U.S. Department of the Interior

Bureau of Land Management
Rock Springs Field Office

April 2000

Environmental Assessment and Finding of No Significant Impact for the Pioneer Pipe Line Expansion Project, Sinclair, Wyoming, to Croydon, Utah

MISSION STATEMENT

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

WY-040-EA00-057

BLM/WY/PL-00/014 + 1430

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Rock Springs Field Office
280 Highway 191 North
Rock Springs, Wyoming 82901-3448

1791 (040)
Pioneer Pipeline
WY-040-EA00-057

Dear Reviewer:

This Environmental Assessment (EA) and Finding of No Significant Impacts (FONSI) on the proposed Pioneer Pipeline Project is furnished for your review and comment. Written comments will be considered in the Record of Decision if they are received by May 30, 2000.

The decision on whether or under what conditions to permit the proposed pipeline will be based upon the analysis in the EA, public concerns and comments, and other multiple-use resource objectives or programs that apply to the project. A Decision Record, detailing the decision of the BLM and its rationale for the decision, will be prepared and distributed upon request as soon as the decision is reached following the end of the 30-day review period.

Comments on the content of this EA should be sent to:

Mr. Arlan Hiner, Team Leader
Bureau of Land Management
280 Highway 191 North
Rock Springs, Wyoming 82901

Comments, including the names and street addresses of respondents, will be made available for review by the public at the addresses listed below during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except holidays, and could be published as part of subsequent documents related to this proposal. However, individual respondents may request confidentiality. If you wish to withhold your name and/or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

The BLM appreciates the individuals, organizations, and Federal, State, and Local Governments who participate in the environmental analysis process. Your involvement enhances the integrity of the EA and the public land manager's ability to make an informed decision.

Sincerely,

Ted A. Murphy

Ted Murphy
Assistant Field Manager
Lands and Minerals

FINDING OF NO SIGNIFICANT IMPACT
PIONEER PIPELINE PROJECT

Based on my review of the analysis in the Pioneer Pipeline Project Environmental Assessment (April, 2000). I have determined that the proposed action is in conformance with the approved land use plans and will not have any significant impacts on the human environment. Therefore, an environmental impact statement is not required. Further explanation of the finding is provided below.

The EA shows that adverse impacts to surface ownership/use and grazing; livestock management; socioeconomics/environmental justice; cultural resources; paleontology; soils/watersheds; water resources; air quality/noise; vegetation/riparian areas; wildlife and fisheries; threatened, endangered, candidate, and special status species, wild horses, visual resources; and from the use of hazardous materials would all be minor, short term, necessary and due impacts. Potentially positive economic impacts could result for the company, and local governments and communities.

The Kemmerer Resource Area Resource Management Plan, the Great Divide Resource Area Management Plan, and the Green River Resource Area Resource Management Plan provide for the use of these public lands as a transportation corridor. The Proposed Action would be in conformance with these land use plans, and no amendments to the RMPs would be necessary to implement the Proposed Action.

Approval:

_____
Assistant Field Manager
Lands and Minerals

_____
Date

ENVIRONMENTAL ASSESSMENT FOR THE PIONEER PIPE LINE EXPANSION PROJECT, SINCLAIR, WYOMING, TO CROYDON, UTAH

Bureau of Land Management
Rock Springs Field Office
Rock Springs, Wyoming

Kemmerer Field Office
Kemmerer, Wyoming

Rawlins Field Office
Rawlins, Wyoming

and

Bureau of Reclamation
Provo, Utah

This Environmental Analysis was prepared by TRC Mariah Associates Inc., an environmental consulting firm, with the guidance, participation, and independent evaluation of the Bureau of Land Management (BLM). The BLM, in accordance with Title 40 Code of Federal Regulations, Part 1506(a) and (b), is in agreement with the findings of the analysis and approves and takes responsibility for the scope and content of this document.

April 2000

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

LIST OF MAPS

LIST OF MAPS (Continued)

LIST OF TABLES

LIST OF TABLES (Continued)

LIST OF FIGURES

ABBREVIATIONS AND ACRONYMS

acre-ft	Acre-foot/feet
AO	Authorized Officer
ASME	American Society of Mechanical Engineers
AUM	Animal unit month
BA	Biological assessment
bbl	Barrels
BLM	Bureau of Land Management
BOR	Bureau of Reclamation
B.P.	Before present
bpd	Barrels per day
CEQ	Council on Environmental Quality
C.F.R.	Code of Federal Regulations
COE	U.S. Army Corps of Engineers
CPLC	Conoco Pipe Line Company
dBA	A-weighted decibel
DOT	Department of Transportation
DWR	Division of Water Resources
EA	Environmental assessment
EIS	Environmental impact statement
EPA	Environmental Protection Agency
EVG	Erathem-Vanir Geologic Consultants
ft	Foot or feet
hr	Hour
I-80	Interstate 80
KFO	Kemmerer Field Office
m	Meter(s)
NEPA	*National Environmental Policy Act of 1969* (as amended)
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
PAHs	Polynuclear aromatic hydrocarbons
PLS	Pounds of Pure Live Seed
POD	Plan of Development
POM	Polycyclic organic matter
PPLC	Pioneer Pipe Line Company
RCRA	*Resource Conservation and Recovery Act of 1976*
RFO	Rawlins Field Office
RIP	*Recovery and Implementation Program for Endangered Fish Species in the Upper Colorado River Basin*
RMP	Resource Management Plan
ROW	Right-of-way
RSFO	Rock Springs Field Office

ABBREVIATIONS AND ACRONYMS (CONTINUED)

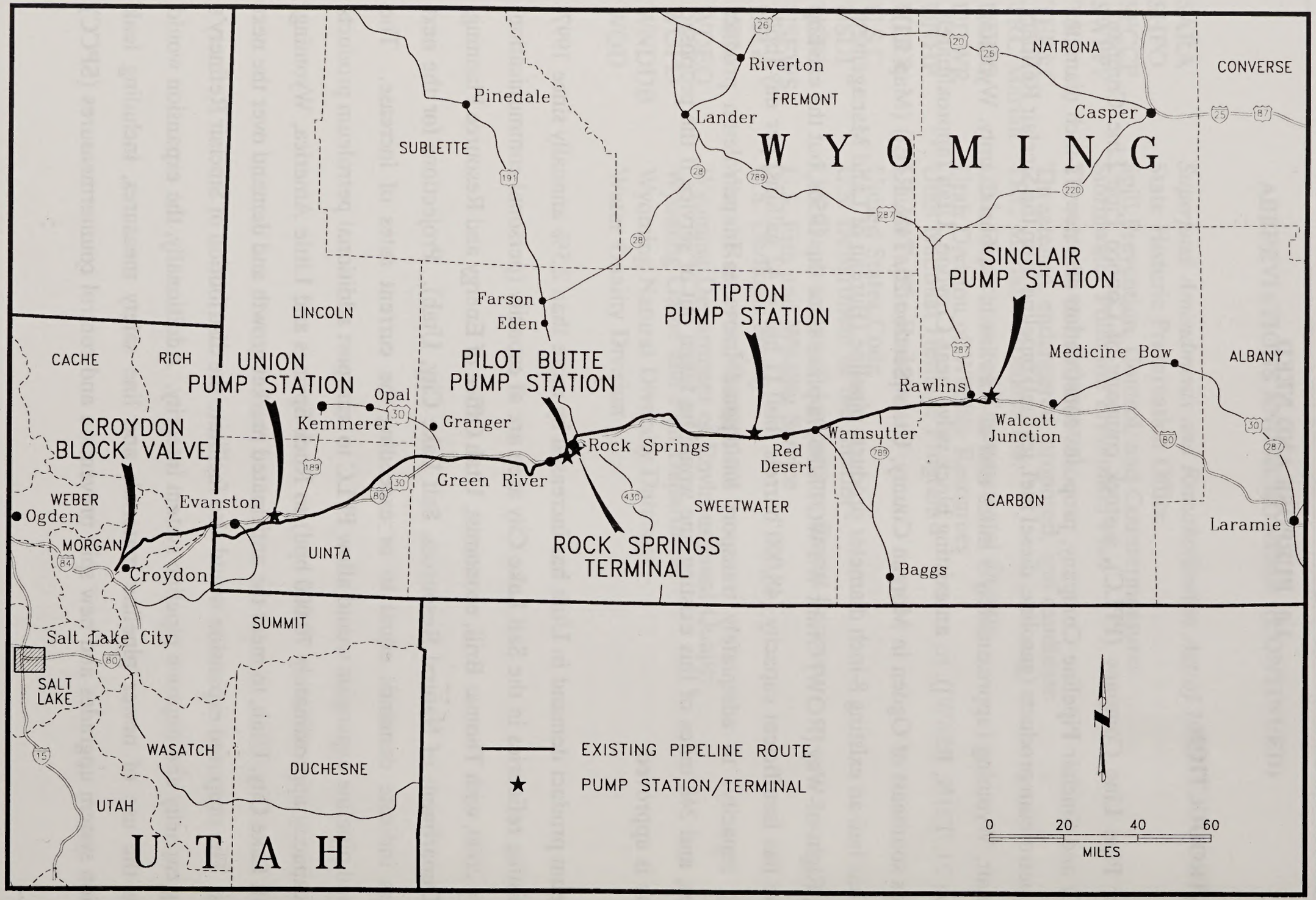
SARA	*Superfund Amendments and Reauthorization Act of 1986*
SHPO	State Historic Preservation Office
SPCCP	Spill Prevention, Control, and Countermeasures
SWPPP	Stormwater Pollution Prevention Plan
T&E	Threatened and endangered
TEP&C	Threatened, endangered, proposed, and candidate
TRC Mariah	TRC Mariah Associates Inc.
UDEQ	Utah Department of Environmental Quality
UDWR	Utah Division of Wildlife Resources
UNHP	Utah National Heritage Program
UPRR	Union Pacific Railroad
U.S.C.	United States Code
USDI	U.S. Department of the Interior
USFS	U.S. Department of Agriculture, Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey
VRM	Visual Resource Management
WDEQ	Wyoming Department of Environmental Quality
WGFD	Wyoming Game and Fish Department
WNDDB	Wyoming Natural Diversity Database
WQD	Water Quality Division

1.0 PURPOSE AND NEED

1.1 INTRODUCTION

Pioneer Pipe Line Company (PPLC), a stock company of Conoco Pipe Line Company (CPLC) and Sinclair Pipeline Company, proposes construction of a new 12-inch diameter buried petroleum products (gasoline, diesel fuel, jet fuel) pipeline from the Sinclair Refinery in Sinclair, Wyoming (approximately 5 miles east of Rawlins in Carbon County, Wyoming [Section 21, T21N, R86W]), to an existing block valve near Croydon, Utah (approximately 25 miles southeast of Ogden in Morgan County, Utah [Section 20, T4N, R4E]) (Map 1.1). PPLC has had an existing 8-inch diameter products pipeline (Bureau of Land Management [BLM] Right-of-Way [ROW] Grant WYWO17230) in place since the 1950s, but the existing pipeline has insufficient capacity (48,000 barrels [bbl] [1 bbl = 42 gallons] per day [bpd] existing capacity) to adequately transport anticipated increases in petroleum product supplies, and 248 miles of this existing line would be taken out of service if the proposed pipeline is approved.

Petroleum product demand in Utah has increased by more than 2.5% annually since 1997, and existing refineries in the Salt Lake City area are at capacity (personal communication, January 2000, with Thomas Brill, economist, Utah Office of Energy and Resource Planning, Utah Department of Natural Resources, Salt Lake City, Utah). Projections for the next 10 years indicate demands equal to or exceeding the current rates of increase. The proposed pipeline expansion would allow PPLC to transport additional petroleum products (total capacity approximately 70,000 bpd) to Rock Springs and Little America, Wyoming, and Salt Lake City, Utah, to meet the anticipated market growth and demand over the next 6 years. The proposed expansion would also facilitate the distribution of Sinclair Refinery's existing capacity and improve pipeline system integrity. Additionally, the expansion would include the use of newer pipeline materials and line safety measures, including leak detection system upgrades and new spill prevention and control countermeasures (SPCC)



Map 1.1 Project Location, Pioneer Pipe Line Expansion Project, 2000.

and is rerouted at selected locations to avoid sensitive areas (e.g., community encroachment areas near towns).

The proposed pipeline would be approximately 262 miles long (230 miles in Wyoming and 32 miles in Utah) and would traverse portions of Carbon, Sweetwater, and Uinta Counties in Wyoming and Summit, Rich, and Morgan Counties in Utah. The pipeline would cross approximately 86 miles of BLM-administered land (all in Wyoming); less than 1 mile of Bureau of Reclamation (BOR)-administered land (in Utah); 4 miles of state land (all in Wyoming); and 172 miles of private land (in Wyoming and Utah).

The existing 8-inch pipeline from Croydon, Utah, to North Salt Lake (43 miles) would continue to be used. Facilities to inject a drag-reducing agent may be installed at Croydon to facilitate the desired throughput. PPLC would continue to implement pipeline integrity programs along this segment of the existing pipeline to allow for safe and environmentally sound operations. Additionally, a hydrostatic test of the approximately 43 miles of existing pipeline between Croydon and North Salt Lake City is planned for 2000 to verify pipeline integrity for the increased pipeline volumes.

A 90-ft wide temporary construction ROW and a 50-ft wide permanent (30-year) operating ROW would be required, and much of the disturbance from the proposed project would occur on reclaimed areas previously disturbed for the existing PPLC ROW (8-inch line) and other authorized ROWs. Construction would begin in July 2000 and continue until project completion, anticipated for December 2000.

1.2 CONFORMANCE AND AUTHORIZATION ACTIONS

The proposed project is within areas covered by the following BLM Resource Management Plans (RMPs) and land management plans:

- BLM Great Divide RMP (Rawlins Field Office [RFO]) (BLM 1987, 1988a, 1990);
- BLM Green River RMP (Rock Springs Field Office [RSFO]) (BLM 1992, 1996, 1997a);
- BLM Kemmerer RMP (Kemmerer Field Office [KFO]) (BLM 1985a, 1986);
- BOR Lost Creek Reservoir RMP (BOR 1996); and
- land use plans for the states of Wyoming and Utah.

All of these plans provide for the development of pipelines with stipulations to protect natural resources. The plans also identify preferred utility corridors that would be used for this project to the extent possible. The proposed pipeline would be in conformance with the guidance and decisions provided in these plans.

Other environmental documents relevant to the proposed project include: the Continental Divide/Wamsutter II environmental impact statement (EIS) (BLM 1999a, 1999b); the Expanded Moxa Arch EIS (BLM 1995a); the Enron Communications, Inc. Wasatch Reach Fiber Optic Installation environmental assessment (EA) (BLM 1999c); and the IXC Communications, Inc. EA (BLM 1999d, 1999e). Each of these documents provides resource data and management direction relevant to the proposed project.

The BLM is the lead agency for this proposed project for Wyoming, and the BOR, which administers some lands traversed by the proposed pipeline in Utah, is a cooperating agency.

In compliance with the *National Environmental Policy Act of 1969* (NEPA) and the Council on Environmental Quality (CEQ) regulations for implementing NEPA, the BLM has determined that an EA is required to evaluate the proposed project. The purpose of the EA is to provide the public and government agencies with information about the potential environmental consequences of PPLC's proposed project and alternatives; to allow the

public and agency officials the opportunity to evaluate the extent of potential environmental impacts resulting from the project; to provide an evaluation of practicable means to avoid or minimize adverse environmental impacts that may be associated with the project; and to provide responsible officials with information upon which to make an informed decision regarding the project.

This EA was prepared in accordance with NEPA and is in compliance with all applicable regulations and laws passed subsequently, including CEQ regulations (40 *Code of Federal Regulations* [C.F.R.] 1500-1508), U.S. Department of the Interior (USDI) requirements (*Department Manual 516, Environmental Quality*), and guidelines listed in the BLM *NEPA Handbook, H-1790-1* (BLM 1988b). This EA assesses the environmental impacts of the Proposed Action and No Action Alternatives and serves to guide the decision-making process.

The proposed project would comply with all relevant federal, state, and local laws and regulations. Table 1.1 lists the authorizing actions required for project compliance.

1.3 LAND AND RESOURCE MANAGEMENT ISSUES AND CONCERNS

Land and resource management issues and concerns specific to pipeline installation and operation considered during preparation of this EA include the following:

- compatibility with management plans and objectives;
- construction timing;
- minimize surface disturbance;
- fencing requirements;
- stream, wetland, and irrigation system crossings;
- acquisition of temporary surface water permits;
- water quality;
- cultural and historic resources;

Table 1.1 Federal, State, County, and Local Agencies and Authorizing Actions, Pioneer Pipe Line Expansion Project, 2000.

Agency	Nature of Action
Carbon/Sweetwater/Uinta/Summit/Rich/ Morgan County Offices	Zoning certificates for site development and construction
	Small wastewater system permits, where applicable
	Road use agreements and/or oversize trip permits, when traffic on county roads exceeds established size and weight limits or where the potential for excessive road damage exists
	Construction permits and use permits
	Filing fees
	Control of noxious weeds
	Permits to bore or trench county roads or for any crossing or access off a county road
U.S. Army Corps of Engineers	Section 404 Permit for placement of dredged or fill material into waters of the U.S.; permits to cross Green River, Blacks Fork River, and Bear River
U.S. Bureau of Land Management Rawlins, Rock Springs, and Kemmerer Field Offices	NEPA compliance and approval of ROW applications for pipelines; temporary use permits
U.S. Bureau of Reclamation (BOR)	NEPA compliance and approval of ROW applications for pipelines; temporary use permits
	Permits for boring under roads; licensing agreement to take water on BOR lands
U.S. Fish and Wildlife Service	Review of impact on federally listed threatened, endangered, proposed, and candidate species
U.S. Department of Transportation	Conformance with regulations for transportation of hazardous liquids by pipeline (49 C.F.R. Part 195)
Wyoming Department of Environmental Quality, Water Quality Division; Utah Department of Environmental Quality, Division of Water Resources	National Pollution Discharge Elimination System (NPDES) permit
	Conformance with all surface water standards; permit to construct and permit to operate
Wyoming Department of Transportation; Utah Department of Transportation	Conformance with applicable size and weight limits for trucks
Wyoming State Engineer's Office	Permit to take water
Wyoming State Historic Preservation Office; Utah State Historic Society and Division of State History	Consultation for cultural resource inventory, evaluation, and mitigation
Various cities and towns	Various permits, easements, and notifications

- threatened, endangered, proposed, and candidate (TEP&C) species;
- BLM sensitive species;
- noxious weeds;
- erosion control;
- spill containment;
- health and safety;
- reclamation/revegetation with native species;
- cumulative impacts;
- crossing private lands, highways, railroads, and other pipelines;
- acquisition of railroad crossing permits and highway encroachment permits;
- impacts on private lands and associated compensation;
- need to prepare an EIS;
- impacts to existing refineries and/or distribution systems;
- impacts to/from trona mining;
- social and economic ramifications to communities to which product is delivered;
- handling and marketing of product once it is delivered to Croydon;
- susceptibility to landslides and earthquakes;
- impacts to wildlife, especially big game crucial winter range, sage grouse (leks and nesting habitats), and raptors; and
- potential impacts to water supply at Lost Creek State Park in Utah.

These issues were identified during internal BLM reviews and as a result of a scoping notice mailed in July 1999 to approximately 75 federal and state agencies, counties, municipalities, Native American tribes, and other organizations and individuals, as well as to all landowners and grazing permittees along the proposed route and local media outlets (Appendix A). Additional concerns identified during preparation of this EA are also included herein.

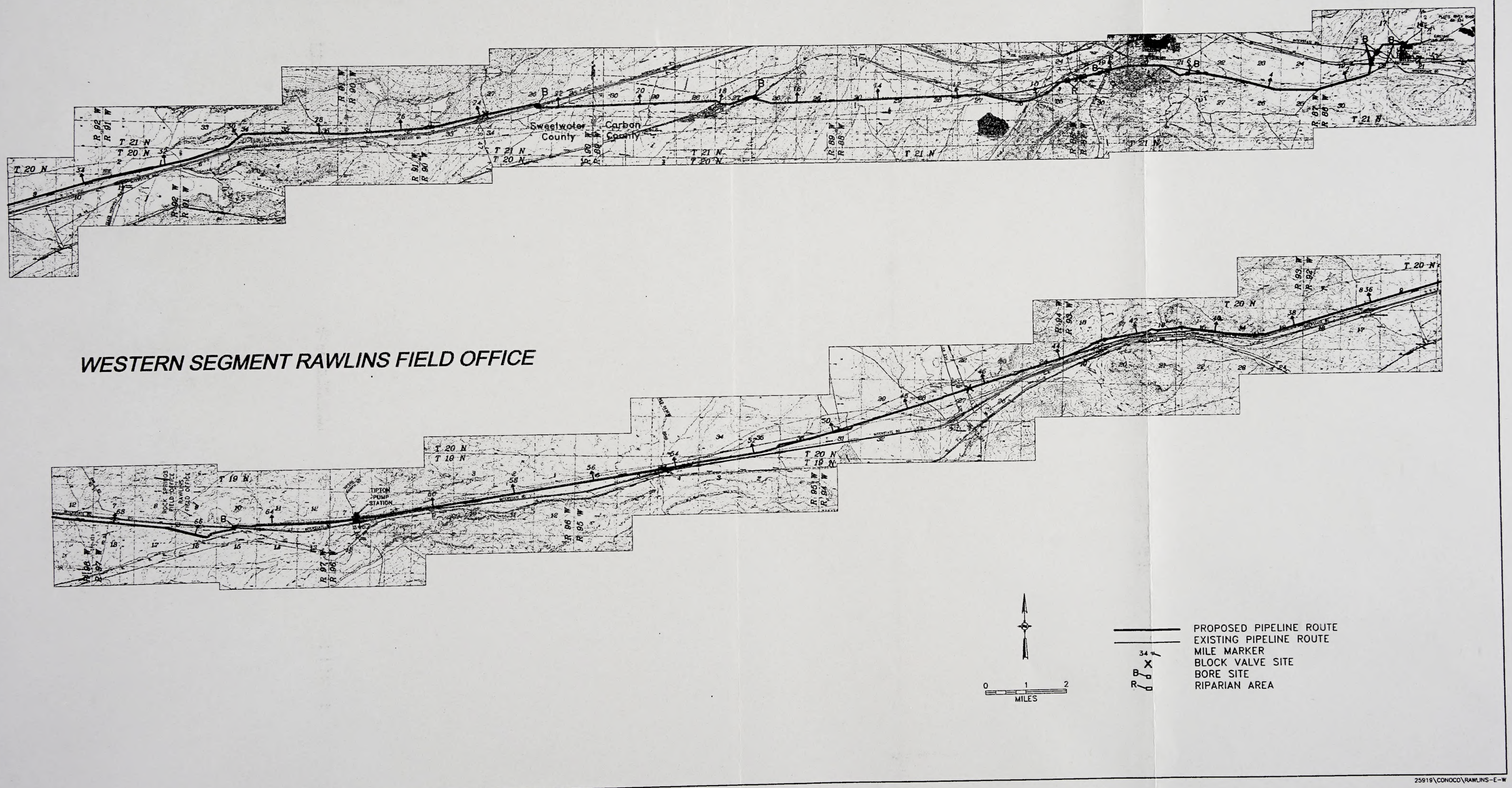
2.0 THE PROPOSED ACTION AND ALTERNATIVES

2.1 THE PROPOSED ACTION

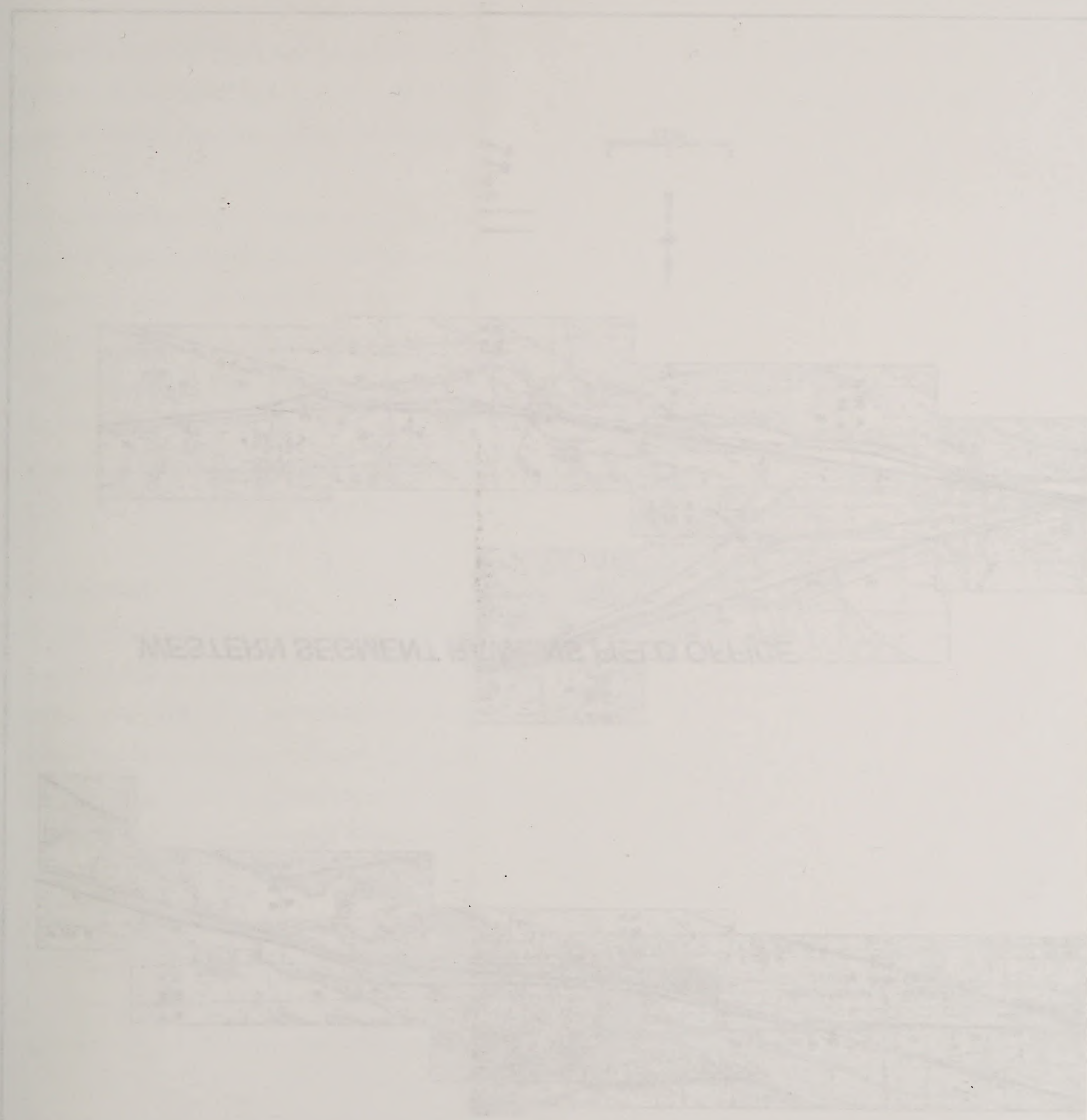
PPLC proposes construction of a new 12-inch diameter buried petroleum products pipeline from the Sinclair Refinery in Sinclair, Wyoming (approximately 5 miles east of Rawlins in Carbon County, Wyoming [Section 21, T21N, R86W]), to an existing block valve near Croydon, Utah (approximately 25 miles southeast of Ogden, in Morgan County, Utah [Section 20, T4N, R4E]) (see Map 1.1). Petroleum products would originate at the Sinclair Refinery or from a connecting pipeline that moves petroleum products from refineries in Casper, Wyoming, and Billings/Laurel, Montana, to Sinclair. Eastern portions of PPLC's existing 8-inch diameter pipeline (BLM ROW Grant WYWO17230) (248 miles) are of insufficient capacity to adequately transport anticipated petroleum product supplies. The proposed pipeline expansion would allow PPLC to transport additional petroleum products to Salt Lake City and other areas to meet anticipated market growth and demand over the next 6 years.

The proposed pipeline would be approximately 262 miles long (230 miles in Wyoming and 32 miles in Utah) and would traverse portions of Carbon, Sweetwater, and Uinta Counties in Wyoming and Summit, Rich, and Morgan Counties in Utah. The pipeline would cross approximately 86 miles of BLM-administered land (all in Wyoming); less than 1 mile of BOR-administered land (in Utah); 4 miles of state land (all in Wyoming); and 172 miles of private land (in Wyoming and Utah) (Maps 2.1-2.6). The approximately 43 miles of the existing 8-inch pipeline from Croydon to North Salt Lake City would continue to be used to transport petroleum products.

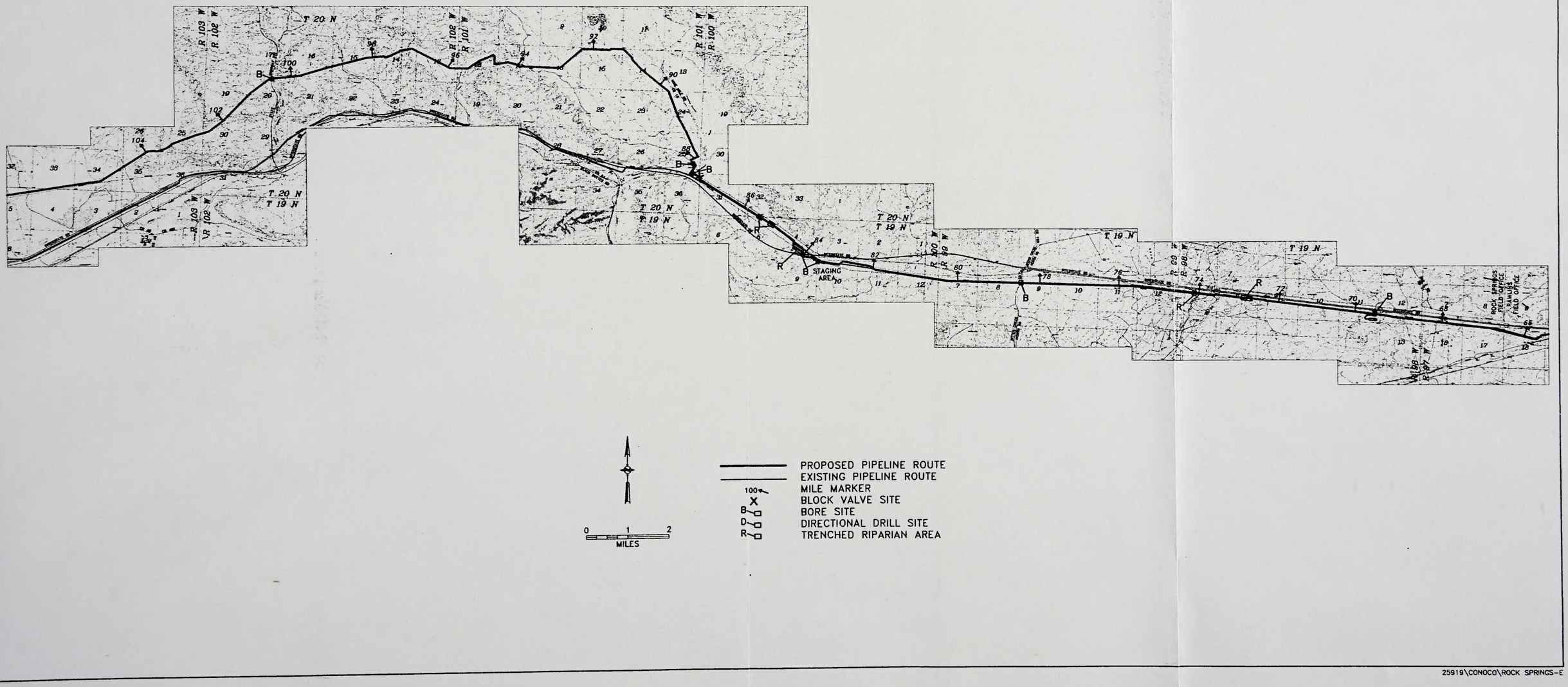
The proposed pipeline would be designed to transport approximately 70,000 bpd of petroleum products, the majority of which would be received at Salt Lake Terminal Company's North Salt Lake Terminal and tank farm. Products would then be distributed



Map 2.1 Rawlins Field Office Segments, Pioneer Pipe Line Expansion Project, 2000.



