

CHAPTER 2

PROPOSED ACTION AND ALTERNATIVES

2.0 SUMMARY

The proposed project components are identified within Chapter 1, 1.1 Project Description and Location, and the locations are shown on Figure 1-1. Detailed maps of all project components appear in Appendix A of this document. JGGC currently owns and operates a large gathering pipeline system including three large diameter pipelines from the west end of the Jonah Field to Opal. The pipelines would run parallel to the existing pipeline routes for most of their length. Table 2-1 shows detailed pipeline lengths and surface ownerships for each of the pipelines.

Table 2-1. Pipelines Included in the Proposed Action

Pipeline	Size	Total Length, ft.	BLM	BOR	Fee	State
Luman Road Suction	24"	33,610	33,610	0	0	0
Windmill Road Suction	24"	13,904	13,904	0	0	0
Burma Road Suction	36"	26,308	26,308	0	0	0
Bridger-Luman Discharge	36"	18,086	18,086	0	0	0
Bridger-Luman Liquids	8"	18,077	18,077	0	0	0
Bridger-Bird-Opal Discharge	36"	349,655	308,219	25,707	11,926	3,803
Pioneer-Opal Liquids	4"	9,300	6,000	0	3,300	0
Total		468,940	424,204	25,707	15,226	3,803

Bridger to Opal Pipeline

The Bridger to Opal discharge pipeline would run parallel to the existing Jonah Gas pipeline route from the proposed Bridger Compressor Station to the existing Luman Compressor Station then to the existing Bird Canyon Compressor Station, to a point in the NW/4 of Section 15 T25N-R111W where it would run in a southwesterly direction to a point in the NW/4 of Section 21, T25N-R111W. At that point it would parallel the existing FMC pipeline to the Green River crossing located in the SW/4 of Section 16, T23N-R111W. From the Green River crossing to the Opal Plant, the pipeline would run west to the Williams pipeline corridor in Section 13, T22N-R114W and from there it would run on the east side and parallel to the existing Williams Field Services pipelines into the existing Pioneer Gas Plant. From there, the line would parallel the existing JGGC pipelines to Williams' Opal Gas Plant.

The discharge pipeline route requires crossing the Green River. JGGC is proposing to horizontally bore under the Green River to minimize environmental impact. A staging area is proposed for each side of the Green River crossing. The pipeline would be buried at least 4.0 feet deep, except at road crossings where the depth would be 6.0 feet, and the Green River horizontal directional drill, where the pipeline would be 25 to 40 vertical feet beneath the river bed. A 110-foot wide construction corridor is proposed by JGGC. Upon completion of the

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project, a permanent 50-foot wide right-of-way, containing approximately 383.29 federal acres, is proposed for operational and maintenance purposes. Temporary use areas for pipeline construction purposes would total approximately 619.4 federal acres. The pipeline would be operational year-round. The volume of natural gas in the pipeline would be approximately 750 to 1,300 million standard cubic feet per day (MMSCF/D). The length of term for the right-of-way requested by JGGC is thirty years.

Bridger and Luman Suction Pipelines

The proposed suction pipelines and the 8-inch liquids pipeline from Bridger to the existing Luman Compressor Station would parallel existing pipeline ROWs within the Jonah Field, keeping a minimum 25-foot separation distance from the existing pipelines. Total disturbance would be approximately 212.8 federal acres for the suction pipelines: 105.5 acres for the proposed 50-foot permanent ROW and 107.3 acres of temporary use areas.

Bridger Compression Station

The compression facility would be located at the proposed Bridger Compressor Station, located in NWNW Section 9, T28N, R108W, in Sublette County, Wyoming. The compressor site would consist of five 13,500 Solar Titan natural gas-fired turbine driven centrifugal compressors and three electric motor-driven centrifugal compressors. JGGC anticipates up to 180,100 horsepower of compression at the proposed station. The site for the compressor station is approximately 1,400 feet in length by 1,160 feet in width, containing approximately 37.3 acres. In order to supply electric power for part of the compression, JGGC proposes the construction of a pole-mounted power line from LaBarge, Wyoming to the Bridger Compressor Station.

Estimated short term disturbances for Proposed Action project components are summarized in Table 2-2. Estimated disturbances after construction and reclamation (long term disturbances) are summarized in Table 2-3. Reclamation reduces surface disturbances from a total of 1524.9 acres (short term) to 345.1 acres (long term).

Expansion to Pioneer Gas Plant

The expansion to the existing Pioneer Gas Plant would include the addition of a 650 to 750 MMSCFD cryogenic NGL separation plant to the existing membrane separation equipment and ancillaries. The existing Pioneer Gas Plant is located on 12.0 acres in NWSE Section 22, T21N, R114W. JGGC proposes to add approximately 158.6 federal acres to this site as shown on Figure 2-5, in sections 22 and 14 of the same township and range. The gas plant also includes private surface acreage in sections 15 and 23.

230 kV Overhead Power Lines

JGGC is proposing to construct two power lines as part of this project:

- A 31.9 mile long 230 kilovolt (kV) overhead power line from the Chappel substation near LaBarge, Wyoming to the proposed Bridger Compression Station; and
- A 3.0 mile long 230 kilovolt (kV) overhead power line from the Craven substation north of Opal, Wyoming to the proposed Pioneer Gas Plant expansion.

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JGGC is requesting permanent ROW for maintenance and operating purposes for these power lines of 150 feet wide for the entire length plus an additional 75 feet X 150 feet, for a total of 150 feet X 200 feet, at each conductor-carrying structure. Structures would be placed 400 to 500 feet apart in order to support the conductors.

Estimated short- and long-term disturbances for these power lines are:

- LaBarge to Bridger: 137.98 acres federal, 13.4 acres fee, 3.49 acres State of Wyoming;
- Craven to Pioneer: 7.80 acres federal, 6.64 acres fee.

Table 2-2. Proposed Action Short Term Disturbance Summary

Project Component	Acres BLM	Acres BOR	Acres Fee	Acres State
Luman Road Suction	87.2	0	0	0
Windmill Road Suction	35.1	0	0	0
Burma Road Suction	73.54	0	0	0
Bridger-Luman Discharge	74.89	0	0	0
Bridger-Bird-Opal Discharge	778.33	76.86	30.12	9.6
Bridger Compressor Station	41.3	0	0	0
Bridger Power Line ¹	137.98	0	13.40	3.49
Pioneer Gas Plant Expansion	158.62	0	23.49	0
Pioneer Plant Power Line ¹	7.80	0	6.64	0
Total	1,524.77	76.86	73.65	13.09

Table 2-3. Proposed Action Long Term Disturbance Summary

Project Component	Acres BLM	Acres BOR	Acres Fee	Acres State
Luman Road Suction	0	0	0	0
Windmill Road Suction	0	0	0	0
Burma Road Suction	0	0	0	0
Bridger-Luman Discharge	0	0	0	0
Bridger-Bird-Opal Discharge	3.44	0	0	0
Bridger Compressor Station	37.28	0	0	0
Bridger Power Line ¹	137.98	0	13.40	3.49
Pioneer Gas Plant Expansion	158.62	0	23.49	0
Pioneer Plant Power Line ¹	7.80	0	6.64	0
Total	345.12	0.00	43.53	3.49

¹Power line short/long term disturbance was calculated as follows: 1 pole per 400 lineal feet of power line with a disturbance of 150 feet X 200 feet, plus a two-track power line access road 12 feet wide the entire length of the power line (ref: E. Grill, 4/26/06).

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2.1 PROPOSED ACTION

2.1.1 Design and Construction

2.1.1.1 Pipelines

The proposed pipelines described in Tables 2-1, 2-2, and 2-3 would be constructed. A flagged survey has been established along the proposed routes. All pipeline plans and specifications, alignment maps, utility and road profiles, cross sections, site-specific details, and design drawings associated with the project would be available for review at JGGC's office in Pinedale and the BLM Field Offices in Kemmerer, Pinedale, and Rock Springs prior to issuance of the ROW grant. The design, engineering, maintenance, and inspection of the proposed pipelines would be performed by JGGC personnel or their contractors in accordance with safe and proven engineering practices.

Construction would begin upon BLM authorization. JGGC would build the Bridger to Opal Pipeline starting north of the Green River, outside of the bore area, and proceeding north to Bird Canyon, then on to Bridger. They would then move to the Pioneer Plant moving north to the Green River, boring the Green River outside of the seasonal restrictions for wildlife, mid to late August, 2006. The suction pipelines in the Jonah Field would be constructed by a separate crew at the same time. JGGC personnel would oversee construction by the contractor. Pipeline construction is expected to take approximately 120 days. JGGC would notify BLM at least 72 hours prior to the anticipated start of construction and/ or surface-disturbing activities.

All equipment and vehicular access into the pipeline project will be confined to existing roads and established rights-of-way that have been approved under the proposed action. No major reconstruction or rerouting of these roads is intended. Any damage incurred to existing roads during construction would be repaired by JGGC.

JGGC does not propose to do construction or routine maintenance activities during periods when the soil is too wet to adequately support construction equipment or when watershed damage is likely to occur. If such equipment creates ruts in excess of four inches deep, the soil would be considered too wet to adequately support construction equipment. Soil mixed with snow would not be used in construction.

The top 6 inches of topsoil would be removed and conserved during excavation and reused as cover on disturbed areas to facilitate regrowth of vegetation.

After the ROW is cleared and graded, a trench up to ten-feet wide would be dug with a trencher or, in rocky areas or where the pipeline changes direction, with a backhoe. Figures 2-1 through 2-4 show schematics of pipeline placement and offset from existing pipelines for 36-inch and 24-inch pipeline scenarios with and without temporary use areas. The proposed pipeline would be placed at depths of 4.0-4.5 feet, except at road crossings, where the depth would be 6 feet. Spoil and topsoil would be windrowed separately along the nonworking side of the trench.

Portions of the trench would be open for no more than 10 days, and gaps in the trench would be spaced at intervals of no more than 1.0 mile to allow for the passage of vehicles, livestock, and wildlife. Open trenches would be inspected daily for trapped livestock or wildlife, and JGGC would notify appropriate livestock permittees when trenching would occur in their allotments.

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Gates would be installed every $\frac{1}{4}$ mile, and ingress/egress ramps every $\frac{1}{2}$ mile.

The proposed natural gas pipelines would consist of 24 inch, 0.343-inch wall thickness, Grade X-70, and 36 inch, 0.515-inch wall thickness, Grade X-70, both with maximum allowable operating pressure (MAOP) of 1440 psig. The proposed hydrocarbon liquid pipeline from Bridger to Luman would consist of 8.625 inch O.D., 0.322-inch wall thickness, Grade X-42, with an MAOP of 1440 psig. The proposed hydrocarbon liquid pipeline from Pioneer to Opal would consist of 4.500-inch O.D., 0.237-inch wall thickness, Grade X-42, with an MAOP of 2,160 psig. Pipe and other construction materials would be hauled to the job by truck, as needed, and stored along the ROW. A bending machine would be used to bend the pipe to fit the trench. Sections of pipe would be lined, welded together, coated with epoxy, and cathodically protected to prevent corrosion according to industry standards. Side-boom caterpillars would then be used to lower the pipe into the trench. In rocky areas, the trench would be padded with sand or soil using a ditch-padding machine.

After the pipeline is in place, the trench would be backfilled using an angle dozer or auger and the soil would be compacted to prevent subsidence. Any excavated material that cannot be placed in the trench would be disposed of in conformance with applicable landowner or agency requirements. After construction, no berms would remain on the surface, and no rock foreign to the surface would remain exposed. Hydro testing of the pipeline takes place after backfilling of the entire trench except at the final tie-in locations, which are used to separate the hydro test sections. Ripping the working side of the pipeline may be necessary to reduce compaction.

