal	*34.09*	*16.55*	*0.35*	*50.99*
Private				
Gas/water line	11.52	5.79	2.75	20.06
Natural gas only	17.84	8.98		26.82
Water only	1.47	1.19		2.66
Subtotal	*30.83*	*15.96*	*2.75*	*49.54*
Total	**64.92**	**32.51**	**3.1**	**100.53**

The proposed pipelines would cross no streams and would be bored beneath the Colorado River using the horizontal directional drilling (HDD) technique. Encana plans to conduct test coring and sampling along the length of the planned Colorado River bore to determine the suitability of the subsoils and alluvium for this purpose. The core samples will be taken from private lands within the 400-foot survey corridor at the beginning and end points of the proposed bore. Core sampling is anticipated to occur in early 2012. The lines would be installed beneath paved county roads by boring using the auger boring technique, and unimproved roads would be crossed with an open cut.

Construction is planned to occur in three phases:

- Phase I would begin in spring 2012 and would involve boring under the Colorado River. Separate bores are planned for the natural gas and water pipelines. Anticipated duration of this phase is 4 to 6 months.
- Phase II, conducted concurrently with Phase I, would include installation of the water pipeline from the Lake Fox Tie-in to the southern bore location. Anticipated duration is also approximately 4 to 6 months.

- Phase III would begin in spring 2013 and would include the construction of the gas pipeline from the East Mamm Creek compressor station to the southern bore location. Anticipated duration is 4 to 6 months.

Reclamation of temporary disturbances associated with Phase I and II would occur prior to winter of 2012. Phase III site reclamation would occur after installation of the gas pipeline and would be completed prior to winter of 2013. The pipelines would be operated year-round.

Although the two proposed pipelines be installed parallel for approximately 6.3 miles (including the bores), they would not be installed concurrently, due to worker safety issues given topography constraints within the proposed ROW, safety concerns to reduce and minimize construction traffic to limited public roads access, and owner capital investment constraints for 2012. For these reasons, the water pipeline would be installed first. Where the water line parallels existing pipelines in the proposed ROW corridor, the water line would be installed adjacent to and offset from the existing pipeline a minimum of 15 feet as practicable. The natural gas pipeline would be installed in the same manner in the following year (2013) and would parallel and be offset from the water line accordingly. Typical offsets for each of these lines would vary from 15 to 25 feet within the proposed 75-foot corridor; however, the proposed route may deviate from this standard offset during construction activities due to terrain and/or environmental features. The end result would be two pipelines installed within the proposed 75-foot disturbed ROW corridor, resulting in a permanent 50-foot ROW for both lines after final reclamation efforts are completed.

The pipelines would be installed at depth to provide a minimum of 36 inches of cover above the pipe. One wetland would be crossed, and nine drainages would be crossed with the proposal. Depending on the time of construction and the amount of flowing water, Encana would flume the ditches to maintain water flow, if necessary, and open cut the ditches. Authorization under a nationwide permit from the US Army Corps of Engineers would be required for these crossings.

The Proposed Action consists of permanent below-ground and above-ground pipeline facilities as well as temporary facilities needed during construction. Permanent facilities would include meter stations/valve sets, pipeline markers, and Cathodic Protection (anti-corrosion) test stations. The various segments of the pipeline and associated facilities would be installed in compliance with BLM and private landowner stipulations, as applicable.

After installation of the pipelines, all disturbed areas (including the ROW, temporary vehicle travel routes, and staging areas) would be returned to pre-construction contours and drainage patterns. Topsoil would then be replaced into areas from which it was stripped. Revegetation via seeding with native perennial grasses would be the primary method to stabilize soils and ensure permanent erosion control over the long term. Encana would be responsible for the monitoring of the operations of the pipeline once construction is completed.

Detailed Description of the Proposed Action

Major elements of the Proposed Action are described in more detail under the general headings of project facilities, construction, reclamation, and operations and maintenance. These elements include standard and project-specific surface-use lease/ROW stipulations to avoid, minimize, or mitigate impacts to natural resources as a result of the Proposed Action. The BLM stipulations to be attached to the ROW grants for the two pipelines are provided in Appendix A.