EASTERN SEGMENT ROCK SPRINGS FIELD OFFICE



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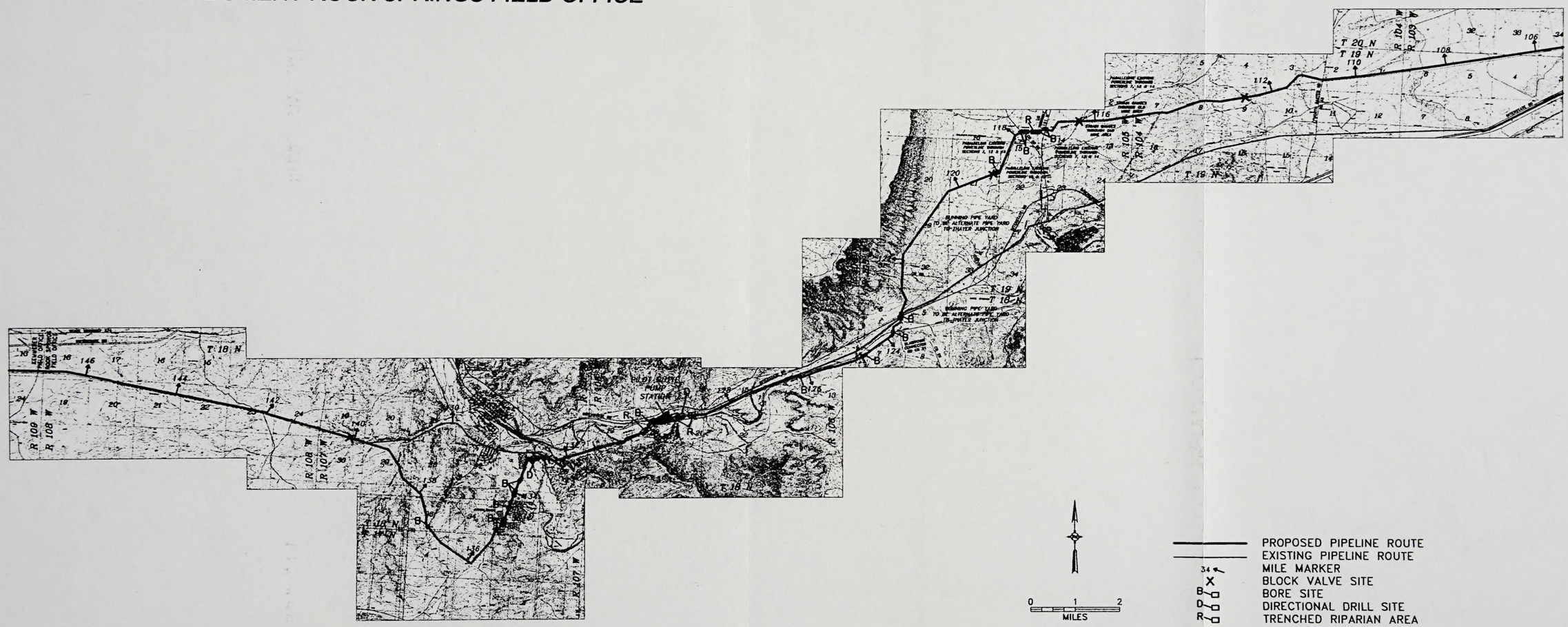
Map 2.2 **Rock Springs Field Office, Eastern Segment, Pioneer Pipe Line Expansion Project, 2000.**

WESTERN SEGMENT ROCK SPRINGS FIELD OFFICE



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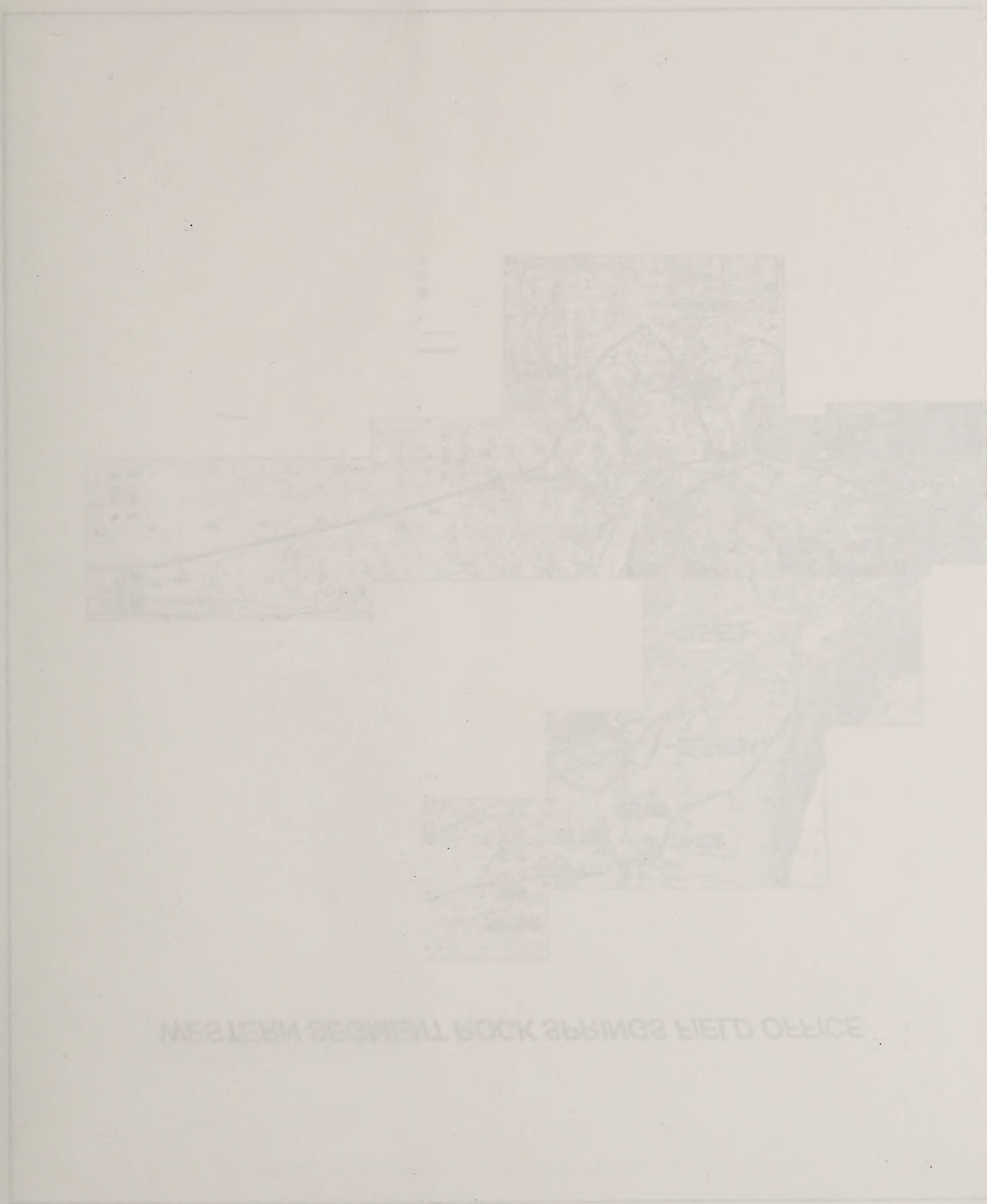
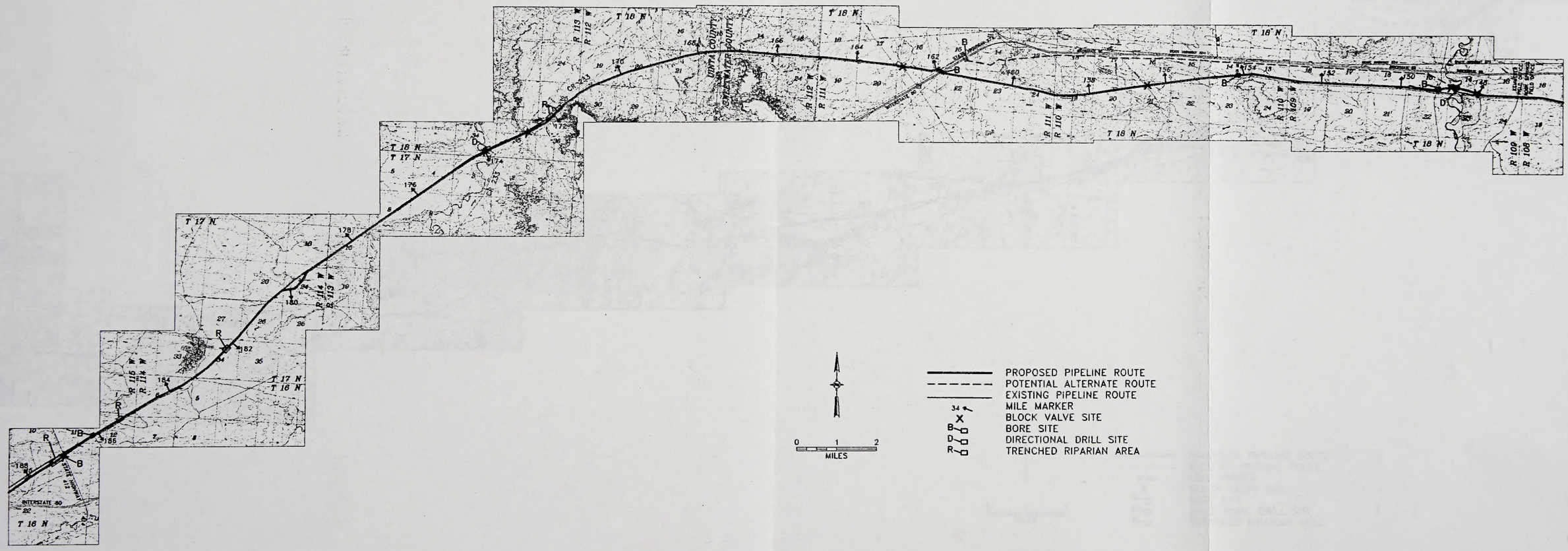
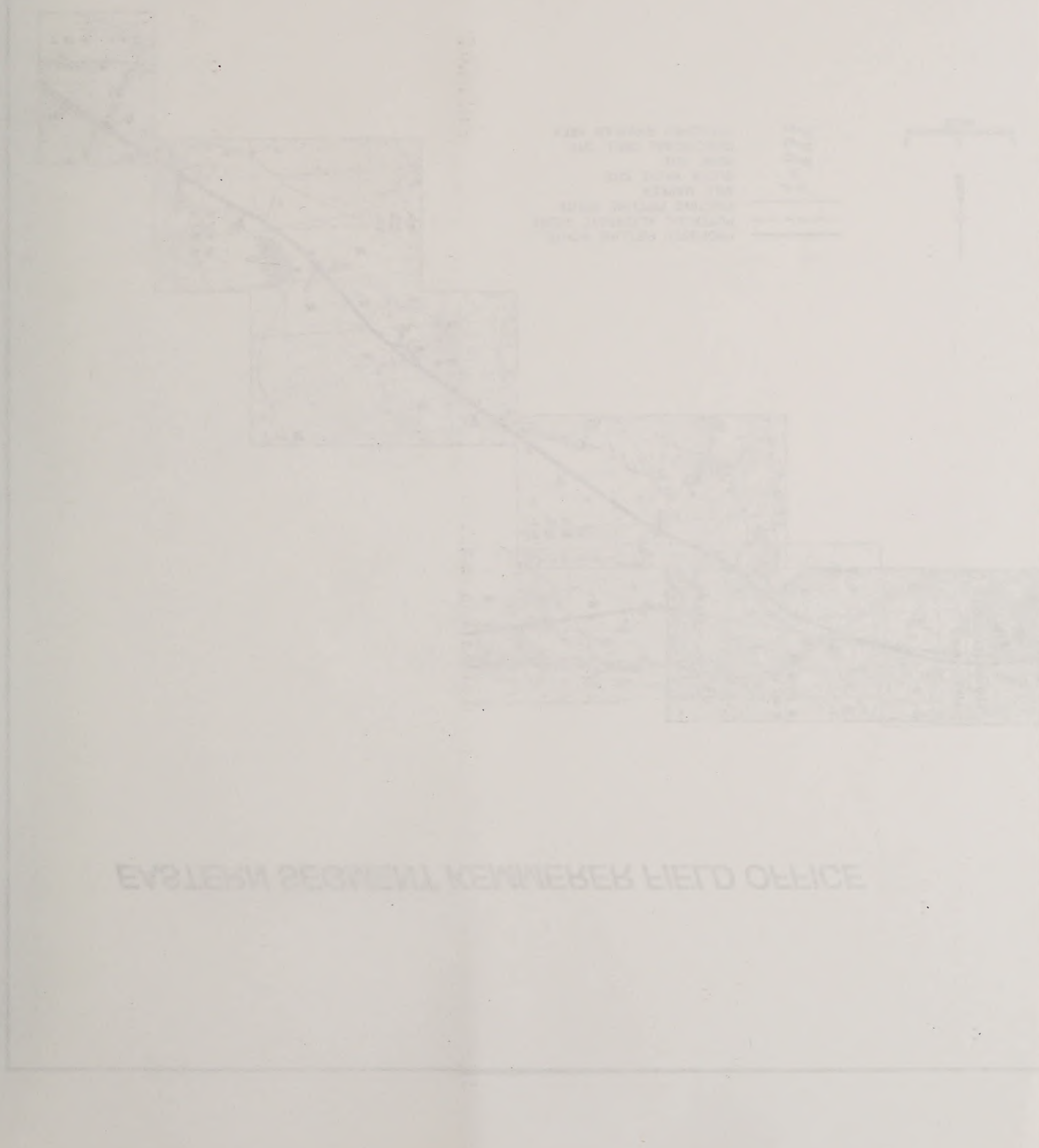
Map 2.3 **Rock Springs Field Office, Western Segment, Pioneer Pipe Line Expansion Project, 2000.**



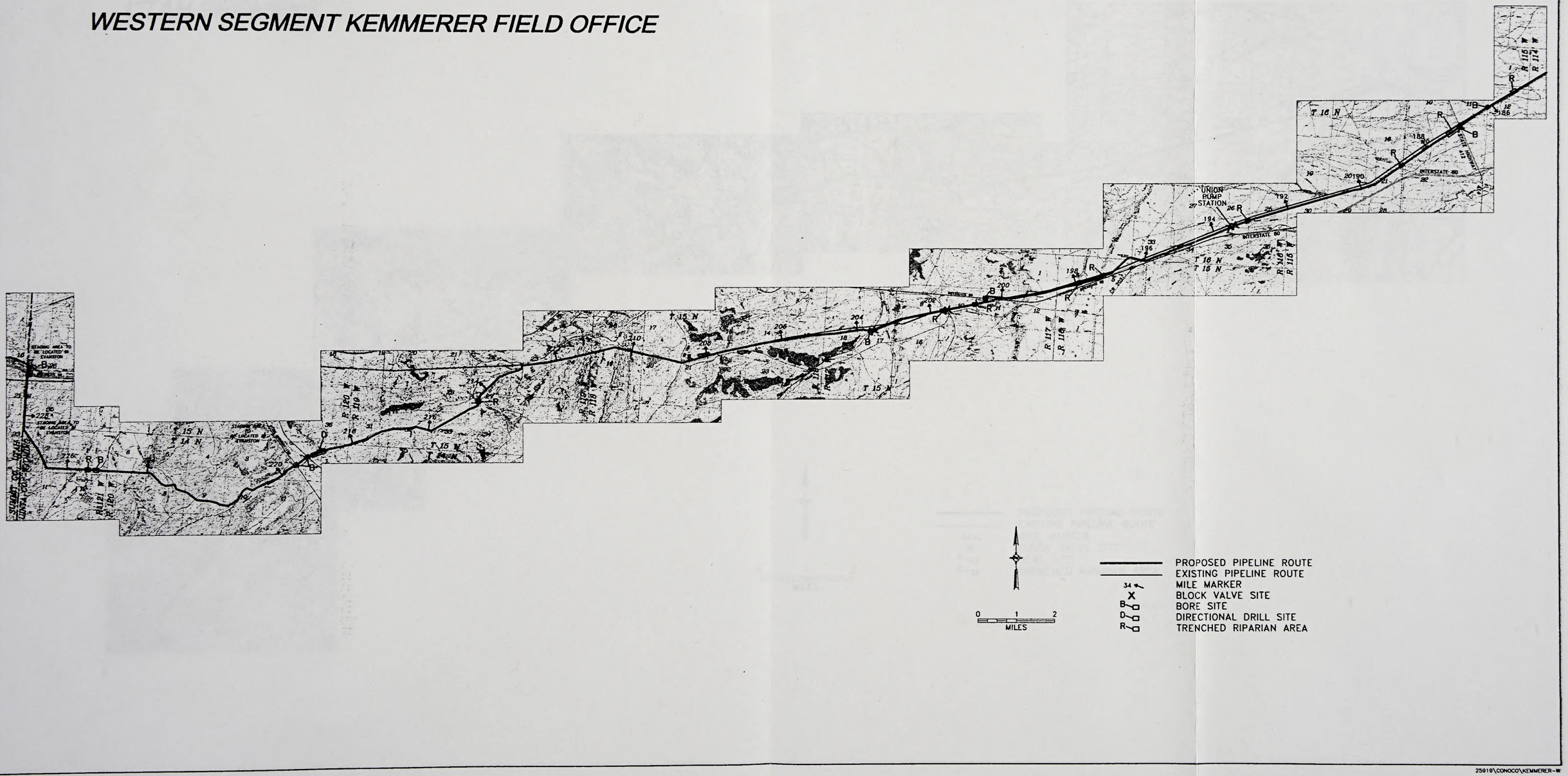
EASTERN SEGMENT KEMMERER FIELD OFFICE



Map 2.4 Kemmerer Field Office, Eastern Segment, Pioneer Pipe Line Expansion Project, 2000.

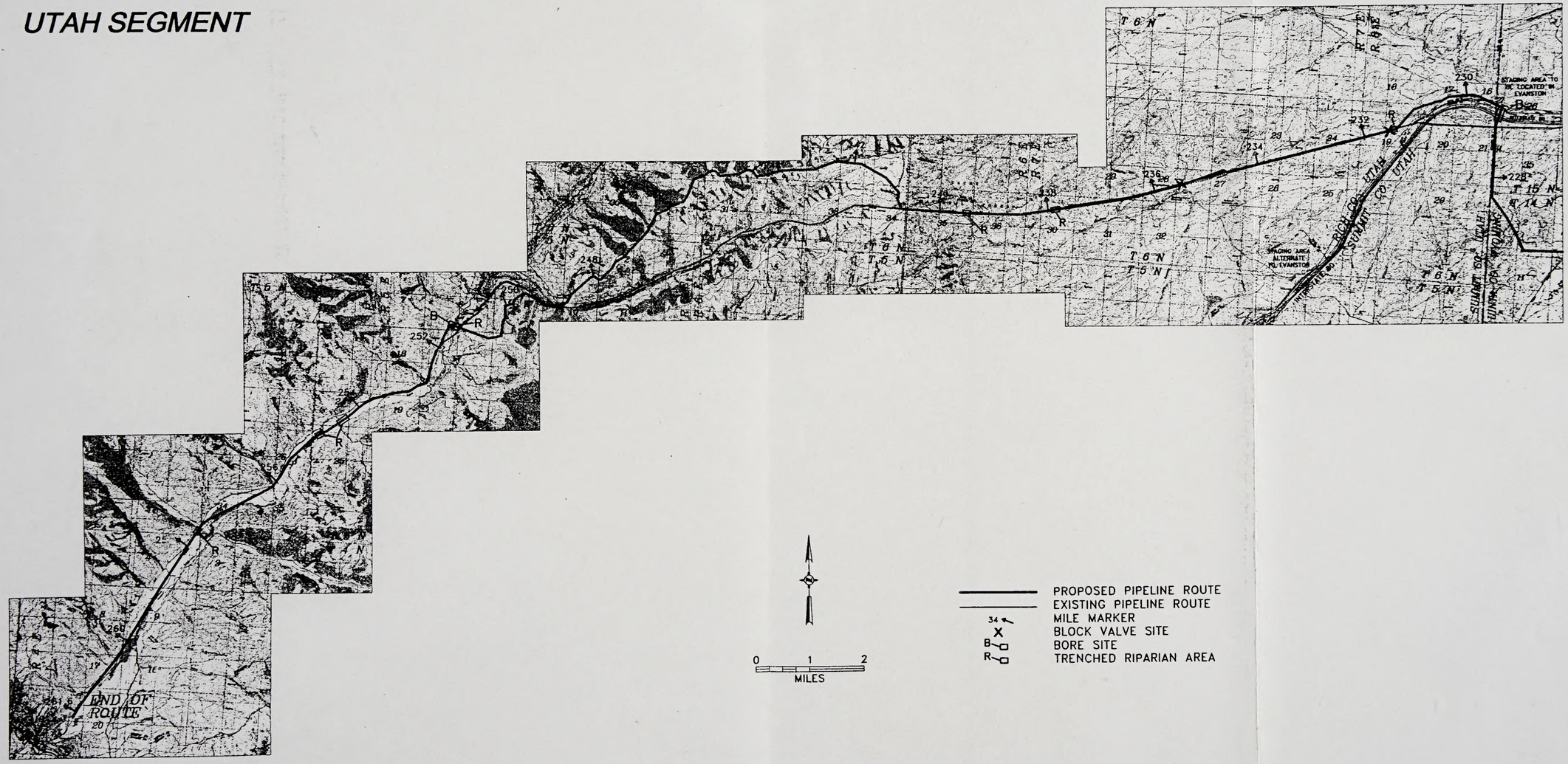


WESTERN SEGMENT KEMMERER FIELD OFFICE



Map 2.5 Kemmerer Field Office, Western Segment, Pioneer Pipe Line Expansion Project, 2000.

UTAH SEGMENT



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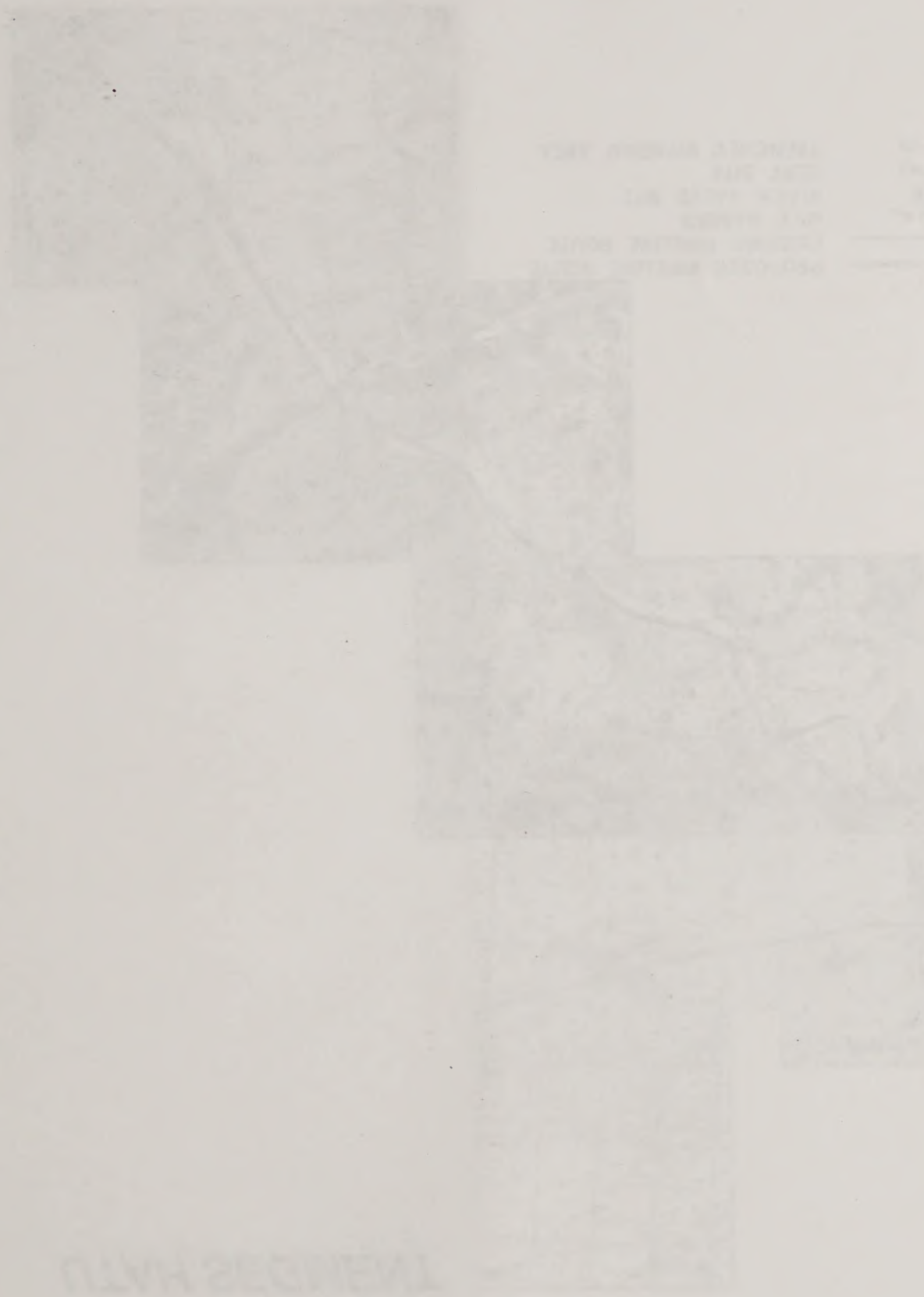
Map 2.6 Utah Segment, Pioneer Pipe Line Expansion Project, 2000.



for use in the Salt Lake City area or further piped to terminals in Idaho and elsewhere via other existing pipeline systems. Salt Lake Terminal Company is expanding its facility for additional product storage, piping, racking, flaring, and truck loading, and all required permits (e.g., Utah air quality permits) are being obtained for this work. Terminal facility modifications would occur independently of any considerations for the proposed pipeline and modifications that are currently underway. Furthermore, work at the facility is not part of PPLC's pipeline application and would occur on private lands in an existing industrialized area. The facility modifications are not considered part of the Proposed Action for this project.

A 90-ft wide temporary construction ROW and a 50-ft wide permanent (30-year) operating ROW would be required, and much of the approximately 2,927 acres of disturbance associated with proposed project construction would occur on reclaimed areas previously disturbed for the existing PPLC 8-inch pipeline ROW and other ROWs (Table 2.1). A maximum of approximately 30 miles (324 acres) of the proposed ROW would occur along a new ROW corridor. The proposed ROW route was chosen to parallel existing ROWs, while avoiding existing developments as much as possible (e.g., truck stops, municipalities, potential subsidence areas at trona mines); archaeological sites; and areas with geotechnical concerns. Many of the support facilities for the existing 8-inch pipeline (e.g., pump stations, power stations, tank farms) would service the new pipeline, although some changes (e.g., modified or new aboveground valves, cathodic protection sites, line markers) would be required to accommodate the new pipeline. No additional pumping stations are proposed. Construction would begin in July 2000 and continue until project completion, scheduled for December 2000. Final reclamation is anticipated for completion in 2001.

PPLC would continue to implement asset integrity programs to the remaining existing 8-inch pipeline (i.e., from Croydon to the North Salt Lake Terminal) to allow continued safe and environmentally sound operations through such methods as internal surveys, aerial and ground inspections, and subsequent repairs programs, as warranted. In addition, PPLC

Table 2.1 Summary of Disturbance for Pioneer Pipe Line Expansion Project, 2000.

ROW	Length (miles)				Surface Disturbance (acres)			
	New ROW	Within 50 ft of the Existing 8-inch Pipeline	Adjacent to Other ROWs	Total	New ROW	Within 50 ft of the Existing 8-inch Pipeline[1]	Adjacent to Other ROWs[2]	Total
Pipeline ROW[3]	30	41	191	262	327	447	2,084	2,858
Bores/drills[4]	--	--	--	--	-3	-3	-15	-21
Ancillary facilities[5]	--	--	--	--	--	3	--	3
Staging areas/pipe yards[6]	--	--	--	--	--	--	87	87
Total	30	41	191	262	324	447	2,156	2,927

1 Approximately one-half of the proposed ROW construction width (90 ft total, 45 ft on previously disturbed areas) would be on previously disturbed areas associated with the existing 8-inch pipeline.

2 An undetermined portion of the proposed ROW would occur on previously disturbed areas associated with other existing ROWs (excludes areas within 50 ft of the existing 8-inch pipeline), and all staging areas and pipe yards would be located on previously disturbed areas.

3 Assumes the entire 90-ft ROW width is disturbed (approximately 10.1 acres/mi).

4 Assumes 2,000 ft^2 of additional disturbance for each bore and 44,000 ft^2 of additional disturbance for each directional drill. The 47 bores and five directional drills proposed would disturb approximately 7 acres in addition to the 90-ft construction ROW disturbance; however, the 13,516 ft of boring/drilling would result in 28 acres less disturbance to the ROW (bored/drilled areas would not be disturbed at the surface). Therefore, boring/drilling would result in a net of approximately 21 fewer acres of surface disturbance along the ROW.

5 Includes approximately 0.5-acre of surface disturbance at each of the pumping stations (Sinclair, Tipton, Pilot Butte, and Union) and at the Rock Springs Terminal.

6 Includes four spread breaks/staging areas (approximately 10 acres each) and four pipe yards (total pipe yard disturbance = 47 acres).

would hydrostatically test the remaining existing 8-inch pipeline (Croydon to North Salt Lake) during 2000 to verify line integrity. The remainder of the existing pipeline (from Sinclair to Croydon) would be decommissioned (taken out of service) and left in place once the new pipeline is put into service. Alternative uses (e.g., fiber optics) for the existing 8-inch pipeline may be developed, but are not complete at this time.

Operators would comply with all applicable federal, state, and local laws and regulations as they relate to public health, safety, and environmental protection in the construction, operation, and maintenance of existing and proposed facilities.

2.1.1 Design and Construction

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 PPLC's office in Rock Springs and the BLM Field Office in Rock Springs. Construction procedures would adhere to the design parameters specified in the Plan of Development (POD) for this project (TRC Mariah Associates Inc. [TRC Mariah] 2000), which will be available for review at the BLM RSFO in May 2000. The design, engineering, maintenance, and inspection of the proposed pipeline would be performed by PPLC personnel and their contractors in accordance with safe and proven engineering practices. The proposed pipeline would be 12-inch outside diameter, have a wall thickness of approximately 0.375 - 0.500 inch, and would be Grade X-52 steel pipe with a maximum operating pressure commensurate with the pipe grade and wall thickness.

Construction would begin upon BLM authorization, anticipated for July 2000, and is scheduled for completion in December 2000. The goal is to complete pipeline construction in October 2000 and spend the remaining time on pumping station connections. PPLC personnel and their consulting engineers would oversee construction by contractors. PPLC would notify the BLM at least 5 days prior to the anticipated start of construction and/or surface-disturbing activities. The pipeline would be installed using three spreads (different portions of a pipeline worked on independently and simultaneously) of 70-110 miles each, with 150-200 workers per spread, and it is assumed that construction within each spread would occur at a rate of approximately 1 to 2 miles per day. Four staging areas or spread breaks would be required--one at Sinclair, one near milepost 84, one near milepost 194, and

one at Croydon. These areas would occupy approximately 40 acres (10 acres each) and would be located on previously disturbed private lands where practicable.

The construction corridor would be cleared of aboveground vegetation, obstacles, and 6 inches of surface material (topsoil), except in flagged areas of cultural significance where no topsoil would be removed. For the purpose of this analysis, it is assumed that the entire 90-ft construction ROW would be disturbed along the entire pipeline length; however, in many areas only the approximately 50-ft wide work area would have topsoil removed, and at some locations topsoil may only be removed from spoil stockpile and trench areas. A schematic showing the general dimensions of the pipeline construction area is provided in Figure 2.1. In areas of steep terrain, cuts, gullies, or stream crossings, some blading would be necessary to provide a safe and suitable working area. After the ROW is cleared and graded, a trench 3-5 ft wide would be dug with a trencher or, in rocky areas or where the pipeline changes direction, with a backhoe. The proposed pipeline would be buried at depths of 3.0-4.5 ft (cover over the pipe), except at major road and railroad crossings, where the depth would be at least 6 ft. Spoil and topsoil would be windrowed separately.

Portions of the trench in each construction spread would be open for no more than 20 days, the maximum unfilled trench distance would be 5.0 miles, and gaps in the trench would be spaced at intervals of no more than 0.25 mi to allow for the passage of vehicles, livestock, and wildlife. Open trenches would be inspected daily for trapped livestock or wildlife, and PPLC would notify appropriate livestock permittees when trenching would occur in their allotments.