Figures 2-1 through 2-4 show schematics of the 24-inch and 36-inch pipeline ROW layouts. The various cases shown would apply depending on whether JGGC or foreign pipelines are contiguous to the proposed pipeline ROW, or whether no pipelines are present (virgin ROW cases), and to which side of the JGGC or foreign pipeline is located (Ditch Side or Working Side). Figures 2-1 and 2-3 depict cases where no roads are present, while Figures 2-2 and 2-4 show cases where access roads are present. The notation "Extra TUAs to extend 200 feet each side of the road" indicate that additional temporary use areas (TUAs) would be utilized at a pipeline road crossing.

The pipelines would be pressure-tested with water after the trenches are backfilled. The pipeline would be filled with water and pressurized to 1.25 times their designated operating pressure for 8 hours to verify integrity. Test water would be pumped from the Green River (at the CCC Bridge, near Fontenelle, Wyoming), and permits or license agreements for the withdrawal would be obtained from the Wyoming State Engineer's Office and the BOR. JGGC would use approximately 7,552,000 gallons (23.17 acre-feet) of water for testing the Jonah Compression pipelines. Water would be pumped into a 7 to 10-mile section of pipe, pressurized, and released to the next 7 to 10-mile section. This procedure would be repeated for the entire pipeline system. A battery of frac tanks would be utilized to save water for use in other sections of the project. The same water would be used for hydrotesting piping for the Bridger Compressor Station and the Pioneer Gas Plant Expansion. Prior to release, hydrostatic test water would be tested and processed, if necessary, to ensure that it meets local, state, and federal water quality standards. All hydrostatic water testing and discharge would be approved in writing by the Wyoming Department of Environmental Quality/Water Quality Division (WDEQ/WQD). Before discharging any hydrostatic test water from the pipeline, workers would protect natural channels within the affected watershed by installing suitable energy dissipaters at pipeline outlets. To prevent scouring or erosion, JGGC would put in place channel protection

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materials such as filter bags, sandbags or rock. The hydrotest water would be released approximately 500 feet from the withdrawal point on or before 30 days from the time of withdrawal from the Green River. Upon completion of testing, JGGC would remove all installed materials and objects from the site.

At the Green River crossing, specialized horizontal directional drilling construction equipment would be utilized. Typical construction site arrangements for rig side workspace and pipe side workspace are shown on Figure 2-5. A pilot hole of about 4 inches in diameter would be drilled from the rig side to the pipe side (Figure 2-6). Construction disturbances would be located 500-feet from riparian areas, per the applicable RMP. Sophisticated guidance equipment would be utilized to assure proper alignment of the pilot hole. Drill cuttings would be stored on each side of the bore in portable water tanks and would be properly disposed of upon completion of the bore. Once the pilot emerges on the pipe side of the bore, reamers of sequentially larger sizes would be utilized until the bore size of the pipe is achieved (42 inches for the 36 inch pipe at the Green River crossing). The bore would have 25 to 40 vertical feet of undisturbed earth between the bore and the riverbed to preclude disturbing the river's flow. In the mean time, welders would be preparing approximately 1,400 feet of pipe for installation in the bore. The pipe would be hydrostatically tested before it is pulled under the Green River. The pipe would be pulled by the drilling rig from the pipe side to the rig side. The current plan calls for a 1,200 foot bore length. Approximately 1,500,000 gallons of water (4.60 acre-feet) of water would be consumed for this activity.

After pipeline construction is completed, markers would be installed at line-of-sight intervals and at road crossings to identify the pipeline's location within the ROW.

No material or borrow sites are anticipated to be necessary for pipeline construction. Approximately 1,344,000 gallons (4.12 acre-feet) of water for dust control would be obtained from the Green River. Permits or license agreements for water would be obtained from the Wyoming State Engineer's Office and the BOR. The total water required for JGGC actions would be 31.89 acre-feet. Table 2-4 presents a summary of project water usage.

Table 2-4. Green River Drainage Water Usage for the Bridger to Opal Natural Gas Project.

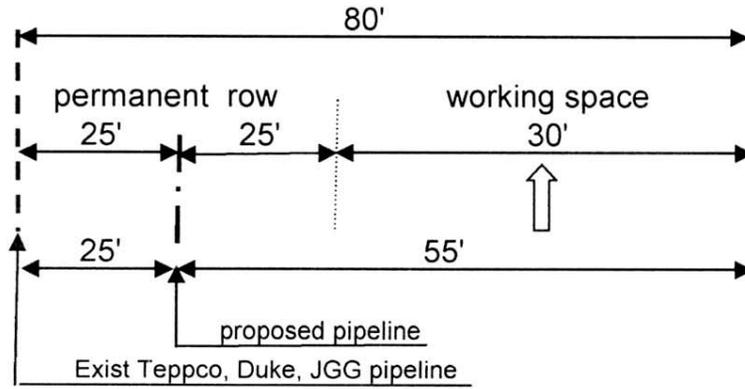
Project Component	Water Usage, gallons	Water Usage, acre-feet
Pipeline Hydrotest	7,552,000	23.17
Bridger Station and Pioneer Gas Plant Expansion Hydrotest	0 (reuse pipeline hydrotest water)	0
Green River Horizontal Directional Drill	1,500,000	4.60
Dust Control	1,344,000	4.12
Total	10,396,000	31.89

All equipment and vehicular access to the pipeline project would be confined to existing roads and established ROWs. No reconstruction or rerouting of roads would occur.

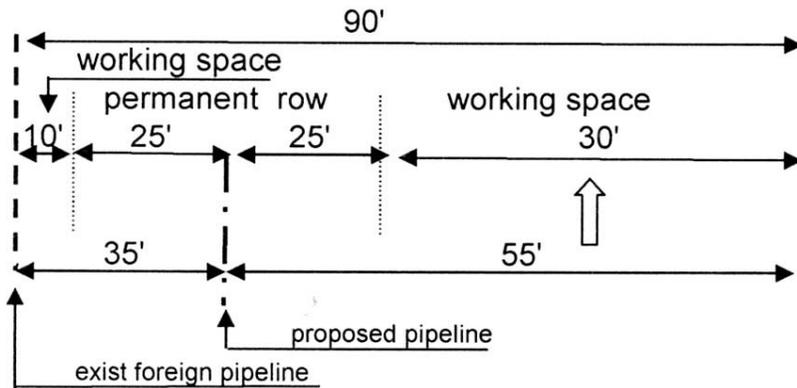
Equipment used to construct the proposed pipelines would include trenchers, tractor-trailers, 2-ton trucks, pickup trucks, ditch-padding machines, seed drillers, tractors, backhoes, trackhoes, side-boom caterpillars, and welding trucks.

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I. Parallel Teppco /Duke /JGG Pipelines



II. Parallel Foreign Pipeline - Ditch Side



III. Virgin ROW

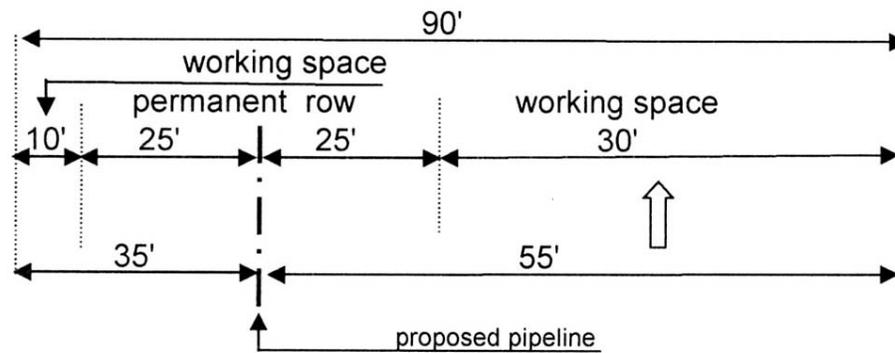
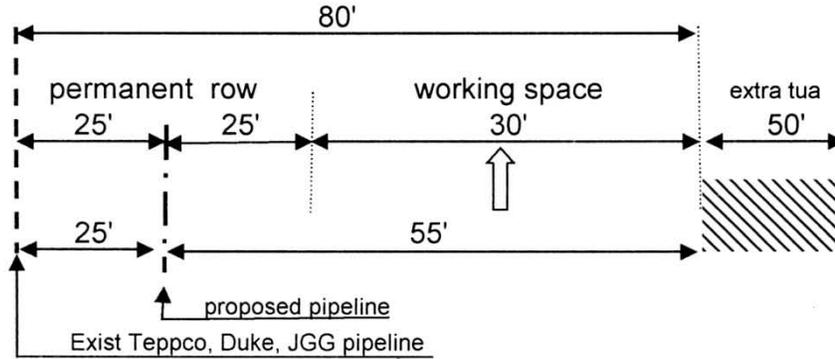


Figure 2-1. 24" Pipeline ROW Layout

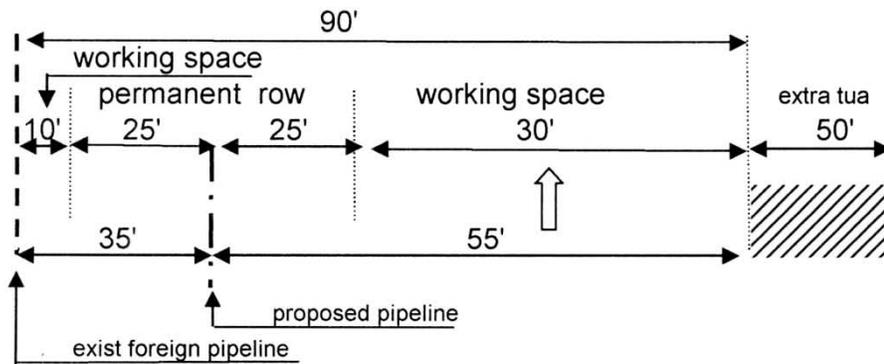
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NOTE: Extra TUA's to extend 200 Feet each side of the road.

I. Parallel Teppco /Duke /JGG Pipelines



II. Parallel Foreign Pipeline - Ditch Side



III. Virgin ROW

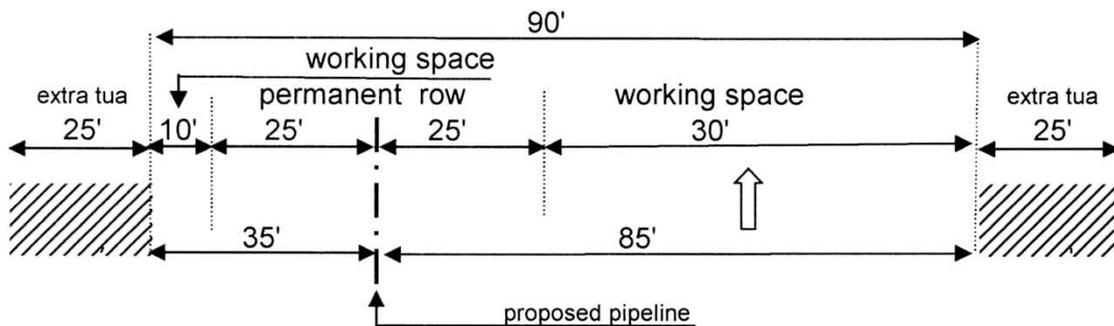
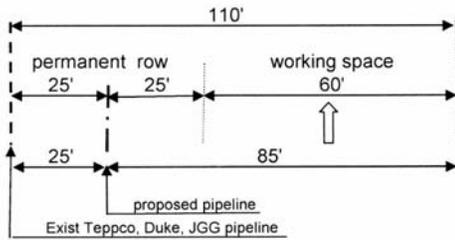


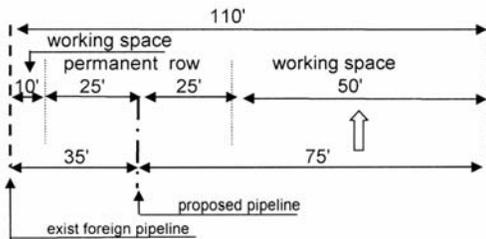
Figure 2-2. 24" Pipeline ROW Layout with Access Roads and Extra TUAs