Project Access

Encana would primarily use existing roads to access the construction workspace. No road improvements would be required. Roads would be maintained to the original condition following construction. Access to the northern portion of the project area would originate from US Interstate 70 (I-70) at Exit 87 and onto U.S. Highway 6, which generally parallels I-70 toward Rifle. The Rifle compressor station and the northern bore terminus would be reached by traveling northeastward approximately 0.4 mile on Highway 6. Access to the southern bore terminus, located on private lands, would be via Taughenbaugh Mesa Road (County Road 321).

Access to the southern portion of the project area would originate from Mamm Creek Road (County Road 319), which accesses Hunter Mesa, the existing Pumba compressor station, and the existing East Mamm compressor station. From County Road 319, the Lake Fox tie-in would be accessed via the BLM Grass Mesa Road or the Rose Ranch Road. Mamm Creek Road can be reached by travelling east on Airport Road from Exit 90 for approximately 1.75 miles.

Portions of the project area would not be accessible from existing roads. In these cases, travel lanes would be established within the ROW limits to allow traffic to flow between access roads.

Rose Ranch Road would be used as the preferred route to access portions of the pipeline on or near the southern part of the Grass Mesa subdivision. It would also serve as emergency access during pipeline installation along the Grass Mesa Road. Encana's Traffic Control Plan and Emergency Access Plan for the project would be provided with the EA.

Project Facilities

A 75-foot-wide work area would be required on both Federal and private lands during construction, of which 50 feet would be maintained as a permanent pipeline ROW. Encana has identified nine existing work stations to facilitate construction of the pipelines. Two of these areas are located between mileposts (MPs) 4 and 5 and are necessary because of the steep topography. One large staging area is located south of MP 1, which would be used during mobilization and demobilization of equipment and for the delivery of pipe and materials for the bore under the Colorado River. This bore ends at approximately MP 0.2, and two smaller work stations are also identified in that field. Four additional work stations are proposed for staging equipment and materials associated with the conventional bore under US6 to the Rifle compressor station, two on each side of Highway 6.

Permanent facilities include meter stations/valve sets, pipeline markers, and Cathodic Protection (anti-corrosion) test stations. These facilities would be located within the permanent ROW. Valves would be installed on both sides of the Colorado River on both lines. These facilities would be finalized upon completion of the engineered design.

Civil engineering surveys were performed by Wasatch Surveying to identify the centerline of the pipeline and the boundaries on both sides of the ROW. Independent Environmental Inspectors (EIs) retained by Encana would be responsible for verifying that the limits of authorized construction work areas are staked and approved access roads are signed prior to construction.

Clearing and Grading

Exclusion fencing would be installed prior to clearing and grading as appropriate to protect sensitive vegetation and cultural resources. Existing survey monuments located as part of the civil survey effort

would not be at risk from proposed construction activities. Temporary fencing for livestock would be installed as necessary in areas where grazing occurs.

Clearing, grading, and other disturbance of soil and vegetation would be limited to the minimum area required for safe construction operations within the approved ROW and extra workspaces. Trees would be cut using a chain saw and/or mechanical shears; brush would generally be cut with a hydro-ax to avoid disturbance of root systems. Trees and brush would be cut as close to the ground as possible. Root systems of trees would be left in place where feasible and where they would not pose a safety concern for workers or an impediment to equipment or rubber-tired vehicle access. Crowns of herbaceous vegetation would be maintained to the extent possible where grading of the ROW and extra workspaces are not necessary.

Following clearing of obstacles and debris, the alignment would be graded to remove topsoil and surface rocks. Up to 6 inches of topsoil would be stockpiled separately along the edge of the ROW for redistribution following construction. Where the ROW parallels existing pipelines, the topsoil would be placed over the existing pipelines to prevent its being mixed with trench spoils.

All cleared brush and other materials would be shredded by using a hydro-ax and mixed with topsoil within the ROW or in temporary use areas unless otherwise specified. Following construction, these materials would be dispersed over the ROW. No brush would be windrowed along the row.