Pipe materials would be brought to the vicinity of the proposed ROW by rail or truck, and up to four pipe yards occupying a maximum total of approximately 47 acres may be located near the proposed ROW at Creston, Rock Springs, Granger, and Evanston. Pipe yards would be located on private lands--railroad sidings--that are already disturbed. Pipe and other construction materials would be hauled to the ROW by semi-trucks, and strung out

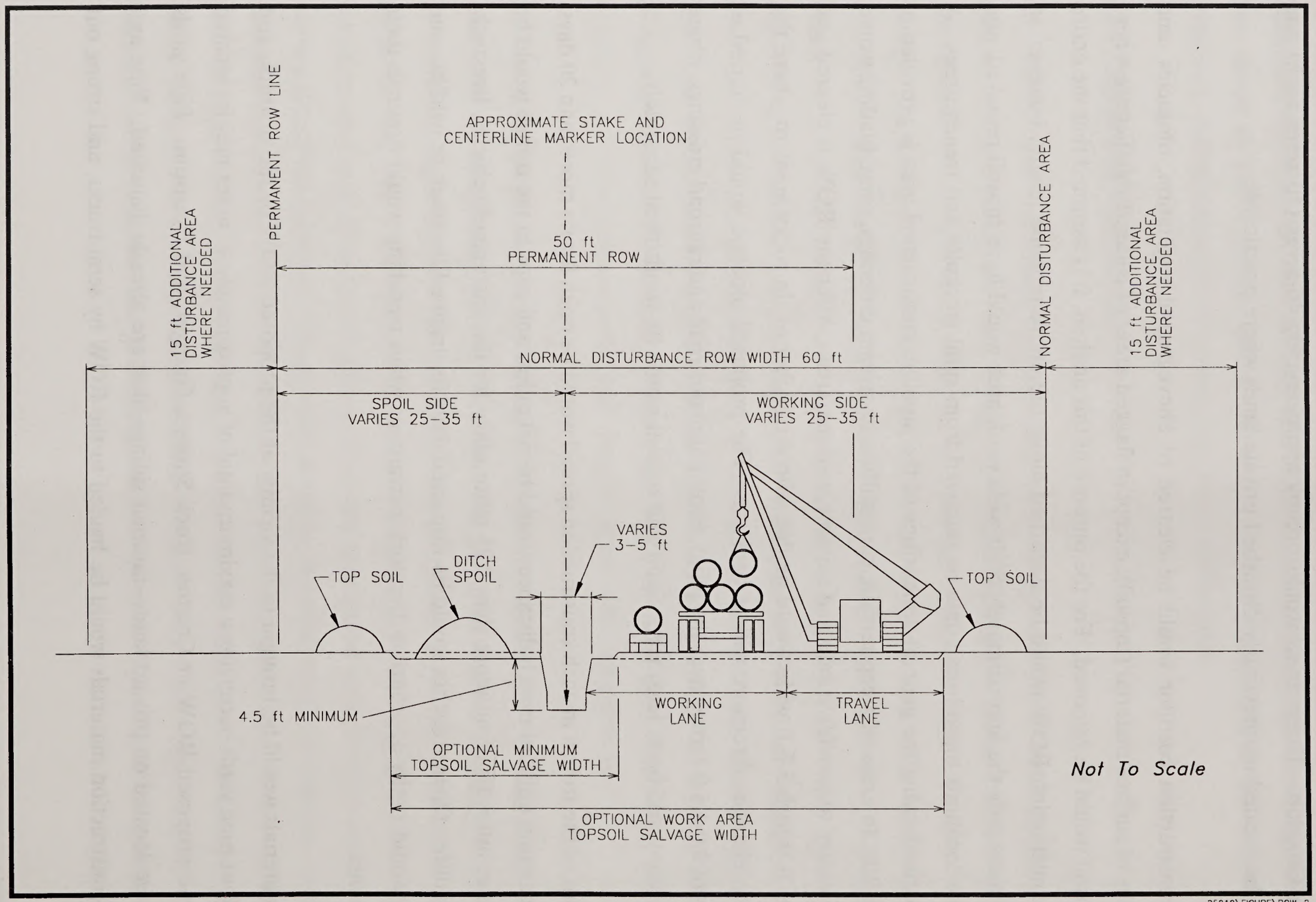


Figure 2.1 Pipeline Construction Area, Pioneer Pipe Line Expansion Project, 2000.

along the ROW. A bending machine would be used to bend the pipe to fit the trench. Sections of pipe would be aligned, welded together, and have joint coating applied. Cathodic protection to prevent corrosion would be installed according to industry standards within 1 year of pipeline installation. Side-boom caterpillars would be used to lower the pipe into the trench (see Figure 2.1). The trench would be padded as necessary with sand or soil using ditch-padding techniques. After the pipeline is placed in the trench, 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 (e.g., spread/feathered over the disturbed area prior to topsoil replacement). No trench berms would remain on the surface unless approved by the BLM, and no rock foreign to the surface would remain exposed.

Water would be used as needed for dust control during construction, and the pipeline would be pressure-tested with water once it is in place. The pipeline would be filled with water and pressurized to 125% of its designated operating pressure for 8 hours to verify integrity or other requirements identified in 49 C.F.R. 195.303 would be applied. Test water and water for dust control would be acquired from several sources: Sinclair Refinery and/or Rawlins municipality untreated water (1.65 million gal [5 acre-ft]); and the Green River, Blacks Fork River, Bear River, and/or Lost Creek (1.65 million gal [5 acre-ft]). Permits or license agreements for water withdrawal would be obtained from the Wyoming State Engineer's Office and the BOR as necessary. Consequently a total of approximately 3.3 million gal (10 acre-ft) of water would be required for pipeline testing and dust control.

All hydrostatic water testing and discharge would be approved in writing by the Wyoming Department of Environmental Quality/Water Quality Division (WDEQ/WQD) or the Utah Department of Environmental Quality, Division of Water Resources (UDEQ/DWR). A hydrostatic testing plan is being prepared for this project (VECO Rocky Mountain, Inc. 2000). Hydrostatic test water discharge would be to ephemeral drainages at a rate

commensurate with the drainage capacity and, 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. Hydrostatic test water discharge locations are shown on maps in the POD (TRC Mariah 2000). Before discharging any hydrostatic test water from the pipeline, suitable energy dissipaters would be installed at pipeline outlets to prevent scouring or erosion. Materials such as sandbags, filters, straw bales (weed free), or rock would be placed in the receiving channel. Upon completion of testing, all installed materials and objects would be removed from the site.

All major perennial water courses, paved roads, and railroad crossings would be horizontally bored or directionally drilled to minimize disturbance to these areas (Table 2.2). Horizontal boring (47 sites) and directional drilling (five sites) would require some additional disturbance outside the 90-ft construction ROW. Bore sites require approximately 2,000 ft^2 (100 x 100 ft on each side of crossing), 90 ft x 100 ft of which would be within the construction ROW, for a total of 1,000 ft^2 additional disturbance per crossing. Directional drill sites require approximately 44,000 ft^2 (200 x 200 ft on each side of crossing), 90 ft x 200 ft of which would be within the construction ROW, for a total of 22,000 ft^2 additional disturbance per crossing. Therefore, approximately 157,000 ft^2 (3.6 acres) of additional disturbance would be required outside of the 90-ft construction ROW for the 47 bores (47,000 ft^2) and five directional drills (110,000 ft^2). However, there would be no surface disturbance on that portion of the ROW that was bored or drilled (approximately 13,516 ft, 2.6 miles, 28 acres).

No new roads would be required, and existing roads, fences, structures, or drainage facilities that are damaged during construction would be replaced or repaired to a condition equal to or better than that which existed before construction. Fences crossed during construction would remain down during daylight hours while construction operations are occurring; however, when daily construction activities are complete, fences would be reinstalled in a manner to minimize livestock passage. In the event that existing roads used to access the

Table 2.2 Horizontal Bore/Directional Drill Sites, Pioneer Pipe Line Expansion Project, 2000.[1]

Feature Crossed	Bore (B) or Directional Drill (D)	Approximate Mile Post	Approximate Crossing Length (ft)
Washington Ave.	B	0	60
Carbon County Road 351	B	0	100
Interstate 80 (I-80)	B	1	570
Wyoming State Highway 76	B	1	90
Union Pacific Railroad (UPRR)	B	1	428
Penitentiary Road	B	6	86
Wyoming State Highway 71	B	8	146
UPRR	B	17	421
I-80	B	23	371
I-80	B	65	385
Table Rock Village Road	B	70	110
Bitter Creek Road	B	78	78
Black Butte Mine Road	B	84	243
I-80	B	84	371
Deadman Wash	B	87	100
Mine Haul Roads (3)	B	88	360
Highway 371	B	100	70
Highway 191	B	117	348
UPRR	B	117	200
Killpecker Drive	B	118	93
Yellowstone Road	B	118	100
Foothills Boulevard	B	119	150
I-80 and Frontage Roads	B	124	573
UPRR	B	124	260
Highway 191	B	125	188
UPRR	B	126	260
Bitter Creek	D	129	400
UPRR	B	130	210
Green River	D	133	1,200
East Teton Boulevard	B	133	142

Table 2.2 (Continued)

Feature Crossed	Bore (B) or Directional Drill (D)	Approximate Mile Post	Approximate Crossing Length (ft)
Bridger Drive	B	134	64
South Dakota Street	B	134	66
Upland Way	B	134	66
West Teton Boulevard	B	135	77
Pennsylvania Boulevard	B	135	60
Hitching Post Dr.	B	135	63
Highway 530	B	137	247
Blacks Fork River East	D	149	600
Solvay Railroad Spur	B	149	70
I-80 and Highway 374	B	162	591
Sweetwater County Road 233	B	173	104
Blacks Fork River West	D	174	600
Lyman Road	B	186	61
Highway 412	B	187	204
I-80	B	200	398
UPRR	B	204	200
Bear River	D	219	600
UPRR and ditch	B	219	200
Highway 150	B	220	195
Yellow Creek Road	B	225	110
I-80 and Frontage Roads	B	229	607
UPRR	B	229	220

[1] Additional bore/drill locations may be identified for Utah portions of the pipeline.

pipeline route require upgrades, appropriate on-site investigations (e.g., cultural resource inventories) would be conducted prior to road improvements, and if road repairs/upgrades are required, they would be done in accordance with BLM *Manual 9113 - Roads* (BLM 1985b).

After pipeline construction is completed, approximately 1,500 to 2,000 line markers would be installed above the pipe at line-of-sight intervals and at road crossings to identify the approximate pipeline location within the ROW. Line markers would be equipped with anti-perching devices on areas within 2.0 miles of sage grouse leks, would be colored to match the surrounding landscape, and would be strong enough to withstand livestock use for scratching. Approximately 400 cathodic protection test stations and 37 new block valves would also be installed, and all of these features would be located within the authorized ROW.

No new material or borrow sites or new rock disposal sites are anticipated to be necessary for pipeline construction. No construction would take place when the soil is too wet to adequately support construction equipment or when watershed damage is likely to occur. If equipment creates surface ruts more than 4 inches deep, PPLC would suspend construction activities until the soil is sufficiently dry unless otherwise authorized by the BLM. No frozen soil or soil mixed with snow would be used in construction (e.g., road construction, trench compaction).

All equipment and vehicular access to the pipeline would be confined to existing BLM-approved roads and established ROWs. No new or rerouted roads would be required. Approximately 288 miles of existing roads (163 miles of improved roads and 125 miles of unimproved roads) would be utilized for access to the proposed ROW. Some upgrades of the unimproved access roads may be required by the BLM. The proposed pipeline would parallel existing ROWs (i.e., the existing 8-inch line and other buried pipelines and utilities) for a minimum of 232 miles (89%) of the 262-mile route.

Equipment used to construct the proposed pipeline would include but is not limited to trenchers, tractor trailers, stringing trucks, 2-ton trucks, lowboy trucks, lube and fuel trucks, buses, pickup trucks, trenchers, ditch-padding machines, seed drillers, tractors, backhoes, trackhoes, side-boom tractors, dozers, welding trucks, and directional drilling equipment.

2.1.2 Operation and Maintenance

2.1.2.1 Pipelines

Prior to utilizing the pipeline, PPLC would submit to the BLM 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 plans and specifications and all applicable federal and state laws and regulations. The BLM authorized officers for this project would be the Rock Springs Assistant Field Manager, Mineral and Lands, and the BOR Provo Office Manager.

Pipeline maintenance actions would be consistent with those described in Conoco Inc.'s *Maintenance Procedure Guide* (Conoco Inc. 1999a) and *Operations Procedures Manual* (Conoco Inc. 1998a), which are available for review at the PPLC Rock Springs Office and at the BLM RSFO. PPLC would routinely patrol and inspect the pipeline to check for problems such as erosion, pipe exposure, ROW condition, 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, from a vehicle, or by air along the proposed ROW. Vehicles would be restricted to designated roads (i.e., no off-road travel would occur). If pipeline damage occurs from external sources, repair or replacement of the damaged portion of the pipeline would be immediately completed. PPLC has developed line break and emergency response procedures which would be implemented in the unlikely event of an emergency (Conoco Inc. 1998b, 1999b).

2.1.2.2 Ancillary Facilities

Four existing pumping stations--Sinclair, Tipton, Pilot Butte, and Union, Wyoming--would be used in their current configuration to move products down the proposed pipeline. Approximately 0.5 acre of new disturbance would occur at each of these four sites to accommodate the proposed pipeline, as well as an additional 0.5 acre of disturbance at the Rock Springs Terminal. The larger diameter line would eliminate the need for drag-reducing agent, a substance now used at each pumping station. Facilities to inject drag-reducing agent would be installed at Croydon, Utah, if necessary to achieve desired throughputs into the North Salt Lake Terminal via the existing 8-inch line.

2.1.3 Reclamation

A formal reclamation plan for this project is provided in Appendix B. All disturbed areas along the pipeline corridor would be reseeded to landowner or regulatory agency specifications. Seeding would take place as soon as possible after completion of construction, likely during the late fall. If conditions permit, the ROW would be seeded immediately after construction. Seeding would be repeated until a satisfactory stand is established as determined by the BLM, BOR, or other landowner.

PPLC would be responsible for weed control on the disturbed areas within the ROW and would consult with the BLM and/or local authorities for acceptable weed control methods.

2.1.4 Abandonment

At the end of the useful life of the proposed 12-inch pipeline, PPLC would obtain necessary authorizations from the BLM to abandon the facility. PPLC would contact the BLM to arrange a pre-termination conference and a joint inspection of the ROW to agree on an acceptable abandonment plan.

Abandonment of the new 12-inch pipeline would be accomplished in accordance with the policies and standards employed by the BLM at the time of abandonment. The pipeline would be purged of all combustible materials and retired in place. PPLC 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 generally would revert to the control of the landowner.

As a component of the Pioneer Pipe Line Expansion Project, the existing PPLC 8-inch pipeline from Sinclair, Wyoming, to Croydon, Utah (248 miles), would be decommissioned (taken out of service) and left in place once the new pipeline is put into service. Alternative uses (e.g., fiber optics) for the existing 8-inch pipeline may be developed, but are not complete at this time. All product would be removed from the existing pipeline and be replaced with an inert material such as nitrogen. Required maintenance of the line (e.g., damage prevention programs, cathodic protection requirements, block valve inspections, aerial patrols, ROW maintenance, pipeline leak and inspection reports) would continue to ensure pipeline integrity is maintained until the line is either re-activated or abandoned. A formal decommissioning plan would be prepared in 2000.

2.1.5 Work Force

Pipeline construction would require three spreads with 150-200 workers per spread (approximately 175 workers x 3 spreads x 3 months = 131 worker-years). Additional workers would be used for surveying, engineering, maintenance, inspection, and other specialty services. Construction workers would be hired from the local southwestern Wyoming work force when available; otherwise, workers from outside the area would be hired. No temporary work camps are proposed. Workers would be transported to work sites via bus, car pools, and light pickups.

2.1.6 Hazardous Materials

Hazardous and extremely hazardous materials identified in the Environmental Protection Agency's (EPA's) *Consolidated List of Chemicals Subject to Reporting Under Title III of the Superfund Amendments and Reauthorization Act of 1986* (SARA) and 40 C.F.R. 355 that may be used for or produced by the proposed project are presented in Table 2.3. All measures necessary and appropriate for the prevention and containment of accidental discharges would be taken. Refueling and fuel storage would not occur within 300 ft of stream channels.

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 300 ft of stream channels.

PPLC would conform with provisions of the *Toxic Substances Control Act of 1976*, as amended (15 *United States Code* [U.S.C.] 2601, et seq.) with regard to any toxic substances that are used, generated by, or stored on the ROW or at facilities authorized under the ROW grant (see 40 C.F.R. 702-799 and especially provisions on polychlorinated biphenyl--40 C.F.R. 761.1-761.193). Any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity as established by 40 C.F.R. 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 BLM within 5 working days of occurrence. Safety guides (CPLC 1996) and emergency response procedures for the existing Pioneer Pipe Line (Conoco Inc. 1998b, 1999b) would be adhered to for this project. Copies of emergency response plans are available for review at the PPLC Rock Springs Office and at the BLM RSFO.

Table 2.3 Hazardous and Extremely Hazardous Materials, Pioneer Pipe Line Expansion Project, 2000.

Material	Hazardous/Extremely Hazardous Substances[1]	Chemical Abstract Service (CAS) Identification No.
Pipeline Construction Materials		
Coating	Aluminum oxide	1334-28-1
Cupric sulfate solution	Cupric sulfate	7758-98-7
	Sulfuric acid	7664-93-9
Diethanolamine	Diethanolamine	111-42-2
LP Gas	Benzene	71-43-2
	n-Hexane	110-54-3
	Propylene	115-07-1
Molecular sieves	Aluminum oxide	1344-28-1
Pipeline primer	Naphthalene	91-20-3
	Toluene	108-88-3
Potassium hydroxide	Potassium hydroxide	1310-58-3
Rubber resin coatings	Acetone	67-64-1
	Coal tar pitch	68187-57-5
	Ethyl acetate	141-78-6
	Methyl ethyl ketone	78-93-3
	Toluene	108-88-3
	Xylene	1330-20-7
Fertilizers	Unknown	
Herbicides	Unknown	
Lead-free thread compound	Copper	7440-50-8
	Zinc	7440-66-6
Lubricants	1,2,4-trimethylbenzene	95-63-6
	Barium	7440-39-3
	Cadmium	7440-43-9
	Copper	7440-50-8
	n-Hexane	110-54-3
	Lead	7439-92-1
	Manganese	7439-96-5
	Nickel	7440-02-0
	PAHs[2]	--
	POM[3]	--
	Zinc	7440-66-6
Motor oil	Zinc compounds	--

Table 2.3 (Continued)

Material	Hazardous/Extremely Hazardous Substances[1]	Chemical Abstract Service (CAS) Identification No.
Paints	Aluminum	7429-90-5
	Barium	7440-39-3
	n-Butyl alcohol	71-36-3
	Cobalt	7440-48-4
	Lead	7439-92-1
	Manganese	7439-96-5
	PAHs[2]	--
	POM[3]	--
	Sulfuric acid	7664-93-9
	Toluene	108-88-3
	Triethylamine	121-44-8
	Xylene	1330-20-7
Sealants	1,1,1-trichloroethane	71-55-6
	n-Hexane	110-54-3
	PAHs[2]	--
	POM[3]	--
Solvents	1,1,1-trichloroethane	71-55-6
	Acetone	67-64-1
	t-Butyl alcohol	75-65-0
	Carbon tetrachloride	56-23-5
	Isopropyl alcohol	67-63-0
	Methyl ethyl ketone	108-10-1
	Methanol	67-56-1
	PAHs[2]	--
	POM[3]	--
	Toluene	108-88-3
	Xylene	1330-20-7
Starting fluid	Ethyl ether	60-29-7
Petroleum Products/Fuels		
Diesel fuel/#2 fuel oil	Benzene	71-43-2
	Cumene	98-82-8
	Ethylbenzene	100-41-4
	Methyl tert-butyl ether	1634-04-4
	Naphthalene	91-20-3
	PAHs[2]	--
	POM[13]	--
	Toluene	108-88-3
	m-Xylene	108-38-3
	o-Xylene	95-47-6
	p-Xylene	106-42-3

Table 2.3 (Continued)

Material	Hazardous/Extremely Hazardous Substances[1]	Chemical Abstract Service (CAS) Identification No.
Gasoline	Benzene	71-43-2
	Cumene	98-82-8
	Cyclohexane	110-82-7
	Ethylbenzene	100-41-4
	n-Hexane	110-54-3
	Methyl tert-butyl ether	1634-04-4
	Naphthalene	91-20-3
	PAHs[2]	--
	POM[3]	--
	Tetraethyl lead	78-00-2
	Toluene	108-88-3
	m-Xylene	108-38-3
	o-Xylene	95-47-6
	p-Xylene	106-42-3
Jet A/JP8	Benzene	71-43-2
	Cumene	98-82-8
	Cyclohexane	110-82-7
	Ethylbenzene	100-41-4
	n-Hexane	110-54-3
	Methyl tert-butyl ether	1634-04-4
	Naphthalene	91-20-3
	PAHs[2]	--
	POM[3]	--
	Toluene	108-88-3
	m-Xylene	108-38-3
	o-Xylene	95-47-6
	p-Xylene	106-42-3
Vehicle Emissions		
Gases	Formaldehyde	50-00-0
	Nitrogen dioxide	10102-44-0
	Ozone	10028-15-6
	Sulfur dioxide	7446-09-5
	Sulfur trioxide	7446-11-9

Table 2.3 (Continued)

Material	Hazardous/Extremely Hazardous Substances[1]	Chemical Abstract Service (CAS) Identification No.
Hydrocarbons	Benzene	71-43-2
	Ethylbenzene	100-41-4
	n-Hexane	100-54-3
	PAHs	--
	Toluene	108-88-3
	m-Xylene	108-38-3
	o-Xylene	95-47-6
	p-Xylene	106-42-3
Particulate matter	Barium	7440-39-3
	Cadmium	7440-43-9
	Copper	7440-50-8
	Fine mineral fibers	--
	Lead	7439-92-1
	Manganese	7439-96-5
	Nickel	7440-02-0
	POM	--
	Zinc	7440-66-6
Miscellaneous Materials		
Antifreeze	Acrolein	107-02-8
	Cupric sulfate	7758-38-7
	Ethylene glycol	107-21-1
	Freon	76-13-1
	Phosphoric acid	766-38-2
	Potassium hydroxide	1310-58-3
	Sodium hydroxide	1310-73-2
	Triethylene glycol	112-27-6
Batteries	Cadmium	7440-43-9
	Cadmium oxide	1306-19-0
	Lead	7439-92-1
	Nickel hydroxide	7440-02-0
	Potassium hydroxide	1310-58-3
	Sulfuric acid	7664-93-9
Cleaners	Hydrochloric acid	7647-01-0

1 Hazardous substances are those constituents listed under the Consolidated List of Chemicals Subject to Reporting Under Title III of SARA, as amended; extremely hazardous substances are those define in 40 C.F.R. 355. Extremely hazardous substances are shown in bold.

2 PAHs = polynuclear aromatic hydrocarbons.

3 POM = polycyclic organic matter.

PPLC 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 U.S.C. 9601 et seq., or the *Resource Conservation and Recovery Act of 1976* [RCRA], 42 U.S.C. 6901 et seq.) on their ROW, unless the release or threatened release is wholly unrelated to PPLC's activities on the ROW. This agreement is applied without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

Regarding herbicide use, PPLC would comply with all federal and state laws and with registered uses and limitations imposed by the BLM or landowner. Before using herbicides, PPLC would obtain written approval from the BLM or landowner 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 BLM or landowner.

2.1.7 Applicant-Committed Practices

This section describes measures that would be utilized to avoid, minimize, or mitigate potential impacts due to project development. Exceptions to these measures may be made on a case-by-case basis by the BLM if a thorough analysis determines that the resources for which the measure was developed would not be impacted. Further site-specific mitigation measures would be identified during ROW application review processes. To ensure compliance with mitigation measures presented in this EA and the POD, PPLC or its designated contractor would have qualified individuals available during construction operations. These individuals would consult with the BLM on a case-by-case basis as necessary during pipeline construction.

All of the proposed applicant-committed practices identified in this section would be implemented on all project-affected lands (public and private). Development activities

would be conducted in accordance with all appropriate federal, state, and county laws, rules, and regulations.

2.1.7.1 Survey Monuments

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

2.1.7.2 Fire Control

PPLC would notify the appropriate BLM field office of any fires observed during construction and would comply with all rules and regulations administered by the BLM concerning the use, prevention, and suppression of fires on federal lands.

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

PPLC 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. PPLC 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 inventories have been completed on the area currently proposed for surface disturbance (Martin et al. 2000a, 2000b, 2000c; McNees 2000), and reports will be submitted to the BLM RFO, RSFO, and KFO in Wyoming, and the BOR Office in Provo, Utah. Additionally, Class III inventories would be conducted prior to construction in areas where new surface disturbances are needed (e.g., route changes, access roads, pump stations, electrical transmission lines). PPLC and their contractors would train their employees on relevant federal regulations protecting cultural resources. If any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places (NRHP), under the *National Historic Preservation Act of 1966* or subject to the provisions of the *Archaeological Resource Protection Act of 1979* are discovered during construction, activities shall immediately cease and the responsible BLM or BOR field office would be notified.

Operators would comply with all BLM and State Historic Preservation Office (SHPO) recommendations for crossings of the Lincoln Highway, three newly recorded spur lines off of the main Union Pacific Railroad line, the Baxter to Gunn Railroad, Rawlins-Baggs Stage Road, the Overland Trail, the Bryan to Browns Park Road, Fort Bridger to Carter Road, the Austin Canal, Bigelow Ditch, and City Ditch. Trails and other linear historic properties would be crossed in areas of existing disturbance and no new disturbance would occur in undisturbed portions of these properties. NRHP-contributing portions of historic trails, road

grades, and railroad grades would not be used by Operators or their contractors to access the pipeline ROW.

2.1.7.4 Paleontological Resources

A literature search and paleontologic resource database evaluation (nonfield) is being prepared for this project (Erathem-Vanir Geological Consultants (EVG) and TRC Mariah 2000), and all recommendations presented in the final report that are adopted by the BLM would be adhered to. If paleontological resources are uncovered during construction activities, PPLC or its contractors would suspend all operations within 100 ft of the discovery to prevent further disturbance of such materials. PPLC would immediately contact the BLM, 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 PPLC 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. Vehicle speeds would be restricted. Disturbed areas (e.g., access roads, cleared ROW, spoil piles) would be watered or have stabilizers applied as necessary to suppress dust. Noise from construction activities would be of short duration at any given location.

2.1.7.6 Permitting and Construction

PPLC or its designated contractor would adhere to all construction parameters identified in the approved POD for this project (TRC Mariah 2000). All necessary permits (including storm water discharge permits/storm water pollution prevention plan [SWPPP]) and arrangements for access would be acquired prior to construction.

All construction and reclamation actions would be confined to the minimum width practical, and actions would not occur outside the designated construction ROW, temporary access routes, or other designated work areas. The maximum distance between clearing/grading operations and clean-up activities within any spread would be approximately 10 miles.

2.1.7.7 Vegetation

The following measures would be implemented to minimize impacts to vegetation.

- Disturbance would be limited to that which is necessary for safe and efficient pipeline installation.
- All disturbed areas would be restored to the approximate original contour and reclaimed as described in Appendix B.
- Weeds would be mechanically controlled in all disturbed areas. If herbicides are needed to control weeds, BLM would be consulted and herbicides applied by a licensed contractor. Equipment would be washed at a commercial facility prior to any construction and during construction if noxious weeds are encountered along the route.
- Removal or disturbance of vegetation would be minimized through construction site management (e.g., by utilizing previously disturbed areas, using existing ROWs, designating limited equipment/materials storage yards and staging areas, scalping), and PPLC would develop and implement detailed reclamation specifications including stabilizing and revegetating disturbed areas to minimize impacts from project related activities.

2.1.7.8 Streams and Wetlands

PPLC would comply with all federal regulations concerning the crossing of waters of the U.S. (including wetlands) as listed in Title 33 C.F.R. Part 323. The project meets the criteria for coverage under a U.S. Army Corps of Engineers (COE) Nationwide 12 permit

for compliance with the *Clean Water Act*. The use of heavy equipment and other construction activities within 500 ft of surface waters would be conducted as authorized by BLM.

- Stream banks to be trenched would be stabilized to prevent slumping and erosion.
- Horizontal boring/directional drilling entry and exit points would be located outside of riparian areas.
- Refueling and staging would occur at least 300 ft from the edge of a stream or stream bank at all stream channels.
- Sediment control measures would be utilized, as needed, at all stream crossings.
- Where streams would be trenched, stream banks would be restabilized with large angular rock. Riprap would be placed from the channel bottom to the top of the bank or the 25-year flood mark.
- Construction vehicles would not cross vertically sloped channels.
- Stabilizing vegetation would not be removed unless absolutely necessary. Most drainages crossed would be ephemeral, where vegetation would be composed of upland species, and many of these drainages would be trenched. Vegetation would be reestablished immediately following completion of the crossing.
- Drainages would be crossed at right angles to the channel when possible to minimize disturbance.

2.1.7.9 Soils

The following measures would be implemented to minimize impacts to soils.

- No construction or routine maintenance activities would be conducted when soil is too wet to adequately support construction equipment (i.e., if such equipment creates ruts in excess of 4 inches deep).

- Certified weed-free straw mulches, certified weed-free hay bale barriers, silt fences, and water bars would be used to control soil erosion.
- Soil erosion control measures would be monitored, especially after storms, and repaired or replaced if needed.
- Disturbance would be limited to that which is necessary for safe and efficient pipeline installation.
- All disturbed areas would be restored to the original contour and reclaimed as described in Appendix B.
- Areas with high erosion potential and/or rugged topography (i.e., steep slopes, dunes, floodplains, unstable soils) would be avoided, where possible.

2.1.7.10 Wildlife

- PPLC or its designated contractor would prohibit hunting, fishing, dogs, or possession of firearms by their employees on the ROW and other project-required areas during project construction.
- Pipelines, and ancillary facilities would be selected and designed to minimize disturbances to areas of high wildlife habitat value (e.g., prairie dog colonies, cushion plant communities, playa lakes, wetlands, and riparian areas).
- To minimize wildlife mortality due to vehicle collisions, PPLC would advise project personnel regarding appropriate speed limits on designated access roads. Potential increases in poaching would be minimized through employee and contractor education regarding wildlife laws. If violations are discovered, the offending employee or contractor would be disciplined and may be dismissed by PPLC and/or prosecuted by the Wyoming Game and Fish Department (WGFD).
- Daily trench inspections would be conducted for trapped livestock and wildlife.

- To protect plant populations and wildlife habitat, project-related travel would be restricted to designated access roads; no off-road travel would be allowed, except in emergencies.
- Wildlife-proof fencing would be utilized on reclaimed areas if it is determined that wildlife species and/or livestock are impeding successful vegetation establishment.
- Potential impacts to fisheries would be minimized by using proper erosion control techniques (e.g., water bars, jute netting, rip-rap, mulch). Construction within 500 ft of open water and 100 ft of intermittent or ephemeral channels would be avoided, where possible. Channel crossings requiring trenching would be constructed when flows are not expected (i.e., late summer or fall). All necessary crossings would be constructed nearly perpendicular (at right angles) to flow. No water from the Platte River system would be used for the project, and less than 5 acre-ft of water from the Colorado River System would be used.

Raptors

To protect potential raptor nesting and/or roosting habitat, PPLC would not remove cottonwood trees at river crossings. PPLC would directionally drill or bore pipelines at major perennial water crossings (see Table 2.2) to ensure that trees are protected.

- BLM consultation and coordination with USFWS and WGFD would be conducted for all mitigation activities related to raptors (WGFD) and TEP&C species (USFWS) (and their habitats), and all permits required for relocation, removal, and/or establishment of raptor nests would be obtained. In addition, the following raptor nest avoidance measures would be applied.

- The proposed ROW would be selected and designed to avoid disturbance to known raptor nest sites, and if access road improvements are required, these routes also would be selected and designed to avoid disturbances to known raptor nest sites.
- Raptor nest surveys would be conducted within a 1.0-mile radius of proposed surface use or activity areas if such activities are proposed to be conducted between February 1 and July 31.
- All surface-disturbing activities (e.g., pipeline construction) would be seasonally restricted from February 1 through July 31 within a 0.75-mile radius of all occupied raptor nests, except ferruginous hawk nests, for which the seasonal buffer would be 1.0-mi. The seasonal buffer distance and applicable exclusion dates may vary on a case-by-case basis, depending on such factors as the activity status of the nest, species involved, prey availability, natural topographic barriers, line-of-site distance(s), and other conflicting issues such as cultural values, steep slopes, etc.
- Surface structures requiring repeated human presence would not be constructed within 825 ft (2,000 ft for bald eagles) of active raptor nests, where practical.

• Additional mitigations for nesting raptors would be designed on a site-specific basis, as necessary, in consultation with the BLM, USFWS, and WGFD. PPLC would notify the BLM immediately if raptors are found nesting on project facilities and would assist the BLM as necessary to erect artificial nesting structures.

• Any power line construction would follow recommendations by Avian Power Line Interaction Committee (1994, 1996) and Olendorff et al. (1981) to avoid collisions and electrocution of raptors and other avifauna.

Sage Grouse

Surface disturbance within 0.25 mile of any active sage grouse lek would be avoided. If construction or reclamation activities are planned in potential sage grouse nesting/breeding habitat (i.e., areas within 2 miles of an active lek) between February 1 and July 31, BLM wildlife biologists would conduct field evaluations to identify active leks and/or nests or other adverse effects. If an active sage grouse lek/nest is found that could be disturbed by construction activities or other potential adverse effects are identified, such activities would be delayed until breeding or nesting is completed and the young have fledged. Line markers located within 2.0 miles of sage grouse leks would be equipped with anti-perching devices.

Big Game Crucial Winter Range

PPLC would comply with seasonal big game stipulations that restrict construction activities in big game crucial winter range between November 15 and April 30. If construction extends into critical use periods, PPLC would request an exception from the BLM in consultation with Wyoming Game and Fish Department (WGFD). (An exception is a one-time, case-by-case exemption from a ROW stipulation or a permit condition of approval for a certain portion of a ROW. The stipulation or condition of approval continues to apply to all other sites within the ROW to which the restrictive criteria applies.)