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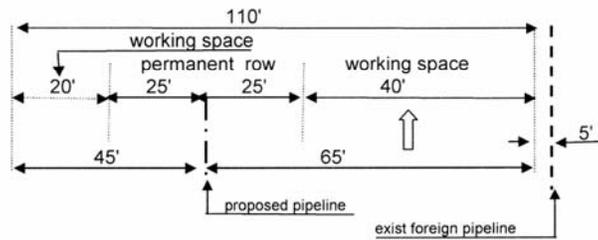
I. Parallel Teppco /Duke /JGG Pipelines



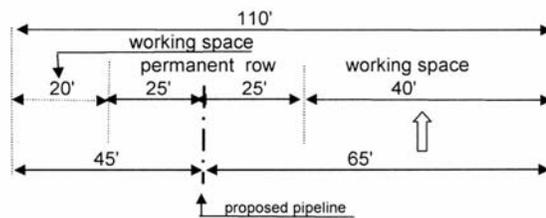
II. Parallel Foreign Pipeline - Ditch Side



III. Parallel Foreign Pipeline - Working Side



IV. Virgin ROW



IV A. Virgin ROW Option

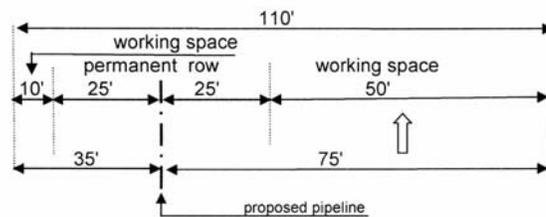
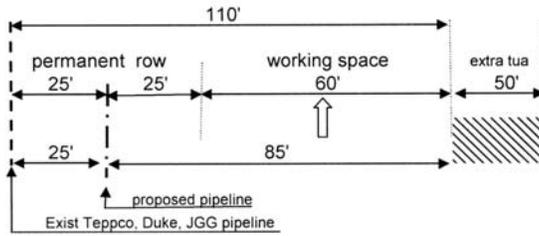


Figure 2-3. 36" Pipeline ROW Layout

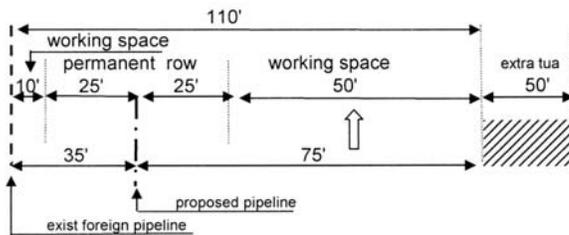
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NOTE: Extra TUA's to extend 200 Feet each side of the road.

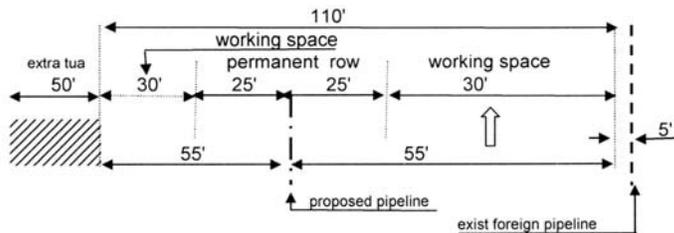
I. Parallel Teppco /Duke /JGG Pipelines



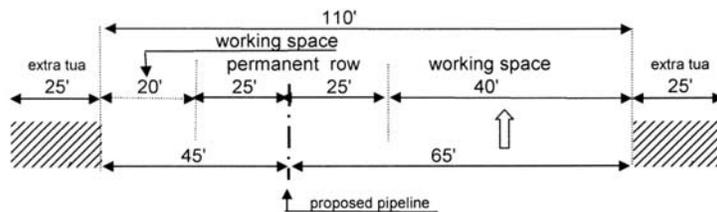
II. Parallel Foreign Pipeline - Ditch Side



III. Parallel Foreign Pipeline - Working Side



IV. Virgin ROW



IV A. Virgin ROW Option

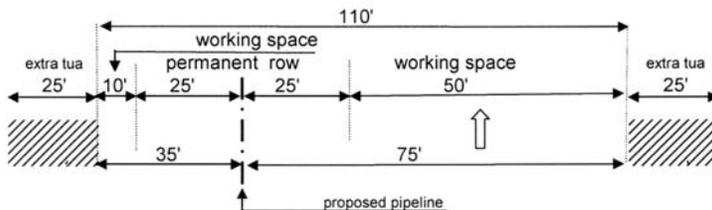


Figure 2-4. 36" Pipeline ROW Layout with Access Roads and Extra TUAs

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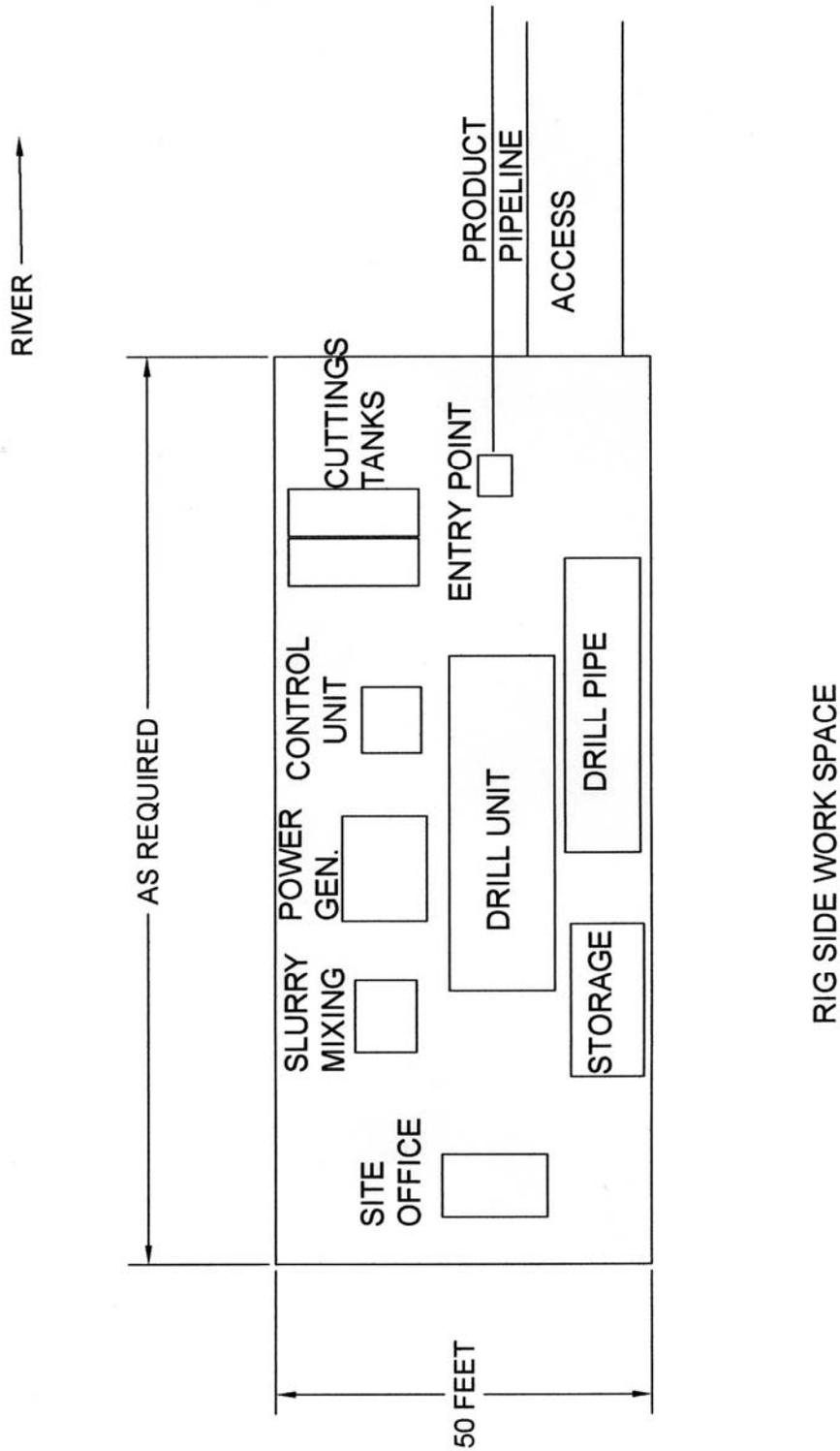


Figure 2-5. Green River Bore Site - Rig Side Work Space.

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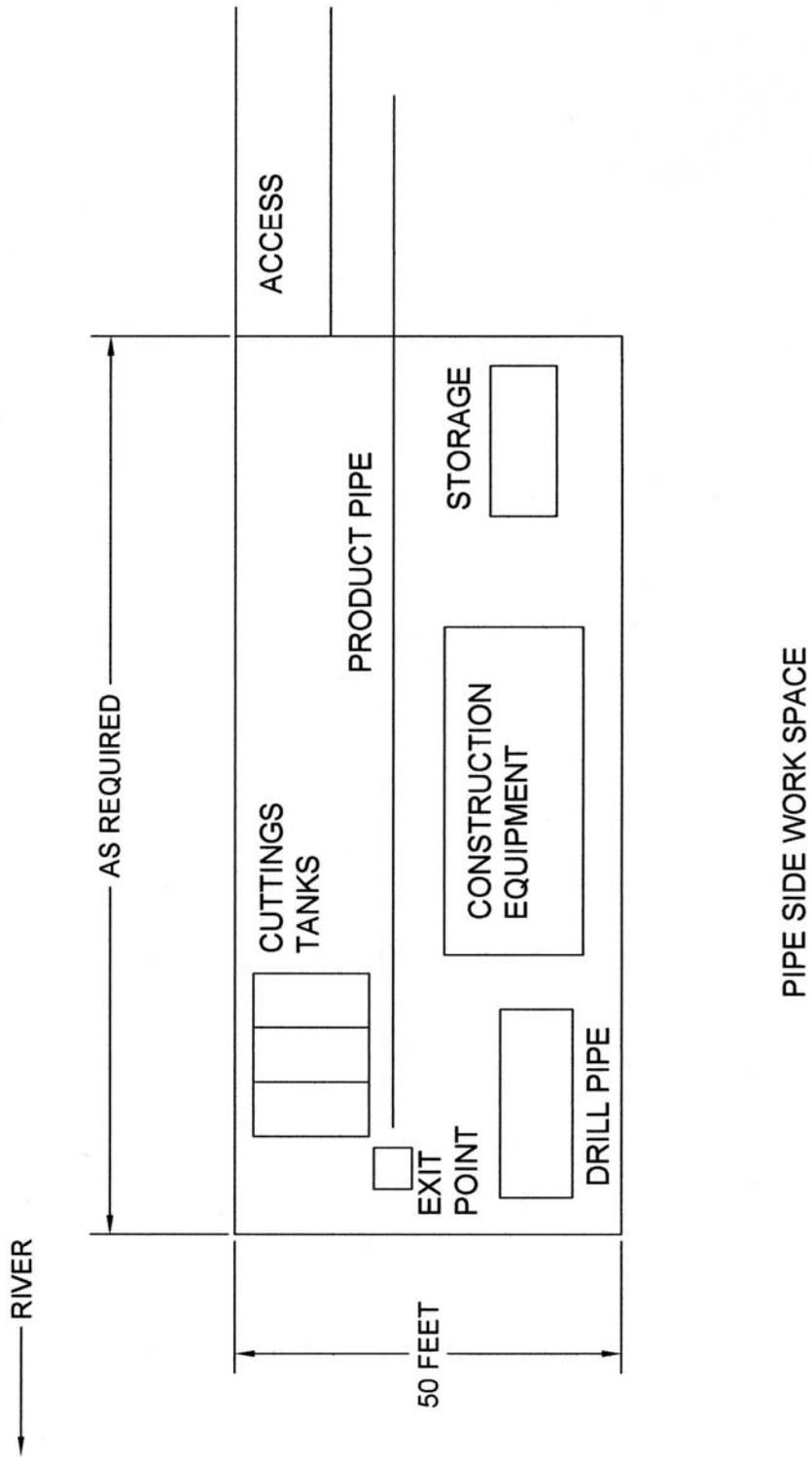


Figure 2-6. Green River Bore Site - Pipe Side Work Space.

