FRONT RANGE PIPELINE LLC PROJECT
Draft Environmental Assessment

April 2013

Project Applicant:

Front Range Pipeline LLC

Lead Federal Agency:

U.S. Forest Service
Comanche National Grassland
Springfield, Colorado

Prepared by:

Whitenton Group
San Marcos, Texas

BIO-WEST, Inc.
Logan, Utah

TABLE OF CONTENTS

1.0 PURPOSE AND NEED 1
1.1 Introduction 1
1.1.1 Scoping and Identification of Issues 2

2.0 PROJECT DESCRIPTION 3
2.1 Project Overview 3
2.2 Description of the Proposed Action 3
2.3 Description of the Preferred Pipeline Route 3
2.4 Pipeline Specifications 7
2.5 Pipeline Construction Techniques 7
2.5.1 Special Construction Issues 11
2.6 Operation and Maintenance 16
2.6.1 Maintenance Facilities/Activities 16
2.6.2 Cathodic Protection System 17
2.6.3 Depth of Cover 17
2.6.4 Hydrostatic Testing 17
2.6.5 One-Call System 17
2.6.6 Public Education and Damage Prevention Programs 18
2.6.7 Radiographic Inspection 18
2.6.8 Right-of Way Marking 18
2.6.9 Right-of-Way Monitoring. 18
2.6.10 Smart Pigs 18
2.6.11 Supervisory Control and Data Acquisition 18
2.6.12 Valve Spacing 19
2.6.13 Access 19
2.6.14 Damage Prevention 19
2.6.15 Product Spill and Emergency Plan 19
2.6.16 Abandonment 20
2.6.17 Alternatives 20
2.6.18 Alternatives Considered but Dropped from Further Analysis 20
2.6.19 No-Action Alternative 21

3.0 AFFECTED ENVIRONMENT 22
3.1 Water Resources 22
3.1.1 Streams 23
3.1.2 Wetlands 23
3.1.3 Ponds 23
3.1.4 Groundwater 24
3.2 Climate and Air Quality 24
3.2.1 Air Quality 25
3.3 Noise 26
3.4 Land Use 27
3.5 Wildlife Resources 27
3.6 Aquatic Resources 28
3.7 Vegetation 28
3.7.1 Grassland Vegetation Types 28
3.7.2 Pinyon-Juniper Vegetation Type 29
3.7.3 Wooded Riparian Vegetation Type 29
3.7.4 Agricultural Lands 29
3.8 Grazing 29
3.9 Threatened, Endangered, and Sensitive Species 30
3.9.1 Habitat Description 30
3.9.2 Species Considered and Evaluated 30
3.10 Recreation 35
3.11 Visual Resources 35
3.12 Socioeconomics 35
3.13 Cultural Resources 36
3.13.1 Early Prehistoric Period 36
3.13.2 Late Prehistoric Period 37
3.13.3 Historic Period 38
3.13.4 Survey Methodology 40
3.13.5 Site Probability 41
3.14 Paleontological Resources 42
3.15 Geology, Topography, and Soils 42
3.15.1 Economic Minerals 42
3.15.2 Geologic Hazards 43

Landslides 43
Seismicity 43
3.16 Soils 43
3.16.1 Otero-Potter Association 43
3.16.2 Travessilla-Kim Association 43
3.16.3 Vona-Manter-Dalhart Association 44
3.16.4 Baca-Wiley Association 44
3.17 Environmental Justice 44