2.1.7.11 Threatened, Endangered, Proposed, Candidate, and BLM Sensitive Species

A biological assessment (BA) has been prepared for this project (BLM 2000) and PPLC would comply with all decisions reached during informal consultation between the BLM or BOR and the U.S. Fish and Wildlife Service (USFWS) and with all decisions reached between the BLM and the USFWS during formal consultation, if formal consultation occurs. In areas that have not previously been surveyed or cleared for TEP&C species, a qualified

biologist/botanist would conduct surveys for these species in areas of potential habitat prior to disturbance. If TEP&C species are found, consultation with the USFWS would be initiated, as necessary, and construction activities would be relocated or curtailed until the BLM, USFWS, and PPLC concur on a plan of action.

- PPLC would finance site-specific surveys for TEP&C (i.e., Ute ladies'-tresses) and other sensitive plant species prior to any surface disturbance in areas determined by the BLM to contain potential habitat for such species (BLM Directive USDI-BLM 6840). These surveys would be completed by a qualified botanist as authorized by the BLM, and this botanist would be subject to BLM's special status plant survey policy requirements. Data from these surveys would be provided to the BLM, and if any sensitive plant species or habitats are found, BLM/USFWS recommendations for avoidance or mitigation would be implemented. Project facilities would be relocated to avoid TEP&C plant species, and other sensitive plant species and/or their habitat would also be avoided where practical.
- Herbicide applications would be prohibited within 500 ft of known sensitive plant populations.
- Site-specific surveys for TEP&C (i.e., black-footed ferret) and other sensitive animal species would be conducted prior to disturbance in areas determined by the BLM to contain potential habitat for such species. These surveys would be completed by the BLM and/or a BLM-authorized biologist during on-site inspections of the proposed ROW prior to disturbance. Surveys would focus on species known to occur on the area, as well as those potentially occurring on the area. If TEP&C or other sensitive animal species are found on the area, construction activities would be delayed, and the BLM and USFWS would be consulted to determine appropriate avoidance and/or protection measures. Habitats where TEP&C animal species are found would be avoided, and habitats where other sensitive animal species are likely to or are known to occur would be avoided where practical.

- Impacts from the removal of mountain plover breeding/nesting habitat would be minimized by replacing disturbed nesting habitat during reclamation operations. Disturbed areas would be reclaimed to approximate original conditions (topography, vegetation [including mountain plover breeding/nesting habitats], hydrology, etc.) after completion of activities in the area. No construction or reclamation operations would occur during the mountain plover breeding/nesting season (i.e., April 10-July 10) on suitable breeding/nesting habitats.
- To determine whether criteria for black-footed ferret habitat are met, proposed construction sites in prairie dog colonies would be surveyed to determine white-tailed prairie dog colony/complex size and burrow density. The techniques described by Biggens et al. (1993) would be employed to determine burrow densities or affected colonies would be censused (i.e., all open burrows counted within affected colonies). If prairie dog colonies with burrow densities of eight or more burrows per acre are found, project components would be located to avoid direct impacts to the colony. If this is impractical, black-footed ferret surveys would be conducted according to USFWS guidelines and requirements (USFWS 1989). If black-footed ferrets are found, no further project-specific surface disturbance would occur to the prairie dog complex in which the ferret(s) were observed.

2.1.7.12 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. PPLC and its contractors would prohibit littering on the ROW and at other project-required areas.

2.1.7.13 Existing Utilities

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

Care would be used, including hand/shovel exposure where appropriate, for all construction work that parallels or crosses existing subsurface ROWs (e.g., pipelines, cables, power lines), and the minimum clearance between the new pipeline and existing features would be 12 inches unless a closer proximity is specifically authorized.

2.1.7.14 Visual Resources

PPLC would restore the pipeline ROW to as near its original contour as possible after construction is completed. The ROW would be reclaimed as described in Appendix B. All aboveground facilities including line markers would be painted Carlsbad Canyon (2.5Y 6/2) or a similar color determined by the BLM or BOR to blend with the surrounding landscape.

2.1.7.15 Miscellaneous

Ditches and Culverts. All irrigation, overflow, and roadway ditches; lead-offs from culverts or cut sections; and lead-in ditches crossed by the proposed pipeline would be cleared of any material which could obstruct water flow. Work would be accomplished so that reasonable conformance to the previous line, grade, and cross section is achieved. If any culverts clog due to project activities, the culvert would be cleaned to provide an unobstructed flow to and through the pipe. Any loose material on the backslope adjacent to the entrance of culverts would be removed.

Litter. Construction vehicles would be equipped with litter disposal containers. Contractors would be informed that any littering along the proposed route could result in their immediate dismissal. Disposal of garbage and other refuse would be at authorized disposal sites or landfills. Construction sites would be maintained in a sanitary condition at all times.

Spill Prevention, Containment, and Countermeasure Plan. SPCC Plans would be prepared for all horizontal bore/directional drill locations and would be located on-site in all construction areas as well as in the construction contractor's offices.

Stormwater Pollution Prevention Plan. SWPPPs, to ensure that erosion is minimized during storm events, would be prepared and would be located on-site at all construction sites, as well as in the construction contractor's offices.

Traffic and Public Safety. Construction may result in minor transportation-related impacts such as traffic delays (especially in urban areas) where construction occurs at busy road ROWs, increased traffic at construction sites, and increased tractor-trailer traffic to and from the ROW. Impacts would be temporary and limited in area. Construction, operation, and maintenance are not expected to cause safety hazards or to notably inconvenience motorists or other adjacent users because PPLC would implement the following measures to mitigate impacts to traffic.

- Construction-related traffic would be restricted to routes approved by BLM or private landowners. Temporary use permits for access to federal, state, and county roads would be obtained prior to construction.
- Existing BLM-approved roads would be used to access the ROW so no new road construction is anticipated. Construction equipment would be restricted to the ROW and to BLM-approved roads.
- Specified roads would be bored (see Table 2.2).
- All intersecting streets and alleys, public and private drives, and business entrances would be kept open, except as absolutely required to install the

pipeline across the feature. The necessary permits for closures would be acquired.

- At no time would construction, operations, or maintenance inhibit emergency vehicle passage.
- PPLC would provide signs, flags, and flaggers as required by the *Manual on Uniform Traffic Control Devices for Streets and Highways* (U.S. DOT 1988) and applicable Utah or Wyoming DOT standards.
- In the unlikely event that existing traffic controls must be modified during construction, a traffic control plan, approved by the Utah or Wyoming DOT, would be implemented.
- Traffic delays would be minimized. The maximum traffic delay at any location would be 10 minutes or as otherwise directed by the Utah or Wyoming DOT.

Geologic Hazards. To avoid geological hazards (earthquakes, landslides, etc.), pipeline construction would be in accordance with American Society of Mechanical Engineers (ASME) standards B31.4 Section 419 and Department of Transportation regulations 195.110(a) (products pipelines) dealing with external loads.

2.2 ALTERNATIVES CONSIDERED BUT REJECTED

During development of the Proposed Action, alternative pipeline routes were considered, but the Proposed Action route was determined optimal because it would parallel existing ROWs for most of its length and avoid most areas with sensitive resources, thereby minimizing environmental impacts. One alternative pipeline route is still under consideration for the minimization of conflicts with existing trona mines (see Map 2.4).

2.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, the pipeline would not be constructed. No ground would be disturbed and no impacts to the existing physical or biological environment would take place. However, demand for petroleum products would eventually necessitate some alternative means of petroleum product supply (alternate pipeline, trucking).

The analysis of a No Action Alternative provides a benchmark, enabling decision-makers to compare the magnitude of environmental effects of the action alternative. Under the No Action Alternative, the BLM would deny construction of the pipeline on federal lands as currently proposed by PPLC, while allowing existing land uses to continue.

For the purposes of analysis in this EA, choice of the No Action Alternative would mean that the Proposed Action would not be implemented and that existing land uses would continue.

There are no other pipeline developments currently proposed for the distribution of Sinclair Refinery product or other products presently transported by the existing 8-inch pipeline, although it is acknowledged that, given anticipated petroleum product demands within the area, proposals to distribute additional product may be developed. If and when additional proposals are formalized, they would be subjected to analysis under NEPA.

A No Action decision would only be considered, given one of the following conditions.

- If there were no acceptable means of mitigating significant adverse impacts to stipulated surface resource values, then this may trigger denial of the ROW application and require consideration and analysis of another alternative(s).
- If the USFWS concluded that the Proposed Action would likely jeopardize the continued existence of TEP&C species, then the ROW application may be denied in whole or in part.

This EA will help to determine whether the proposed project meets any of these conditions.

2.4 SUMMARY OF ENVIRONMENTAL IMPACTS

Table 2.4 presents a summary of environmental impacts from for the Proposed Action and the No Action Alternative. A detailed analysis of project impacts and mitigation measures is provided in Chapter 4.0.

Table 2.4 Summary of Environmental Consequences and Mitigation Measures.

Resource	Proposed Action	No Action	Mitigation
Geology and minerals, and geologic hazards	No impacts	No impacts	Minimize disturbance or avoid sensitive areas; rerouting above proposed long wall mining areas; prompt reclamation according to reclamation plan (Appendix B)
Paleontology	Remote but possible inadvertent destruction of important fossils during construction on 61 acres of previously undisturbed land	No impacts	Monitor construction in sensitive areas; recover any significant discoveries
Soils	Disturbance of 2,927 acres of soils, 2,603 acres of which have previously been disturbed	No impacts	Minimize disturbance; implement soil erosion practices until sites are permanently reclaimed; prompt stabilization and reclamation
Surface and ground water	No impacts to ground water, limited use of surface water for pipe testing and dust control	No impacts	Bore perennial streams; construct during periods of no or low flow; prompt stabilization and reclamation
Air quality	Temporary short-term construction-related increases in dust and exhaust emissions	No impacts	Dust suppression during construction; proper maintenance of construction equipment
Noise	Temporary construction-related increases in noise	No impacts	Properly muffle all construction equipment; avoid noise sensitive areas at critical times
Vegetation	Disturbance of 2,927 acres of vegetation, 2,603 acres of which have been previously disturbed	No impacts	Minimize disturbance; avoid ROW grading; prompt revegetation with native, adapted species
Wetlands/riparian areas	No impacts	No impacts	Wetlands would be drilled, bored, or avoided, where practical, and prompt revegetation with native, adapted species
Invasive non-native species	Possible increase spread	No impacts	Prompt reclamation according to reclamation plan (Appendix B); reclamation monitoring; weed control
Wildlife and fisheries	Unlikely direct effects from collision-related mortality; indirect effects of 2,927 acres of temporary habitat loss, 2,603 of which have been previously disturbed; temporary displacement during construction	No impacts	Comply with all seasonal stipulations and applicant-committed measures for wildlife protection unless otherwise authorized by the BLM; minimize disturbance; reclaim disturbed areas promptly
Threatened, endangered, proposed, and candidate, (TEP&C), and sensitive animal and plant species	No adverse effects to TEP&C species; possible direct effects (e.g., collision- and/or construction-related mortality) on certain state-sensitive species or inadvertent destruction of sensitive plants	No impacts	Complete surveys along entire route; avoid species habitats, where practical; bore or avoid habitat for black-footed ferret and/or Ute ladies'-tresses
Land use/ownership	No change in landownership; temporary loss of grazing use and wildlife habitat	No impacts	Prompt stabilizing after construction and reclamation of disturbed areas

Table 2.4 (Continued)

Resource	Proposed Action	No Action	Mitigation
Cultural resources	Adverse impacts on from one to three known archaeological sites recommended as eligible for NRHP	No impacts	Complete surveys of all areas to be disturbed; avoid NRHP-eligible sites where practical; mitigate possible impacts on a case-by-case basis through the Section 106 consultation process; open trench inspection/ construction site monitoring as deemed necessary by the BLM; data recovery at three sites recommended as eligible for NRHP
Visual resources	Temporary visual impacts during construction; no long-term impacts requiring re-categorization of existing VRM classification	No impacts	Minimize disturbance; prompt stabilization and reclamation of disturbed areas; painting aboveground features to blend with the surrounding landscape
Socioeconomics	Temporary beneficial impacts to local and state economies during construction; long-term benefits to Utah and Wyoming due to increased product availability	Loss of positive economic benefits	Hire workers locally as available
Environmental justice	No impacts	No impacts	None
Hazardous materials	Possible pipeline ruptures/spills	No impacts	Implementation of appropriate spill prevention and control measures; appropriate pipeline design

3.0 AFFECTED ENVIRONMENT

Critical elements of the human environment (BLM 1988b), their status in the project area, and their potential to be affected by the proposed project are listed in Table 3.1. Four critical elements (areas of critical environmental concern, prime or unique farmlands, wild and scenic rivers, and wilderness) do not occur in the project area and are not discussed in this EA. In addition to the critical elements, this EA discusses potential effects of the proposed project on surface ownership/use, livestock grazing, socioeconomics, geology/minerals/geologic hazards, paleontology, soils/watersheds, noise, vegetation, wildlife and fisheries, wild horses, and visual resources.

3.1 PHYSICAL RESOURCES

3.1.1 Geology and Minerals

3.1.1.1 Surficial Geology

The following geologic formations would be traversed by the pipeline:

- Unnamed Quaternary to Recent deposits,
- Eocene Bridger Formation,
- Eocene Green River Formation,
- Eocene Wasatch Formation,
- Paleocene Fort Union Formation,
- Paleocene Evanston Formation,
- Cretaceous Lance Formation,
- Cretaceous Fox Hills Sandstone,
- Cretaceous Lewis Shale,
- Cretaceous Almond Formation,
- Cretaceous Ericson Formation,

Table 3.1 Critical Elements of the Human Environment Along the Proposed ROW.

Element[1]	Status on Project Area	Addressed in Text of EA
Air quality	Potentially affected	Yes
Areas of critical environmental concern	None present	No
Cultural remains	Potentially affected	Yes
Environmental justice	No effects anticipated	Yes
Farmlands (prime or unique)	None present	No
Floodplains	No effects anticipated	Yes
Invasive non-native species	Potentially affected	Yes
Native American religious concerns	Potentially affected	Yes
Threatened and endangered species	Potentially affected	Yes
Wastes, hazardous or solid	Potentially affected	Yes
Water quality (surface and ground)	Potentially affected	Yes
Wetlands/riparian zones	Potentially affected	Yes
Wild and scenic rivers	None present	No
Wilderness	None present	No

[1] As listed in BLM *NEPA Handbook H-1790-1* (BLM 1988b).

- Cretaceous Rock Springs Formation,
- Cretaceous Blair Formation,
- Cretaceous Baxter/Steele Shale,
- Cretaceous Frontier Formation,
- Cretaceous Gannett Group,
- Cretaceous Smiths Formation,
- Jurassic Twin Creek Limestone, and
- Triassic Nugget Sandstone.

Where it occurs at all, disturbance to these formations would be minor, so surficial geology is not discussed further in this EA.

3.1.1.2 Geologic Hazards

Pipeline construction would occur in stabilized sand dunes in the following areas (Case and Boyd 1987; TRC Mariah 1999):

- just west of Rawlins in T21N, R88W;
- in the Continental Divide area, T20N, R92W;
- Red Desert Basin in T19N, R97W and R98W;
- East of Deadman Wash, T19N, R100W; and
- in the Little America/Granger area in T18N, R110W, R111W, R112W, and R113W.

No dunes occur along the Utah portion of the route (TRC Mariah 1999).

Most of Wyoming is seismically active to some degree, and the historic record shows that southwestern Wyoming has been active (West 1994). Most of the activity occurred due to movement of buried faults. The route passes adjacent to the Bear River fault system near Evanston, Wyoming (Case et al. 1990; West 1994), which may produce earthquakes of up to 7.5 on the Richter scale at a recurrence interval of an estimated 1,800 years. The system's last event was probably over 2,320 years ago. One Pleistocene fault (active between 10,000-750,000 years ago) occurs along Saleratus Creek approximately 4 miles north of the proposed route in Utah (Hecker 1993). Large earthquakes are a potential hazard.

In Wyoming, landslides occur along the route between 2 and 4 miles west of Byrne's Crossing (Sections 12 and 15, T15N, R118W), on the western end of Blake Hollow (Section 31, T15N, R119W), and adjacent to Albert Creek (Sections 17, 18, 19, and 20, T15N, R118W). Numerous landslides also occur along the route in Utah (Harty 1991). Large-scale slumping is visible on the north-facing slope of Trail Creek, where the existing pipeline is located.

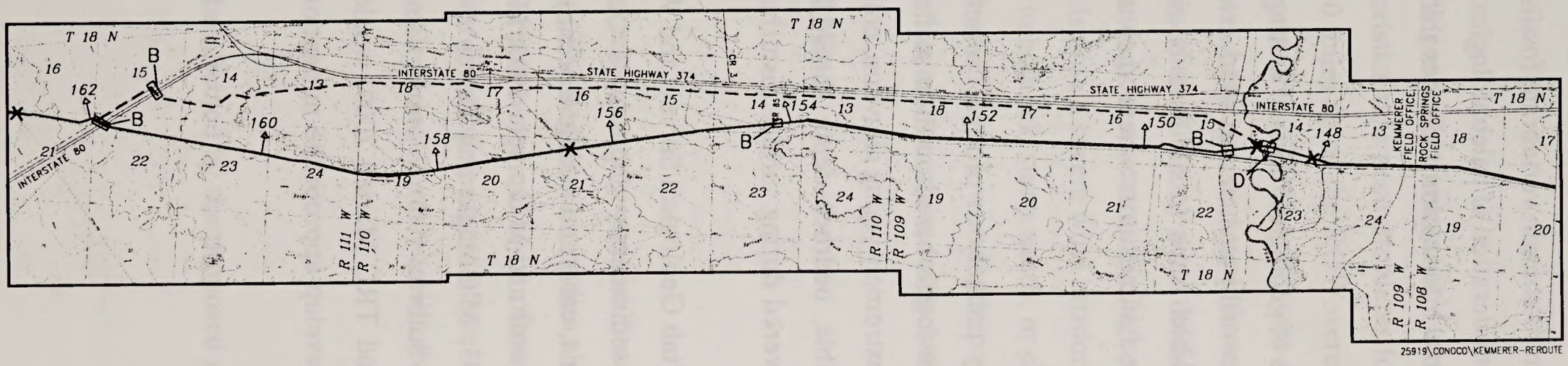
Numerous small mined-out areas occur along the route, especially in the Guild Hollow area (Sections 5, 8, 12, and 30, T15N, R118W and Section 18, T16N, R117W) (personal communication, February 2000, with Jim Case, Wyoming Geological Survey). Extensive underground trona mining is occurring between Green River and Church Butte.

3.1.1.3 Mineral Resources

Mineral resources occurring along the proposed ROW include coal, oil, gas, trona, limestone, alluvial sand and gravel, bentonite, pumice, and clay (DeBruin and Boyd 1991; Harris and Meyer 1986; Harris et al. 1985; Jones 1991). No economically recoverable deposits of precious metals or uranium are known to occur along the route (Hausel et al. 1992). Active underground trona mining is occurring along the route between Green River and Church Butte. The proposed pipeline would have no impacts on any known mineral resources and only trona mining has the potential to affect or be affected by the proposed pipeline. The pipeline route crosses proposed trona mining areas in Sections 17, 18, and 20, T18N, R108W; Sections 13, 14, 15, 16, 17, and 18, T18N, R109W; Sections 13, 14, 15, 19, 20, and 21, T18N, R110W; and Sections 16, 17, 18, 22, 23, and 24, T18N, R111W, (see Map 3.1). Alternative pipeline routing may occur in some of these areas to avoid active trona mines that propose long wall mining. The alternative route would be located primarily along I-80 at locations excluded from long wall mining proposals.

3.1.2 Paleontology

BLM has established categories (Conditions 1-3) for ranking areas based on their potential to contain fossils of scientific interest. Ranking categories determine the need for additional treatment during environmental review. The BLM conditions used to define the paleontologic potential of geologic deposits in this investigation are as follows.



Map 3.1 Alternative Pipeline Route for Trona Mine Avoidance, Pioneer Pipe Line Expansion Project, 2000.

Condition 1. Areas that are known to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils. Consideration of paleontological resources will be necessary if the field office review of available information indicates that such fossils are present in the area.

Condition 2. Areas with exposures of geological units or settings that have a high potential to contain vertebrate fossils or noteworthy occurrences of invertebrates or plant fossils. The presence of geologic units from which such fossils have been recovered elsewhere may require further assessment of these same units where they are exposed in the area of consideration.

Condition 3. Areas that are very unlikely to produce vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils based on their surficial geology or the presence of igneous or metamorphic rocks, extremely young alluvium, colluvium, or aeolian deposits, or deep soils. However, if possible, bedrock depth should be estimated determine if fossiliferous deposits may be uncovered during surface disturbance.

U.S. Geological Survey (USGS), Utah Geological Survey, and Wyoming Geological Survey maps document the presence of sedimentary deposits of Quaternary (Pleistocene and Holocene), early Tertiary (Paleocene, early and middle Eocene), and Cretaceous-age along the project route (Bradley 1964; Dover and M'Gonigle 1993; Hintze 1980, 1988; Love and Christiansen 1985; Love et al. 1993; M'Gonigle and Dover 1992; Roehler 1991a, 1991b, 1992a, 1992b, 1992c, 1993a, 1993b; Sullivan 1980; Wyoming Geological Survey 1973). The final paleontology report (EVG and TRC Mariah 2000) would be used to classify lands within the pipeline ROW and to develop appropriate mitigations as needed.

3.1.3 Soils

The proposed pipeline ROW generally traverses arid terrain, and the soils, not unexpectedly, sometimes exhibit characteristics that pose problems for reclamation. Seventy-nine areas encompassing more than 30 miles along the ROW were identified as having soils that have notable limitations. The primary soil limitations are steep-slopes (including steep-sided drainages), salinity, rockiness, badlands, and sand dunes (Table 3.2). Some soils along the proposed ROW are highly susceptible to wind and/or water erosion, especially after vegetation removal. Badlands pose an extremely high water erosion hazard, whereas sand dunes and fine-textured soils pose a severe wind erosion hazard. Other possible limitations may include shallow depth to bedrock; stony, sandy, or clayey textures; excess lime; presence of bentonite or other shrink-swell clays; low strength; poor drainage; and small stones, which limit their use for construction and/or make revegetation difficult.

3.1.4 Surface and Ground Water

3.1.4.1 Surface Water

Numerous ephemeral, intermittent, and perennial streams and wetlands would be crossed during pipeline installation. The largest waterbodies along the route are the Green, Black's Fork, and Bear Rivers. Surface water quality is often poor due to high concentrations of total dissolved solids. Numerous ephemeral drainages occur along the ROW, and these flow only in response to snow melt or local precipitation events.

3.1.4.2 Ground Water

Ground water would not be affected by the proposed pipeline and is not discussed further in this EA.

Table 3.2 Known Locations of Sensitive Soils Along the Proposed Pipeline ROW, Pioneer Pipe Line Expansion Project, 2000.

Type of Limitation	Location	Length (mi)
Saline	Sections 17, 20, T21N, R86W	1.0
Steep slope	Section 20, T21N, R86W	--
Saline	Section 25, T21N, R87W	0.4
Saline	Section 26, T21N, R87W	0.3
Parallels steep bank	Section 22, T21N, R87W	--
Steep slope	Section 21, T21N, R87W	--
Steep slope	Section 25, T21N, R88W	--
Steep slope (Red Rim)	Section 26, T21N, R89W	--
Saline	Sections 26, 27, T21N, R89W	2.8
Saline	Section 25, T21N, R90W	0.3
Dunes	Section 18, T20N, R92W	--
Badlands	Sections 13, 14, T20N, R93W	0.4
Vertical bank	Section 16, T19N, R97W	--
Steep slopes	Section 12, T19N, R100W	0.4
Badlands, dunes, steep slopes	Section 10, T19N, R100W	0.6
Steep slope	Section 32, T20N, R100W	--
Steep-sided drainage	Section 25, T20N, R101W	--
Steep-sided drainage	Section 24, T20N, R101W	--
Rocky cliff	Section 14, T20N, R101W	--
Steep-sided drainage	Section 16, T20N, R101W	--
Rocky knob	Section 17, T20N, R101W	--
Not surveyed - very steep	Section 17, T20N, R101W - Section 25, T20N, R103W	8.7
Steep-sided drainage	Section 20, T20N, R102W	--
Saline (North Baxter Basin)	Sections 33, 34, T20N, R103W	1.1
Rocky knob, steep slopes	Section 3, T19N, R104W	--
Rocky knob	Section 8, T19N, R104W	--
Rocky knob	Section 7, T19N, R104W	--
Rocky	Section 14, T19N, R105W	0.4
Steep-sided drainages	Section 15, T19N, R105W	0.4
Badlands	Section 29, T19N, R105W	0.1
Badlands	Section 5, T18N, R105W	0.2
Saline (Bitter Creek)	Sections 6, 7, T18N, R105W	1.4
Steep slopes (2 locations)	Section 15, T18N, R106W	--
Steep slope	Section 16, T18N, R106W	--
Saline	Section 21, T18N, R106W	0.5
Steep slopes/badlands	Section 20, T18N, R106W	0.2
Rocky knolls	Section 19, T18N, R106W	--
Channery badlands	Sections 19, 30, T18N, R106W	0.2
Steep slopes (3 locations)	Section 25, T18N, R107W	--
Steep slopes	Section 35, T18N, R107W	--

Table 3.2 (Continued)

Type of Limitation	Location	Length (mi)
Steep-sided drainage	Section 3, T17N, R107W	--
Badlands/steep slopes	Section 19, T18N, R107W	--
Steep-sided drainage	Section 20, T18N, R108W	--
Steep slope (Blacks Fork River)	Section 14, T18N, R109W	--
Steep slope (Blacks Fork River)	Section 15, T18N, R109W	--
Saline	Section 14, T18N, R110W	0.8
Saline	Sections 15, 16, T18N, R110W	0.5
Steep slope	Section 16, T18N, R110W	--
Steep slopes/badlands	Sections 13, 14, 15, T18N, R111W	2.3
Saline	Sections 15, 22, T18N, R111W	0.5
Dunes/badlands	Section 21, T18N, R111W	0.7
Steep-sided drainage	Section 18, T18N, R111W	--
Steep-sided drainage	Section 13, T18N, R112W	--
Badlands/steep slopes	Section 13, T18N, R112W	0.2
Dunes/badlands/steep slopes	Sections 14, 15, T18N, R112W	2.0
Steep-sided drainage	Section 15, T18N, R112W	--
Steep-sided drainages (2 locations)	Section 21, T18N, R112W	--
Dunes	Sections 19, 20, 30, T18N, R112W	2.0
Dunes/badlands/steep-sided drainage	Section 25, T18N, R113W	1.0
Steep slopes/badlands/steep-sided drainage	Section 8, T17N, R113W	--
Steep slopes/rocky knob/steep-sided drainage	Section 24, T17N, R114W	--
Steep-sided drainage	Section 21, T16N, R115W	--
Steep-sided drainage	Section 26, T16N, R116W	--
Steep-sided drainage	Section 5, T15N, R116W	--
Steep-sided drainage	Section 6, T15N, R116W	--
Steep slopes/steep-sided drainage	Section 10, T15N, R117W	--
Steep slopes	Section 14, T15N, R118W	--
Steep slopes/rocky	Section 22, T15N, R118W	--
Steep-sided drainage/steep slopes	Section 21, T15N, R118W	--
Steep slopes	Section 19, T15N, R118W	--
Steep slopes	Sections 23, 24, T15N, R119W	--
Not surveyed - steep slopes likely (Blake Hollow)	Sections 23-32, T15N, R119W	--
Not surveyed - steep slopes likely (Glasscock Hollow)	Section 10, T14N, R120W	--
Steep slopes	Section 9, T14N, R120W	--
Steep slopes	Sections 5, 6, T14N, R120W	--
Steep slopes	Section 2, T14N, R121W	--
Steep slopes	Sections 27, 34, T6N, R6E	--
Steep slopes	Sections 2, 3, T5N, R5E	--
Steep slopes	Sections 8, 9, 16, 17, T5N, R5E	2.0
Total		31.4

3.1.5 Air Quality/Noise

3.1.5.1 Air Quality

Air quality along the proposed route is generally good and is in compliance with state and national ambient air quality standards (BLM 1999a). The principal air quality pollutants along the more rural portions of the route are particulates (BLM 1987:157, 1999a). Fugitive dust (uncontrolled wind-carried particles) from natural sources, surface coal mines, oil and gas fields, highway construction, roads, and other types of development or disturbances (e.g., recreation and livestock grazing) increase the ambient level of suspended particulates along the route, especially during dry windy periods (BLM 1987). Visibility in the region is typically very good (greater than 70 miles), and fine particles are considered to be the main source of visibility degradation (BLM 1997b).

3.1.5.2 Noise

Traffic on local and county roads, state highways, and Interstate 80 (I-80); road and highway construction activities; trains; and wind are the primary sources of noise along the proposed route. The A-weighted sound pressure level, or A-scale, is used extensively in the U.S. for the measurement of community and transportation noise and is a measure of noise in A-weighted decibels (dBA), which is directly correlated with some commonly heard sounds (Table 3.3). Noise-sensitive areas along the route include residences, recreational areas, occupied raptor nests, sage grouse leks during the breeding and nesting season, and crucial big game winter range during critical winter periods.

Ambient noise levels on rural portions of the route are around 30-40 dBA in the morning and evening and 50-60 dBA in the afternoon when wind speeds are typically greatest (BLM 1995a, 1995b). Small town noise levels are typically 40-50 dBA. These levels correspond to noise levels of a soft whisper (30 dBA), a library (40 dBA), a quiet office (50 dBA), and

Table 3.3 Comparison of Measured Noise Levels with Commonly Heard Sounds, Pioneer Pipe Line Expansion Project, 2000.

Source	dBA	Description
Normal breathing	10	Barely audible
Rustling leaves	20	
Soft whisper (at 16 ft)	30	Very quiet
Library	40	
Quiet office	50	Quiet
Normal conversation (at 3 ft)	60	
Busy traffic	70	
Noisy office with machines; factory	80	
Heavy truck (at 49 ft)	90	Constant exposure endangers hearing

normal conversation (60 dBA). Traffic along I-80 has average noise levels of more than 70 dBA (BLM 1999b).

3.2 BIOLOGICAL RESOURCES

3.2.1 Vegetation

3.2.1.1 Plant Communities

The proposed pipeline and its associated access roads would traverse eight dominant vegetation types/landforms including big sagebrush, greasewood, saltbush, sagebrush/juniper, mixed grass prairie, irrigated hay meadows, shrub-dominated riparian areas, badlands, and sand dunes.

Much of the land on which the proposed pipeline would be installed has been previously disturbed and reclaimed. Characteristics of vegetation to be disturbed during construction

varies depending on the seed mixtures used during previous reclamation and the degree of invasion by native species from adjacent undisturbed areas.

The big sagebrush type occurs on uplands along the entire route. It is typically dominated by Wyoming big sagebrush or mountain big sagebrush. Other common shrubs include black sagebrush, greasewood, Gardner's saltbush, and rabbitbrush. Mountain mahogany occurs in this type in western Wyoming, predominantly on south-facing slopes. Understory species include western wheatgrass, Junegrass, needle-and-thread grass, Sandberg bluegrass, prickly pear cactus, and scarlet globemallow (Knight 1994).

The greasewood type predominantly occurs on saline flats and salt-tolerant species are common. It is dominated by greasewood and often contains shadscale, fourwing saltbush, Gardner saltbush, spiny hopsage, and kochia. Common grasses and forbs include alkali sacaton, alkaligrass, bluebunch wheatgrass, bottlebrush squirreltail, foxtail barley, Indian ricegrass, needle-and-thread grass, saltgrass, western wheatgrass, fringed sage, halogeton, Hood's phlox, and others (Knight 1994).

The saltbush type occurs on flat to gently sloping rocky surfaces and is dominated by very low-growing Gardner's saltbush. Indian ricegrass, western wheatgrass, bottlebrush squirreltail are common grasses, and greasewood may occur in this type.

The sagebrush/juniper type occurs in western Wyoming and Utah and contains sagebrush species plus scattered juniper. The mixed grass prairie type includes Indian ricegrass, needle-and-thread grass, fringed sage, wheatgrasses, snakeweed, and cushion plants. Irrigated hay meadows are actively managed for hay production and occur predominantly north of Lyman and in the Lost Creek drainage. Shrub-dominated riparian areas occur along streams and are typically dominated by willows or tamarisk with a variety of flood-tolerant understory species.

Badlands and sand dunes occur at numerous locations along the route (see Table 3.2)--badlands are typically devoid of vegetation. Sand dune vegetation is highly diverse and typically includes species such as blowout grass, Indian ricegrass, needle-and-thread grass, prairie sandreed, antelope bitterbrush, big sagebrush, rabbitbrush, silver sagebrush, and spiny hopsage (Knight 1994).

3.2.1.2 Wetlands and Other Waters of the U.S.

Wetlands--including ponds, reservoirs, and streams--occur in riparian areas adjacent to streams, springs, and wet meadows along the route. Wetland vegetation in the region is typically dominated by grasses and grasslike species, with forbs and woody plants being much less abundant. Common wetland grass and grasslike species include common spike-rush, baltic rush, alkali grass, Nebraska sedge, foxtail barley, slender muhly, tufted hairgrass, and sedges. Common forb species include deep-root poverty-weed, western yellowcress, and buttercup species, whereas common shrub species include silver sage, willow, and rose. Ephemeral streams, dry much of the year and running only after snowmelt or local precipitation events, occur along the proposed pipeline ROW are waters of the U.S. and thus subject to regulation under Section 404 of the *Clean Water Act* by the COE under a Nationwide Permit No. 12. A list of all wetlands and waters of the U.S. is included in the Plan of Development for this project (TRC Mariah 2000) (on file at the BLM RSFO).