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2.1.1.2 JGGC Compressor Station

The compression facility proposed, the Bridger Compressor Station, would be located in NW/4NW/4 of Section 9, T28N, R108W, in Sublette County, Wyoming. The compressor station would consist of five 13,500 horsepower Solar Titan natural gas-fired turbine driven centrifugal compressors and three electric motor-driven centrifugal compressors. JGGC anticipates up to 180,100 horsepower of compression at the proposed station. The site for the compressor station is approximately 1,400 feet in length by 1,160 feet in width, containing approximately 37.3 federal acres. Temporary use areas totaling approximately 4.0 acres are also proposed. Auxiliary equipment for the station would include an electric sub-station, slug catchers, filter/separators, pressure and atmospheric condensate storage vessels and tanks, gas and engine coolers, condensate stabilization, and emergency power generation. A preliminary plan view of the proposed compressor station is shown in Figure 2-7.

Line scrubbers would be placed on the suction side of compressors to separate condensed liquids from the gas stream. The scrubber system would include large diameter (48- to 72-inch) horizontal line separators, compressor skid inlet scrubbers, and fuel gas scrubbers, which would discharge into the 400-bbl tanks. About 0.5 bbl of condensate would be recovered for every million cubic feet of gas that flows through the scrubber system.

JGGC workers and contractors would implement all appropriate safety measures in the design, construction, operation, and maintenance of the compressor station.

JGGC would have inspectors present during the construction of the facility. Construction of the compressor station is anticipated to be completed within 90 days. Compressor engine modules would be prefabricated and assembled off-site, then transported to the station by truck and placed on concrete pads. Associated piping would be fabricated and attached to facilitate gas flow.

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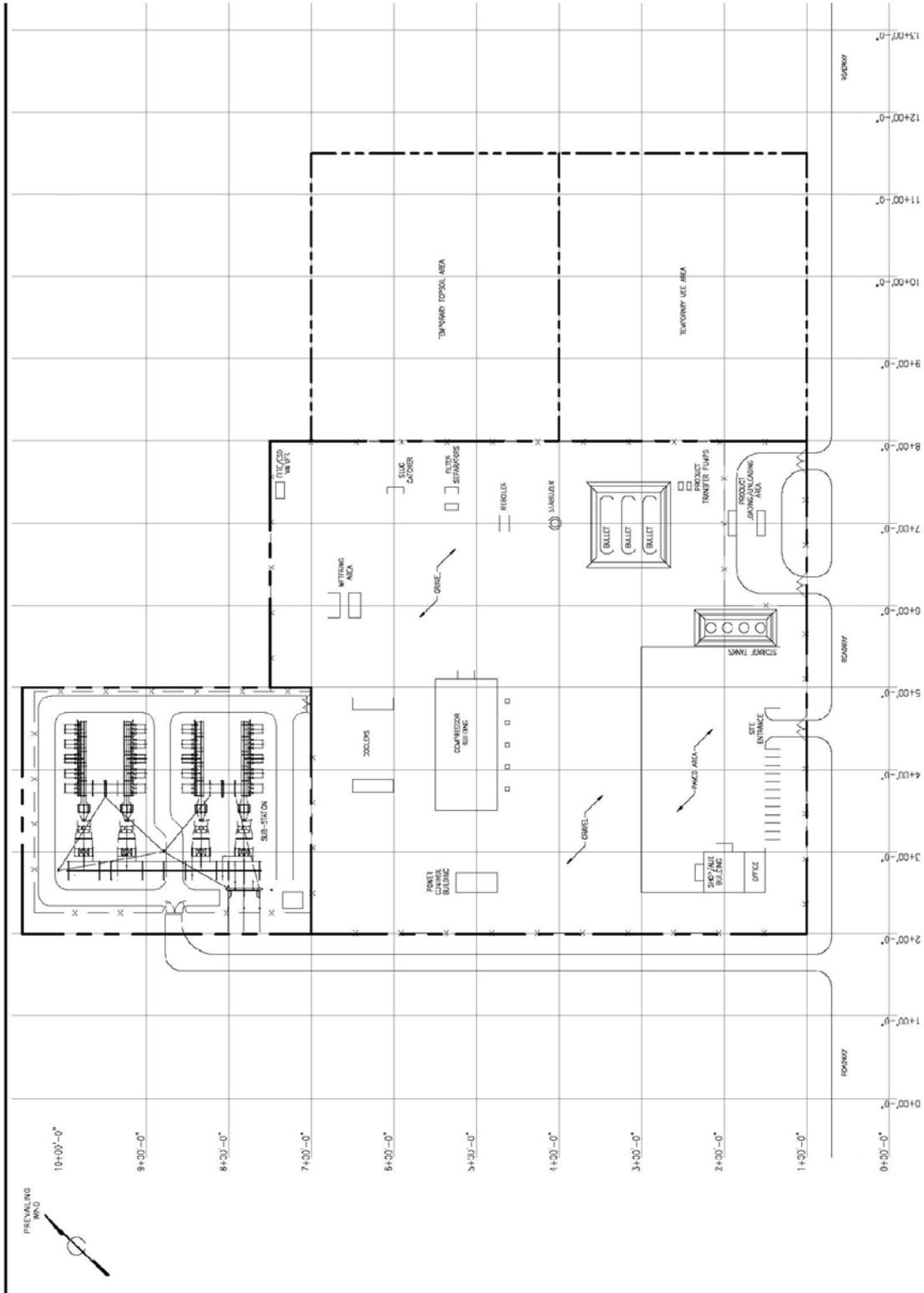


Figure 2-7. Plan View of the Proposed Bridger Compressor Station.

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2.1.1.3 Electric Power Supply System.

In order to supply electric power for the proposed electric motor-driven compression, a 230 kV (kilovolt), 80 MW (megawatt) capacity, overhead power line would be installed to the Bridger Compressor Station to supply electrical power for 72,000 to 90,000 horsepower of electric motor-driven compressors. The power line would initiate at the Chappel Creek Substation southwest of LaBarge, in NWSW Sec. 12, R113W, T26N, proceed northwest, cross the Green River several miles north of LaBarge, and then proceed north and west on predominantly BLM surface into the Bridger Compressor Station, located in NWNW Section 9, T28N, R108W. The power line would be carried by large H-type wood structures, approximately 80 feet high, with guying as appropriate. Structures would be located approximately 400 to 500 feet apart, and sized according to terrain and load bearing requirements. Each structure would be approximately 20 to 50 feet wide. Figure 2-8 shows a typical 230 kV power line support structure. Figure 2-9 shows a typical power line structure at a tangent point, where high lateral loads are present. Construction equipment utilized would be an auger-type drill rig (drilling of pole holes), pickup trucks, transmission line truck, crane, boom truck, man lifts, hydraulic tension machine, reel trailers, backhoe, water trucks, material trucks, flatbed trucks, seeding equipment, and other typical powerline construction equipment. All construction would be kept within the confines of the permitted ROW. Footprint for each powerline structure would be 150 ft X 200 ft for access and maintenance purposes.

There would be two 230 kV circuits carried by these structures for approximately 6 miles north of Chappel. After that, the structures would carry a single 230 kV circuit to the Bridger compression site. Access for power line construction and maintenance would be from existing roads and a two-track along the entire length of the power line specifically for Pacificorp construction and maintenance. The existing 69 kV power line that runs along US 189 north of LaBarge would not be underhung on the new 230 kV structures due to route and span length incompatibilities with the proposed structures.

These powerlines would be constructed in accordance to standards outlined in *Suggested Practices for Raptor Protection on Powerlines, The State of the Art in 1996*, Edison Electric Institute/Raptor Research Foundation, and include anti-perching structures in areas identified by the BLM.

The total length of the power line would be approximately 31.89 miles (168,385 feet). JGGC is proposing a 125-foot ROW width for the entire power line length, with a 150-foot X 200-foot permanent ROW at each structure. Total surface disturbance for the power line would be a maximum of approximately 137.98 federal acres. Surface disturbance at the structures would be reclaimed according to the procedures detailed in Section 2.1.3. The two-track road along the power line ROW would not be reclaimed as Pacificorp would utilize the road for periodic maintenance of the power line. Figure 1-1 shows the proposed powerline route, along with two alternative routes not further analyzed. Appendix A contains detailed maps of the proposed powerline route.

2.1.1.4 Pioneer Gas Plant Expansion

The expansion to the existing Pioneer Gas Plant would include the addition of a 650 to 750 MMSCFD cryogenic NGL separation plant to the existing membrane separation equipment and ancillaries. The existing Pioneer Gas Plant is located on 12.0 acres in NWSE Section 22, T21N,

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R114W. JGGC proposes to add approximately 158.6 federal acres to this site as shown on Figure 2-5, in sections 22 and 14 of the same township and range. The gas plant also includes private surface acreage in sections 15 and 23. In a cryogenic separation plant, field gas rich in heavier hydrocarbons is cooled to cryogenic temperatures (less than -200 °F), where the heavier components condense, and are separated as liquid products. The gas, now of pipeline quality (without condensing hydrocarbon liquids, or above-specification water content), is recompressed and transported to interstate pipelines for sale. Additionally, an amine plant is proposed, which would reduce the inert gas content (specifically, carbon dioxide) in the product natural gas. An amine plant allows the removal of carbon dioxide (CO₂) from the field natural gas by contacting the gas with an amine, usually diethanol amine (DEA), in a pressure vessel. The CO₂ is then stripped from the DEA and emitted to the atmosphere. The DEA is reused in a closed loop process. The proposed Pioneer Gas Plant would produce approximately 35,000 barrels per day of liquid products, which would be transported through a proposed 4-inch hydrocarbon liquids pipeline. This pipeline would parallel the proposed gas pipeline from the Pioneer Gas Plant to Williams' Opal Gas Plant. Very few over-the-road liquid hauling trucks would be loading products at the proposed facility – only when the existing liquid pipeline is unavailable. JGGC proposes to install Wyoming Department of Transportation approved signage in order to minimize impacts to the traffic flow on Wyoming State Highway 240. Additional auxiliary equipment to be installed in the expansion include an emergency power generator, pressure and atmospheric condensate storage vessels and tanks, recompression equipment (approximately 24,000 horsepower of electric motor-driven compressor units), dehydration system, and gas coolers. A preliminary plan view of the proposed gas plant expansion appears as Figure 2-10.

In order to supply electric power to the plant expansion, a new 230 kV overhead powerline is proposed from the Craven Substation, located in SE/4 SE/4 of Sec. 3, T21N, R114W, to the Pioneer Gas Plant Expansion, a distance of approximately 3.0 miles. Its construction would be the same as the powerline for the Bridger Compressor station described in Section 2.1.1.3 above. JGGC proposes a 125-foot ROW width plus 150-foot by 200-foot at each structure for this powerline. Disturbance for this powerline would be approximately 7.80 federal acres.