4.0 ENVIRONMENTAL CONSEQUENCES AND MITIGATION 45
4.1 Water Resources 45
4.1.1 Streams 45
4.1.2 Wetlands 46
4.1.3 Ponds 46
4.1.4 Groundwater 46
4.2 Climate and Air Quality 46
4.2.1 Climate 46
4.2.2 Air Quality 46
4.3 Noise 47
4.4 Land Use 47
4.5 Wildlife Resources 47
4.6 Aquatic Resources 48
4.7 Vegetation 48
4.8 Grazing 49
4.9 Threatened, Endangered, and Sensitive Species 49
4.9.1 Federally Listed Proposed, Threatened, and Endangered Species 50
Lesser Prairie-chicken (*Tympanuchus pallidicinctus*) 50
4.9.2 U.S. Forest Service Region 2 Forest Service Sensitive Species 52
Black-tailed Prairie Dog (*Cynomys ludovicianus*) 52
Swift Fox (*Vulpes velox*) 54
Burrowing Owl (*Athene cunicularia*) 55
Cassin's Sparrow (*Aimophila cassinii*) 55
Grasshopper Sparrow (*Ammodramus savannarum*) 56
Ferruginous Hawk (*Buteo regalis*) 56

Mountain Plover (*Charadrius montanus*) 56
Northern Harrier (*Circus cyaneus*) 56
Loggerhead Shrike (*Lanius ludovicianus*) 57
Long-billed Curlew (*Numenius americanus*) 57
Brewer's Sparrow (*Spizella breweri*) 57
American Peregrine Falcon (*Falco peregrinus anatum*) 58
Bald Eagle (*Haliaeetus leucocephalus*) 58
Desert Massasauga (*Sistrurus catenatus*) 58
Wheel (Dwarf) Milkweed (*Asclepias uncialis*) 59
Sandhill Goosefoot (*Chenopodium cycloides*) 59
4.10 Recreation 60
4.11 Visual Resources 60
4.12 Socioeconomics 60
4.13 Cultural Resources 61
4.13.1 Definition of Impact 61
4.13.2 Design Criteria to Mitigate Effects to Cultural Resources 62
4.13.3 Cultural Resources Conclusion 63
4.14 Geology, Topography, and Soils 63
4.14.1 Geology 63
4.14.2 Soils 63
4.15 Environmental Justice 64
4.16 Cumulative Effects Analysis 64
4.16.1 Overall Cumulative Effects 65
4.17 Cumulative Impacts to Resources 65
4.17.1 Water Flows and Quality 65
4.17.2 Climate and Air Quality 67
4.17.3 Noise 67
4.17.4 Land Use 67
4.17.5 Wildlife 67
4.17.6 Aquatic 67
4.17.7 Vegetation 67
4.17.8 Grazing 68
4.17.9 Threatened and Endangered Species 68
4.17.10 Recreation 68

4.17.11 Visual 69
4.17.12 Socioeconomic 69
4.17.13 Cultural 69
4.17.14 Paleontological 72
4.17.15 Geology, Topography, and Soils 72
4.17.16 Environmental Justice 72

5.0 COMPARISON OF THE PROPOSED ACTION WITH THE ALTERNATIVES 73

6.0 SUMMARY AND RECOMMENDATIONS 76

7.0 PERSONS AND ORGANIZATIONS CONTACTED 77

8.0 LIST OF PREPARERS 79
8.1 U.S. Forest Service – Pike & San Isabel National Forests, Cimarron & Comanche National Grasslands 79
8.2 Consultants 79

9.0 REFERENCES CITED 80

APPENDIX A: PUBLIC SCOPING INFORMATION

APPENDIX B: REVEGETATION PLAN

APPENDIX C: CONSULTATION LETTERS

List of Tables

Table 1. Potential Jurisdictional Waterbodies Identified in the Survey Corridor within U.S. Forest Service Lands on the Comanche National Grassland. 23

Table 2. Springfield, Colorado, Temperature and Precipitation Data. 25

Table 3. National Ambient Air Quality Standards. 26

Table 4. U.S. Fish and Wildlife Service Federally Listed Threatened and Endangered Species and U.S. Forest Service Region 2 Regional Forester's Sensitive Species Identified on the Comanche National Grassland (CNG) in Baca County, Colorado. 31

Table 5. Acreage of Black-tailed Prairie Dog Colonies within the Comanche National Grassland from 1999 to 2011. 53