The primary functional values of wetlands along the route include ground water recharge, nutrient retention and removal, and sediment trapping (Salvesen 1990). Other important functional values include ground water discharge, food chain support, and wildlife habitat.

3.2.1.3 Invasive Non-native Species

Invasive non-native species known to exist along the route include hoary cress, houndstongue, black henbane, Canada thistle, Russian thistle, and halogeton.

3.2.2 Wildlife and Fisheries

3.2.2.1 Big Game

Five big game species occur along the proposed route: pronghorn, mule deer, elk, moose, and bear. The proposed pipeline ROW would also pass through one Wyoming white-tailed deer hunt area (#83), but the portion of the hunt area proposed to be crossed is unoccupied by white-tailed deer. In Wyoming, the route would cross nine pronghorn herd units, each of which support an estimated 5,100 to 46,800 animals, depending on the unit (Table 3.4). The population in one unit is above WGFD population objectives, whereas the remaining eight herd units are below population objectives. Pronghorn crucial winter habitats occur along approximately 120 miles of the proposed ROW, primarily in the I-80 corridor (TRC Mariah 2000).

Mule deer populations are above objective in one of the eight herd units crossed by the proposed ROW and below objective in the other seven herd units (see Table 3.4). Mule deer crucial winter habitats occur along approximately 27 miles of the proposed ROW (TRC Mariah 2000).

Eight elk herd units are crossed by the proposed pipeline ROW, and all but one (Uinta) are at or above WGFD objectives (see Table 3.4). The proposed ROW would intercept very little occupied elk habitat; however, approximately 4 miles of elk crucial winter habitat would be crossed by the proposed ROW (TRC Mariah 2000).

Moose populations are essentially at WGFD objectives in the two herd units that are currently hunted (see Table 3.4). Limited data has been collected for the Snowy Range-Sierra Madre herd unit, and a draft management plan was developed in 1999. This herd is the result of dispersal from an introduced population in Colorado in the late 1970s. The total population in the herd unit is estimated at 100 moose. No moose crucial winter habitats would be crossed by the proposed ROW.

Table 3.4 Wyoming Big Game Herd Units, Population Objectives, and Estimated Population Sizes, Pioneer Pipe Line Expansion Project, 2000.

Herd Units (Hunt Areas)	Population Objective	Proposed 1999 Population	Percent of Objective
Pronghorn			
Iron Springs (56)	12,000	9,275	77
South Ferris (62)	6,500	5,900	91
Baggs (55)	9,000	5,100	57
Red Desert (60, 61)	15,000	11,625	78
Bitter Creek (57, 58)	25,000	16,600	66
Sublette (92)	48,000	46,800	98
South Rock Springs (59)	8,000	5,800	73
Uinta/Cedar Mountain (95, 99)	10,000	8,700	87
Carter Lease (94)	6,000	11,000	183
Mule Deer			
Platte Valley (83)	20,000	15,708	79
Baggs (84, 85, 100)	18,700	20,000	107
Chain Lakes (98)	500	450	90
Ferris (86)	5,000	3,300	66
Steamboat (131)	4,000	2,100	53
South Rock Springs (101, 102)	11,750	7,500	64
Uinta (132, 133, 134)	20,000	17,300	87
Wyoming Range	50,000	40,000	80
Elk			
Ferris (111)	350	510	146
Sierra Madre (108)	4,200	8,000	190
Shamrock (118)	75	220	293
Steamboat (100)	500	1,100	220
Petition (124)	300	350	117
South Rock Springs (30)	1,000	1,100	110
Uinta (106, 107)	600	500	83
West Green River (105)	3,100	3,783	122
Moose			
Uinta (27, 35)	900	900	100
Lincoln (40)	1,500	1,469	98

Herd unit data were not available for Utah, but the route crosses approximately 10 miles of high-value bear habitat; 25 miles of high-value summer mule deer habitat; 1 mile of high-value winter mule deer habitat; 2 miles of critical winter mule deer habitat; and 18 miles of high-value summer elk range (Utah Division of Wildlife Resources [UDWR] 1999).

3.2.2.2 Raptors

All raptors and their nests are protected from take or disturbance under the *Migratory Bird Treaty Act* (16 U.S.C. 703-711) and Wyoming statutes (Wyoming Statute 23-1-101 and 23-3-108). Certain species are also afforded protection under the *Bald Eagle Protection Act* (16 U.S.C. 668-688d) and the *Endangered Species Act* (16 U.S.C. 1513-1543). An estimated 28 raptor species are known to occur along the route.

There are numerous raptor nests in close proximity to the proposed pipeline ROW, some of which were known to be active in recent years, and all potentially affected nest sites are delineated in the Plan of Development (TRC Mariah 2000). The locations of raptor nests are not disclosed in this EA to protect them from possible harassment.

3.2.2.3 Upland Game Birds

The most common upland game bird species occurring along the proposed pipeline ROW are mourning dove, sage grouse, blue grouse, ruffed grouse, and Hungarian partridge. Mourning dove is a common summer resident in Wyoming habitats, is highly adaptive, and prefers open land with scattered vegetation and trees or some type of structure for nesting. Mourning dove concentrations are usually highest near power lines, buildings, and other areas of human disturbance.

Sage grouse habitat is characterized by an interspersed mixture of sagebrush and grassland. In winter, sage grouse use tall dense stands of sagebrush that remain relatively exposed through deep snow; low sagebrush on windswept knolls are also used as winter feeding sites. During spring, sage grouse gather on breeding grounds (leks), which are characterized by open areas (e.g., meadows, low sagebrush zones) surrounded by denser sagebrush cover. Sage grouse often return year after year to these leks, although their exact location may vary from year to year.

Numerous sage grouse leks have been identified within 2.0 miles of the route, and these are delineated in the Plan of Development (TRC Mariah 2000). Some of these leks are known to have been active at least one of the past 3 years. Areas within 0.25 mile of active lek centers are considered potential breeding habitat, which are protected year-round from surface disturbance requiring a repeated human presence. Sage grouse tend to nest within 2.0 miles of lek centers, and occupied nesting habitat in these areas is protected from surface disturbance during the nesting period.

The Utah portion of the route provides yearlong habitat for ruffed grouse. Ruffed grouse summer in clearings in open woods and winter in coniferous forest. Blue grouse habitat (woodlands and mountainous forest) also occurs along the route in Utah.

3.2.2.4 Other Wildlife

Based on observation records (Wyoming Natural Diversity Database [WNDDB] 1999, 2000; UDWR 1999) and range and habitat preference (Clark and Stromberg 1987; WGFD 1992), numerous mammal species are known to occur or are likely to occur on or adjacent to the route. These include, among others, predators such as coyote, bobcat, red fox, and mountain lion; porcupine; various shrews, bats, and new world rats and mice; squirrels such as the least chipmunk, golden-mantled ground squirrel, and white-tailed prairie dog; Wyoming pocket gopher; badger; striped skunk, and others.

Numerous bird species occur along the proposed ROW in addition to those already mentioned. Some of the more common species include black-billed magpie, common raven, mountain bluebird, horned lark, sage thrasher, vesper sparrow, Brewer's sparrow, and Brewer's blackbird. Migratory birds are protected by the *Migratory Bird Treaty Act* (16 U.S.C. 701-715).

3.2.2.5 Reptiles and Amphibians

Numerous amphibian and reptile species potentially occur along the route, including plains rattlesnake, eastern short-horned lizard, northern leopard frog, sagebrush lizard, wandering garter snake, and gopher snake.

3.2.2.6 Fisheries

The Green, Black's Fork, and Bear Rivers are the only surface waters along the pipeline ROW that support significant sport fish populations. The Green River, where it is crossed, is considered a Class 2 stream--very good trout water providing a fishery of statewide importance (WGFD 1991). The Black's Fork is a Class 4 stream--low-production trout water--whereas the Bear River is a Class 3 stream--important trout water of regional importance. Other fish species occur in some of the smaller perennial streams (e.g., Bitter Creek), including redside shiner, speckled dace, and fathead minnow. The remaining streams, draws, and washes along the proposed ROW are intermittent or ephemeral and do not to support permanent fish populations or fish populations important for recreational purposes.

All major perennial stream crossings would be drilled or bored, so no impacts to fisheries would occur; therefore, fisheries are not discussed further in this EA.

3.2.3 Threatened, Endangered, Proposed, Candidate, and BLM-Sensitive Species

3.2.3.1 Threatened, Endangered, Proposed, and Candidate Species

TEP&C species are those that have been specifically designated as such by the USFWS under the *Endangered Species Act*. To ensure compliance with this act, a BA analyzing the potential effects of the proposed project on TEP&C species has been prepared (BLM 2000). Threatened species are those likely to become endangered in the foreseeable future throughout all or a significant portion of their ranges. Endangered species are those in danger of extinction throughout all or a significant portion of their range. Proposed species (proposed threatened) are those species for which the USFWS has issued proposed rules, but a final listing decision has not been made. Candidate species are those for which the USFWS has sufficient data to list as threatened or endangered, but for which proposed rules have not yet been issued.

A list of TEP&C species that potentially occur in the vicinity of the proposed project was compiled from several sources, including letters from the Wyoming and Utah State Supervisor's Offices of the USFWS (1999a, 1999b), the Nature Conservancy's WNDDB (1995, 1999, 2000), and the Utah Natural Heritage Program (UNHP) (1999). Information pertaining to TEP&C species was gathered from these sources as well as the draft EIS for the Continental Divide/Wamsutter II Natural Gas Project (BLM 1999a), the EA for the IXC Fiber Optic Telecommunication System (BLM 1999c), and other published literature. Further site-specific information pertaining to species occurrence and potential impacts would be gathered as part of the ROW application process, and the potential impact of a given construction site on a particular species would be determined as part of ROW application reviews.

Black-footed Ferret. The black-footed ferret, a federally endangered species, was once distributed throughout the high plains of the Rocky Mountain and western Great Plains

regions (Forrest et al. 1985). Prairie dogs are the main food of black-footed ferrets (Sheets et al. 1972), and few black-footed ferrets have been collected away from prairie dog towns (Forrest et al. 1985). Black-footed ferrets were considered extinct until a small population was discovered near Meeteetse, Wyoming, in 1981. Following outbreaks of distemper, surviving black-footed ferrets were brought into captivity and a captive breeding program was initiated (USFWS 1988). Black-footed ferrets were reintroduced in the Shirley Basin of central Wyoming from 1991 to 1994, and USFWS has designated special management areas to monitor the experimental (i.e., reintroduced) populations (USFWS 1995). The proposed ROW does not intersect any special management areas; however, the route does intersect prairie dog towns that are suitable black-footed ferret habitat (i.e., $\geq$8 burrows per acre), and investigations would be conducted to determine whether black-footed ferret are present in these areas. However, it is very unlikely that ferrets are present on areas affected by the proposed project.

Historic black-footed ferret sightings have been recorded within approximately 7 miles of the proposed ROW (WNDDB 1995, 1999, 2000), and one observation in 1983 recorded a black-footed ferret in an area less than 1 mile from the proposed ROW (WNDDB 2000).

Canada Lynx. Canada lynx, a federally threatened species, are typically found at elevations above 4,000 ft in a mosaic of forest conditions, ranging from early successional to mature coniferous and deciduous stands (Koehler et al. 1979). Due to the remoteness of their habitat and the lynx's nocturnal nature, very few sightings have been reported and fewer have been verified over the past 10 years (UDWR 1999). Snowshoe hare is their primary prey, and hunting habitat includes dense young vegetation. Tree squirrels, voles, and mice are also eaten (Ruggiero et al 1994).

Forested habitats occur along the proposed pipeline ROW in Utah. However, the present known distribution of Canada lynx in the vicinity of the project is limited to the southern

slopes of the high Uinta Mountains, 40 or more miles south of the proposed project, and Canada lynx has not been documented along the proposed route (UNHP 1999).

Swift Fox. The swift fox, a candidate for federal listing as threatened, is generally considered a resident of the Great Plains (including central and eastern Wyoming) from the northern Rocky Mountain foothills to western Texas (Clark and Stromberg 1987). In Wyoming, this species inhabits the eastern Great Plains grasslands, occasionally utilizing agricultural lands and irrigated meadows. Swift fox feed on small mammals, insects, and birds (WGFD 1992); cottontails and jackrabbits constitute the bulk of their diet in many areas (Cameron 1984; Zumbaugh et al. 1985).

No swift fox have been observed in the vicinity of the proposed ROW (WNDDB 1999, 2000; UNHP 1999). The swift fox is not identified by the USFWS as a species of concern (i.e., TEP&C species) along the Utah portion of the proposed ROW (USFWS 1999b). Several observations of swift fox have been reported from the Chain Lakes and Luman Ranch areas more than 10 miles north of the route (personal communication, July 15, 1995, with Greg Hiatt, Wildlife Biologist, WGFD). Many of these swift fox observations were in habitats generally considered atypical for this species (e.g., greasewood).

Bald Eagle. The bald eagle is a federally threatened species (downlisted from endangered and now proposed for removal from federal listing). Bald eagles require cliffs, large trees, or sheltered canyons associated with concentrated food sources (e.g., fisheries or waterfowl concentration areas) for nesting and/or roosting (Call 1978; Edwards 1969; Peterson 1986; Snow 1973; Steenhof 1978). They forage over wide areas during the nonnesting season (i.e., fall and winter) and scavenge on animal carcasses such as pronghorn, deer, and elk. Potential roosting sites and wintering areas are generally associated with larger rivers. Two eagle observations have been documented within 2 miles of the proposed pipeline ROW in Utah, in 1987 and 1988 (UNHP 1999).

No known bald eagle nests or winter roosts are known to occur within 5 mile of the proposed pipeline ROW (UNHP 1999; WNDDB 1999, 2000).

Mountain Plover. The mountain plover is proposed for federal listing as threatened. It inhabits the high, dry short-grass plains/prairies east of the Rocky Mountains (Dinsmore 1983), as well as the sagebrush grasslands throughout Wyoming (WGFD 1997), and is found in northern Utah and northwestern Colorado (Knopf 1996). The focus of breeding activity appears to be northeastern Colorado (Graul and Webster 1976). Parrish et al. (1993) noted that mountain plover nests in northeastern Wyoming were found in areas of short (<4 inches) vegetation on slopes of less than 3%; any short grass, very short shrub, or cushion plant vegetation type could be considered nesting habitat. In Colorado, the mountain plover diet is composed of 99.7% arthropods, with beetles, grasshoppers, crickets, and ants the most important food items (Baldwin 1971). Breeding bird surveys between 1966 and 1987 show an overall decline in the continental population of mountain plovers [U.S. Department of Agriculture, Forest Service [USFS] 1994a). Surveys completed in 1991 indicate that only 4,360 to 5,610 mountain plovers remain on the North American continent (USFS 1994b). Probably the most important reasons for the decline of the mountain plover are human impacts and habitat alteration on breeding grounds and the degradation in the quality of wintering habitats (e.g., southern Texas and California) (Knopf 1994, 1996). Loss of breeding habitat due to cultivation and prey base declines resulting from pesticide use are also threats to mountain plover survival (Wiens and Dyer 1975). Cattle often maintain the open grass habitat favored by mountain plovers, so livestock grazing may benefit the species (Klipple and Costello 1960).

Mountain plovers have been observed breeding and nesting along the proposed pipeline route and on adjacent areas (WGFD 1995; WNDDB 1995, 1999, 2000). They are well documented in Carbon County south of the proposed ROW (TRC Mariah 1999). Suitable breeding and nesting habitat occurs along portions of the proposed route in Wyoming on undisturbed (saltbush, greasewood, and cushion plant communities) and on reclaimed areas.

Wooded habitats in far western Wyoming and Utah occur along the proposed pipeline ROW and mountain plover occurrence in these areas is unlikely. Potential mountain plover nesting habitat has been identified at 22 locations totaling approximately 20 miles along the proposed pipeline ROW (Table 3.5).

Whooping Crane. Whooping crane, a federally endangered species, breed in marshes, sloughs, prairie potholes, and lake margins with abundant emergent vegetation in isolated undisturbed areas. Foraging may occur in adjacent uplands. Nesting typically occurs from late April through mid-July. Whooping cranes winter in salt marshes and barrier islands in Texas and New Mexico. During migration (mid September), they feed in croplands and prefer to roost in large wetlands or on sandbars in wide unobstructed channels, isolated from human disturbance.

All recorded observations of whooping cranes in Wyoming have occurred in the western part of the state, and these birds are probably part of the Gray's Lake fostering project (WGFD 1992). Whooping cranes use the Green River as a spring and fall migration corridor and may fly over the proposed pipeline ROW during migrations. No whooping cranes have been documented along the proposed ROW (UNHP 1999; WNDDB 1999, 2000).

Colorado River Endangered Fish Species. The bonytail chub, Colorado pikeminnow, humpback chub, and razorback sucker are federally endangered species that inhabit the Green and Colorado River systems below Flaming Gorge Dam (Matthews 1990; Tyus and Karp 1989; USFWS 1987). Although once abundant throughout both of these river systems, all four species are now limited to reaches of river that are either relatively undisturbed or controlled to provide appropriate flows. Reservoirs, water diversions, and introductions of nonnative fish are the main threats to these species.

None of the four endangered fish species are known to occur in the vicinity of the proposed pipeline ROW.

Table 3.5 Known Potential Mountain Plover Nesting Areas Along the Proposed Pipeline ROW, Pioneer Pipe Line Expansion Project, 2000.

Section(s)	Township and Range
Sections 16, 17	T21N, R86W
Sections 25, 26	T21N, R87W
Section 25	T21N, R90W
Section 26	T21N, R90W
Section 27-Section 6	T21N, R90W - T20N, R91W
Sections 29, 31, and 32	T20N, R94W
Section 32	T20N, R100W
Section 31	T20N, R100W (Possible)
Section 25	T20N, R101W
Sections 34, 35	T20N, R103W
Sections 1, 2	T19N, R104W
Sections 13, 14	T18N, R111W
Sections 15, 22	T18N, R111W
Section 17	T18N, R111W
Section 12	T18N, R112W
Sections 19; 20	T18N, R112W
Section 25	T18N, R113W
Sections 34, 35	T18N, R113W
Section 24	T17N, R114W (Possible)
Sections 20, 21	T16N, R115W
Section 25	T16N, R116W
Sections 27, 28	T6N, R7E

Ute Ladies'-tresses. Ute ladies'-tresses, a federally threatened species, is a perennial terrestrial orchid 20 to 50 cm in height with narrow leaves and small white or ivory flowers clustered into a spike arrangement. It is endemic to moist soils near wetland meadows, springs, lakes, and perennial streams at elevations from 4,200 to 7,000 ft above sea level. Ute ladies'-tresses colonize early successional riparian habitats such as point bars, sandbars, and low-lying gravelly, sandy, or cobbly edges and persist in those areas that provide perennial moisture. They are intolerant of shade and usually occur in small scattered groups. Ute ladies'-tresses were first identified in Wyoming in August 1993 and are suspected to occur throughout southern Wyoming in appropriate habitats.

Ute ladies'-tresses are not known to occur along the proposed pipeline ROW (UNHP 1999; WNDDB 1999, 2000); however, intervals of appropriate habitat (i.e., stream, river, and wetland/riparian area crossings) do occur along the route. Populations in Utah are known from the south side of the Uinta Mountains (more than 40 miles from the proposed ROW), and in Wyoming in the North Platte River drainage. It is possible that this orchid could occur along the proposed ROW, and site-specific surveys for the species would be completed in suitable habitats prior to disturbance.

3.2.3.2 BLM-Sensitive Animal and Plant Species

Database searches indicate that numerous BLM-sensitive species occur or potentially occur along the proposed pipeline ROW. Opal phlox, Payson's beardtongue, and loggerhead shrike were observed during field surveys for the IXC fiber optic cable ROW which is close to the proposed pipeline ROW (BLM 1999c), and pygmy rabbit, as well as other BLM sensitive species, may be present along the route. Field surveys prior to pipeline construction will delineate any such occurrences.

3.2.4 Wild Horses

Wild horses inhabit the prairies in central and western Wyoming, but are not known to occur on lands crossed by the route in Utah. Because wild horses tend to either avoid areas of human activity or become acclimated to human activity, they are not likely to either occur in the immediate vicinity of the route (which is often adjacent to roads in or near the busy I-80 corridor) or be disturbed by activities. As a result, wild horses would not be affected by the proposed project; therefore, wild horses are not discussed further in this EA.

3.3 LAND USE

3.3.1 Landownership

The proposed pipeline would be installed on a mixture of federal lands (86 miles of BLM-administered lands [all in Wyoming] and less than 1 mile of BOR-administrated land [all in Utah]), state lands (4 miles [all in Wyoming]), and private lands (172 miles [in Wyoming and Utah]). PPLC would procure all necessary easements to access and construct on state and private lands. The federal authorizations are pending successful completion of the environmental review process. Landownership is not anticipated to change as a result of the proposed project; therefore, it is not discussed further in this EA.

3.3.2 Land Use

The principal land uses within and adjacent to the proposed pipeline ROW are transportation (local, county, state, and federal roadways) and utilities (telecommunications systems, power lines, pipelines); livestock grazing; municipalities; oil and gas and other mineral developments; hay crop production; recreation; and wildlife habitat. All measures to mitigate impacts to the environment presented in the EA would be implemented on

federal, private, and state lands, including Lost Creek State Park in Utah, thus limiting land use impacts to temporary/nonsignificant status.

3.3.3 Livestock Grazing

The proposed pipeline ROW crosses numerous grazing allotments; however, only a relatively small amount of surface would be disturbed in any one allotment.

3.4 CULTURAL RESOURCES

Cultural Resources, or the nonrenewable physical remains of past human activity, are protected under Section 106 of the *National Historic Preservation Act of 1966* (as amended) and the *Archaeological Resource Protection Act of 1979*. Archaeological investigations in the Continental Divide and Green River Basins indicate that human activity has occurred across the landscape over the past 10,000 years, beginning during the Paleoindian period and continuing up to the present. The archaeological record has been established through information gathered during surveys, test excavations, data recovery excavations, a limited amount of ethnographic material pertaining to the Native American populations in the area at the time of initial Euro-American presence, and historic documentation pertaining to the settlement of the region by Euro-Americans. Historically, the area has been used for mining and livestock ranching and as a travel corridor via the Overland Trail, the Lincoln Highway, and the Union Pacific Railroad. More detailed descriptions of the various types of cultural resources in the region are presented in the Kemmerer RMP EIS (BLM 1985a, 1986), the Green River RMP EIS (BLM 1992, 1996, 1997a), the cultural resource overview for the Continental Divide/Wamsutter II EIS (TRC Mariah 1998), and the Expanded Moxa Arch Area Natural Gas Development Project (BLM 1995a).

TRC Mariah has conducted the Class I Literature Review and the Class III Cultural Resource Inventory of the Pioneer Pipe Line Expansion Project in both Wyoming and Utah.

These two inventories included the PPLC ROW and a number of realignments of the ROW, including several realignments around significant prehistoric archaeological sites. The results of the Class I/Class III investigations will be presented in four separate reports that are currently being prepared (Martin et al. 2000a, 2000b, 2000c; McNees 2000). Extra work spaces, access roads, and ancillary facilities have not been inventoried. They will be inventoried in the early spring of 2000, and the results will be included in separate reports for each field office prepared shortly after the fieldwork is completed.

The Class III inventories resulted in the recording and evaluation of 127 archaeological sites or linear properties (68 previously known and 59 newly recorded) within the PPLC ROW. Of the 127 sites, 122 are in Wyoming and five are in Utah. Wyoming sites or linear properties include 37 located in the RFO, 21 in the RSFO, and 64 in the KFO. No properties currently enrolled on the NRHP are within the proposed PPLC ROW.

Linear properties include the Lincoln Highway, three newly recorded spur lines off of the main Union Pacific Railroad line, the Baxter to Gunn Railroad, Rawlins-Baggs Stage Road, the Overland Trail, the Bryan to Browns Park Road, Fort Bridger to Carter Road, the Austin Canal, Bigelow Ditch, and City Ditch. The PPLC ROW crosses the Lincoln Highway in nine places, the Baxter to Gunn Railroad in two places, and the Overland Trail in five places. Except for the Austin and Bigelow Canals, all of the linear historic features have been recommended as eligible for listing on the NRHP. The points where the proposed pipeline would cross these historic linear properties have been evaluated as noncontributing segments. Besides the linear features, 51 sites have been evaluated as eligible for listing on the NRHP and 68 as not eligible, and one was left unevaluated (site was avoided by a reroute). Thirty-one eligible sites are assessed as lacking the qualities that contribute to their NRHP-eligibility status in the project-affected areas, so they would not be adversely affected. Testing at 14 of the potentially eligible sites showed that they possessed the qualities that contribute to the NRHP-eligibility status within the ROW, so they would be adversely affected. Realignments were developed and inventoried around 11 sites. The

remaining three sites (Sites 48SW6632, 48UT204, and 48UT375) could not be avoided. Data recovery excavations before construction are recommended to mitigate the adverse effects that construction activities would have on these sites. A Memorandum of Agreement detailing the work to be preformed would be developed and signed by the BLM and Wyoming SHPO. The research design and the site-specific treatments for the three sites are detailed in a Historic Properties Treatment Plan, which is included in the inventory and evaluation report for the KFO (Martin et al. 2000a).

Native American consultation for religious and culturally sensitive sites has been and would continue to be conducted by the BLM (see Section 4.4.2).

3.5 VISUAL RESOURCES

Landscapes along the route have generally been influenced by man, primarily by roads--including I-80--and other ROWs. The BLM's Visual Resource Management (VRM) system seeks to maintain scenic values and visual quality on federal lands. VRM classes represent the visual management objective of acceptable visual change within a characteristic landscape (Table 3.6). A class is based on three factors: scenic quality evaluation, sensitivity analysis, and delineation of distance zones. VRM Classes I and II are most sensitive to change, Class III is moderately sensitive, and Class IV is least sensitive. The BLM-administered lands along the proposed pipeline ROW are Class III and IV.

3.6 SOCIOECONOMICS/ENVIRONMENTAL JUSTICE

The proposed pipeline would pass through six counties in two states (Carbon, Sweetwater, and Uinta in Wyoming and Morgan, Rich, and Summit in Utah). Demographic conditions along the route are rural, with relatively low county population densities of less than 10 people/mile^2 (Table 3.7).

Table 3.6 BLM's VRM Class Objectives, Pioneer Pipe Line Expansion Project, 2000.

Class	Description
I	Preserve the existing character of the landscape; although this class provides mainly for natural ecological change, limited development activity may be allowed in some areas, if the level of change to the characteristic landscape is very low and nearly unnoticeable. This class includes primitive (wilderness) areas, some natural areas, wild sections of national wild and scenic rivers, and other congressionally and administratively designated areas where decisions have been made to preserve a natural landscape.
II	Retain the existing character of the landscape; management activities may be seen, but should not attract the attention of the casual observer. Changes to the characteristic landscape should be low, and changes must repeat the basic elements (i.e., form, line, color, texture) found in the predominant natural features of the existing landscape.
III	Partially retain the existing character of the landscape; moderate changes to the existing landscape are allowed, although management activities associated with these changes should not dominate the view of the casual observer. As in Class II, changes should repeat the basic elements of the characteristic landscape.
IV	Provide for management activities that require major modification of the existing character of the landscape. Although management activities may dominate the view and be the major focus of viewer attention, every attempt should be made to minimize the impact of these activities through careful location selection, minimal disturbance, and repetition of the basic elements of the characteristic landscape. The relative change to the characteristic landscape can be high.

Table 3.7 Socioeconomic Data, Pioneer Pipe Line Expansion Project, 2000.

State/County	Estimated Population[1]	Percent Change (1990-1998/99)[1]	Population Density (no./mi^2)[1]	Median Household Income (1996)[2]	Personal Per Capita Income (1996)[2]	Unemployment Rate (11/99)[2]	Percent of Population Below Poverty Level (1995)[3]
Wyoming	480,045	-3.4	4.7	27,096	21,532	4.1	11.5
Carbon	15,575	-6.5	2.1	27,109	19,871	4.3	11.9
Sweetwater	39,780	2.5	3.7	36,210	22,554	5.1	8.0
Uinta	20,465	9.4	9.0	33,259	17,932	5.4	9.3
Utah	2,129,836	23.6	21.0	37,469	19,156	3.3	11.4
Morgan	7,022	27.0	9.1	48,775	16,521	3.8	4.4
Rich	4,834	6.3	1.7	38,176	14,594	4.1	11.5
Summit	26,746	72.4	8.3	49,932	33,319	3.5	5.8

1 U.S. Bureau of the Census (www.census.gov): state estimates for July 1, 1999; county estimates for July 1, 1998.

2 Wyoming: personal communication, February 15, 2000, with Dave Bullard, Statistician, Wyoming Department of Employment, Casper, Wyoming. Utah: personal communication, February 15, 2000, with Doug Jex, Research Director, Utah Community and Economic Development Department, Salt Lake City, Utah.

3 Wyoming: personal communication, February 15, 2000, with Wenlin Liu, Analyst, Wyoming Division of Economic Analysis, Cheyenne, Wyoming. Utah: personal communication, February 15, 2000, Doug Jex, Research Director, Utah Community and Economic Development Department, Salt Lake City, Utah.

In Wyoming, all three counties have higher median household incomes than the state average, although personal per capita incomes in two of the counties--Carbon and Uinta--are less than the state average (see Table 3.7). Unemployment rates in all three counties are above that for the state of Wyoming, and the percent of population below the poverty level is above the state average only in Carbon County. In Utah, all three counties have higher median household incomes than the state average, although personal per capita incomes in two of the counties--Morgan and Rich--are less than the state average (see Table 3.7). Unemployment rates in all three Utah counties are above that for the state of Utah, and the percent of population below the poverty level is above the state average only in Rich County.

Pipeline installation would not unduly affect low-income or minority populations; therefore, environmental justice is not discussed further in this EA.

The annual consumption of petroleum products in Utah is anticipated to rise from approximately 966 million gallons in 1999 to 1,227 million gallons in 2010 (personal communication, January 2000, with Thomas Brill, Energy Data Information System, Utah Office of Energy and Resource Planning, Salt Lake City, Utah).

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 PHYSICAL RESOURCES

4.1.1 Geologic Hazards/Minerals

4.1.1.1 Significance Criteria

Impacts to geologic hazards would be significant if project facilities were to be damaged due to seismic events, landslides, subsidence, or flooding, or if project activities resulted in reactivation of sand dunes, landslides, subsidence, or increased flooding. Impacts to minerals, specifically trona mining, would be significant if project activities resulted in the inability to mine trona or trona mine subsidence damaged project facilities.

4.1.1.2 The Proposed Action

The proposed project would not contribute to increased risks of seismic events, subsidence, or flooding. Earthquake-induced ground shaking could result in damage to aboveground structures; however, buried structures (i.e., the pipeline) would only be affected when shaking induces ground failure. Construction would occur such that the chance of damage from these factors would be minimized (see Section 2.1.7.15, Geologic Hazards), although complete protection is impossible. Reclamation, as described in Chapter 2.0 and the reclamation plan (Appendix B) would ensure that no dunes would be reactivated and that the chance of landslides would not be increased.

Impacts to and/or from trona mining could be significant where the pipeline route crosses known trona mining areas, and these impacts would occur either as a loss of federal minerals (i.e., extraction beneath the pipeline is decreased) or as a result of pipeline disruption (i.e., mine subsidence results in the pipeline's inability to convey product).

However, with the implementation of mitigation measures (see Section 4.1.1.4), these impacts would not occur.

4.1.1.3 The No Action Alternative

Under the No Action Alternative, there would be no construction at this time and geologic hazards would remain unchanged from their existing condition except as modified by natural causes or otherwise impacted by other activities. Trona mining alterations may be necessary where trona mining occurs beneath the existing Pioneer pipeline (see Map 3.1). These alterations could result in federal minerals (trona) not being recovered. If mining activities result in subsidence along the existing route, pipeline disruptions could occur.

4.1.1.4 Mitigation

No additional mitigations for geological hazards are recommended; however, to avoid the potential for significant impacts to and/or from trona mining (i.e., revised mine plans, loss of federal mineral royalties, subsidence impacts to the pipeline). PPLC could construct the proposed pipeline using the alternate route shown on Map 3.1.

4.1.1.5 Cumulative Impacts

Potential effects from geologic hazards are mitigated on a case-by-case basis by avoiding known hazard areas and/or using geotechnical techniques to enable safe construction and operation of facilities within and adjacent to hazards. Thus, facilities along the proposed pipeline ROW would not be at unacceptable risk, and the cumulative effects of the proposed project in conjunction with other facilities along the route would be minimal or none.

4.1.2 Paleontological Resources

4.1.2.1 Significance Criteria

Impacts to paleontological resources would be significant if important fossils would be directly lost or destroyed during construction or indirectly lost or destroyed due to private collection or vandalism.