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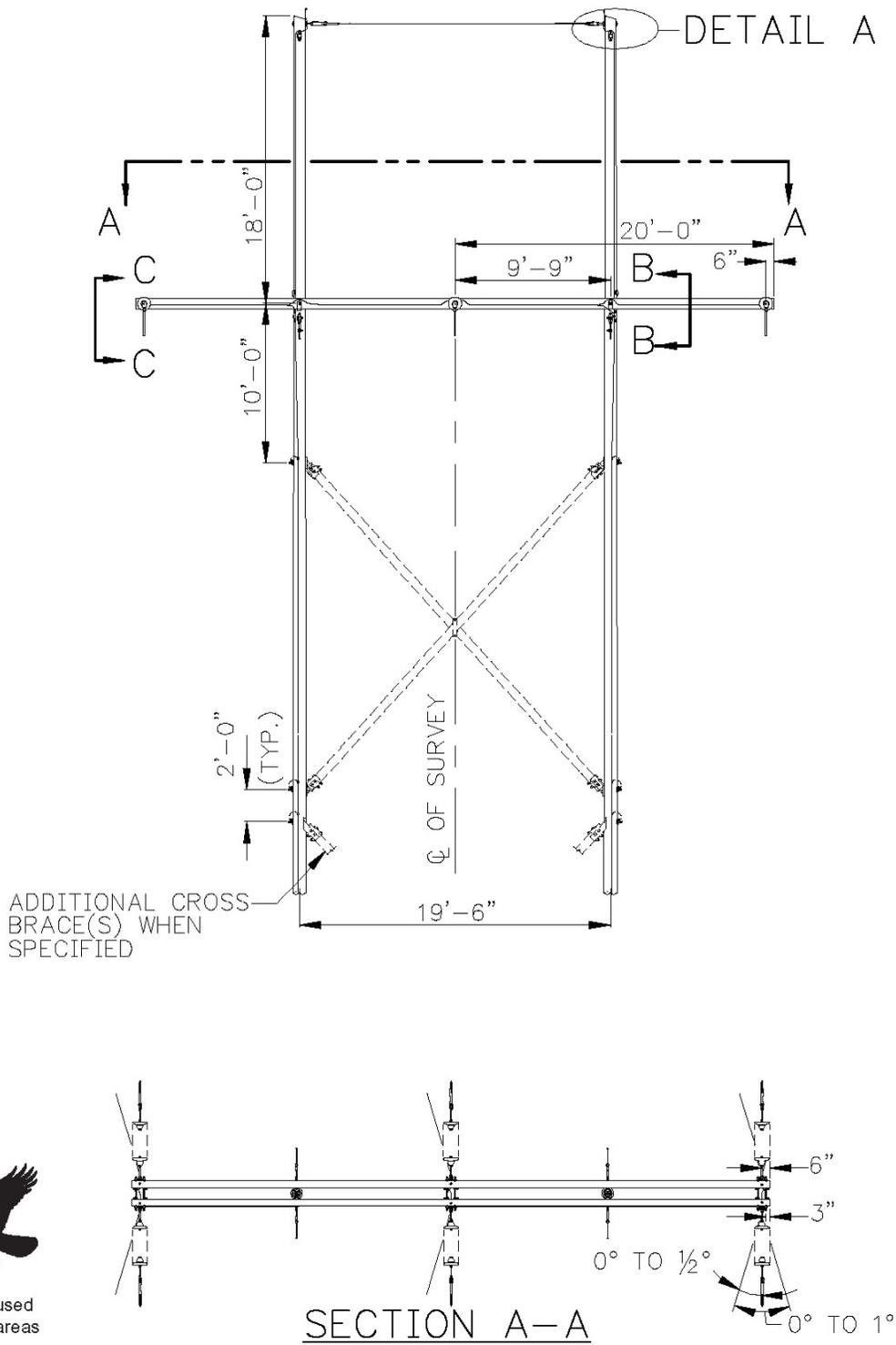


Figure 2-8. Typical 230 kV Support Structure.

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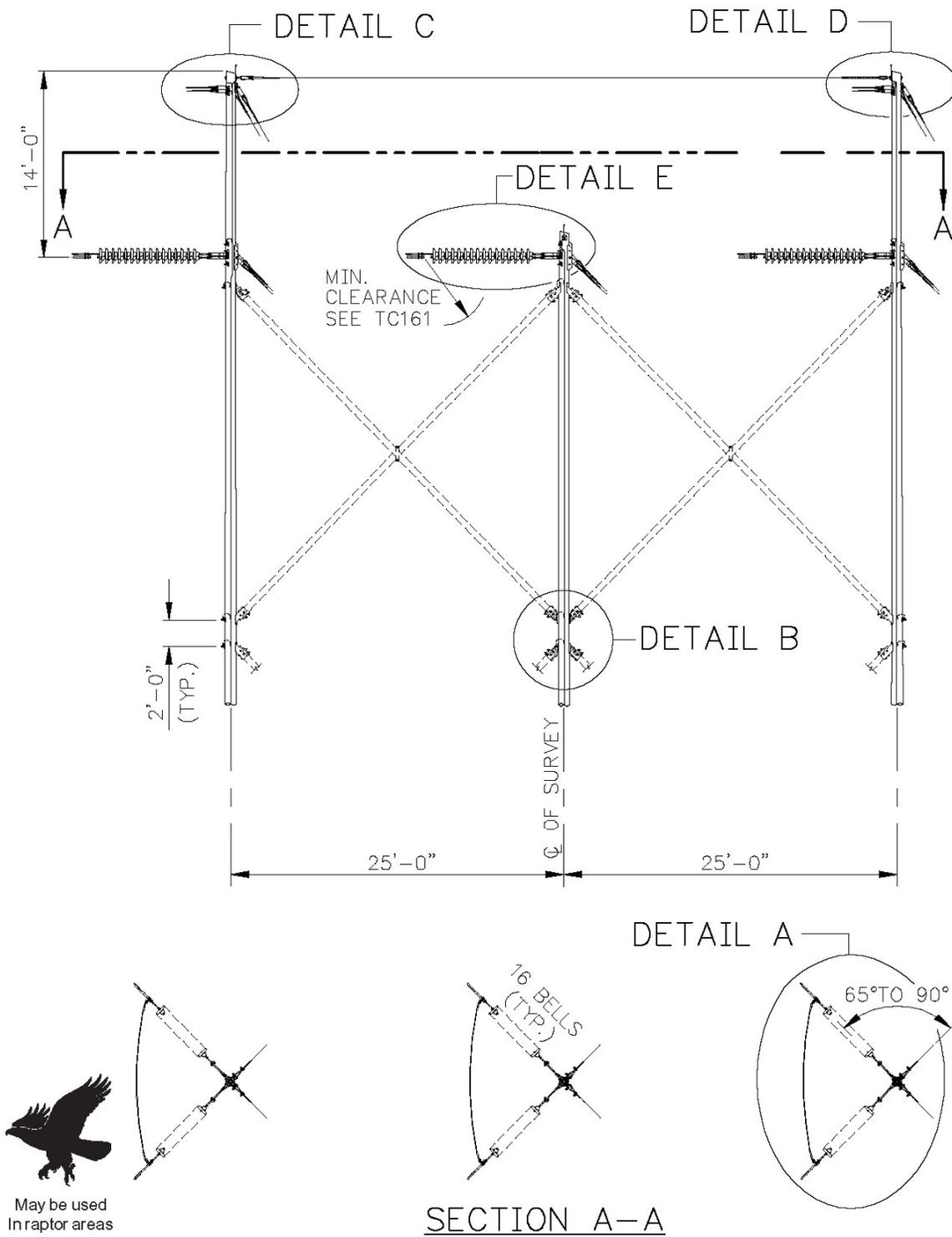


Figure 2-9. Typical 230 kV Tangent Support Structure.

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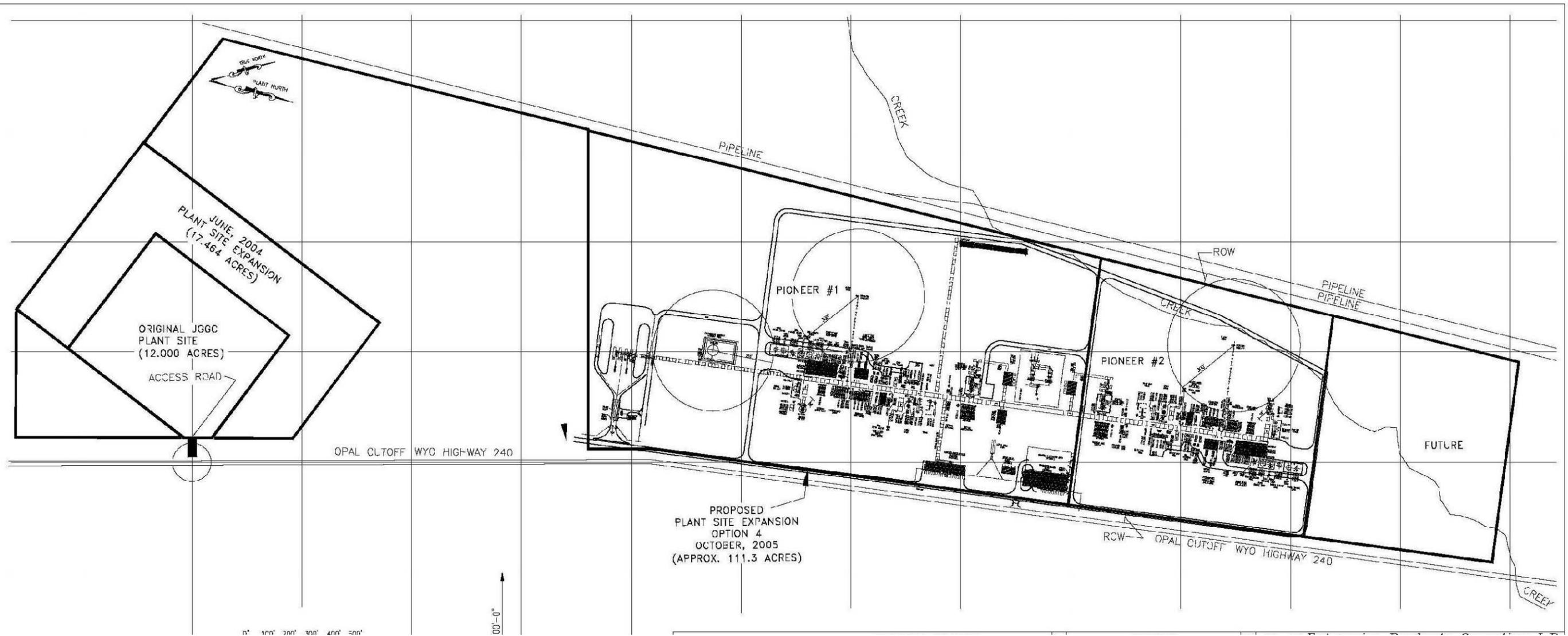


Figure 2-10. Proposed Pioneer Gas Plant Expansion Plan View.

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2.1.2 Operation and Maintenance

2.1.2.1 Pipelines

Prior to utilizing the pipelines, JGGC would submit to the BLM authorized officer (AO) a certificate of construction verifying that their pipeline has been constructed and tested in accordance with the terms of the ROW grant and in compliance with the plans and specifications and all applicable federal and state laws and regulations (The BLM AOs for this project would be the Kemmerer, Pinedale, and Rock Springs Field Managers). Pipeline as-built drawings and data would be supplied in a GIS data format to all three BLM field offices.

JGGC would routinely patrol and inspect the pipeline to check for problems such as erosion, pipe exposure, ROW conditions, unauthorized encroachment on the ROW, and any other situations that may result in a safety hazard or may require preventive maintenance. These inspections would be conducted on foot or from a vehicle along existing roads. Vehicles would not traverse pipeline ROWs without prior permission from the BLM. If damage should occur to pipes from external sources, repair or replacement of the portion of the pipeline would be completed. JGGC has developed line break and emergency procedures which would be implemented in the unlikely event of an emergency. These procedures are available for review at the JGGC office in Pinedale.

2.1.2.2 Compressor Station

Gas from the Jonah and Pinedale Natural Gas Fields would report to the Bridger Compressor Station at from 300 pounds per square inch gauge (psig) pressure to 600 psig. Two different discharge pressures would be produced at Bridger: 600 psig for existing Luman Station suction, and 1200 to 1400 psig for delivery to the Pioneer Gas Plant/Opal area through the proposed discharge line. JGGC employees would operate, maintain, and monitor the station using remote monitoring and alarm equipment. Flare stacks would be continuously operated, piloted, and monitored following the WDEQ Air Quality Division's (WDEQ/AQD's) requirements and industry technology.