Table 6. Cumulative Summary of Cultural Resources in the Front Range Pipeline LLC Project Area. 70

Table 7. National Register of Historic Places (NRHP) Eligibility Status of Identified Cultural Resources in the Overall Project Area..... 71

Table 8. Comparison of the Implementing the Front Range Pipeline LLC (Proposed Action) with the No-Action Alternative in the Comanche National Grassland. 73

Table 9. Summary of the Environmental Consequences from and Mitigation Measures for Implementation of the Front Range Pipeline LLC Project (Proposed Action) in the Comanche National Grassland (CNG)..... 76

List of Figures

Figure 1. Front Range Pipeline LLC Project General Location Map. 4

Figure 2a. Front Range Pipeline LLC Project Location Map. 5

Figure 2b. Front Range Pipeline LLC Project Location Map on Aerial Background..... 6

Figure 3. Typical Pipeline Construction Approach..... 9

Figure 4. General Approach for Boring under Linear Features. 12

Figure 5. Right-of-Way Configuration..... 13

Figure 6a. Front Range Pipeline LLC Mainline Valve Map..... 14

Figure 6b. Front Range Pipeline LLC Mainline Valve Map on Aerial Background. 15

Figure 7. Pond near Milepost 144 of the Proposed Front Range Pipeline LLC Project Route..... 24

Figure 8. Front Range Pipeline LLC Project Overview Map..... 66

1.0 PURPOSE AND NEED

1.1 Introduction

The purpose of this Environmental Assessment (EA) is to disclose the effects of alternative decisions that the U.S. Department of Agriculture–Forest Service (Forest Service) may make to issue a special use permit in response to an application submitted by Front Range Pipeline LLC (FRPL) to construct and operate a 16-inch diameter natural gas liquids (NGL) pipeline. The proposed pipeline would traverse 11.7 miles of National Forest System (NFS) land designated as the Comanche National Grassland (CNG) and administered by the Forest Service in southeastern Colorado.

An EA is not a decision document. It is a document that discloses the environmental consequences that would result from implementation of the proposed action, as well as other alternatives considered. The decision will be documented in a Decision Notice signed by the responsible official. If in the process of analyzing the environmental consequences that would result from implementation of the Proposed Action, it is noted that no significant environmental impact will occur, then the lead agency, the Forest Service, will issue a Finding of No Significant Impact. If in this analytic process it is determined that significant environmental impacts would occur that cannot be mitigated, then the lead agency will issue a Notice of Intent to prepare an Environmental Impact Statement (EIS). This process is in accordance with the National Environmental Policy Act (NEPA), Forest Service Manual 1950 (USFS 2008), and Forest Service Handbook 1909.15 (USFS 2013a). Best management practices (BMP) as outlined in the Forest Service manuals (e.g., USFS 2012) for each resource, and as outlined in the special use permit application.

The Forest Service decision relates only to lands administered by the Forest Service and will be documented in the Decision Notice. Decisions by other jurisdictions to issue or not issue approvals related to the Proposed Action may be aided by the disclosure of impacts available in this document.

The FRPL Project EA directly addresses an approximately 33.3-mile segment of a larger, 430-mile, 16-inch pipeline that would originate near Fort Lupton, Colorado, and terminate near Skellytown, Texas. The FRPL Project would facilitate the delivery of 230,000 barrels per day of NGL from the Denver-Julesburg Basin to markets in the Gulf Coast. The 16-inch diameter NGL pipeline would traverse 11.7 miles of Federal land designated as the Comanche National Grassland, which is administered by the Forest Service. The proposed FRPL Project would parallel three existing pipelines within an existing utility corridor and traverse portions of the following NFS lands: Section 18, T.35S. R.46W.; Section 2, T.35S. R.47W.; Sections 18, 21, 27, 35, T.34S. R.47W.; Section 31, T.33S. R.47W.; Sections 9, 15, 22, 23, 26, 25, T.33S. R.48W.; Sections 7, 17, 18, 20, T.31S. R.49W.; and Section 12, T.31S. R.50W., Baca County, Colorado, 6th P.M.