Trenching

Construction methods used to excavate the trench would vary depending on soil, terrain, and related factors. Rotary trenching machines would be used where practicable. Conventional tracked backhoes (track hoes) would generally be used in areas with steep slopes, unstable soils, high water tables, or where especially deep or wide cuts are required. Measures would be taken to ensure that property owners or tenants are able to move vehicles, equipment, and livestock across the trench when necessary. Adequate precautions would also be taken to ensure that livestock are able to reach water sources. These would include contacting livestock operators, providing adequate crossing facilities, or other measures as needed.

The trench would typically be excavated approximately 36 inches wide at the bottom, with sides sloped to meet Occupational Safety and Health Administration (OSHA) specifications. The depth of the trench would be approximately 66 to 72 inches but would vary with the conditions encountered. The minimum pipe depth of 36 inches of cover would be maintained at all times in conformance with U.S. Department of Transportation (USDOT) regulations. Occasionally, the trench would be excavated to greater depths due to topography or safety issues. Greater depths would be required at crossings of unpaved roads, other pipelines, streams, or other obstructions. At a minimum, the trench would be excavated to a depth to allow a clearance of 24 inches between the new pipelines and other pipelines or underground facilities. Other pipelines exposed during trenching would be padded to prevent damage. Machine excavation would not be performed closer than 10 feet from any existing pipeline encountered in the ROW unless authorized by the owner/operator of that pipeline. Existing pipeline locations would be marked in the field, and 48-hour prior notification given to the operator of the underground utility.

Pipeline crossings of unimproved, lightly traveled, or rural roads would be made with a mechanical ditching machine or a backhoe. Installation at these locations, including cleanup and restoration of road surfaces, would usually be completed within one day. In such cases, the public would be given 72 hours' notice of any closures and provisions would be made to detour or control passage of traffic during construction.

Where large rocks are encountered, hydro-hammers, tractor-mounted mechanical rippers, or rock trenching equipment may be used to facilitate excavation. No blasting is anticipated.

Boring

Boring techniques would generally be used to cross beneath County Roads to avoid disrupting traffic in accordance with the governing agency requirements and permitting agreements. Auger boring techniques would be used for these installations. Unimproved roads would typically be crossed using an open cut. Refer to Figure 1 for proposed road crossings. Table 4 identifies roads that would be crossed, surface type, and proposed construction methods for pipeline installation.

Table 4. Proposed Construction Method for Road Crossings

Road Name	*Route #*	*Surface Type*	*Proposed Construction Method*
US Highway 6	6	Paved	Bore
Interstate 70	70	Paved	Bore
Taughenbaugh Mesa Road	CR 321	Paved	Bore
Rifle-Rulison Road	CR 320	Paved	Bore
Salmon Lane	334A RD	Dirt	Open Cut
NA	CR 356	Dirt	Open Cut
NA	CR 334A	Dirt	Open-Cut
NA	CO Hwy 334	Dirt	Open Cut
Beaver Creek Road	CR 317	Dirt	Open Cut
Federal 29-11 Pad Access Road	NA	Dirt	Open Cut
NA	8193AR	Dirt	Open Cut
BLM/Grass Mesa Road	NA	Dirt	Open Cut
West Mamm Creek Road	CR 319	Paved	Bore
East Mamm Creek Compressor Station Access Road	NA	Dirt	Open Cut

Auger boring involves excavating a bore pit on one side of the crossing and a receiving pit on the other side. A power unit mounted on rails or a side-boom boring machine attached to a dead-man is used to drive the auger inside a heavy-walled pipe casing until the power unit reaches the leading edge of the bore pit. The power unit is disconnected from the auger, backed up, and a segment of the carrier pipe welded to the casing segment already driven. Additional auger and carrier pipe segments are added successively until the bore reaches the other side of the crossing in the receiving pit. Soil excavated by the auger is removed from the pit by a backhoe. Once through, the power unit backs out the auger one segment at a time, leaving the gas pipeline in place under the crossing. In the receiving pit, the casing segment is removed for use at the next crossing.