4.1.2.2 The Proposed Action

Direct impacts to fossils could include damage or destruction of important fossils during construction, with subsequent loss of scientific information. Adverse indirect impacts could include fossil damage from accelerated erosion due to surface disturbance.

Beneficial impacts could occur if excavation reveals fossils of scientific significance that would otherwise have remained buried and unavailable for scientific study. Newly discovered fossils would be properly collected and catalogued into the collections of a museum repository so that associated geologic data are preserved and the fossils are available for future scientific study.

With the implementation of the mitigation measures described in Chapter 2.0 as well as those accepted by the BLM from the paleontology report (EVG and TRC Mariah 2000), potential adverse impacts to fossil resources would be less than significant.

4.1.2.3 The No Action Alternative

Under the No Action Alternative, there would be no construction at this time and paleontological resources would remain unchanged from their existing condition except as modified by natural causes or otherwise impacted by other activities.

4.1.2.4 Mitigation

No additional mitigation beyond what is accepted by BLM from the paleontology report (EVG and TRC Mariah 2000) is recommended.

4.1.2.5 Cumulative Impacts

Substantial development is occurring across Wyoming and along the Wasatch Front in Utah, some of which could lead to the loss of important fossil resources. For construction in areas with high paleontologic potential, BLM may require predisturbance surveys and construction monitoring to avoid accidental fossil destruction. Since high potential areas would be surveyed prior to construction, if necessary, the impacts mitigated, and the standard paleontological protection stipulations applied, cumulative loss of paleontologic resources would be minimal.

4.1.3 Soils

4.1.3.1 Significance Criteria

Impacts to soils would be significant if a reduction in soil productivity and/or increased erosion would prevent successful reclamation and revegetation.

4.1.3.2 The Proposed Action

The proposed pipeline ROW would disturb 2,927 acres of surface, most of which has been disturbed previously, primarily by other ROW projects. However, measures to conserve soil, prevent erosion, and expeditiously reclaim disturbed surface (see especially Section 2.1.7.9 and the reclamation plan [Appendix B]) would prevent any significant impacts to soils. Special mitigation measures would be taken in problem areas--steep slopes, shallow soils, alkaline or saline soils, etc.--if these areas cannot be avoided.

4.1.3.3 The No Action Alternative

Under the No Action Alternative, there would be no construction at this time and soils would remain unchanged from their existing condition except as modified by natural causes or otherwise impacted by other activities.

4.1.3.4 Mitigation

The BLM may require that vertical banks along existing drainages that are cut back during construction be restored to their approximate original contour and stabilized during reclamation.

4.1.3.5 Cumulative Impacts

Because disturbance would be limited to a maximum of 2,927 acres over the 262-mile ROW and much of this disturbance would occur on previously disturbed areas, the proposed project would only minimally contribute to the cumulative impacts to soils disturbed by farming, urban development, road construction, oil and gas development, and other activities occurring along the corridor. Soil disturbance would contribute minimally to soil transportation from disturbed areas to adjacent areas because soils would be stabilized as soon as practicable. Therefore, cumulative impacts to soils would not be significant.

4.1.4 Surface Water

4.1.4.1 Significance Criteria

Impacts to surface waters would be significant if surface water quality declined such that the existing WDEQ surface water quality class (WDEQ 1990) would be downgraded or if surface water quantities were depleted such that the water rights of downstream users would be violated.

4.1.4.2 The Proposed Action

Surface water would not be adversely impacted because all major water courses would be bored or drilled and because of the various applicant-committed practices described in Chapter 2.0--especially Sections 2.1.7.8 and 2.1.7.9--and the reclamation plan (Appendix B). The small amount of water used for pipeline testing and dust control would not affect downstream users and therefore would not be significant.

4.1.4.3 The No Action Alternative

Under the No Action Alternative, there would be no construction at this time and surface water resources would remain unchanged from their existing condition except as modified by natural causes or otherwise impacted by other activities.

4.1.4.4 Mitigation

The BLM may require that vertical banks along existing drainages that are cut back during construction be restored to their approximate original contour and stabilized during reclamation.

4.1.4.5 Cumulative Impacts

Existing disturbances and land uses along the corridor inevitably contribute to surface water pollution, primarily the result of sediments but also due to spills. However, stringent surface water quality protection measures (SWPPPs, NPDES permits) are in place and are enforced such that runoff/discharge from developments meets specific water quality standards and surface water quality is maintained for its designated uses. Therefore, no significant cumulative impacts to surface water quality are anticipated. Surface water is used

extensively along the route for irrigation, livestock and wildlife watering, oil and gas field development, and recreation.

4.1.5 Air Quality/Noise

4.1.5.1 Significance Criteria

Impacts to air quality would be significant if they resulted in a violation of federal and/or state air quality attainment standards (WDEQ 1989). Impacts to noise would be significant if long-term project activities would exceed the federal 55 dBA standard for noise at residences and/or other noise-sensitive locations such as sage grouse leks during breeding season, raptor nests during breeding and nesting seasons, and big game crucial winter ranges during critical winter periods.

4.1.5.2 The Proposed Action

Impacts to air quality and noise would be negligible and temporary during construction. Impacts would be minimized by the applicant-committed practices included in Chapter 2.0--especially Section 2.1.7.5. Construction is proposed to take place outside of the breeding/nesting seasons of sage grouse and raptors and is not likely to occur during the time that big game animals are on crucial winter ranges.

4.1.5.3 The No Action Alternative

Under the No Action Alternative, there would be no construction at this time and air quality and noise levels likely would remain unchanged from their existing condition except as modified by natural causes or otherwise impacted by other activities. However, additional trucking of petroleum products from the Sinclair Refinery (potentially 260 tanker truck trips per day) would likely occur, and the increased use of trucks along the I-80 corridor would

contribute to regional increases in air pollutant emissions (potentially 1.8 tons of tailpipe NO_x emissions per day) and noise adjacent to I-80.

4.1.5.4 Mitigation

No additional mitigation is recommended.

4.1.5.5 Cumulative Impacts

Cumulative impacts to air quality and noise would be negligible because construction would be temporary. Salt Lake Terminal Company's North Salt Lake Terminal and tank farm is expanding and increased emissions from this facility are anticipated. However, emissions from this facility would be permitted through the Utah Department of Natural Resources and their contribution to regional air pollution levels would not be in violation of state and national ambient air quality standards or prevention of significant deterioration increments.

4.2 BIOLOGICAL RESOURCES

4.2.1 Plant Communities

4.2.1.1 Significance Criteria

Impacts to plant communities would be significant if there was a long-term reduction in vegetation productivity or a permanent change in species composition.

4.2.1.2 The Proposed Action

Reclamation potential within the sagebrush, greasewood, shrub-dominated riparian, sagebrush/juniper, shortgrass prairie, and irrigated hay meadow communities would be good

to excellent; however, in the more barren areas (e.g., saltbush, badlands) and sand dune areas, reclamation would be limited by shallow soils, droughtiness, salinity, and other adverse conditions. The sandy soils associated with stabilized dunes are very susceptible to wind erosion when vegetation cover is removed, and the restoration of these areas following disturbance may pose the greatest reclamation challenge along the route. Reclamation potential may also be limited by other extant conditions including salinity, alkalinity, steep slopes, noncohesive soils, weather conditions (high winds, drought), periodic flooding, short growing seasons, and livestock and wildlife use. However, by incorporating the measures included in Chapter 2.0--especially Sections 2.1.7.7, 2.1.7.8, and 2.1.7.9--and the reclamation plan (Appendix B), no significant impacts are likely to occur.

Some trees (e.g., juniper, limber pine, lodgepole pine) would be removed from upland areas on private lands along the route in Utah. However, very few trees occur along the route, the extent of tree removal would be limited to only that necessary for construction, reclamation in these areas would be conducted pursuant to landowner preferences, and reclamation seed mixes may include tree species if so desired by landowners. Therefore, no significant impacts due to tree removal are anticipated.

Areas that would be avoided, where practical, include:

- areas with high erosion potential (e.g., rugged topography, steep slopes [>25%], stabilized sand dunes, floodplains);
- areas with saturated soils; and
- wetland/riparian areas (e.g., wetlands, perennial stream channels, and open water).

4.2.1.3 The No Action Alternative

Under the No Action Alternative, there would be no construction at this time and vegetation would remain undisturbed from its existing condition except as modified by natural causes or otherwise impacted by other activities.

4.2.1.4 Mitigation

No additional mitigation is recommended.

4.2.1.5 Cumulative Impacts

Cumulative effects would be negligible because most of the proposed disturbance would occur on previously disturbed areas, and all newly disturbed areas would be reclaimed soon after disturbance.

4.2.2 Wetlands/Riparian Areas

4.2.2.1 Significance Criteria

Impacts to wetlands and riparian areas would be significant if there would be a violation of Section 404 of the *Clean Water Act* or Executive Orders 11988 or 11990.

4.2.2.2 The Proposed Action

Impacts to wetlands and riparian areas would not be significant because of the applicant-committed practices described in Chapter 2.0--especially Section 2.1.7.8. Major streams would be bored or drilled, and this activity would begin and end outside the borders of adjacent riparian areas. Trenched portions would be reclaimed according to Section 2.1.7.8 and the reclamation plan (Appendix B).

4.2.2.3 The No Action Alternative

Under the No Action Alternative, there would be no construction at this time and wetlands and riparian areas would remain undisturbed from their existing condition except as modified by natural causes or otherwise impacted by other activities.

4.2.2.4 Mitigation

No additional mitigation is recommended.

4.2.2.5 Cumulative Impacts

Because the proposed project would not affect wetlands or riparian areas, it would not contribute to cumulative impacts to these resources.

4.2.3 Invasive Non-native Species

4.2.3.1 Significance Criteria

Project impacts would be significant if they resulted in the unreasonable spread of invasive non-native species (noxious weeds) (see Appendix B, Sections B-5.1.1. and B-5.1.2).

4.2.3.2 The Proposed Action

Noxious weeds would not cause significant impacts because of control measures that would be implemented by PPLC. These include timely reclamation that includes the control of noxious weeds that may establish on reclaimed areas (see Section 2.1.7.7 and the reclamation plan (Appendix B).

4.2.3.3 The No Action Alternative

Under the No Action Alternative, there would be no construction at this time and noxious weed populations would likely remain unchanged from their existing condition except as modified by natural causes or otherwise impacted by other activities, including weed control efforts by county agencies.

4.2.3.4 Mitigation

No additional mitigation is recommended.

4.2.3.5 Cumulative Impacts

Adverse cumulative impacts as a result of the spread of noxious weeds would not be significant because of control measures included in the plans for this proposed project.

4.2.4 Wildlife

4.2.4.1 Significance Criteria

Impacts to wildlife resources would be significant if they prevent realization of WGFD-specified population objectives, disrupt raptor breeding activities with subsequent reproductive failure, continuously disrupt sage grouse breeding and nesting activities, or result in the loss of a population of any species.

4.2.4.2 The Proposed Action

Big Game. Direct impacts to big game would include potential collision-related mortality; however, under the Proposed Action the potential for such direct mortality is slight. Indirect effects would include habitat loss due to vegetation removal and big game displacement from areas where construction is occurring. Most of the 2,927 acres of disturbance would occur on habitat occupied by pronghorn, mule deer, elk and/or moose; however, this represents a very small fraction of the available habitat for the various herd units affected. Because most of the route is on or adjacent to existing ROWs, many of which are fairly busy (e.g., I-80), big game are already somewhat displaced from the route; therefore, project construction would result in minimal and temporary additional displacement that would not

be a significant impact. Some forage would be lost for several years until reclamation was successful, and shrub forage (notably sagebrush) may take up to 20 years to return to present levels; however, most of the proposed ROW has already been disturbed, and shrub density is already below that on these undisturbed/reclaimed lands.

It is unlikely that any construction would occur in big game crucial winter range from November 15 to April 30, since construction is scheduled to be completed prior to November 15; however, if construction did occur after November 15 on crucial winter range it would only be after permission from the BLM in consultation with the WGFD.

Other Mammals. Direct mortality due to collisions with vehicles or inadvertent burial in a trench would occur infrequently if at all, so direct impacts on other mammals would be less than significant. The indirect effects of up to 2,927 acres of temporarily lost habitat also would be less than significant because adjacent habitats would be available.

Raptors. Direct impacts to raptors during pipeline installation could include the very unlikely potential for collision-related mortality. Breeding and nesting birds could be adversely affected by noise and human activity associated with construction if it causes adults to abandon nests or young. Construction is scheduled to begin near the end of the raptor nesting season. However, pipeline installation would not occur within 0.75 mile of any occupied raptor nest (within 1.0 mile of occupied bald eagle or ferruginous hawk nests) during the nesting season (February 1-July 31) unless otherwise permitted by the BLM. Indirect impacts to raptors could include habitat loss and a reduction in available prey due to prey habitat loss. The previously disturbed portions of the route may provide good foraging habitat because shrubs have usually been cleared and thus prey are easier to see. Project construction impacts to raptors would be minimal (less than significant), and operation and maintenance activities are not expected to adversely affect raptors.

Upland Game Birds. Direct impacts to upland game birds could include collision-related mortality. Indirect effects could include habitat loss, displacement from construction areas, increased raptor predation by raptors using line markers as perches, and disruption during the breeding and nesting season. However, upland game bird mortality due to collisions with project-related vehicles is unlikely, line markers would be equipped with anti-perching devices at locations within 2.0 miles of leks, and no significant direct impacts are anticipated. Furthermore, roadside vegetation is poor habitat for upland game birds because it usually consists of species that are unattractive to birds and because roadsides are frequently mowed, eliminating cover. Disturbance along pipeline or other utility ROWs would result in minimal and temporary habitat loss, and these indirect effects would not be significant. No construction would occur during the sage grouse breeding season.

No surface-disturbing activities requiring human presence would occur within 0.25 mile of active sage grouse leks, and no disturbance would occur within 2.0 miles of a lek from February 1 to July 1 unless otherwise permitted by the BLM.

Other Birds. Collision-related mortality of other birds (e.g., songbirds, waterfowl, shorebirds, waders) would constitute a direct impact but is unlikely and would not result in a significant impact. Construction actions may also directly affect late-season ground-nesting birds. The indirect effect of habitat loss would not be significant because of the relatively small area disturbed and the abundance of adjacent habitat.

Amphibians and Reptiles. Amphibians and reptiles would be directly affected via collision-related mortality or burial but these effects would not be significant. Indirect effects would include habitat loss and displacement from construction areas, but these effects would be minimal (i.e., less than significant) due to the availability of adjacent habitats.

4.2.4.3 No Action Alternative

Under the No Action Alternative, there would be no construction at this time and impacts to wildlife populations would likely remain unchanged from their existing condition except as modified by natural causes or otherwise impacted by other activities.

4.2.4.4 Mitigation

No additional mitigation is recommended.

4.2.4.5 Cumulative Impacts

Wildlife have been, and are being, affected by numerous developments along the route; however, big game herds continue to attain populations near WGFD objective levels. Federal undertakings such as oil and gas field development, livestock grazing, coal mining, and the installation of telecommunications systems and pipelines also have/would continue to have impacts on wildlife, some of which may be significant (e.g., BLM determined that turbine-related avian mortality from windpower development would constitute a significant impact). However, the effects of PPLC's proposal on wildlife are minimal and project impacts combined with other developments would be temporary and negligible. The proposed project in combination with other existing and reasonably foreseeable actions would not result in the permanent loss of habitats or wildlife populations.

4.2.5 Threatened, Endangered, Proposed, and Candidate, and BLM-Sensitive Species

A BA (BLM 2000) was prepared for this proposed project and submitted to the USFWS for comment and approval. The following material is a summary of potential impacts resulting from the proposed project.

4.2.5.1 Significance Criteria

Any action that would adversely affect or jeopardize TEP&C species or their critical habitat, and/or any recovery program (e.g., Colorado River fish) for such species, would be a significant impact. Any action that would cause a BLM-sensitive species to become federally listed would be a significant impact.

4.2.5.2 The Proposed Action/Cumulative Effects

Impacts to TEP&C plant and animal species are summarized in Table 4.1.

Black-footed ferret. It is anticipated that there would be no impact to this species from the proposed project because: no black-footed ferrets are known to occur along the proposed ROW in Wyoming or in Utah; it is unlikely that the species occurs in the area; and mitigation measures for black-footed ferrets would be applied (see Section 2.1.7.11).

The proposed project would have no additional impacts to the cumulative effects on black-footed ferret habitat from ranching, mining, oil and gas projects, and transportation and on prairie dogs from pest control and recreational shooting.

Canada lynx. The proposed project (individually and cumulatively) is not likely to adversely affect Canada lynx since limited habitat disturbance would occur in areas not known to be occupied by the species. No mitigation measures other than the timely reclamation of disturbed areas are currently proposed.

Swift fox. Disturbance of sagebrush-grasslands may reduce potential habitat for swift fox; however, no adverse effects to swift fox from the proposed project are anticipated due to the apparent infrequent use of the area by this species and the relatively small amount of potential habitat that would be temporarily disturbed. While individuals may occasionally

Table 4.1 Summary of Potential Effects and Mitigations for Federal Threatened, Endangered, Proposed, and Candidate Species and Their Habitats on and Adjacent to the Pioneer Pipe Line Expansion Project.

Species	Level of Impact to Species[1]	Level of Impact to Habitat[1]	Mitigation Measures
Black-footed ferret	1; not likely to be present	1; temporary loss of potential habitat only	Disturbance to prairie dog towns (i.e., potential black-footed ferret habitat) would be minimized; where potential habitat would be affected, black-footed ferret clearance surveys would be conducted per USFWS guidelines prior to disturbance; if black-footed ferrets are observed, no further disturbance would occur to suitable prairie dog colonies within the prairie dog complex in which the ferret(s) were observed.
Swift fox	2; uncommon visitor	2; potential for some displacement from foraging habitat, but overall disturbance to such habitat would be negligible	None.
Canada lynx	1; uncommon visitor	1; potential for some displacement from foraging habitat, but overall disturbance to such habitat would be negligible	None.
Bald eagle	1; uncommon visitor	1; nest disturbance unlikely; potential for some displacement from foraging habitat, but overall disturbance to such habitat would be negligible	If bald eagle roosts or active nests are found, no surface activity/occupancy would be allowed within 1 mile of active roosts or nests during periods of use; project features requiring repeated human presence would not be constructed within 2,000 ft of active nests.
Mountain plover	2; birds may be displaced from disturbed areas	2; temporary loss of breeding/ nesting habitat	Affected breeding habitats would be replaced; no construction during the breeding/nesting season (April 10-July 10); reclamation would include reestablishment of suitable plover breeding habitat.
Whooping crane	1; uncommon visitor	1; stop-over habitats only	None.
Bonytail chub	3; not present	3; habitat not present; <100 acre-ft of surface water withdrawal in Green River watershed	Standard wetland, erosion, and aquatic habitat protection measures.
Colorado pikeminnow	3; not present	3; habitat not present; <100 acre-ft of surface water withdrawal in Green River watershed	Standard wetland, erosion, and aquatic habitat protection measures.
Humpback chub	3; not present	3; habitat not present; <100 acre-ft of surface water withdrawal in Green River watershed	Standard wetland, erosion, and aquatic habitat protection measures.
Razorback sucker	3; not present	3; habitat not present; <100 acre-ft of surface water withdrawal in Green River watershed	Standard wetland, erosion, and aquatic habitat protection measures.
Ute ladies'-tresses	1; uncommon	1; potential habitat present along route	Standard wetland habitat protection measures; surveys; avoidance if found.

[1] Level of impact with project-wide mitigation--a relative measure of the intensity or "seriousness" of project impacts.
1 = is not likely to adversely affect listed species.
2 = is not likely to jeopardize proposed or candidate species.
3 = possible adverse effects/jeopardy to species/species habitats.

cross the route, the potential for impacts is extremely remote. As a result, the proposed project would have only negligible additional effects, if any, to existing cumulative effects on swift fox habitat in the region.

Bald eagle. Migrating bald eagles and those wintering at locations sufficiently close to the proposed route may occasionally fly over the route while foraging; however, since no known nests or roosts occur near the route and disturbance would be minimal and occur over a short period of time, the proposed project is unlikely to adversely affect bald eagles.

Cumulative impacts resulting from the proposed project likely would contribute only negligible additional effects, if any, to existing oil and gas development, surface mining, urban developments, and roads; some additional foraging habitat would be removed, but large areas remain available to eagles. Also, all developments (including the proposed project) would avoid winter roosts and active nests, further minimizing potential disturbance to the species.

Mountain plover. The temporary loss of potential mountain plover breeding and foraging habitat due to proposed project activities is unlikely to adversely affect suitable habitats during the breeding season. The proposed project also is unlikely to jeopardize individuals since project construction would occur outside the breeding and nesting period (April 10-July 10). While the total extent of mountain plover habitat along the proposed route has not been defined, the limited and scattered nature of habitat disturbance and proposed construction timing, as well as proposed habitat rehabilitation actions that include reclamation of habitats to conditions suitable for plover breeding and nesting, would preclude the displacement of plovers from disturbed breeding and nesting areas.

Cumulative impacts to the local mountain plover population are unlikely to be increased as a result of the proposed pipeline project. Although disturbance due to oil and gas development, surface mining, urban developments, and roads has removed an unknown

portion of potential mountain plover breeding and nesting habitat, it is unlikely that the proposed pipeline in combination with these actions would jeopardize plover reproduction. Furthermore, potentially displaced plovers likely would have adequate alternate habitats for breeding and nesting activities.

Whooping crane. Although none have been documented along the route, whooping cranes may migrate across the ROW during project construction. However, none of the proposed route is isolated from human disturbance, so whooping cranes are unlikely to utilize the limited cropland or few wetlands along the route during migration. Furthermore, construction actions at the Green, Black's Fork, and Bear River crossings would utilize directional drilling techniques to avoid surface disturbance. Therefore, this species is not likely to be adversely affected by the proposed project. Similarly, there would be no increase in cumulative impacts to whooping crane or its preferred habitat due to the proposed project.

Colorado River endangered fish species. Under the *Recovery and Implementation Program for Endangered Fish Species in the Upper Colorado River Basin* (RIP), any water depletions from tributary waters within the Colorado River drainage are considered as jeopardizing the continued existence of these fish. Tributary water is defined as water that contributes to instream flow habitat. Depletion is defined as water which would contribute to the river flow if not intercepted and removed from the system.

The RIP was developed as part of a cooperative effort between the states of Colorado, Utah, and Wyoming; the BOR; USFWS; private water development interests; and various environmental groups. In addition, a cooperative agreement was signed by the governors of the states of Colorado, Utah, and Wyoming, the Secretary of the Interior, and the Administrator of the Western Area Power Administration, Department of Energy, to further implement the RIP.

The BLM has discretionary authority over individual projects within the area for the purpose of endangered species consultation. If the recovery program is unable to implement the RIP in a timely manner or make sufficient progress in recovery of these endangered species, re-initiation of Section 7 consultation may be required so that new reasonable and prudent alternatives can be developed.

The USFWS has determined that progress made under the RIP has been sufficient to merit a waiver of the mitigation fee for depletions of 100 acre-ft or less (Memorandum dated March 9, 1995, to Assistant Regional Director, Ecological Services, Region 6, from Regional Director 6, "Intra-Service Section 7 Consultation for Elimination of Fees for Water Depletions of 100 acre-feet or Less from the Upper Colorado River Basin"). The Proposed Action would deplete less than 5 acre-ft and, thus, no fee would be required for this project. Furthermore, because the proposed project would require less than 100 acre-ft of surface water depletions in the Colorado River Basin, appropriate sedimentation and erosion control measures would be used, and directional drilling techniques would be applied (at Green, Blacks Fork, and Bear River crossings), impacts from the proposed project individually and in combination with other regional actions (cumulatively) would be minimized.

BLM-Sensitive Species. Surveys for these species would be conducted prior to construction, and if individuals are found, appropriate actions (e.g., avoidance) would be implemented as directed by the BLM to ensure their protection.

State-sensitive species are being affected throughout Wyoming and Utah by urban development, road construction, oil and gas development, coal mining, etc.; however, the Proposed Action would affect these species minimally, if at all, and thus would add imperceptibly to cumulative effects.

4.2.5.3 The No Action Alternative

Under the No Action Alternative, there would be no pipeline construction at this time, and impacts to threatened, endangered, candidate, and BLM-sensitive animal and plant species would continue at levels determined by current and future activities.

4.2.5.4 Mitigation

No additional mitigation is recommended.

4.3 LAND USE

4.3.1 Significance Criteria

Impacts to land use would be significant if the pipeline precluded other current uses adjacent to the pipeline ROW for the long term or if there would be a reduction in animal unit months (AUMs) of a magnitude that would require modifications in grazing allotments or other actions that would prevent the realization of grazing goals.

4.3.2 The Proposed Action

The pipeline would be routed to be compatible with existing land uses. Roads carrying significant traffic would be bored so as not to cause traffic congestion. Existing mining and oil and gas development would be avoided, where practical, and future mineral development actions could occur except in very close proximity to the installed pipeline, depending upon existing regulations. All existing pipeline and telecommunications cables would be protected during construction. For these reasons, there would be no significant impacts to these land uses. There would be some increased likelihood of adverse impacts in the vicinity of existing or potential trona mines, for which appropriate mitigation is recommended.

There would be temporary, short-term displacement of livestock and recreational activity in proximity of the pipeline ROW during construction, and a loss of livestock grazing on disturbed lands for the short-term until reclamation is successful. It is anticipated that reclaimed areas would provide suitable grazing areas within 3 years of disturbance. Surface disturbance would be approximately 11 acres per linear mile of pipeline ROW, or less than 2% of any given section (i.e., approximately 1 AUM per section in these allotments). No adjustments to existing allotments would be made. The trench would present a temporary short-term hazard to livestock and may block access, and livestock may move from designated pastures during construction when fences are down. However, any given section of the trench would be open for no more than 20 days; the maximum unfilled trench disturbance would be 5 miles; gaps would occur at intervals of no more than 0.25 mile to allow passage of livestock, wildlife, and vehicles; the trench would be inspected daily for trapped livestock and wildlife; fences crossed during construction would be down during daylight hours only; and permittees would be notified in advance as to when their allotment would be trenched so that they may move their livestock appropriately. For these reasons, impacts to livestock grazing and recreation would not be significant.

Pipeline construction across existing hay meadows in western Wyoming and Utah would temporarily affect hay operations during construction and may temporarily disrupt flows in existing irrigation systems. However, no significant impacts are anticipated since private landowners would be adequately compensated for their losses, irrigation system flows would not be altered to such an extent as to adversely affect crops at other locations, and all disturbed hay meadows would be adequately reclaimed pursuant to landowner requirements to ensure hay crop productivity is not permanently reduced. Furthermore, the pipeline would be located such that its construction and operation would not result in damage to existing homes and other buildings, or adversely affect potential future land uses.

The proposed pipeline has been located and designed to minimize impacts to Lost Creek State Park, and no significant impacts to the park are anticipated. Location, design, and mitigation features relevant to impact minimization within the park include:

- rerouting the pipeline such that it crosses less than 0.25 mile of the park;
- rerouting the pipeline away from Trail Creek upstream from the park;
- implementing reclamation/revegetation techniques conducive to minimizing erosion and vegetation loss (see Appendix B);
- continued consultation with Utah Division of Parks and Recreation and BOR regarding the project; and
- other measures for existing land uses/livestock grazing, cultural resources (see Sections 2.1.7.3 and 4.4), water resources (see Sections 2.1.7.8, 2.1.7.15, 4.1.4, and 4.2.2), and hazardous materials (see Sections 2.1.6, 2.1.7.15, 4.7).

The Proposed Action would not have a significant impact on any of the resources that contribute to healthy rangelands, such as:

- stable soils that allow for water infiltration, optimal plant growth, and minimal surface runoff;
- healthy riparian areas;
- healthy upland vegetation;
- habitat capable of supporting native plant and animal species, including sensitive plant species;
- water quality that meets state standards; and
- air quality that meets state standards.

4.3.3 No Action Alternative

There would be no impacts from the No Action Alternative because there would be no change in surface use.

4.3.4 Mitigation

In areas where the pipeline may be subject to damage from subsidence caused by existing or potential future trona mines, appropriate mitigation would be developed between PPLC and the trona mines, or such areas would be avoided by the proposed pipeline. Additionally, the BLM may require that vertical banks along existing drainages that are cut back during construction be restored to their approximate original contour and stabilized during reclamation.

4.3.5 Cumulative Impacts

Because impacts to land use would be short-term, they would not significantly contribute to cumulative land use impacts.

4.4 CULTURAL RESOURCES

4.4.1 Significance Criteria

Significant impacts to cultural resources would include:

- loss of NRHP qualities of cultural resources that are eligible for listing on the NRHP;
- any surface disturbing activities within 0.25 mile of a historic trail, unless such disturbance would not be visible from the trail or would occur in an existing visual intrusion within the buffer; and
- disturbance of sites of religious or cultural significance to Native Americans.

4.4.2 The Proposed Action

Construction of the Proposed Action would adversely affect from one to three archaeological sites (Sites 48SW6632, 48SW3389, and 48UT375) recommended as eligible for listing on the NRHP, based on the presence of intact subsurface archaeological deposits.

Additionally, there is a moderate to high potential for encountering buried cultural material undetected during the Class III inventories. Cultural resource clearance was recommended for both the Wyoming and Utah segments of the proposed ROW. Stipulations included the development of a Memorandum of Understanding and site-specific treatment plan for data recovery excavations at Sites 48SW6632, 48SW3389, and 48UT375 and archaeological discovery plans for open trench inspections during construction. Since the pipeline would cross historic trails, roads, ditches, and railroad grades at noncontributing portions of the overall systems, no significant adverse effects to linear properties are anticipated.

The BLM has consulted several times with the Eastern Shoshone, Northern Arapaho, Ute, and Shoshone-Bannock tribal governments regarding sacred sites and other places along the proposed pipeline that could be of importance to Native Americans. Written requests for consultation were sent to these tribes on three occasions. No response has been received from any of the tribal governments or their contact persons. The fact that the majority of the pipeline would be located in an existing, heavily used transportation corridor may be an important consideration in evaluating whether or not there is potential for the proposed pipeline to affect places important to Native Americans for sacred or cultural reasons. If any sacred sites or other concerns are brought to the attention of BLM, they would be considered, and the BLM would communicate with the tribes and PPLC to avoid any effects to places that may be of concern to Native Americans.

Mitigation measures described below along with the applicant-committed practices outlined in Section 2.1.7.3 would ensure that no significant impacts would occur to cultural resources or historic linear features.

4.4.3 No Action Alternative

Under the No Action Alternative, no project-related disturbance of cultural resources would occur other than that which is already occurring--accidental destruction, vandalism, or illegal collection.

4.4.4 Mitigation

The BLM or BOR may require large-scale data recovery excavations under the direction of a qualified archaeologist at Sites 48SW3389, 48SW6632, and 48UT375 or other sites before the onset of construction. The BLM may also require the inventory of all unimproved access roads, extra works spaces, and ancillary facilities before their use and construction. Finally, the BLM may require an open-trench inspection by a qualified archaeologist for the section of the proposed pipeline route from Westvaco Road to Mountain View and at other locations.

4.4.5 Cumulative Impacts

All cultural resources impacts would be mitigated in accordance with the *National Historic Preservation Act* and related acts and Executive Orders so that cumulative impacts to cultural resources from past, present, and reasonably foreseeable future developments would not be significant.

4.5 VISUAL RESOURCES

4.5.1 Significance Criteria

Impacts to visual resources would be significant if they result in a reduction in VRM class or a violation of BLM's VRM objectives as specified in the appropriate RMPs (BLM 1985a, 1986, 1987, 1988a, 1990, 1992, 1996, 1997a; BOR 1996).

4.5.2 The Proposed Action

Because most of the proposed pipeline ROW would occur in or adjacent to existing ROWs that have already been disturbed by linear development, the visual quality of the proposed route would be affected only temporarily due to construction activities and surface disturbance. Once the route is reclaimed, the corridor would be similar in appearance to

that of today. All disturbance would occur in VRM Class III and IV areas which allow for moderate changes to the landscape as long as they do not attract the casual viewer's attention and they repeat the landscape's basic form, line, color, and texture. Therefore, the proposed project would be in conformance with VRM objectives along the entire route, so impacts would not be significant.

4.5.3 The No Action Alternative

Under the No Action Alternative, there would be no project-related impacts to visual resources, and the landscape would remain unchanged.

4.5.4 Mitigation

No additional mitigation is recommended.

4.5.5 Cumulative Impacts

Because the proposed project would be constructed primarily within or adjacent to existing linear disturbances, most of the route would not contribute to cumulative visual impacts. The areas of new disturbance would result in a minor increase in landscape disruption caused by construction activities and linear perturbation, but most of the new disturbance would be on or near existing disturbances and thus would repeat the landscape's overall form, line, color, and texture. Cumulative visual impacts would not be significant.

4.6 SOCIOECONOMICS

4.6.1 Significance Criteria

Impacts to socioeconomics would be significant if they increased demand for temporary housing or for local government facilities in excess of availability.