Gas turbine compressor drivers would be of the lean combustion/air-fuel premix type with 0.10 lb/MMBtu NO_x emissions. Total emissions from the Bridger Compressor Station are discussed in Section 4.2 (Air Quality) of this EA.

2.1.2.3 Pioneer Gas Plant Expansion

Prior to operating the plant, JGGC would submit to the BLM authorized officer (AO) a certificate of construction verifying that the plant has been constructed and tested in accordance with the terms of the ROW grant and in compliance with the plans and specifications and all applicable federal and state laws and regulations.

JGGC would have personnel on the plant site seven days a week to perform routine operating and maintenance functions. Automatic call out systems would summon operators during off shifts should abnormal operating conditions arise. Design of the plant would incorporate an Emergency Shutdown (ESD) system such that in the unlikely event of an unstable process condition, the plant would automatically shut down and go to a safe condition pending arrival of an operator. JGGC has developed emergency procedures which would be implemented in the unlikely event of an emergency. ESD procedures would be located at the plant site, but are

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available for review at the JGGC office in Pinedale.

2.1.3 Reclamation

Operators would scarify, grade, and contour all disturbed areas to preconstruction conditions. Soil compaction on the working side of the pipeline may require ripping prior to final reclamation. Topsoil would be evenly spread and disturbed areas would be revegetated to blend with the surrounding terrain. Reclamation would be accomplished as soon as possible after disturbance occurs. Appropriate measures would be taken to prevent erosion using construction diversion terraces, riprap, matting, and water bars. Water bars would be placed approximately every 25 feet on steep slopes to prevent erosion. Any drainages encountered during construction would be cleared of dirt and debris and backsloped as closely as possible to their original contours.

All disturbed areas along the pipeline corridor would be reseeded to landowner or regulatory agency specifications. JGGC would use the application rates and seed mixtures for reseeding disturbed areas shown in Table 2-5. JGGC will use the recommended seed mix for reclamation in the Jonah Field, as outlined in the Jonah Infill EIS for the Pinedale Field Office, shown in Table 2-5..

Table 2-5. Seed Mixtures Recommended For Reclamation on the Jonah Bridger to Opal Natural Gas Project Disturbances

Upland Sites Seed Mix		
Species	Variety	Drill Seeding Rate ¹
Western wheatgrass	Rosanna	6.0
Thickspike wheatgrass	Critana	6.0
Indian Ricegrass	Nezpar	3.0
Shadscale saltbush ²		3.0
Globemallow ³		0.5
Sterile Triticale		6.0
TOTAL		23.5
1. Drill Seeding Rate = Lbs/Acre Pure Live Seed (PLS) 2. Substitution for shadscale saltbush: Gardner saltbush 3. Substitution for globemallow: other globemallow species, white yarrow or blue flax		
Saline Lowlands Seed Mix		
Species	Variety	Drill Seeding Rate ¹
Western wheatgrass		6.0
Bottlebrush squirreltail		3.0
Gardner saltbush		2.0
Indian ricegrass		4.0
Slender Wheatgrass		2.0
TOTAL		17.0
1. Drill Seeding Rate = Lbs/Acre Pure Live Seed (PLS)		

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Wet Meadow/Marsh Seed Mix		
Species	Variety	Drill Seeding Rate ¹
Alkali sacaton		3.0
Nebraska sedge		1.0
Tufted hairgrass		2.0
Alkali grass		4.0
Basin Wildrye		5.0
TOTAL		15.0
1. Drill Seeding Rate = Lbs/Acre Pure Live Seed (PLS)		
Jonah Field Seed Mix ¹		
Species	Variety	Drill Seeding Rate ²
Grasses		
Thickspike Wheatgrass		2.0
Western Wheatgrass		2.0
Bluebunch Wheatgrass		2.0
Indian Ricegrass		3.0
Needle-and-thread		3.0
Forbs		
Desert Indian paintbrush		1.0
Scarlet globemallow		1.0
Shrubs		
Four-wing saltbush		3.0
Wyoming Big Sage		0.25
Common Winterfat		1.0
Antelope bitterbrush		1.0
TOTAL		19.25
1. Per Jonah Infill EIS, March 14, 2006		
2. Drill Seeding Rate = Lbs/Acre Pure Live Seed (PLS)		

All seed applied on public land must have a valid seed test, within one year of the acceptance date, from a seed analysis lab by a registered seed analyst (Association of Official Seed Analysts). The seed lab results shall show no more than 0.5 percent by weight of other weed seeds; and the seed lot shall contain no noxious, prohibited, or restricted weed seeds according to State seed laws in Wyoming. Seed procured for use on public land will meet the Federal Seed Act criteria. Seed may contain up to 2.0 percent of "other crop seed" by weight which includes the seed of other agronomic crops and native plants. Copies of the seed lab test results, including purity and germination (viability) rate will be forwarded to the appropriate BLM office prior to seed application.

Seeding would take place during the spring or late fall when the ground is not frozen. In suitable areas, seed would be planted using a drill equipped with a depth regulator to ensure proper depth of planting. The seed mixture would be evenly and uniformly planted over the disturbed area. Areas not appropriate for drilling, such as steep slopes, would be broadcast-

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seeded and raked or chained to cover the seed. Seeding rates for broadcast-seeded areas would be double that used in drill-seeded areas. Seeding would be repeated until a satisfactory stand is established as determined by the BLM AO. Evaluation of growth would not be made before completion of the first growing season after seeding.

JGGC shall be responsible for total control of all invasive/noxious weed species on any and all disturbed sites, including areas outside the development where weeds have established due to project installation and development and would consult with the AO and/or local authorities for acceptable weed control methods.

JGGC proposes to conduct operations on BLM and Bureau of Reclamation administered lands as follows:

- Certified weed-free seed would be used during re-seeding of disturbed areas.
- Native plant species would be used in reseeded areas.
- Noxious weed control would be conducted for the life of the project (30 years).
- Monitoring noxious weeds and success of planting would be done.
- All compacted areas would be ripped to the necessary depth to reduce compaction prior to seeding.
- The minimum surface disturbance required to install the pipe would occur.

2.1.4 Abandonment

At the end of the useful life of the pipelines, JGGC would obtain necessary authorizations from the BLM to abandon the facilities. JGGC would contact the AO to arrange a pre-termination conference and a joint inspection of the ROW to agree on an acceptable abandonment plan.

Pipeline abandonment would be accomplished in accordance with the policies and standards employed by BLM at the time of abandonment. The pipeline would be purged of all combustible materials and retired in place. Operators would remove all aboveground facilities and dispose of unsalvageable materials at authorized sites. Regrading and revegetation of disturbed areas, as applicable, would be completed according to BLM or landowner standards, and the abandoned ROW would revert to the control of the landowner .

2.1.5 Work Force

Pipeline, compressor station, and gas plant construction would require up to 300 JGGC workers at the peak of construction. Construction workers would be hired from the local southwestern Wyoming work force, and no temporary work camps are proposed.

2.1.6 Hazardous Materials

All measures necessary and appropriate for the prevention and containment of accidental discharges would be taken by JGGC. Refueling of machinery and fuel storage would not be allowed within 500 feet of a perennial, intermittent, or ephemeral stream channel. JGGC would develop Spill Prevention Control and Countermeasure (SPCC) plans for all project activities, making these plans available for BLM review and use. All chemicals, fuels, lubricants, and other materials stored on federal lands would require secondary containment. In addition, the mandates of 40 CFR Part 112 would be adhered to.

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To conform with state and federal regulations, any used or unused engine oil or other lubricants would be stored in appropriate labeled containers and disposed of at an approved site. These lubricants would not be stored within 500 feet of a perennial or ephemeral stream.

JGGC would conform with provisions of the *Toxic Substances Control Act of 1976*, as amended (15 United States Code [USC] 2601, et seq.) with regard to any toxic substances that are used, generated by, or stored on the ROW or on facilities authorized under ROW grants (see 40 CFR 702- 799 and especially provisions on polychlorinated biphenyl-- 40 CFR 761.1-761.193). Any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity as established by 40 CFR 117.3 would be reported as required by the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, Section 102 B. Copies of reports required by federal or state agencies for a release or spill of any hazardous material would be furnished to the AO within 5 working days of occurrence.

JGGC agrees to indemnify the U.S. against any liability arising from the release of any hazardous substance or hazardous waste (as defined in the *Comprehensive Environmental Response, Compensation and Liability Act of 1980*, 42 USC 9601 et seq., or the *Resource Conservation and Recovery Act of 1976* [RCRA], 42 USC 6901 et seq.) on their respective ROW /TUPs, unless the release or threatened release is wholly unrelated to JGGC activities on the ROW /TUP. This agreement is applied without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

Regarding herbicide use, JGGC would comply with all federal and state laws and with registered uses and limitations imposed by the AO. Before using herbicides, JGGC would obtain written approval from the AO of a plan showing the type and quantity of material used, pest(s) to be controlled, application methods, storage locations, container disposal, and any other information deemed necessary by the AO.

2.1.7 Applicant-committed Practices

2.1.7.1 Survey Monuments

JGGC would protect all survey monuments, witness corners, reference monuments, and bearing trees within the ROW against disturbance during construction, operation, maintenance, and rehabilitation. If any monument, corner, or accessory is destroyed, obliterated, or damaged, JGGC would arrange for a registered land surveyor to restore the disturbed monument, corner, or accessory using surveying procedures specified in the *Manual of Surveying Instruction for the Survey of Public Lands of the United States*, 1973 edition. JGGC would record the survey in the appropriate county and send a copy to the appropriate BLM office.

2.1.7.2 Fire Control

JGGC would notify the AO of any fires during construction and would comply with all rules and regulations administered by the AO concerning the use, prevention, and suppression of fires on federal lands.

In the event of a fire, JGGC or their contractors would initiate fire suppression actions in the work area. Suppression would continue until the fire is out or until the crew is relieved by an

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authorized representative of the agency on whose land the fire occurred. Heavy equipment would not be used for fire suppression outside the ROW without prior approval of the AO unless there is imminent danger to life or property. JGGC or their contractors would be responsible for all costs associated with the suppression of fires and the rehabilitation of fire damage resulting from their operations, employees, or contractors.

JGGC would designate a representative to be in charge of fire control during pipeline construction. The fire representative would ensure that each construction crew has fire-fighting tools and equipment, such as extinguishers, shovels, and axes, available at all times. The number of tools needed would depend on the number of persons working in the area. JGGC would, at all times during construction, maintenance, and operations, require that satisfactory spark arresters be maintained on internal combustion engines.

2.1.7.3 Cultural Resources

Class III surveys have been completed on the area proposed for surface disturbance and reports were submitted to the BLM Rock Springs and Kemmerer Field Offices. JGGC and contractors would inform their employees about relevant federal regulations protecting cultural resources. The project will have an open trench inspection conducted of all pipeline trenches. Mitigation of cultural resources would occur on a case-by-case basis, and JGGC would be responsible for the costs. If any cultural remains, monument sites, objects, or antiquities subject to the *Antiquities Act of June 8, 1906* or the *Archaeological Resources Protection Act of 1979* are discovered during construction, activities shall immediately cease and the responsible AO would be notified. Notification of the AO would be in the case of any previously unidentified or unanticipated cultural remains.

2.1.7.4 Paleontological Resources

If paleontological resources are uncovered during construction activities, JGGC or their contractors would suspend all operations to prevent further disturbance of such materials and would immediately contact the BLM's AO, who would arrange for a determination of significance and, if necessary, recommend a recovery or avoidance plan. Mitigation of paleontological resources would occur on a case-by-case basis, and JGGC would be responsible for the costs.

2.1.7.5 Air Quality/Noise

All vehicles and construction equipment would be maintained to minimize exhaust emissions and would be properly muffled to minimize noise. Disturbed areas would be watered as necessary to suppress dust. Noise from construction activities would be of short duration.

At the proposed compressor station, JGGC would utilize either:

- turbine drivers (lean combustion/air-fuel premix) with 0.10 lb/MMBtu NO_x emissions; or
- electric motor-driven compressors.