Horizontal directional drilling would be used to bore under the Colorado River, requiring a bore length of 0.9 mile. This method is typically used to avoid disturbance of sensitive surface features, including waterbodies and wetlands. The process uses drilling fluid consisting primarily of water and bentonite, a naturally occurring clay. The drilling fluid is prepared in the mixing tank using both new and clean recycled drilling fluid. The fluid is pumped at rates of 200 to 1,000 gallons per minute (gpm) through the center of the drill pipe to the cutters. Return flow is through the annulus created between the wall of the boring and the drill pipe. One pit would be constructed at both the entry and exit points of the bore to provide temporary storage for the drilling fluid. In the entry pit, the fluid is pumped to the fluid

processing equipment. Typically, shaker screens, de-sanders, de-silters, and centrifuges remove increasingly finer cuttings from the drilling fluid. As stated previously, Encana plans to conduct test coring and sampling along the length of the planned Colorado River bore to determine the feasibility of the subsoils for horizontal drilling.

The cleaned fluid is recycled to the mixing tank and pumps for reuse in the borehole. The excess cuttings are disposed at a site approved to accept this type of material. However, directional drilling presents a slight potential for surface disturbance through inadvertent releases of drilling fluids. Such releases are typically caused by pressurization of the drill hole beyond the containment capability of the overburden soil material, which allows the drilling fluid to flow to the ground surface.

A minimum depth of cover of 25 feet in competent soils would be provided above the bore to provide a margin of safety against seepage of drilling fluid.

Pipe Installation

Pipe installation would include stringing, bending for horizontal or vertical angles in the alignment, welding the pipe segments together, X-ray inspection, coating the joint areas to prevent corrosion, and then lowering-in and padding.

Line pipe would be shipped directly from the manufacturer by trucks to the Willow Creek yard and directly to the ROW. Each individual joint of pipe would be unloaded by sucker hoes or tractors equipped with side booms and slings, and strung parallel to the trench. Sufficient pipe for road or stream crossings would be stockpiled at staging areas near the crossings. Longer pipe segments associated with the horizontal drilling would be staged parallel to one another within the approved work stations.

Stringing operations would be coordinated with trenching and installation activities 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 ROW.

After the joints of pipe are strung along the trench but before being welded together, individual joints of the pipe would be bent to accommodate horizontal and vertical changes in direction. Field bends would be made utilizing a hydraulically operated bending machine. Where the deflection of a bend exceeds the allowable limits for a field-bent pipe, factory (induction) bends would be installed.

After the pipe joints are bent, the pipe would be lined up end-to-end and clamped into position. The pipe would then be welded ASME Code B31.8 for Gas Transmission and Distribution Piping Systems and ASME Code B31.4 for Pipeline Transportation Systems for Liquids (water). All welds would be visually inspected by a qualified inspector using non-destructive radiographic methods. At a minimum, radiographic inspection would be conducted in accordance with USDOT requirements. A specialized contractor, certified to perform radiographic inspection, would be employed to perform this work. Any defects would be repaired or cut out as required under the specified regulations and standards.

To prevent corrosion, the pipe would be externally coated with fusion bonded epoxy coating prior to delivery. After welding, field joints would be coated using field-applied fusion bond epoxy. Before the pipe is lowered into the ditch, the pipeline coating would be visually inspected and tested with an electronic detector, and any faults or scratches (holidays) would be repaired.

Before the pipe section is lowered into the ditch, visual inspection would verify that the pipe is properly fitted and installed into the ditch, minimum cover is provided, and the trench bottom is free of rocks and other debris that could damage the external pipe coating. Side-boom tractors would be used to

simultaneously lift the pipe section, position it over the ditch, and lower it in place. Padding machines would be used to sift soil fines from the excavated subsoils to provide rock-free pipeline padding pipe cover minimum of twelve inches. Sandbags would be used to support the pipe and maintain a minimum of six inches clearance from the bottom of the trench. In rocky areas, padding material or a rock shield would be used to protect the pipe. No topsoil would be used to pad the pipe.

Backfilling

Backfilling would begin after a section of the pipe has been successfully placed in the trench and final inspection completed. Backfilling would be accomplished using bulldozers and track hoes. Backfilling of the trench would generally use the subsoil previously excavated from the trench, except in rocky areas where imported select fill material may be needed. Backfill would be graded and compacted by being tamped or walked-in with a wheeled or tracked vehicle. Compaction would be performed to the extent necessary to eliminate voids in the trench. Backfill of trenches would not be performed where the soil is frozen to the extent that consolidated masses would not "break down." In agricultural areas, the backfill would be replaced at the same compaction density as the adjacent undisturbed soil. Any excavated materials or materials unfit for backfill would be utilized or properly disposed of in conformance with applicable laws or regulations.