1.1.1 Scoping and Identification of Issues

Public scoping for the FRPL Project was initiated on December 20, 2012. Notices were published in local newspapers that included a description of the Project and instruction on how to submit comments. During the 30-day comment period extending from December 20, 2012, through January 20, 2013, no comments were submitted by the public. Publication notices are included in Appendix A.

On February 6, 2013, the Forest Service conducted an internal scoping meeting at Forest Service offices in La Junta, Colorado. The internal scoping meeting included staff officers and resource specialists familiar with the resources within the CNG and the Project Area. Specific issues raised during this internal scoping meeting emphasized the need to address potential impacts to cultural, wildlife, and vegetative resources within or near the Project Area. These specific issues are addressed in Chapter 3, Affected Environment, and the potential impacts are addressed in Chapter 4, Environmental Consequences and Mitigation. The internal scoping meeting attendance roster and minutes are included in Appendix A.

2.0 PROJECT DESCRIPTION

2.1 Project Overview

The Front Range Pipeline LLC (FRPL) has submitted a special use application to the U.S. Department of Agriculture–Forest Service (Forest Service) requesting authorization to construct and operate a 16-inch diameter natural gas liquids (NGL) pipeline that would traverse 11.7 miles of Federal land designated as the Comanche National Grassland (CNG) and administered by the Forest Service. The proposed FRPL Project would parallel three existing pipelines within an existing utility corridor and traverse portions of the following National Forest System (NFS): Section 18, T.35S. R.46W.; Section 2, T.35S. R.47W.; Sections 18, 21, 27, 35, T.34S. R.47W.; Section 31, T.33S. R.47W.; Sections 9, 15, 22, 23, 26, 25, T.33S. R.48W.; Sections 7, 17, 18, 20, T.31S. R.49W.; and Section 12, T.31S. R.50W., Baca County, Colorado, 6th P.M.

The FRPL would originate near Fort Lupton, Colorado, and terminate near Skellytown, Texas. The FRPL would be approximately 430 miles in length and ultimately would facilitate the delivery of 230,000 barrels per day of NGL from the Denver-Julesburg Basin to markets in the Gulf Coast. The Forest Service is the lead agency for the FRPL Project. Figure 1 shows the general location of the CNG. Figures 2a and 2b show the location of the FRPL as it would cross the CNG.

The Forest Service seeks to analyze the proposed FRPL Project beginning where the pipeline intersects NFS at the Oklahoma-Colorado State Line and ending where the pipeline leaves NFS lands west of Pritchett, Colorado (Project Area). The Project Area would encompass a total length of 33.3 miles, 21.6 miles of which is private surface and 11.7 miles of which is Forest Service surface. This analysis will summarize and disclose the cumulative effects of the Proposed Action in relation to the Project Area's cultural, wildlife (including threatened, endangered, and sensitive) species, and water/wetland resources.

2.2 Description of the Proposed Action

The FRPL proposes to install the 16-inch diameter pipeline parallel to existing rights-of-way (ROW) for the entire length of the pipeline through the CNG. The pipeline would be installed within an 80-foot-wide construction ROW, which includes a 30-foot permanent easement and an additional 50-foot temporary workspace. Upon completion of construction, the temporary workspace would be returned to preconstruction contours and allowed to revert to its original land use. Outside of the CNG, the temporary workspace would be 60-foot wide, and the permanent easement would be 30-foot wide, for a total ROW of 90-foot wide.

2.3 Description of the Preferred Pipeline Route

The Proposed Action, as it crosses the CNG, would be wholly contained within the assigned utility corridor that was established by Amendment 10 to the Forest Plan (USFS 1987). This utility corridor already includes three existing pipelines (Figures 2a and 2b).