Furthermore, a 98% efficient, smokeless, flare stack would be used to control VOC emissions from tanks. Compressor engines would emit a constant loud noise (approximately 65 dBA ("A"-weighted decibels) on-site and 40 dBA at 0.25 mile) for the LOP.

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2.1.7.6 River and Wetland Crossings

JGGC would horizontally directionally drill (HDD) under the Green River and associated wetlands, avoiding surface disturbance. The HDD work sites will be placed 500' from the edge of the riparian areas as per RMP requirements. HDD would be located far enough away from the stream channels to ensure that bank stability is not jeopardized. JGGC would trench crossings at all other stream crossings and numerous unnamed ephemeral drainages along the pipeline corridor.

Operators would ensure that all fueling, servicing, and staging of vehicles takes place more than 500 feet from any river, stream, or riparian area.

At crossings of rivers and wetlands, JGGC would comply with all U.S. Army Corps of Engineers (COE) Wyoming regulatory Office regulations.

2.1.7.7 Invasive/Noxious Weeds

- Incorporate best known weed prevention measures as outlined in Appendix 4 of *Partners Against Weeds: An Action Plan for the Bureau of Land Management*.
- Incorporate invasive/noxious weed management strategies into the preconstruction planning and design process for all surface disturbance activities including road, pipeline, well pad and ancillary facility construction.
- Inventory and remove existing invasive/noxious weed seed sources that could be transported into relatively weed-free areas by passing vehicles.
- All construction vehicles entering the ROW will be washed (power or high pressure) to remove mud, vegetation, and debris (weed seed sources). Washing will be completed at a designated area outside off of the ROW. Construction personnel will be notified of vehicle washing requirements and be monitored by the construction inspector to ensure compliance.
- Stabilize disturbed areas and reestablish vegetation on all bare ground using mixtures and treatment guidelines prescribed in the approved APD/ROW as soon as practical to minimize weed spread.
- Store gravel, top soil and fill in relatively weed-free areas.
- Where possible, limit access to all disturbed sites that are not yet re-vegetated.
- Monitor disturbed and re-vegetated sites to ensure that desired species are thriving and invasive/noxious weeds are not present. Treat, reseed and fertilize as necessary.
- Monitor roads and other disturbed areas throughout the life of the project and for three years after reclamation to insure that invasive/noxious weeds are identified and eradicated.
- Ensure that all invasive/noxious weed control measures adhere to standards in the Decision Record for the Rock Springs District Noxious Weed Control EA or applicable

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updated guidance.

- Cooperate with the Lincoln, Sweetwater, and Sublette County Weed and Pest Districts to identify appropriate methods of weed control.
- Prior to the use of the pesticides/herbicides, JGGC or their contractors, shall obtain from the authorized officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, a map showing the treatment areas, locations of storage and disposal of containers, and any other information deemed necessary by the authorized officer.

Only those chemicals (pesticides and herbicides) listed on the BLM approved label list are authorized for use on public lands. A Pesticide Use Proposal (PUP) must be submitted for each chemical used, and it cannot be used until approval has been obtained in writing from the BLM authorizing officer. The report needs to include any surfactants or dyes used in the spraying operation.

- Ensure that pesticide applicators are certified with an up to date Pesticide Applicator's License before performing spraying work.
- Submit Pesticide Application Records to the BLM KFO each year. Ensure that treatments comply with all federal and state regulations regarding use of pesticides, including those outlined in the following:
 - BLM Information Bulletin No. WY-98-106, *Weed Management Guidance*;
 - Instruction Memorandum No. WY-99-29, *Executive Order #13112 : Invasive Species*;
 - Washington Information Bulletin No. 99-110; *Submission of Pesticide Use Report*;
 - Information Bulletin No. WY-2000-25: *Annual Pesticide Use Report*.

2.1.7.8 Protection of Resource Access Roads

Existing roads to be used by JGGC for access would be designated by signing prior to construction. No unauthorized roads would be used by JGGC or their contractors. Roads would be used within the established travelway of that particular road. No construction or routine maintenance activities would be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of 4 inches deep, the soil would be deemed too wet to adequately support construction equipment. Roads would be reclaimed to as good or better condition than prior to use.

2.1.7.9 Wildlife

JGGC would comply with the following guidelines concerning avoidance of wildlife habitats.

Big Game

JGGC would not disturb habitat within big game crucial winter ranges from November 15 to April 30, unless a written exception is granted.

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Raptors

Operators would not remove cottonwood trees at the Green River crossing to protect potential raptor nesting and/ or roosting habitat. Operators would bore at the crossing to ensure trees are protected.

Where feasible, pipeline ROWs and TUP areas would be selected and designed to avoid disturbance to raptor nests. If construction activities were to occur between February 1 and July 31, surveys for raptor nests within 1.0 mile of the proposed pipeline routes would be conducted to determine nest occupancy. All construction activities would be restricted between February 1 and July 31 within a 0.5-mile radius of all occupied raptor nests except ferruginous hawk and bald eagle nests, for which the seasonal buffer would be 1.0 mile. Construction activities would be restricted between February 1 and August 15 for occupied bald eagle nests and between November 1 to April 1 within 1.0 mile of known bald eagle communal winter roosts. Surface structures requiring repeated human presence would not be constructed within 825 feet (1,000 feet for ferruginous hawks and 2,600 feet for eagles) of active raptor nests, where practical. An active raptor nest is defined as a nest that has been occupied within the past 3 years.

Sage Grouse

Surface disturbance within 0.25 mile of any sage grouse lek would be avoided. If construction activities are planned in potential sage grouse nesting habitat (i.e., areas within 2 miles of an active lek) between March 15 and July 15, BLM wildlife biologists would conduct field evaluations to identify active nests or leks, and if an active sage grouse nest is identified in an area proposed for disturbance, construction activities would be delayed until nesting is completed and the young are fledged. Sage grouse winter concentration areas would not have surface occupancy between November 15 and March 14. Surface disturbance activities would not be allowed within ¼ mile of leks between the hours of 8 pm and 8 am between the dates of March 1 and May 15.

Mountain Plover

Surface disturbance in mountain plover nesting areas would be prohibited between April 10 and July 10. Should construction in potential mountain plover habitat be planned for the prohibited time period, BLM-approved biologists would conduct field investigations to determine the presence of this species. If nesting mountain plovers are present further actions would be prohibited until the chicks have fledged from the area.

Fish Species

The project area is within the Colorado River system, which contains several endangered fish species. The water for hydrostatic testing and dust control would be withdrawn from the Green River, which is a tributary to that system, and would be returned after use. This would minimize any affect upon the endangered species. In addition, JGGC would participate in the "Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin" as a reasonable and prudent measure pursuant to the Endangered Species Act, if needed.

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Special Status Animals and Plants

The BLM would conduct U.S. Fish and Wildlife Service (USFWS) consultation and coordination as necessary for all minimization measures relating to T&E, candidate species and their habitats. In areas that have not been previously surveyed or cleared for these species, a qualified biologist/botanist would conduct surveys for these species in areas of potential habitat prior to disturbance. If T & E, candidate, or sensitive species are found, consultation with the USFWS would be initiated, as necessary, and construction activities would be curtailed until the BLM, USFWS, and Operators concur on which activities can be authorized.

Disturbance would not be authorized within white-tailed prairie dog colonies within the Moxa Complex or within prairie dog colonies within the Jonah Field unless surveys for black-footed ferrets have been completed. If surveys are required, surveys would be conducted according to U.S. FWS guidelines (USDI-FWS 1989). If black-footed ferrets are found, no project related disturbance will occur within the prairie dog complex and all project related activities in such towns or complexes shall be suspended immediately. The FWS will be notified within 24 hours if a black-footed ferret or their sign is observed.

BLM approved biologists have conducted surveys within the BTOPA for pygmy rabbits. Known burrow complexes would be avoided where possible. In areas where burrows cannot be avoided, post-development surveys would be conducted for up to 2 years to determine the effects of the Proposed Action on pygmy rabbit populations and habitat.

JGGC would conduct site-specific surveys for sensitive plants on uncleared areas as directed by the BLM.

2.1.7.10 Historic Trail Crossings

JGGC would comply with all BLM and State Historic Preservation Office (SHPO) recommendations for crossings of Historic Trails. Trails would be crossed in areas of existing disturbance and no new disturbance would occur in undisturbed portions of trails. Historic trail segments would not be used by JGGC or their contractors to access the pipeline ROW.

Segments of the East Bank Kinney Cutoff – Oregon Trail and the Baker Davis Road-Slate Creek Cutoff of the Oregon Trail will be bored, and monitored by an archaeologist who meets or exceeds the qualification standards recommended by the Secretary of the Interior and by a Bureau archaeologist. The Bureau will be notified prior to construction under the sites. The pipeline construction area will neck down as narrow as safely possible within crossing of these trail sites in order to keep the vegetation disturbance to a minimum. Crossing the Sublette Cutoff will be monitored to ensure that the proposed undertaking will remain within existing pipeline corridor disturbance.

2.1.7.11 Sanitation

Construction sites would be maintained in a sanitary condition at all times. Waste materials-- human waste, trash, garbage, refuse, etc., would be disposed of promptly at an appropriate waste disposal site. A litter-policing program, approved by the AO, would be implemented by JGGC to cover all roads and other sites associated with the pipeline ROW.

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2.1.7.12 Existing Utilities

JGGC would secure an ROW on public lands from the BLM prior to pipeline construction and would notify other authorized ROW users of any pipeline crossings or overlaps. Any associated building or zoning on river, creek, or utility crossing permits would be secured from the appropriate regulatory agency or private entity prior to pipeline construction.

2.1.7.13 Visual Resources

JGGC would restore the pipeline ROW to as near its original contour as possible after construction is completed. The ROW would be planted with the seed mixture(s) recommended by JGGC and approved by the BLM. All aboveground facilities within the Jonah Infill Development Project Area would be painted Shale Green (5Y4/2) pursuant to the Jonah Infill ROD/EIS (BLM, 2006), and other aboveground facilities would be painted with Carlsbad Canyon 2.5Y 6/2 or similar color determined by the AO to blend with the surrounding landscape.

2.2 ALTERNATIVES

2.2.1 Alternative Pipeline Route – Alternative 1

One alternative pipeline route in the southern portion of the project will be analyzed in this document. The alternative occurs in the Bird to Opal portion of the project. Figure 1-1 shows this alternative as a dashed red line. Figures 2-11 and 2-12 show the details of this alternative route (labeled on the figures as “Alternate Route”). The route for Alternative 1 is approximately 800 feet longer than the Proposed Action route. Alternative 1 short term and long term disturbance comparisons for project components that changed are shown in Tables 2-6 and 2-7.

Table 2-6. Alternative 1 Short Term Disturbance Comparison

Project Component	Acres BLM	Acres BOR	Acres Fee	Acres State
Bird-Opal Discharge – Proposed Action	684.9	82.76	32.85	10.48
Bird-Opal Discharge – Alternative 1	687.1	82.76	32.85	10.48
Difference	2.2	0	0	0

Table 2-7. Alternative 1 Long Term Disturbance Comparison

Project Component	Acres BLM	Acres BOR	Acres Fee	Acres State
Bird-Opal Discharge – Proposed Action	0.69	0	0	0
Bird-Opal Discharge – Alternative 1	0.69	0	0	0
Difference	0	0	0	0

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2.2.2 No Action Alternative

Under the No Action Alternative, the pipelines, compressor station, gas plant expansion, and ancillary facilities would not be constructed. No ground would be disturbed, and no impacts to the existing physical or biological environment would take place.

2.3 ALTERNATIVES CONSIDERED BUT NOT FURTHER EVALUATED

Several alternatives to the Proposed Action and Alternative 1 were considered during alternative development, but these alternatives were not further evaluated for reasons given in the descriptions below.

2.3.1 Pipeline Route

There was one pipeline route that was considered but not further evaluated. The route would have created an unacceptable disturbance to an historic trail, the Opal Wagon Road, and was dropped from further consideration.