4.6.2 The Proposed Action

Much of the work force for construction of the proposed pipeline would be furnished by the local workforce, and there would be no unreasonable demands for temporary housing. The pipeline would provide employment for more than 500 workers for a 3-month period, resulting in increased income to local workers and subsequent increased tax revenues to local merchants from both local workers and for locally purchased equipment and supplies. Because petroleum products fuel the economy of the U.S., providing an adequate supply to the increasing population in Salt Lake City and western Wyoming will help to ensure a healthy economy in general. Economic benefits from the proposed project, then, would be overwhelmingly beneficial.

4.6.3 The No Action Alternative

Under the No Action Alternative, none of the economic benefits from construction of the pipeline or its delivery of petroleum products to Utah and western Wyoming would be realized; however, because of the demand at Salt Lake City, one or more additional pipelines would inevitably be constructed.

4.6.4 Mitigation

No additional mitigation is recommended.

4.6.5 Cumulative Impacts

The proposed pipeline would become one of many sources of fuel to stimulate the economy of Utah, and especially Salt Lake City, with petroleum product necessary for continued economic prosperity. It would also be another source of employment in southwest Wyoming for a workforce and an economy that depends heavily on the petroleum industry for its

livelihood. Due to the growing demand for petroleum products in Salt Lake City, the proposed pipeline is not anticipated to result in interference of other proposed product pipelines for product distribution to the Salt Lake City area.

4.7 HAZARDOUS MATERIALS

4.7.1 Significance Criteria

Impacts resulting from the use of hazardous materials by the proposed project would be significant if these materials were produced, used, stored, transported, or disposed of in violation of federal or state law and/or required SPCC Plans.

4.7.2 The Proposed Action

Impacts to air, soils, surface water, and wildlife could result from accidental hazardous materials spills, pipeline ruptures, and/or exposure to these materials; however, the pipeline system would be designed with automatic shutoff valves to minimize the volume of materials that could be released in the event of a pipeline rupture. The small amount of soil that could potentially be contaminated, coupled with appropriate and timely cleanup, is not anticipated to result in significant property damage or law violations. Project operations would comply with all relevant federal and state laws regarding hazardous materials and with directives specified in SPCC Plans, and other safety and emergency response plans (CPLC 1996; Conoco Inc. 1998b, 1999b), and in the absence of a spill, there would be no impacts.

4.7.3 No Action Alternative

There would be no additional impacts from hazardous materials under the No Action Alternative.

4.7.4 Mitigation

No additional mitigation is recommended.

4.7.5 Cumulative Impacts

Because the hazardous materials proposed for use/transport by this proposed project would be handled in compliance with all relevant federal and state laws including SPCC Plans, the proposed project in combination with other existing, proposed, and reasonably foreseeable projects are not anticipated to be significant.

5.0 CONSULTATION AND PREPARERS

Personnel contacted or consulted during EA preparation are listed in Table 5.1. The BLM interdisciplinary teams are presented in Table 5.2, and the list of other preparers and participants is given in Table 5.3.

Table 5.1 Personnel Consulted, Pioneer Pipe Line Expansion Project, 2000.

Agency/Organization	Individual	Position
Federal		
Army Corps of Engineers		
Utah Regulatory Office	Michelle Waltz	Project Manager
Wyoming Regulatory Office	Tom Johnson	Project Manager
Bureau of Land Management		
Utah State Office	Rob Bolanger	Wildlife Biologist
	Grace Jensen	Realty Specialist
	Laverne Steah	Realty Specialist
Bureau of Reclamation	Barbara Blackshear	Archaeologist
	Kerry Schwartz	Environmental Protection Specialist
Fish and Wildlife Service		
Utah Field Office	Reed Harris	Field Office Supervisor
Wyoming Field Office	Michael Long	Wyoming Field Supervisor
Forest Service		
Wasatch National Forest	Larry Gillman	NEPA Coordinator
	Wayne Paggett	Wildlife Biologist
Natural Resources Conservation Service	Roger Cox	Soil Scientist
	Mary Gerkin	Soil Conservation Technician
	Daryl Trickler	Soil Scientist
State of Wyoming		
State Historic Preservation Office	Judy Wolf	Deputy SHPO
Wyoming Natural Diversity Database	Rebekah S. Smith	Data Assistant

Table 5.1 (Continued)

Agency/Organization	Individual	Position
State of Utah		
Division of Parks and Recreation	Tharold E. Green, Jr.	Manager, Comprehensive Planning and Policy
Division of Wildlife Resources	Alan Ward	Information Manager
	Lou Cornicelli	Wildlife Biologist
Office of Energy and Resource Planning	Thomas C. Brill	Economist
State Historic Preservation Office	James Dykmann	Archaeologist
Utah Natural Heritage Program	Rory Reynolds	--
Other		
Deseret Ranch	Rick Danvers	--
	Bill Hopkin	--
D.R. Griffin & Associates, Inc., Rock Springs, Wyoming	Larry Bodyfelt	Engineering Manager
	Brian Forbes	--
	Kevin McGee	--
Pioneer Pipe Line Company	Dale Baxter	--
	Randy Booth	ROWs
	Max Buck	--
	Robert Caldwell	ROW/Construction
	Lindell Grover	Area Supervisor
	Jim Rau	--
	Jim Thompson	Environmental Director

Table 5.2 BLM Interdisciplinary Teams, Pioneer Pipe Line Expansion Project, 2000.

Resource	Rock Springs Field Office	Rawlins Field Office	Kemmerer Field Office
Surface and ground water	Dennis Doncaster	N/A	N/A
Soils	John MacDonald	Susan Foley	N/A
Wildlife/Fisheries	Jim Dunder John Henderson	Mary Read	Vicki Herren
Threatened, endangered, and candidate species and species of concern	Jim Dunder Jim Glennon	Mary Read	Vicki Herren
Cultural resources	Russ Tanner	Sandy Meyers	Lynn Harrell
Mining	Jeff Clawson	N/A	N/A
Paleontology	David Valenzuela	Mark Newman	Gary McNaughton
Project Inspector	Brady Baldwin	N/A	N/A
Realty	Becky Heick	Janelle Wrigley	Mark Hatchel
Range	Thor Stephenson	Mike Calton	Pat Netherly
Recreation	Andy Tenney	Krystal Clair	Wally Mierzewjewski
NEPA coordinator	Arlan Hiner	N/A	N/A
Writer/editor	Angelina Pryich	N/A	N/A

Table 5.3 Other Preparers, Pioneer Pipe Line Expansion Project, 2000.

Name	EA Responsibility
TRC Mariah Associates Inc.	
Pete Guernsey	Project Management, Purpose and Need, Proposed Action and Alternatives, TEP&C Species
Karyn Coppinger	Physical Resources, Visual Resources
Susan Eatinger	Air Quality
Genial DeCastro	Document Production
Jan Hart	Biological Resources, Proposed Action
Tamara Linse	Technical Editing
Suzanne Luhr	Drafting/AutoCAD
William Martin	Cultural Resources
Roger Schoumacher	Biological Resources, Socioeconomics, Land Use
Craig Smith	Cultural Resources
Erathem-Vanir Geological Consultants	
Gustav Winterfeld	Paleontology

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APPENDIX A:

SCOPING NOTICE

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Rock Springs Field Office
280 Highway 191 North
Rock Springs, Wyoming 82901-3448

1792 (400)
Pioneer P/L EA

July 16, 1999

SCOPING NOTICE

PIONEER PIPELINE

Dear Reader:

Pioneer Pipe Line Company has notified the Bureau of Land Management's Rawlins, Rock Springs, and Kemmerer Field Offices, of proposed plans to install and operate a 248-mile pipeline from Sinclair, Wyoming to Croydon, Utah. The enclosed document serves as notice of the beginning of the environmental analysis process to fulfill the requirements of the National Environmental Policy Act (NEPA). If you have concerns, issues, or alternatives you would like to see addressed, please respond with your written comments by August 20, 1999. Send written comments to:

Arlan Hiner, Team Leader
Rock Springs District Office
280 Highway 191 North
Rock Springs, Wyoming 82901

If you are interested in participating in the process, but do not have any comments to make at this time **please complete and return the enclosed card**. **Otherwise you will be deleted from the mailing list (unless you are with a government agency) and you will not receive a copy of the environmental analysis or the Decision Record.**

If you have questions regarding the project proposal or the NEPA process, please contact Arlan Hiner at 307-352-0206.

Sincerely,

Bernard Weynand

Acting Field Manager

2 Enclosures:
1-Scoping notice
2-Postcard

SCOPING NOTICE

FOR

PIONEER PIPE LINE COMPANY
SINCLAIR, WYOMING, TO CROYDON, UTAH, PIPELINE EXPANSION

Bureau of Land Management
Rock Springs, Rawlins, and Kemmerer Field Offices

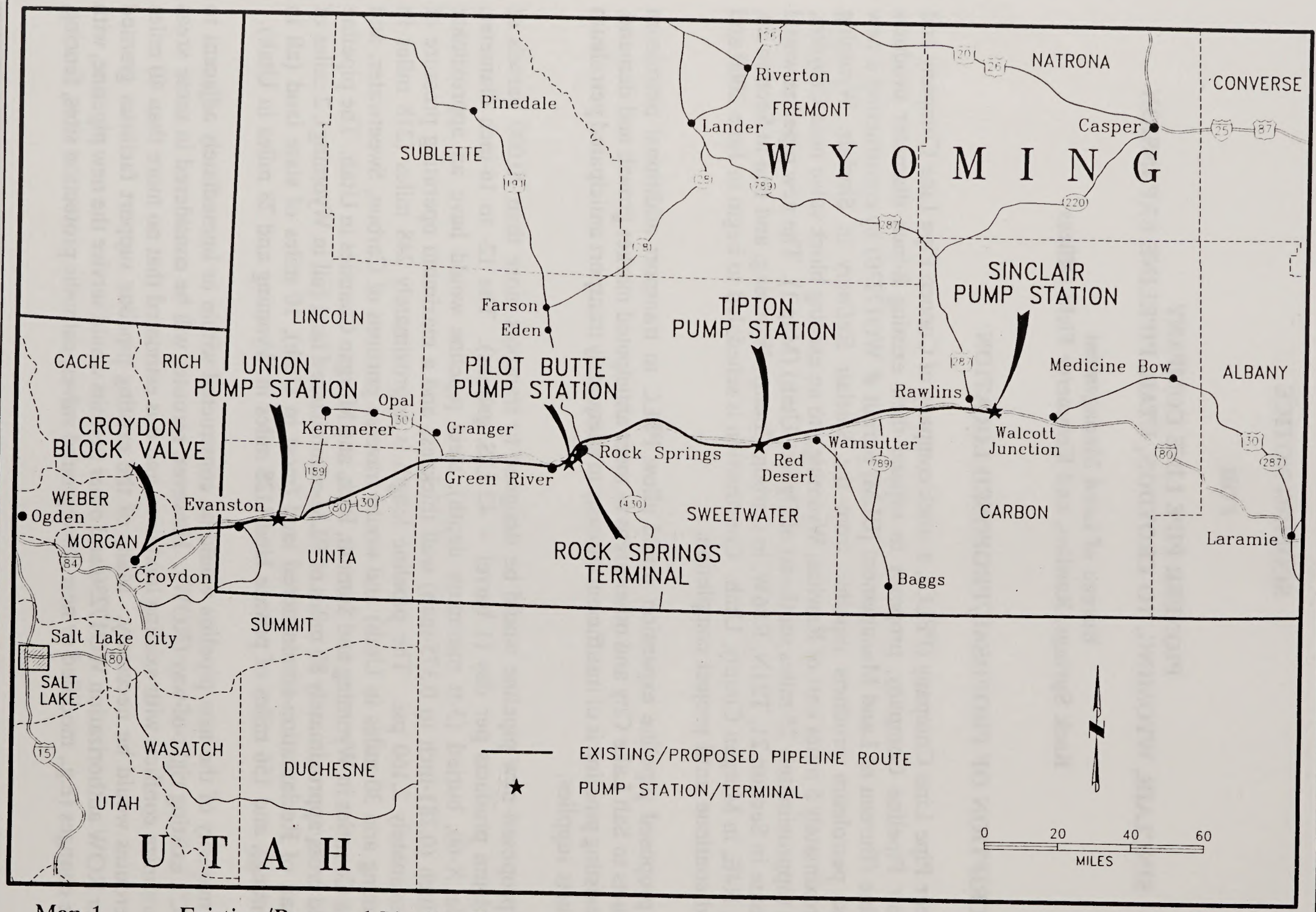
DESCRIPTION OF PROPOSAL/PROPOSED LOCATION

Pioneer Pipe Line Company (PPLC), a stock company of Conoco Pipe Line Company and Sinclair Pipeline Company, proposes to expand their existing 8-inch diameter products pipeline (Bureau of Land Management [BLM] permit # WO17230) by constructing a new buried petroleum products pipeline from the Sinclair Refinery in Sinclair, Wyoming (approximately 5 miles east of Rawlins, Wyoming), to an existing block valve near Croydon, Utah (approximately 25 miles southeast of Ogden, Utah) (Map 1). The new pipeline would originate in Section 21, T21N, R86W, in Carbon County, Wyoming, and end in Section 20, T4N, R4E, in Morgan County, Utah. Construction is scheduled to begin in June 2000 and would continue until project completion.

The proposed pipeline expansion would allow PPLC to transport additional petroleum products to Salt Lake City and other areas to meet anticipated market growth and demand. The existing pipeline is of insufficient capacity to adequately transport anticipated petroleum products supplies.

The proposed new pipeline would be designed to transport more than 70,000 barrels of petroleum products per day (1 barrel = 42 U.S. gallons). The 12- to 16-inch diameter, Grade X-60, buried (3-ft minimum depth), steel pipeline would have an approximate 0.33-inch (0.281-inch to 0.375-inch) wall thickness and a maximum operating pressure of approximately 2,160 psi. The pipeline length is approximately 248 miles (218 miles in Wyoming and 30 miles in Utah) and would traverse portions of Carbon, Sweetwater, and Uinta Counties in Wyoming and Summit, Rich, and Morgan Counties in Utah. The pipeline would cross approximately 80 miles of BLM-administered land (all in Wyoming), 2 miles of Bureau of Reclamation-administered land (most in Utah), 10 miles of state land (all in Wyoming), and 156 miles of private land (128 miles in Wyoming and 28 miles in Utah).

The majority of the new pipeline would be constructed within or immediately adjacent to PPLC's existing right-of-way (ROW). However, reroutes will be considered in some areas to minimize conflicts with existing land uses, and it is estimated that no more than 40 miles of reroutes would be necessary. Many of the existing pipeline support facilities granted under ROW authorization WO17230 and other permits would service the new pipeline, with some changes (e.g., modified or new aboveground valves, cathodic protection sites, fencing,



Map 1 Existing/Proposed Pipeline Route.

line markers) to accommodate the new pipeline. No additional pipeline compression is proposed.

A temporary 90-ft wide construction ROW and a permanent (30-year) 50-ft wide operating ROW have been requested. Use authorizations (e.g., ROW authorizations and other permits) would be processed through appropriate application processes. All construction disturbance would be contained within the 90-ft construction ROW, and with a 90-ft disturbance width along the entire 248-mile pipeline route, an estimated maximum of 2,705 acres would be disturbed. Most of this disturbance would occur in reclaimed areas along the existing PPLC ROW and adjacent ROWs. Furthermore, boring would be used at all paved road, railroad, and perennial water crossings to minimize disturbance of these areas. Maximum surface disturbance is estimated be approximately 10.9 acres per mile.

No new or reconstructed access roads have been identified for this project. Existing roads, fences, structures, or drainage facilities which are damaged during construction would be replaced or repaired to a condition equal to or better than that which existed before construction. The width and alignment of existing roads would not be altered. Roads would not be used if deep rutting (in excess of 4 inches) could occur.

Most land along the route is utilized for transportation (state, county, and local roads), utilities (pipelines, power lines, telecommunications cables), rangeland, wildlife habitat, oil/gas development, and recreation. Detailed reclamation specifications would be developed and applied for the project to minimize impacts to existing land uses.

The environmental analysis will also address and analyze a No Action Alternative.

RELATIONSHIP TO EXISTING LAND USE PLANS AND OTHER ENVIRONMENTAL DOCUMENTS

The proposed project is within areas covered by the following resource and land management plans:

- Great Divide Resource Management Plan;
- Green River Resource Management Plan;
- Kemmerer Resource Management Plan;
- Lost Creek Reservoir Resource Management Plan;
- land use plans for the states of Wyoming and Utah; and
- land use plans for Carbon, Sweetwater, and Uinta Counties, Wyoming and Summit, Rich, and Morgan Counties, Utah.

The management objectives of each of these plans provide for the development of pipelines with stipulations to protect natural resources when locating utility systems. These plans also address preferred utility corridors which would be used to the extent the information is appropriate, including as a benchmark for the No Action Alternative (i.e., current management). The proposed pipeline would be in conformance with the guidance and decisions provided in these plans.

Other environmental documents relevant to the proposed project include: the Continental Divide/Wamsutter II environmental impact statement (EIS), the Expanded Moxa Arch EIS, the Enron Communications, Inc. Wasatch Reach Fiber Optic Installation environmental assessment (EA), and the IXC Communications, Inc. EA.

The aforementioned documents provide resource and environmental data relevant to the proposed project and would be used where discussions are relevant to the Proposed Action, No Action Alternative, and other alternatives that may be developed. Additionally, these and other documents would be used, as appropriate, for cumulative impact analysis.

COMPLIANCE WITH THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

In compliance with NEPA and the Council on Environmental Quality regulations for implementing NEPA, the BLM has determined that an EA will be necessary to evaluate the proposed project. The purpose of the EA is to provide the public and government agencies with information about the potential environmental consequences of PPLC's proposed project and alternatives; to allow the public and agency officials to evaluate the significance of the potential environmental consequences of the project and alternatives; to provide the opportunity to evaluate all practicable means to avoid or minimize environmental harm from the project and alternatives; and to provide the responsible official with information upon which to make an informed decision regarding the project.

Public input is important in establishing the scope of the analysis and the level of analysis needed, and the BLM encourages public participation in the process. The level of environmental analysis will be decided following receipt of public comments to this scoping notice. The proposed project may be modified as a result of comments received during scoping or anytime during EA preparation.

LAND AND RESOURCE MANAGEMENT ISSUES AND CONCERNS

Land and resource management issues and concerns specific to pipeline installation and operation that will be addressed in the EA include the following:

- compatibility with management plans and objectives;
- stream and wetland crossings;
- cultural and historic resources;
- water quality;
- threatened, endangered, candidate, and sensitive species;
- noxious weeds;
- erosion control;
- spill containment;
- health and safety;
- reclamation/revegetation; and
- cumulative impacts.

The aforementioned list is intended as a starting point from which to identify issues and concerns specific to the proposed project. Additional potential issues, concerns, and opportunities will likely be identified during scoping and preparation of the EA. All identified issues and concerns regarding the proposed project will be analyzed during the NEPA process.

SCHEDULE FOR PUBLIC INPUT

The public is encouraged to participate throughout the environmental analysis process. To assure that all concerns are considered in the analysis, the BLM is requesting public input. Comments, questions, and identification of concerns are encouraged. Please submit comments as specified in the cover letter for this scoping notice. Comments must be received by August 20, 1999. Please send your comments to:

U.S. Bureau of Land Management
Rock Springs Field Office
Arlan Hiner, Project Leader
280 Highway 191 North
Rock Springs, WY 82901

SCOPING STATEMENT INITIAL MAILING DISTRIBUTION

FEDERAL AGENCIES

Bureau of Land Management Field and State Offices
U.S. Army Corps of Engineers
U.S. Bureau of Reclamation
U.S. Congresswoman Barbara Cubin
U.S. Fish and Wildlife Service
U.S. Senator Mike Enzi
U.S. Senator Craig Thomas

STATE AGENCIES

Governor Jim Geringer
State Engineer's Office
State Representatives
State Senators
Wyoming Board of Land Commissioners
Wyoming Department of Environmental Quality
Wyoming Public Service Commission
Wyoming Department of Transportation
Wyoming Game and Fish Department
Wyoming Geological Survey
Wyoming Oil and Gas Conservation Commission
Wyoming State Planning Coordinator
Wyoming State Historic Preservation

COUNTY GOVERNMENTS

County Commissioners
County Planning Commissions
County Road and Bridge Departments
County Engineer Offices
County Library Systems
County Zoning Offices

MUNICIPALITIES

Mayor - Evanston
City Manager - Rawlins
Mayor - Wamsutter
Mayor - Sinclair
Mayor - Lyman
Mayor - Rock Springs
Mayor - Green River
Mayor - Superior
Mayor - Granger

NATIVE AMERICAN TRIBES

Northern Arapahoe Tribal Council
Shoshone-Arapahoe Joint Tribal Council
Shoshone-Bannock Tribes
Eastern Shoshone Tribal Council
Uinta-Ouray Tribal Council
Ute Mountain Tribe
Ute Tribal Council
Uinta-Ute Cultural Rights and Protection Office

LANDOWNERS AND GRAZING PERMITTEES

This scoping notice has been sent to all landowners and grazing permittees known from the proposed route.

LOCAL MEDIA

A press release has been issued to local media.

OTHER AGENCIES, INDUSTRY REPRESENTATIVES, AND INDIVIDUALS

Audubon Society
Carbon County Stockgrowers
Field Museum of Natural History
Department of Geology
Independent Petroleum Association
of Mountain States
Montana Oil Journal
Murie Audubon Society
National Wildlife Federation
The Nature Conservancy
Petroleum Association of Wyoming
Petroleum Information
Rocky Mountain Elk Foundation
Rocky Mountain Oil & Gas Association
Sierra Club
Sweetwater Wildlife Association
Wilderness Society
Wyoming Association of Professional
Archaeologists
Wyoming Association of Professional Historians
Wyoming Farm Bureau Federation
Wyoming Mining Association
Wyoming Outdoor Council
Wyoming Public Lands Council
Wyoming Sportsman's Association
Wyoming Stockgrowers Association
Wyoming Wilderness Association
Wyoming Wildlife Federation
Wyoming Woolgrowers Association
Biodiversity Associates/Friends of the Bow
Greater Yellowstone Coalition
Trout Unlimited
Powder River Basin Resource Council

APPENDIX B:

RECLAMATION PLAN

TABLE OF CONTENTS

LIST OF TABLES

B-1.0 RECLAMATION OBJECTIVES

This reclamation plan would be used by Pioneer Pipe Line Company (PPLC) as guidance to achieve successful reclamation on federal lands along the Pioneer Pipe Line right-of-way (ROW). Alternate reclamation procedures may be implemented on private and state lands. The plan complies with Bureau of Land Management (BLM) reclamation policy (BLM 1990a) and management directives specified in the BLM Great Divide, Green River, and Kemmerer Resource Area Management Plans (RMPs) (BLM 1987, 1988, 1990b, 1992, 1996) and the Bureau of Reclamation (BOR) RMP for Lost Creek Reservoir (BOR 1996). The reclamation plan was developed based on these policies and directives, Executive Order 13112, and impacts and scoping issues identified in this environmental assessment (EA). The procedures presented in this plan are designed to allow flexibility based on specific conditions encountered along the route.

Short-term reclamation goals would be the immediate stabilization of disturbed areas and protection of adjacent undisturbed areas from unnecessary degradation. The long-term reclamation objective would be to restore all disturbed lands to conditions equal to or better than predisturbance conditions by developing/re-establishing self-sustaining native vegetation communities that meet or exceed predisturbance parameters for cover, species composition, production, and diversity (i.e., ecosystem reconstruction). Other goals include the protection of surface and ground water resources through the restoration of geologically and hydrologically stable landforms that would support future land uses (i.e., wildlife habitat, recreation, and livestock grazing) and the prevention of the spread of noxious weeds.

BLM-required reclamation objectives are:

- the isolation and/or removal of all undesirable materials (e.g., poor quality subsoils, contaminated soils, potentially hazardous materials) to protect the rehabilitated landscape from contamination;

- the recontouring and implementation of other soil conservation, surface manipulation, and water management techniques to establish stable slopes, water courses, and drainage features to minimize erosion and sedimentation;
- the revegetation of reclaimed areas to stabilize soils and establish a self-perpetuating native plant community capable of supporting post-disturbance land uses;
- the establishment of acceptable long-term visual aesthetics by mitigating visual contrasts; and
- the monitoring and management of reclamation sites by PPLC to evaluate and encourage continued reclamation success (BLM 1990a).

The reclamation process includes procedures for permanent reclamation and reclamation success monitoring. By minimizing the amount of land disturbed through predisturbance planning and initially preparing the site for construction activities (e.g., top soil stripping and stockpiling for later use during site rehabilitation, minimizing traffic on the ROW), the acreage requiring disturbance would be reduced. Permanent reclamation would be conducted concurrently with construction on all disturbed areas as soon as construction in the general area is complete. Reclamation success monitoring would involve assessing the status of reclaimed areas to ensure that these areas meet desired site stability and productivity standards.

B-2.0 AFFECTED COMMUNITIES

The proposed pipeline and its associated access roads would traverse eight dominant vegetation types/landforms including big sagebrush, greasewood, saltbush, sagebrush/juniper, mixed grass prairie, irrigated hay meadows, shrub-dominated riparian areas, badlands, and sand dunes.

Reclamation potential within the sagebrush, greasewood, shrub-dominated riparian, sagebrush/juniper, shortgrass prairie, and irrigated hay meadow communities would be good to excellent; however, in the more barren areas, including the saltbush, badlands, and sand dune areas, reclamation would be limited by shallow soils, droughtiness, salinity, and other adverse conditions. The sandy soils associated with stabilized dunes are very susceptible to wind erosion when vegetation cover is removed, and the restoration of these areas following disturbance may pose the greatest reclamation challenge along the route. Reclamation potential may also be limited by other extant conditions including: salinity, alkalinity, steep slopes, noncohesive soils, weather conditions (high winds, drought), periodic flooding, short growing seasons, and livestock and wildlife use.

Areas that would be avoided, where practical include:

- areas with high erosion potential (e.g., rugged topography, steep slopes [>25%], stabilized sand dunes, floodplains);
- areas with saturated soils; and
- wetland/riparian areas (e.g., wetlands, perennial stream channels, and open water).

For the purposes of the EA, it is estimated that approximately 2,858 acres would be disturbed during pipeline construction, and up to 69 acres of disturbance would be required for staging areas/spread breaks, pipe yards, and other ancillary facilities. Estimated maximum disturbance for the proposed action would be 2,927 acres (see Table 2.1 in the EA).

B-3.0 PIPELINE AND ROAD LOCATION AND ALIGNMENT

New disturbance would be minimized by constructing the pipeline in existing disturbances, where possible (e.g., in reclaimed areas associated with existing ROWs). When constructing and reclaiming the pipeline, existing crowned-and-ditched roads would be used for access, where practical, to minimize surface disturbance. The pipeline would follow new or existing roads or other pipelines, wherever practical. When practical, the pipeline would be built perpendicular to contour to minimize the area required for construction.

ROW clearing would be minimized to that which is necessary for construction. Vegetation would be removed from the ROW so as to leave the root systems intact, and the removed vegetation would be spread over disturbed areas to provide protection, nutrient recycling, and a natural seed source. The pipeline trench would be excavated with trenchers to minimize disturbance.

Topsoil would be salvaged and stockpiled from all proposed disturbance areas unless the BLM deems that leaving topsoil in place would better facilitate successful reclamation. Where available a minimum of 6 inches would be salvaged. If less than 6 inches of topsoil are available, topsoil may be mixed with suitable subsoil materials for stockpiling so that a minimum of 6 inches of plant growth material is available for use during reclamation. Whenever possible, topsoil would be used immediately. Topsoil stockpiled for more than 3 months would be protected from erosion by reducing piles to less than 3 ft in height and by using erosion control procedures (e.g., temporary seeding, mulching, netting).

Topsoil stockpile surface area would be maximized to reduce adverse impacts to soil microorganisms. All herbaceous vegetation stripped with topsoil would be incorporated directly into the topsoil to augment organic matter content and seed source availability; shrub materials would be removed from the trench area and stockpiled to be spread on the

ROW after seeding. Runoff would be diverted around topsoil stockpiles to minimize erosional loss.

The seed mixture for temporary reclamation of topsoil and subsoil stockpiles is shown on Table B-3.1.

Spoil stockpiles would be isolated from topsoil stockpiles and located in windrows adjacent to work areas so as not to affect existing drainages.

Construction would occur as soon as possible after clearing and grading to minimize exposure of soils to erosion. However, no construction activities would be allowed when soils are too wet to adequately support construction equipment; this action would reduce the potential for rutting. Subsoil and topsoil materials would be stored in windrows adjacent to the pipeline trench to facilitate backfilling and topsoil replacement.

Table B-3.1 Temporary Seed Mixture.[1]

Species	Seeding Rate (PLS/acre)[2]
Western wheatgrass (*Elymus smithii*)	2.0
Slender wheatgrass (*Elymus trachycaulus*)	2.0
Streambank wheatgrass (*Elymus riparius*)	2.0
Wild blue flax (*Linum lewisii*)	1.0
Winter Wheat (*Triticum aestivum*)[3]	10.0
Total	17.0

1 Alternative species may be reseeded in areas where permanent reclamation may be warranted and/or where the establishment of proposed species is repeatedly deemed unsuccessful.

2 PLS/acre = pounds of pure live seed per acre; alternative seeding rates may be applied in some areas as deemed appropriate by the BLM.

3 A sterile hybrid would be seeded as cover crop; cover crops would be used only in areas where rapid site stabilization is desired and where further reseeding efforts likely would be conducted.

Clean gravel would be used for the upper 1 ft of fill over the backfilled trench in perennial and intermittent streams. Silt fences or other sediment filtering devices also would be installed along channel banks where sedimentation is excessive and at the base of all slopes adjacent to wetland/riparian areas. Trench plugs would be employed during pipeline construction at nonflumed drainage crossings to prevent diversion of drainage channel flows into adjacent uplands. Application of riprap would be limited to areas where flow conditions prevent vegetative stabilization. Riprap placement and installation would comply with U.S Army Corps of Engineers (COE) permit requirements. The trench would be dewatered so no silt-laden water flows into drainage channels. Where vegetation is disturbed, temporary sediment barriers such as silt fences and/or staked weed-free straw bales would be installed along the topographic contour at the base of slopes adjacent to the ROW crossing. Temporary sediment barriers would remain in place until permanent revegetation measures have been judged successful by the BLM or landowner.

Road improvements would be limited to that which is necessary to access the ROW during construction, and improvements would be made in accordance with BLM road standards (BLM 1985, 1991). Surface runoff control would be incorporated into all road designs in accordance with BLM standards (BLM 1985, 1991). For roads on slopes of less than 10%, available topsoil would be stripped from the construction area and placed in windrows within the construction ROW by sidecasting with a grader.

Where the pipeline or improved access roads cross drainages, construction and installation operations would be designed to protect drainages and timed to coincide with periods of low flow (late summer, fall, winter). Crossings would be at right angles to drainage channels, where possible. Removal and disturbance of riparian/wetland vegetation would be minimized, and these areas would be reclaimed immediately. Channel banks would be restored to the original contour (especially steep- or vertical-sided drainages). All appropriate permits and public notices required by the COE would be obtained prior to construction (e.g., Section 404 permits).

A stormwater pollution prevention plan (SWPPP) would be prepared for the project to ensure that precipitation would not cause erosion or sedimentation problems. A Notice of Intent would be submitted to the Wyoming Department of Environmental Quality (WDEQ) for review, and an SWPPP prepared and implemented. Copies of the SWPPP and inspection reports would be retained on file in the PPLC Rock Springs office.

B-4.0 PERMANENT RECLAMATION

Disturbed areas would be permanently reclaimed immediately after construction, if possible, or in the first appropriate growing season following construction in a given area. Reclamation objectives include:

- stabilization of disturbed areas by providing wind and water erosion control to reduce soil loss and the chance of slope failure;
- the re-establishment of self-sustaining native vegetation communities that meet or exceed predisturbance parameters for cover, production, and diversity, and protect soil resources;
- the development of hydrologically stable landforms that meet future land uses including livestock grazing, wildlife habitat, recreation, and mineral exploration;
- the restoration of the visual quality of the area such that it approximates the visual quality of adjacent undisturbed areas in line, form, color, and texture; and
- minimization of surface runoff to prevent the degradation of downstream receiving waters through the use of runoff control techniques.

B-4.1 SURFACE PREPARATION

Surface preparation would involve backfilling, grading, and ripping of compacted soils. Additionally, in the unlikely event that it is necessary to disturb wetlands, soils would be compacted to appropriate depths and densities, if necessary, to retain wetland form and function.

B-4.1.1 Backfilling and Grading

Disturbed areas would be backfilled and graded (recontoured) to the approximate original contour after construction. Cut-and-fill slopes would be reduced to 3:1 or less. Grading would provide a surface suitable for the replacement of a uniform depth of topsoil, while promoting cohesion between subsoil and topsoil layers, reducing wind erosion, and facilitating moisture capture.

Specialized grading techniques would be applied as necessary, to return the ROW to original contours, and may include slope rounding, bench grading, stair-step grading, and/or contour furrowing. Generally these processes are accomplished either with scrapers or motor graders. Equipment selection would be determined on a site-specific basis dependent on the material to be graded, the size of the area, on-site operating conditions, and equipment availability.

No berms would be created over the pipeline trench. PPLC-provided reclamation specialists would ensure that backfilling and grading operations are conducted so as to provide a landscape suitable for successful reclamation.