The final step in backfilling is to place a mound over the trench approximately 6 inches high to account for subsidence as practical, on Federal lands. A variance is required to eliminate the mound. On private lands, written authorization from the property owner is required to eliminate the mound.

Pressure Testing

The entire pipeline would be tested in compliance with USDOT regulations (49 CFR Part 192). Prior to filling the pipeline for a hydrostatic test, each section of the pipeline is cleaned by passing reinforced poly pigs through the interior of the line. Incremental segments of the pipeline are then filled with water to achieve the required maximum pressure and held for the duration of the test of 8 hours minimum for buried pipe and 4 hours minimum for above ground test segments.

Typically, the hydrostatic tests of individual segments would be conducted in sequence and the test water would be transferred from one segment to another. Test water would be obtained from approved sources. Sources for test water are included in the Strength Testing Plan (Appendix B).

Water for hydrostatic testing would be appropriated from various sources utilizing portable pumps driven by diesel engines. To prevent environmental damage from potential diesel fuel spills during the operation of the engine(s), additional measures would be implemented when the pumps are located within 200 feet of a water body.

Water used for pressure testing would be discharged into approved locations in accordance with applicable permit requirements. These locations would be identified upon completion of the engineered design. Water would be discharged within the same basin using best management practices (BMPs).

Cleanup and Reclamation

Cleanup and reclamation would occur after the pipeline is installed, and would begin after backfill activities are completed. Cleanup of the surface along the construction workspace and work stations would be performed by removing any construction debris and grading to the finished contour. Subsoil would be decompacted to a depth of 6 to 10 inches prior to topsoil replacement and topsoil returned to pre-construction depths and locations. Erosion control measures would be installed as appropriate.

Additional information on measures to protect surface waters and ensure appropriate reclamation of disturbed areas is provided in Appendix B. Seeding of native perennial grasses would be the primary method to stabilize soils and ensure permanent erosion control over the long term. Seed mixes would reflect environmental conditions and ecological range sites along the project route and emphasize the use of native species. Seed mixes, rates, and application areas would be provided in the Reclamation Plan in accordance with fee-landowner and BLM requirements. Every effort would be made to complete final cleanup and installation of permanent erosion control measures within 30 days after final backfilling is completed.

Operations and Maintenance

Encana would be responsible for the monitoring of the operations of the pipeline once construction is completed. Maintenance and operating personnel would be coordinated from the Parachute office to ensure that any area can be reached within a short period in case of an emergency or malfunction. Encana would develop an Emergency Plan for the USDOT-regulated pipelines to be followed by Encana employees in the event of an emergency. The plan would establish written procedures that are intended to minimize the hazards in the event of a gas pipeline emergency. 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.

Design Criteria, Stipulations, and Best Management Practices

Industry standard BMPs for resource protection would be employed throughout the project. Encana has also committed to follow certain design features (also known as mitigation measures) as part of the proposed construction and maintenance activities. These are outlined in this proposal and are included in the Plan of Development that accompanied the ROW application.

NO ACTION ALTERNATIVE

The No Action Alternative would deny the ROW application for the use of Federally administered land, and therefore construction of the pipelines would not occur on BLM land. Although the operators could install the pipelines entirely across private land, the routes would be circuitous, resulting in greater surface disturbance and resource impacts than associated with the Proposed Action. To avoid Federal land, as under the No Action Alternative, the pipelines would need to be constructed in proximity to the Colorado River corridor, where the residential population is more concentrated and resource impacts could 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 result in much greater resource impacts than the Proposed Action presented in this EA.

PLAN CONFORMANCE REVIEW

BLM Land Use Plan

The Proposed Action is subject to and has 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; March 1999 – Oil and Gas Leasing & Development Final Supplemental Environmental Impact Statement.

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

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.

BLM 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 the Proposed Action or alternatives being analyzed would result in impacts that would maintain, improve, or deteriorate land health conditions relative to these resources.