2.3.2 Power Line Routes

There were two major power line routes from LaBarge to the Bridger compression site considered, and several minor variations of the proposed route. Figure 1-1 shows these alternates as dashed blue lines.

2.3.2.1 South Crossing of Green River

The original route for the power line crossed the Green River near the Whelan Bridge, just north of LaBarge. BLM judged this route unacceptable as it was within the distance limitations of an active Bald Eagle nest, and may have required a “take,” according to USFWS protocol for a threatened species.

2.3.2.2 Bird Canyon Route

Another route considered for the power line from LaBarge to Bridger passed through Bird Canyon, just south of the proposed Figure Four Canyon route. This route was rejected by the eventual owner and operator of the power line, Pacificorp, as it would have involved siting structures among existing pipeline rights-of-way in Bird Canyon.

2.3.3 Trail Crossings

JGGC’s original proposal was to trench and recontour to original grade conditions eligible segments of the East Bank Kinney Cutoff – Oregon Trail and the Baker Davis Road-Slate Creek Cutoff of the Oregon Trail just south of the existing Bird Canyon Compressor Station on the Bird Canyon to Opal section of this project. BLM rejected this alternative, favoring a traditional horizontal bore under these trail segments in order to minimize impacts to the trails from the Proposed Action.

CHAPTER 2: PROPOSED ACTION AND ALTERNATIVES

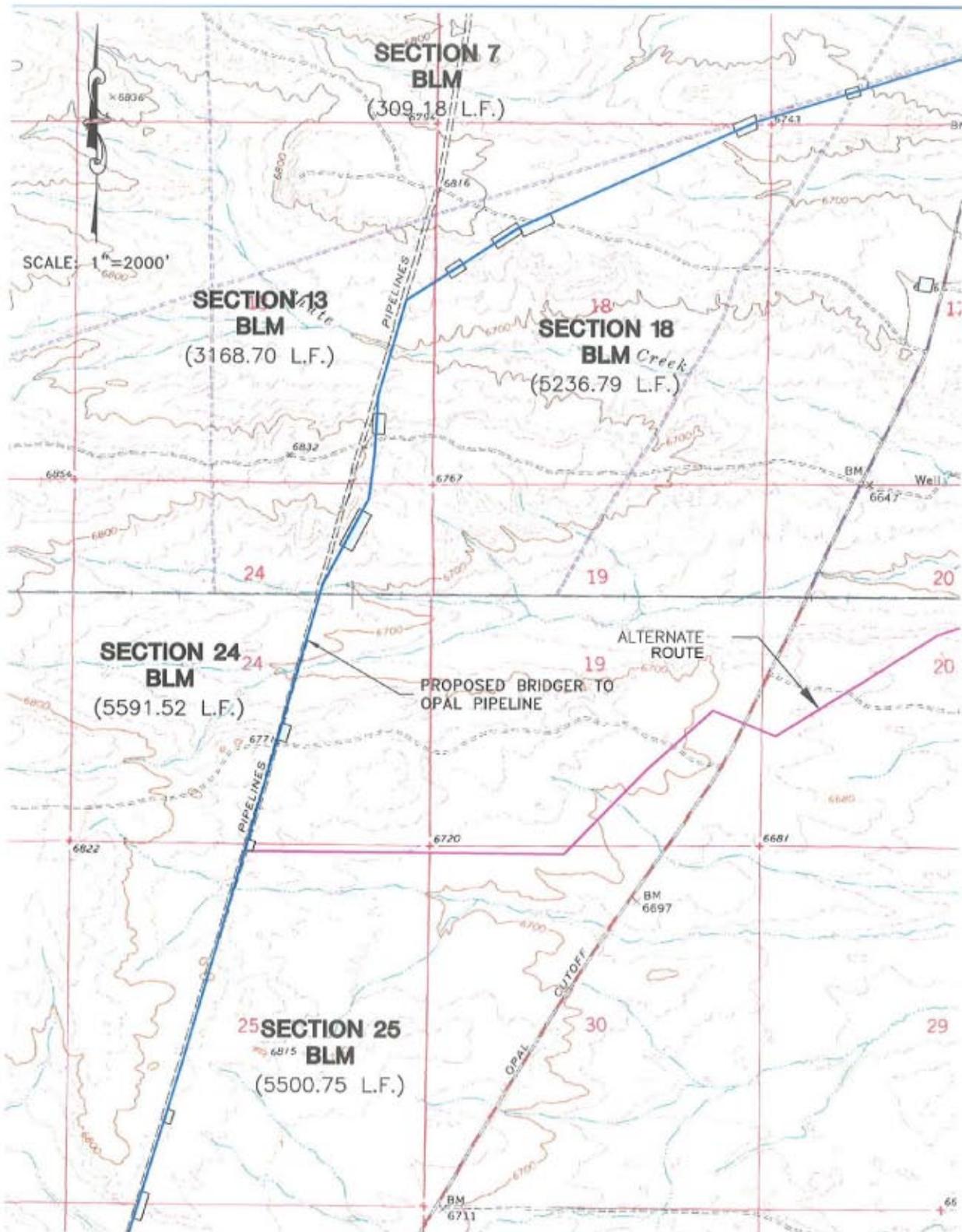


Figure 2-12. Alternative Pipeline Route – Sheet 2

CHAPTER 2: PROPOSED ACTION AND ALTERNATIVES

2.4 COMPARISON OF ENVIRONMENTAL IMPACTS OF PROJECT ALTERNATIVES

A summary of impacts for the Proposed Action, Alternative 1, and the No Action Alternative, analyzed in this EA is provided in Table 2-8. A detailed analysis of project impacts and mitigation measures is presented in Chapter 4.

Table 2-8. Comparative Impact Summary.

RESOURCE ELEMENT	PROPOSED ACTION	ALTERNATIVE 1	NO ACTION ALTERNATIVE
General			
Proposed Disturbance (acres)			
Pipelines	1,295.64	1,297.84	0
Compressor Station	41.3	41.3	0
Gas Plant Expansion	182.11	182.11	0
Power Lines	169.29	169.29	0
Disturbance - Project Area (acres)			
before reclamation	1,688.34	1,690.54	0
after reclamation	392.14	392.14	0
Range Resources			
	NSI w/ mitigation	NSI w/ mitigation	NSI w/ mitigation
Compliance with RMP	YES	YES	YES
AUM's Lost Following Reclamation	34.1	34.1	0
Air Quality			
	NSI w/ mitigation	NSI w/ mitigation	NSI w/ mitigation
Compliance with RMP's and FLPMA	Yes	Yes	Yes
Compliance with State and National Ambient Air Quality Standards	Yes	Yes	Yes
Hazardous Air Pollutant Concentrations	NSI	NSI	NSI
Direct Visibility Impacts to Sensitive Areas (0.5 delta-deciview threshold)	NSI	NSI	UAD
Transportation			
	NSI	NSI	NSI
Compliance with RMP	YES	YES	YES
Minerals/Paleontology			
	NSI w mitigation	NSI w mitigation	NSI w/mitigation
Compliance with RMP's	YES	YES	YES
Disturbance to Fossil Resources	NSI w mitigation	NSI w mitigation	NSI w/mitigation
Soils			
	NSI w/ mitigation	NSI w/ mitigation	NSI w/ mitigation
Compliance with RMP's	YES	YES	YES
Erosion w/ Effective Erosion Control	NSI w/mitigation	NSI w/mitigation	UAD
Additional Erosion: Year 5 (tons/year) w/ Effective Erosion Control	NSI w/mitigation	NSI w/mitigation	UAD
Compliance with EO 11987 (reclamation)	YES	YES	YES

CHAPTER 2: PROPOSED ACTION AND ALTERNATIVES

RESOURCE ELEMENT	PROPOSED ACTION	ALTERNATIVE 1	NO ACTION ALTERNATIVE
Water Resources	NSI w/ mitigation	NSI w/ mitigation	NSI w/ mitigation
Compliance with RMP's	YES	YES	YES
Compliance with CWA and State Water Quality Standards	YES	YES	YES
Fisheries	NSI w/ mitigation	NSI w/ mitigation	NSI w/ mitigation
Compliance with RMP	YES	YES	YES
Vegetation & Wetlands	NSI w/ mitigation	NSI w/ mitigation	NSI w/ mitigation
Compliance with RMP	YES	YES	YES
Compliance with Section 404 of the CWA, EO' 11990 (wetlands), 11988 (floodplains)	YES	YES	YES
Special Status Plants	NSI	NSI	NSI
Compliance with RMP's and FWS:	YES	YES	YES
Wildlife	NSI w/ mitigation	NSI w/ mitigation	NSI w/ mitigation
Compliance with RMP's, FWS, and WGFD objectives and stipulations	YES	YES	YES
Big Game Crucial Winter Range	NSI w/ mitigation	NSI w/ mitigation	NSI w/ mitigation
Greater Sage Grouse Leks, Nesting & Severe Winter Relief Habitats	NSI w/ mitigation	NSI w/ mitigation	NSI w/ mitigation
Raptor Nesting Habitat	NSI w/ mitigation	NSI w/ mitigation	NSI w/ mitigation
Special Status Wildlife & Fish			
Compliance with RMP's and FWS: Animals and Fish	YES	YES	YES
Potential Disturbance to FWS Listed & Proposed Wildlife Species			
Black-Footed Ferret	NSI	NSI	NSI
Yellow Billed Cuckoo	NSI	NSI	NSI
Bald Eagle	NSI	NSI	NSI
Potential Disturbance to Special Status Fish	NSI	NSI	NSI
Visual Resources	NSI	NSI	Low
Compliance with RMP's	YES	YES	YES
Compliance with BLM VRM Class	NSI in Class iii and IV VRM areas	NSI in Class iii and IV VRM areas	NSI in Class iii and IV VRM areas
Noise	NSI	NSI	NSI
Compliance with RMP	No standards specified	No standards specified	No standards specified
Construction and Traffic Noise	Minimal and Short Term	Minimal and Short Term	Lower than Proposed Action
Recreation/Wilderness	NSI w/ mitigation	NSI w/ mitigation	NSI w/ mitigation
Compliance with RMP's	YES	YES	YES

CHAPTER 2: PROPOSED ACTION AND ALTERNATIVES

RESOURCE ELEMENT	PROPOSED ACTION	ALTERNATIVE 1	NO ACTION ALTERNATIVE
Quality of Recreation / Wilderness Experience	NSI w/ mitigation	NSI w/ mitigation	NSI w/ mitigation
Displacement of Recreation/Wilderness Values	NSI w/ mitigation	NSI w/ mitigation	NSI w/ mitigation
Socioeconomics	NSI, Positive	NSI, Positive	NSI
Compliance with RMP	No standards specified	No standards specified	No standards specified
Employment Rate	Increase	Increase	Lower than Proposed Action
Cultural Resources	NSI w/ mitigation	NSI w/ mitigation	NSI w/ mitigation
Compliance with RMP's	YES	YES	YES
Compliance with the NRHP ² guidelines	YES	YES	YES
Sites Eligible for the NRHP in the BTOPA	20	20	20
Impacts to Known or Anticipated Cultural Resources	NSI if avoided	NSI if avoided	Lower than Proposed Action
Health & Safety	NSI	NSI	NSI
Compliance with RMP's	YES	YES	YES
Risk to the Public	Minimal	Minimal	Lower than Proposed Action

Abbreviations:

ADT - Average daily traffic
AUM - Animal Unit Month
CIA - Cumulative Impacts Analysis

CWA - Clean Water Act
EO - Executive Order
ESA - Endangered Species Act
FWS - Fish and Wildlife Service
NSI - No significant impacts
RMP - Resource Management Plan

SI - Significant impacts
UAD - Unquantified additional development
UNKI - Unknown impact until site-specific location is proposed and surveys are completed

VRM - Visual Resource Management
WGFD - Wyoming Game and Fish Department
w/ - with
w/o - without