B-4.1.2 Ripping

Compacted areas such as work and staging areas for the project but not needed for operations and maintenance would be ripped to a depth of approximately 2 ft to improve soil aeration, water infiltration, and root penetration. Ripping would be accomplished with a motor grader or a tractor using an appropriate attachment. Ripper shanks would be set approximately 1 to 2 ft apart.

B-4.2 SEEDBED PREPARATION

Seedbed preparation maximizes seeding efficiency and improves reclamation success. It includes topsoil replacement (with amendments, where appropriate) and discing.

B-4.2.1 Topsoil Replacement

Alternate site preparation procedures may be applied in some areas (i.e., dry alkaline sites, badlands, floodplains, wetland/riparian areas) to facilitate reclamation. In dry alkaline areas (which generally occur at relatively flat sites associated with playas or broad drainages), there is often very little topsoil, and excavations may result in drainage problems. Badland areas also have limited suitable topsoil, with topsoil found only at isolated sandy areas. In addition, topsoils in floodplain areas may not be removed, depending on the potential for shallow ground water occurrence.

In wetland/riparian areas, vegetation would be cut to ground level, leaving existing root systems intact. Cut vegetation would be removed for disposal. Grading would be limited to areas directly over pipeline trenches where the corridor crosses wetlands. At least 12 inches of topsoil would be salvaged and replaced except in areas with standing water or saturated soils. Use of construction equipment in these areas would be limited, and if standing water or saturated soils are present, wide-track or balloon-tire construction equipment may be used or normal construction equipment would be operated on equipment pads or geotextile fabric overlain with gravel fill. Equipment pads would be removed immediately following completion of construction activities. Trench spoil would be placed at least 10 ft away from drainage channel banks, and dirt, rockfill, and brush riprap would not be used to stabilize ROW.

All topsoil salvaged during construction would be uniformly redistributed on areas to be reclaimed to depths of at least 6 inches, or more if readily available, using a scraper or

dozer, as appropriate, for the material and site. Topsoil replacement would be scheduled immediately prior to seeding to maximize the potential for seedling establishment. Since precipitation along the route is low, fertilizers generally would not be applied. Fertilizers would not be utilized proximal to open waters.

B-4.2.2 Discing

After topsoil replacement, newly topsoiled areas would be disced, harrowed, or ripped to reduce soil compaction, break up soil clods, improve root and water penetration, and provide a friable but firm seedbed. PPLC's reclamation specialist would determine how discing or harrowing would be accomplished. Generally, discing would be accomplished using a tractor-drawn implement set 2-6 inches deep.

B-4.3 REVEGETATION PRACTICES

B-4.3.1 Seeding

Reclaimed areas would be seeded using selected species and seeding rates for the various soil and vegetation types and land uses present along the ROW and access roads (Tables B-4.1 through B-4.4).

Private landowners at Deseret Ranch have provided several seed mixtures that would be used to reclaim all disturbed areas on their ranch property (Tables B-4.5 through B-4.8). All seeds utilized for this project would be certified weed free. The proposed seed mixes were developed based on the following criteria: general conditions within the analysis area; species adaptations to site conditions; usefulness of the species for rapid site stabilization; species success in past revegetation efforts; seed costs and availability; compliance on public lands with Executive Order 13112 and BLM Manual Section 1745 (i.e., use of native species only); and private landowner requests. Certain introduced species have been successfully

Table B-4.1 Seed Mixture for Big Sagebrush and Other Upland Communities.[1]

Species	Seeding Rate (PLS/acre)[2]
Grasses	
Western wheatgrass (*Elymus smithii*)	6.0
Bottlebrush squirreltail (*Sitanion hystrix*)	2.0
Indian ricegrass (*Oryzopsis hymenoides*)	2.0
Native bluegrass (*Poa* spp.)	4.0
Forbs	
Western yarrow (*Achillea millefolium)*	0.25
Shrubs	
Fringed sage (*Artemisia frigida*)	0.5
Shadscale (*Artriplex confertifolia*)	1.0
Gardner's saltbush (*Atriplex gardneri*)	0.5
Total	16.25

1 This seed mix may be modified based on site-specific conditions, the identification of additional useful species for rapid site stabilization, species success in past revegetation efforts, and seed availability and cost. This mixture, with supplement plantings of juniper seedlings, would also be used to revegetate sagebrush/juniper communities.

2 PLS/acre = pounds of pure live seed per acre; alternative seeding rates may be applied in some areas as deemed appropriate by the BLM.

Table B-4.2 Seed Mixture for Alkali/Saline Lowland Communities.

Species	Seeding Rate (PLS/acre)[2]
Grasses	
Alkali sacaton (*Sporobolus airoides*)	2.0
Indian ricegrass (*Oryzopsis hymenoides*)	2.0
Shrubs	
Gardner's saltbush (*Atriplex gardneri*)	2.0
Fringed sage (*Artemisia frigida*)	0.5
Total	6.5

[1] This seed mix may be modified based on site-specific conditions, the identification of additional useful species for rapid site stabilization, species success in past revegetation efforts, and seed availability and cost. This mix is intended to be broadcast seeded, and rock mulches may be used to facilitate development of suitable sized areas of bare ground for plover nesting.

[2] PLS/acre = pounds of pure live seed per acre; alternative seeding rates may be applied in some areas as deemed appropriate by the BLM.

Table B-4.3 Seed Mixture for Shrub-Dominated Riparian Communities.[1]

Species	Seeding Rate (PLS/acre)[2]
Grasses/Grass-like	
Streambank wheatgrass (*Elymus riparius*)	1.0
Nebraska sedge (*Carex nebrascensis*)	2.0
Alkali sacaton (*Sporobolus airoides*)	1.0
Tufted hairgrass (*Deschampsia caespitosa*)	2.0
Alkali bulrush (*Scirpus maritimus*)	2.0
Forbs	
Northern sweetvetch (*Hedysarum boreale*)	1.0
Shrubs/Trees[3]	
Golden currant (*Ribes aureum*)	2.0
Silver buffaloberry (*Shepherdia argentea*)	1.0
Woods rose (*Rosa woodsii*)	1.0
Narrowleaf cottonwood (*Populus angustifolia*)	NA[4]
Sandbar willow (*Salix exigua*)	NA[4]
Total	13.0

1 This seed mix may be modified based on site-specific conditions, the identification of additional useful species for rapid site stabilization, species success in past revegetation efforts, and seed availability and cost.

2 PLS/acre = pounds of pure live seed per acre; alternative seeding rates may be applied in some areas as deemed appropriate by the BLM.

3 Planting of shrubs and trees would be dependent on site-specific riparian objectives.

4 Planted as containerized stock, sprigs, or poles.

Table B-4.4 Seed Mixture for Stabilized Sand Dune Communities.[1]

Species	Seeding Rate (PLS/acre)[2]
Grasses	
Prairie sandreed (*Calamovilfa longifolia*)	3.0
Bluebunch wheatgrass (*Elymus spicatus*)	1.0
Sand dropseed (*Sporobolus cryptandrus*)	1.0
Indian ricegrass (*Oryzopsis hymenoides*)	2.0
Needle-and-thread (*Stipa comata*)	1.0
Basin wildrye (*Elymus cinereus*)	1.0
Forbs	
Gooseberryleaf globemallow (*Sphaeralcea grossulariaefolia*)	1.0
Western yarrow (*Achillea millefolium*)	0.25
Wild blue flax (*Linum lewisii*)	0.5
Shrubs	
Spiny hopsage (*Grayia spinosa*)	1.0
Total	11.75

1 This seed mix may be modified based on site-specific conditions, the identification of additional useful species for rapid site stabilization, species success in past revegetation efforts, and seed availability and cost.

2 PLS/acre = pounds of pure live seed per acre; alternative seeding rates may be applied in some areas as deemed appropriate by the BLM.

Table B-4.5 Deseret Ranch Seed Mix, Pump Station to I-80.

Species	Seeding Rate (PLS/acre)
Oaha intermediate wheatgrass	10.0
Hycrest wheatgrass	5.0
Newhy hybrid wheatgrass	2.5
Trailhead basin wildrye	2.5
Bozoisky select wildrye	2.5
Pauite orchardgrass	1.0
Ranger alfalfa	1.5
Sanfoin	7.5
Small burnett	1.5
Yellow sweet clover	0.5
Forage kochia	2.5
4-wing saltbush	5.0
Total	42.0

Table B-4.6 Deseret Ranch Seed Mix, Shearing Hollow (End of Trail Ridge) to Pump Station.[1]

Species	Seeding Rate (PLS/acre)
Oaha intermediate wheatgrass	10.0
Hycrest wheatgrass	5.0
Newhy hybrid wheatgrass	2.5
Trailhead basin wildrye	2.5
Bozoisky select wildrye	2.5
Pauite orchardgrass	1.0
Ranger alfalfa	1.5
Sanfoin	7.5
Small burnett	1.5
Yellow sweet clover	0.5
Forage kochia	2.5
4-wing saltbush	5.0
Blue bunch wheatgrass	5.0
Lewis flax	0.5
Cicer milkvetch	2.5
Western yarrow	1.0
Sagebrush	0.5
Aster	0.5
Total	52.0

[1] Hand plant serviceberry seedlings in those areas where pipeline passes through existing stands (i.e., from the E½ Section 34 to the middle of Section 36).

Table B-4.7 Deseret Ranch Seed Mix, East End of Trail Ridge to West Point of Trail Ridge.[1]

Species	Seeding Rate (PLS/acre)
Oaha intermediate wheatgrass	10.0
Hycrest wheatgrass	5.0
Newhy hybrid wheatgrass	2.5
Trailhead basin wildrye	2.5
Bozoisky select wildrye	2.5
Pauite orchardgrass	1.0
Ranger alfalfa	1.5
Sanfoin	7.5
Small burnett	1.5
Yellow sweet clover	0.5
Forage kochia	2.5
4-wing saltbush	5.0
Blue bunch wheatgrass	5.0
Lewis flax	0.5
Cicer milkvetch	2.5
Western yarrow	1.0
Sagebrush	0.5
Aster	0.5
Whitestem rabbitbrush snowberry	0.5
Mountain brome	5.0
Golden eye	1.0
Lupine	1.0
Bitterbrush	5.0
Total	64.5

[1] Hand plant elderberry and ceanothus seedlings in deep soil sites.

Table B-4.8 Deseret Ranch Seed Mix, West Point of Trail Ridge to Boundary Fence.[1]

Species	Seeding Rate (PLS/acre)
Oaha intermediate wheatgrass	10.0
Hycrest wheatgrass	5.0
Newhy hybrid wheatgrass	2.5
Trailhead basin wildrye	2.5
Bozoisky select wildrye	2.5
Pauite orchardgrass	1.0
Ranger alfalfa	1.5
Sanfoin	7.5
Small burnett	1.5
Yellow sweet clover	0.5
Forage kochia	2.5
4-wing saltbush	5.0
Bitterbrush	10.0
Sagebrush	0.5
Blue bunch wheatgrass	5.0
Indian ricegrass	2.5
Lewis flax	0.5
Total	60.5

[1] Hand plant birchleaf mahogany seedlings.

used for reclamation in the region; these species may have utility in site stabilization and revegetation where revegetation efforts with native species repeatedly have been unsuccessful. PPLC would acquire BLM and/or BOR approval prior to the use of introduced species on public lands.

Selected seed species may be inoculated with soil microorganisms to facilitate germination and growth. Soil and watershed protection would be emphasized when reclaiming disturbed areas. Areas not exhibiting successful revegetation, as determined during monitoring (see Section B-5.0) would be reseeded and/or improved with soil amendments as deemed necessary by the BLM, BOR, or private landowner until adequate vegetative cover is established.

Seeding generally would occur as soon as possible after construction is completed, but may occur in the fall between September 16 and freeze-up or in early spring between spring thaw and April 15. Wherever possible, seed planting would occur along contour using a rangeland drill equipped with an agitator and depth bands to mix seed and ensure proper seeding depths. Seeds would be planted 0.25 to 1.50 inches deep; most seeds would be planted 0.25 inches deep. When drill seeding is not practical due to steep slopes or wet soil conditions, broadcast seeding would be employed, seeding rates would be doubled, and the area would be raked or chained to cover seeds. To facilitate seed establishment, broadcast seeding may be used for shrub and forb species, utilizing either hand or specialized broadcast seeders; fluffy seeds (e.g., winterfat) may be broadcast simultaneously with drill seeds. On Deseret Ranch, forage kochia, which grows in very inhospitable areas, may be broadcast in February or March. In addition, at sites where rapid shrub and/or tree establishment is desirable, bare-root or containerized stock may be hand-planted. Depending on site-specific circumstances, broadcast seeding may occur following mulching and crimping operations.

On the Deseret Ranch, a portion of the route (from old depot to shearing corral) follows a stream where reclamation may require the mixing of wetland and upland seed mixtures. PPLC, in consultation with Deseret Ranch personnel, will determine in the field how various mixtures should be applied in this area.

B-4.3.2 Mulching

Immediately following seeding, selected areas with a high erosion potential, especially steep slopes, would be uniformly mulched (75% minimum cover) with native grass, hay, small grain straw, wood fiber, and/or live mulch, at a rate of approximately 1.0-2.0 tons/acre. Cotton, jute, or synthetic netting also may be applied at some sites. Only certified weed-free mulches would be used, thereby minimizing the potential for noxious weed introduction. Mulch would be crimped in place, as necessary, using a serrated disc crimper or similar implement. Mulch protects the soil from wind and water erosion, raindrop impact, and surface runoff and holds seeds in place. On slopes of greater than 30% or exceeding the operating limits of the equipment, sites containing 35% surface rock content, sandy soil areas, or other unstable areas, hydromulch, biodegradable erosion control netting, rock mulch, or matting attached firmly to the soil surface would be applied, as necessary.

B-4.3.3 Fencing

Lands grazed by livestock may be temporarily fenced to protect newly seeded areas. Fencing requirements would be determined on a site-specific basis in consultation with BLM or the private landowner.

B-4.4 SEDIMENTATION AND EROSION CONTROL DEVICES

Erosion and sediment control measures and structures would be installed, as appropriate, on all reclaimed areas, depending on slope gradient and the susceptibility of disturbed soils

to wind and water erosion. Runoff control would be accomplished using standard measures for linear disturbances, including but not limited to waterbars, silt fences, energy dissipators, mulches, and cross ditches. Waterbars would be installed in accordance with BLM specifications and would discharge water into undisturbed vegetation. Waterbars generally would be 12-18 inches deep. When used, silt fences would be placed at the base of all steep fill slopes and would be installed using manufacturer's directions and BLM regulations to prevent overland flow from washing beneath or around the structures. Instream protection devices (e.g., drop structures) also may be required to prevent erosion in drainages crossed by the pipeline. Site-specific methods are presented in the POD for this project.

Additional runoff and erosion control along the ROWs would be accomplished by implementing standard cross drain, culvert, road ditch, and turnout design, as well as timely stabilization and revegetation of exposed areas. Culvert entrances and exits would be riprapped or protected with energy dissipators or other scour-reducing techniques, as needed and where appropriate. Water discharged from culverts, cross drains, road ditches, and turnouts would be directed appropriately either into undisturbed vegetation or natural drainages. Erosion and sedimentation control measures and structures, as approved by the BLM, would be installed across all cut-and-fill slopes within 100 ft of drainage channels. All runoff and erosion control structures would be inspected by PPLC periodically and maintained or replaced if necessary.

B-5.0 RECLAMATION SUCCESS MONITORING

Reclamation success would be evaluated based on the objectives specified herein, and monitoring would occur annually or at shorter intervals until reclamation is deemed successful by BLM and/or BOR. Monitoring goals would include evaluating the condition of reclamation efforts, determining the prognosis for reclamation success, and determining the need for remediation.

B-5.1 REVEGETATION SUCCESS CRITERIA

The following criteria would be used to evaluate reclamation success and to determine whether bond liability should be released.

- No contaminated materials would remain at or near the surface.
- No indications of slumping and/or significant downward movement of surface soil materials would be visible.
- The ROW would be stable and would not exhibit large rills or gullies (e.g., 3 inches wide/deep), perceptible soil movement or head cutting in drainages, and/or slope instability on or adjacent to the ROW.
- Soils would be stable and have adequate surface roughness to reduce runoff and capture rainfall and snow melt.
- Vegetative canopy cover, production, and species diversity would approximate the surrounding undisturbed areas. Vegetation would stabilize the site and support postdisturbance land uses, provide for natural plant community succession and development, and be capable of renewing itself. There would

be evidence of successful on-site establishment of species included in the seed mixture or other desirable species and/or evidence of vegetation reproduction, either spreading by rhizomatous species or seed production.

- The reclaimed landscape would have characteristics that approximate the visual quality of the adjacent area with regard to location, scale (e.g., line, form, and texture), shape, color, and orientation of major landscape features and would meet the needs of the postdisturbance land uses.

- During and following reclamation activities, PPLC would monitor and protect the reclaimed landscape to help ensure reclamation success until the liability and bond are released. Each of the previous six standards would be maintained until it can be determined that the reclamation effort was successful.

- With the exception of active work areas, all disturbed highly erosive or sensitive areas to be left bare or unreclaimed for more than 3 months would have a protective cover of suitable material in the form of mulch, matting, or vegetative growth. All other disturbed areas would have an effective protective cover within 1 year.

B-5.1.1 Interim Reclamation Criteria (Years Two - Five)

- Seedling density. The density and abundance of desirable species would be at least three to four seedlings/ft of drill row (if drilled) or transect (if broadcast) for most areas. In some sparsely vegetated areas such as badlands, sand dunes, and greasewood saline flats, this standard may be reduced to one to two seedlings/ft to be commensurate with the naturally low vegetative cover, unless significant surface erosion is anticipated.

- Percent cover. Total vegetative cover would be 30-50% of predisturbance cover.

- Species diversity. At least 20% of the species contained in the seed mix and/or present on adjacent areas would be present, and no single species would account for more than 50% of the total vegetative cover unless its dominance is higher than 50% on adjacent undisturbed areas.

- Undesirable species. Weeds or other undesirable species would comprise no more than 10% of the total vegetative cover. All noxious weeds would be controlled.

B-5.1.2 Final Reclamation Criteria (Years Three - Ten)

- Percent cover. Total vegetative cover would be 50-80% of predisturbance cover.

- Dominant species. Ninety percent of the revegetation would consist of species included in the seed mix and/or occurring in the surrounding natural vegetation or as would be deemed desirable by the BLM.

- Erosion condition/soil surface factor. Erosion condition of reclaimed areas would be equal to or in better condition than that of adjacent areas.

Reclamation would be visually monitored for soil stability, particularly near wetland/riparian areas, open waters, or ephemeral stream channels. Mulch effectiveness and other erosion control devices would be assessed, and qualitative evaluations of vegetation establishment and success would be made. Percent vegetative cover would be measured using standard methods such as a point intercept transect. If reclamation monitoring reveals that soil

stability, weed abundance, or vegetation cover do not meet required standards, additional treatments would be promptly undertaken by PPLC in cooperation with the BLM or other surface owner. Continued efforts would be required until satisfactory cover and productivity are achieved and the site is adequately stabilized. Additional treatments could include, but are not limited to, installation of additional erosion control devices, fencing, herbicide or fertilizer application, reseeding, or remulching.

B-5.2 MONITORING RESPONSIBILITY

Reclamation monitoring would be the responsibility of the BLM, other surface owner, and PPLC. Monitoring would follow the guidelines presented in Addendum B-1 (FORM I) of this appendix. Monitoring would be conducted by a qualified PPLC representative (in coordination with the BLM or other surface owner) following initial rehabilitation work. Monitoring areas would be re-examined at the end of the first growing season. Results would be documented in a report (see Addendum B-2, FORM II) to the BLM or other surface owner. Problem areas identified during monitoring would receive follow-up rehabilitation/erosion control measures.

During the second growing season, the BLM would revisit selected portions of the ROW. Original methodologies or other methods used by the BLM would be repeated and the status of reclamation efforts would be assessed. Monitoring results would be available in the RSFO to show progress, and follow-up with PPLC would occur if additional stabilization/reclamation needs are required. BLM would determine the need for long-term monitoring on specific problem areas.

Follow-up monitoring would be conducted at least annually by the BLM until reclamation goals are attained. It is expected that most of the ROW would be adequately restored within approximately 5 years, and therefore monitoring activities usually would be discontinued after 5 years. This would allow personnel to concentrate on evaluation of

long-term problem sites. PPLC would be advised of reclamation status, and annual reporting would continue, as would direction for additional remedial reclamation efforts, if necessary.

B-5.3 MONITORING FORMS

The forms presented in Addenda B-1 and B-2 serve as guidelines for the collection of site-specific information, identification of revegetation success standards, documentation of treatments, and a record for evaluation.

Background data would be collected following initial reclamation work. A report containing this information would be prepared prior to annual reviews. Data collection would be accomplished using point sampling transects on adjacent undisturbed areas of the same vegetation type.

The Revegetation and Erosion Monitoring Evaluation form (Addendum B-2, FORM II) would be used for annual monitoring conducted by PPLC during the first growing season. The BLM would continue to monitor the ROW for 3 years, and if in that time any reclamation is deemed unsuccessful, reseeding of poorly revegetated areas would be completed. Data collection would take place during the seed-ripe stage of plant development, and evaluation reports containing this information would be prepared for annual reviews.

B-6.0 REFERENCES

Bureau of Land Management. 1985. Manual 9113: Roads. Engineering, Rel. 9-247. U.S. Department of the Interior, Bureau of Land Management.

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ADDENDUM B-1:

FORM I
REVEGETATION AND EROSION
MONITORING/BACKGROUND DATA

FORM I

Page 1 of 3

Revegetation and Erosion Monitoring/Background Data

A. Revegetation Project Name: _____

Company: _____ Telephone No: (____) _____

Data Collected By: _____ (Company/Agency Representative)

Monitoring Site Number: _____

B. Legal Location

Twp. _____
Rng. _____
Sec. _____
Sub. _____

C. Slope % _____

Aspect _____
Elevation ____
(include construction map with transect site marked)

D. Key Species in Reference Vegetation

_____-_____%
_____-_____%
_____-_____%
_____-_____%
_____-_____%
_____-_____%

E. Soil:

	Texture	- Rock Content		Texture	- Rock Content
0-6"	_____	- _____%	12-18"	_____	- _____%
6-12"	_____	- _____%	18-24"	_____	- _____%

F. Disturbance Description: Date _____

_____

_____

G. Revegetation Objective(s): _____

_____

_____

H. Criteria for Determining Success: _____

_____

_____

I. Reclamation Treatment Record - Data/season applied: _____

1. Topsoiling: _____

_____

2. Erosion Control (type and method of installation): _____

_____

_____

Page 2 of 3

FORM I, Continued

3. Soil Amendments (type, amount, and method of application): _____

_____

_____

4. Seed Mix (lbs pure live seed/acre by species): _____

_____

_____

5. Mulch (type and method of application): _____

_____

_____

6. Mechanical treatments (type and rationale): _____

_____

_____

7. Remarks: _____

_____

_____

J. Attach a 35 mm photograph of the monitoring transect and reference plot (if applicable) with dates. Photograph sites should be clearly marked on a reference map.

Items requiring further explanation:

B. A 1:24,000 topographic map can be used to attain this information. This report would include the monitoring site transect location on the detailed construction drawings contained in the Surface Use Plans or ERRPs.

D. Reference vegetation serves as a standard of comparison to assess potential species for revegetation and success. The nature of comparisons with reference vegetation would depend on revegetation objectives. A reference plot location would be established on the ground and marked on Surface Use Plan and/or ERRP maps. A 35 mm photo of the plot would accompany the form.

G. Soil stability, productivity restoration, and wildlife habitat enhancement are general examples of objectives. More specific objectives may be provided.

H. Examples of Criteria for Success could include 60% ground cover for erosion control, soil surface factors of less than 45 (see Addendum B-2), specific plant species density and/or diversity requirements for wildlife habitat, and specific production for livestock grazing. Criteria must be defined and measurable.

I. The reclamation treatment record would document what was actually done on the ground, not necessarily what is outlined in Surface Use Plans and/or ERRPs. Short explanations of when topsoiling was completed, the erosion control methods used, fertilizer types and rates, seed mixes and seeding rates, mulching methods, etc., would be described in this section. Any additional erosion control measures should be included under remarks.

J. A photo record of the transect line and any additional erosion control measures would be included. Each transect would have one photo showing the general view along the transect and one photo showing transect detail of vegetation/soil surface. Date, transect, and direction of view would be labeled on each photo. Permanent photomonitoring points also would be established at appropriate vantage locations of drill sites, pipeline and access road ROWs, and ancillary facility sites. Each photomonitoring point would be permanently marked with rebar and identified on a topographic map of the area. The location of each point would be described in detail to assist in relocation. Photos would be taken at each photomonitoring point prior to initiation of construction. Photos, framing the same scene as previously taken, would be taken at each formal site visit until reclamation standards have been met.

ADDENDUM B-2:

FORM II
REVEGETATION AND EROSION
MONITORING EVALUATION

FORM II

Page 1 of 4

Revegetation and Erosion Monitoring Evaluation

A. Revegetation Project Name: _____

Company: _____ Telephone No: (____) _____

Data Collected By: _____ (Company/Agency Representative)

Monitoring Site Number: _____

B. Revegetation Evaluation:

1. Percent Cover	2. Dominant Species	Relative Percent
_____ % Plant	_____	- _____
_____ % Litter	_____	- _____
_____ % Rock	_____	- _____
_____ % Bare Ground	_____	- _____
_____ % Water	_____	- _____
100 % Total	_____	- _____
	_____	- _____
	_____	- _____
	_____	- _____

3. Seedling Density & Abundance

_____: Average plants per linear ft (drill row/transect)

_____: Rating

4. Grazing Impact (Utilization)

_____: Utilization

_____: Rating

5. Weed Investigation: _____

_____

_____

6. Erosion Evaluation (see the attached table): _____

_____

_____

7. Other Comments: _____

_____

_____

_____

_____

_____

EROSION EVALUATION: Evaluate conditions 50 ft on either side of transect line. Assign a numerical rating for each category. (see page 4 of 4 for explanation)

SURFACE LITTER	No movement, or if present, less than 2% of the litter has been translocated and redeposited against obstacles. **0 or 3**	Between 2 and 10% of the litter has been translocated and redeposited against obstacles. **6**	Between 10 and 25% of the litter has been translocated and redeposited against obstacles. **8**	Between 25 and 50% of the litter has been translocated and redeposited against obstacles. **11**	More than 50% of the litter has been translocated and redeposited against obstacles. **14**
SURFACE ROCK MOVEMENT	No movement, or if present, less than 2% of the surface rock fragments have been translocated and/or redeposited against obstacles and show an even distribution on the landscape. **0 or 2**	Between 2 and 10% of the surface rock fragments have been translocated/redeposited against obstacles and have begun to show localized concentration. **5**	Between 10 and 25% of the surface rock fragments have been translocated, redeposited against obstacles, and show localized concentration. **8**	Between 25 and 50% of the surface rock fragments have been translocated, redeposited against obstacles, and show localized concentration. **11**	More than 50% of the surface rock fragments have been translocated, redeposited against obstacles, and show extreme localized concentration. **14**
PEDESTALLING	Pedestals are mostly less than 0.1 inch (2.5 mm) high and/or less frequent than 2 pedestals per 100 ft^2. **0 or 3**	Pedestals are mostly between 0.1 and 0.3 inch (2.5 to 8.0 mm) high and/or have a frequency of 2 to 5 pedestals per 100 ft^2. **6**	Pedestals are mostly between 0.3 and 0.6 inch (8.0 to 15.0 mm) high and/or have a frequency of 5 to 7 pedestals per 100 ft^2. **9**	Pedestals are mostly between 0.6 and 1.0 inch (15.0 to 25.0 mm) high and/or have a frequency of 1 to 10 pedestals per 100 ft^2. **12**	Pedestals are mostly over 1.0 inch (25.0 mm) high and/or have a frequency of over 10 pedestals per 100 ft^2. **14**
FLOW PATTERNS	If present, less than 2% of the surface areas shows evidence of recent translocation and deposition of soil and litter. **0 or 3**	Between 2 and 10% of the surface area shows evidence of recent translocation and deposition of soil and litter. **6**	Between 10 and 25% percent of the surface area shows evidence of recent translocation and deposition of soil and litter. **9**	Between 25 and 50% of the surface area shows evidence of recent translocation and deposition of soil and litter. **12**	Over 50% of the surface area shows evidence of recent translocation and deposition of soil and litter. **15**
RILLS	Rills, if present, are mostly less than 0.5 inch (13.0 mm) deep, and generally at infrequent intervals over 10 ft. **0 or 3**	Rills are mostly 0.5 to 1.0 inch (13.0 to 25.0 mm) deep and generally at infrequent intervals over 10 ft. **6**	Rills are mostly 1.0 to 1.5 inches (25.0 to 38.0 mm) deep and generally at 10-ft intervals. **9**	Rills are mostly 1.5 to 3.0 inches (38.0 to 76.0 mm) deep and at intervals of 5 to 10 ft. **12**	Rills are mostly 3.0 to 6.0 inches (76.0 to 152.0 mm) deep and at intervals of less than 5 ft. **14**
GULLIES	No gullies, or if present, less than 2% of the channel bed and walls show active erosion (are not vegetated); gullies make up less than 2% of the total area. **0 or 3**	Between 2 and 5% of the channel bed and walls show active erosion (are not vegetated), or gullies make up between 2 and 5% of the total area. **6**	Between 5 and 10% of the channel bed and walls shows active erosion (are not vegetated), or gullies make up between 5 and 10% of the total area. **9**	Between 10 and 50% of the channel bed and walls show active erosion (are not vegetated), or gullies make up between 10 and 50% of the total area. **12**	Over 50% of the channel bed and walls show active erosion (are not vegetated) along their length, or gullies make up over 50% of the total area. **15**
SOIL MOVEMENT	Depth of recent deposits around obstacles or in microterraces, and/or depth of truncated areas is between 0 and 0.1 inch (9.0 to 2.5 mm) **0 or 3**	Depth or recent deposits around obstacles or in microterraces, and/or depth of truncated areas is between 0.1 and 0.2 inch (2.5 to 5.0 mm). **5**	Depth of recent deposits around obstacles or in microterraces, and/or depth of truncated areas is between 0.2 and 0.4 inch (5.0 to 10.0 mm). **8**	Depth of recent deposits around obstacles or in microterraces, and/or depth of truncated areas is between 0.4 and 0.8 inch (10.0 to 20.0 cm). **11**	Depth of recent deposits around obstacles or in microterraces, and/or depth of truncated areas is over 0.8 inch (20.0 cm). **14**

Erosion Condition Class: _____ Soil Surface Factor: _____

Items requiring further explanation:

B.1 Percent cover is determined by examination of points along a 100-ft transect. Documentation consists of recording the total number of hits for plant, litter, rock, and bare ground. Each point noted corresponds to each 1-ft increment along the 100-ft transect. Data summarized from this transect would be recorded here.

B.2 Dominant plant species along the transect are listed and their relative percent cover determined based on the number of hits for each species.

B.3 Seedling Density and Relative Abundance is the total number of plants occurring within plots at the 20, 40, 60, and 80-ft mark along the transect. At these points, perennial seedlings per linear ft or drill row (or in the case of broadcast seedling, per linear ft of transect) are recorded and averaged. Ratings are based on the following evaluation system:

PLANTS/LINEAR FT	RATING
8+	Excellent
5-7	Good
3-4	Fair
0-2	Poor

B.4 The grazing impact is assessed as an ocular estimate of the percent utilization along the transect (at 10-ft intervals). Utilization is based on the removal of seeded species (current year's growth). The amount of utilization is expressed as the percent of aboveground biomass grazed. The following describes the rating for various utilization ranges:

PERCENT UTILIZATION RANGE	RATING	GENERAL DESCRIPTION
1-40	Light	The revegetation may be topped, skimmed, or grazed in patches, 50 to 80% of the number of current seed stalks remain intact. Most young plants are undamaged. There is little or no use of nonpalatable species.
41-60	Moderate	The revegetation appears entirely covered (grazed) as uniformly as natural features and facilities will allow. Fifteen to 25% of the number of current seed stalks remain intact. No more than 10% of the nonpalatable species are utilized.
61-100	Heavy	The revegetation has the appearance of complete and repeated grazing use. Less than 10% of the current seed stalks are remaining. The remaining stubble of preferred grasses may be grazed to the soil surface.

Page 4 of 4

C. The Erosion Condition Class/Soil Surface Factor method numerically rates soil movement, surface litter, surface rock, pedestalling, flow patterns, and rill/gully formation and translates these physical factors into an evaluation of the vegetation and erosion stability of an area. Results are an expression of current erosion activity and can be used to reflect revegetation success as a function of site stability.

Identify the numerical factor that most nearly describes the current erosion condition by circling the factors. Evaluate each erosional feature if water erosion is the most prevalent type of erosion. Omit surface rock if not present. If wind erosion is mostly prevalent, do not include rill and gully features in the computation. The following identifies the Erosion Condition Class based on the Soil Surface Factor:

EROSION CONDITION CLASS	**SOIL SURFACE FACTOR (Range)**
Stable	1-20
Slight	21-40
Moderate	41-60
Critical	61-80
Severe	81-100