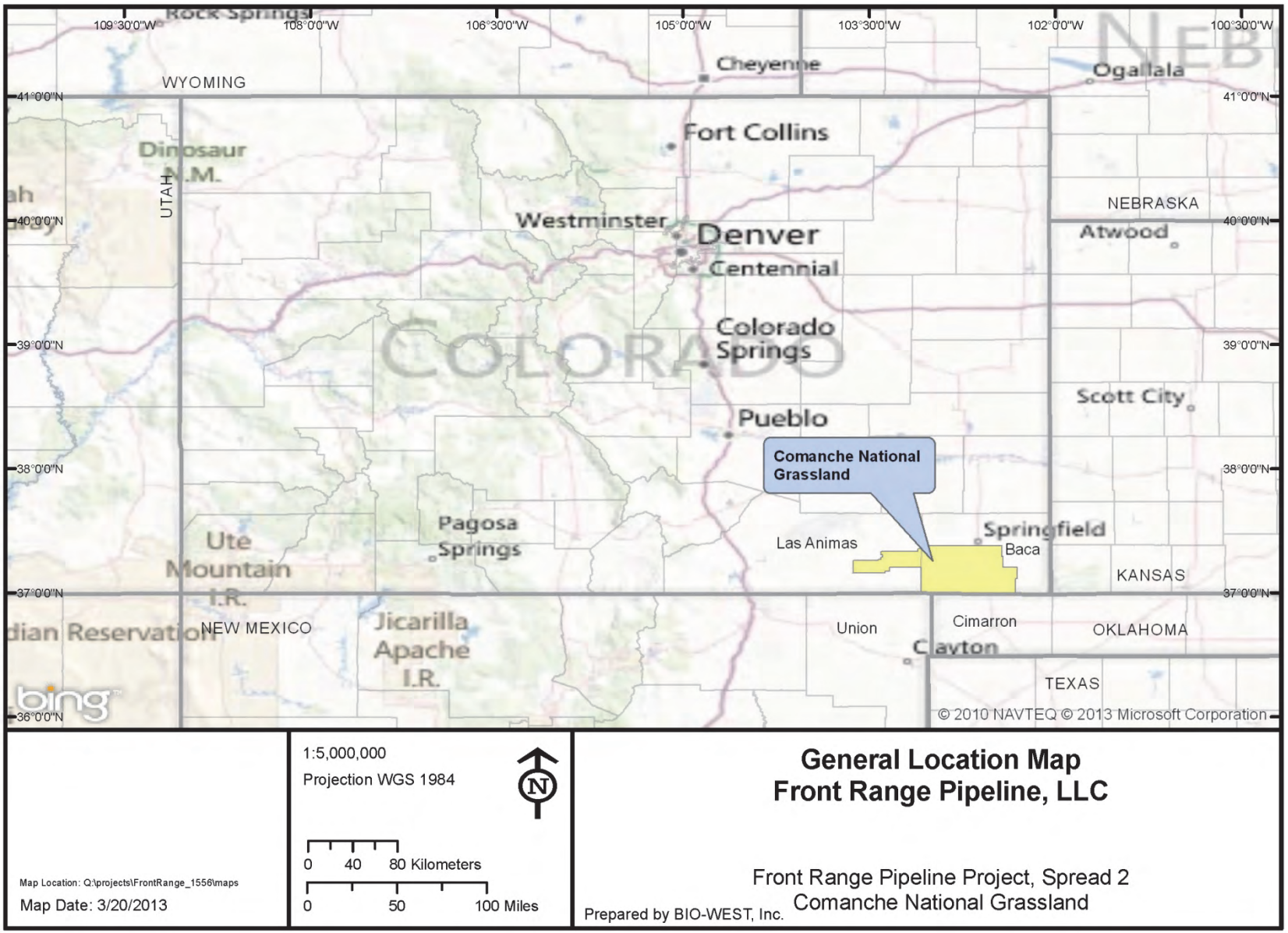


Figure 1. Front Range Pipeline LLC Project General Location Map.

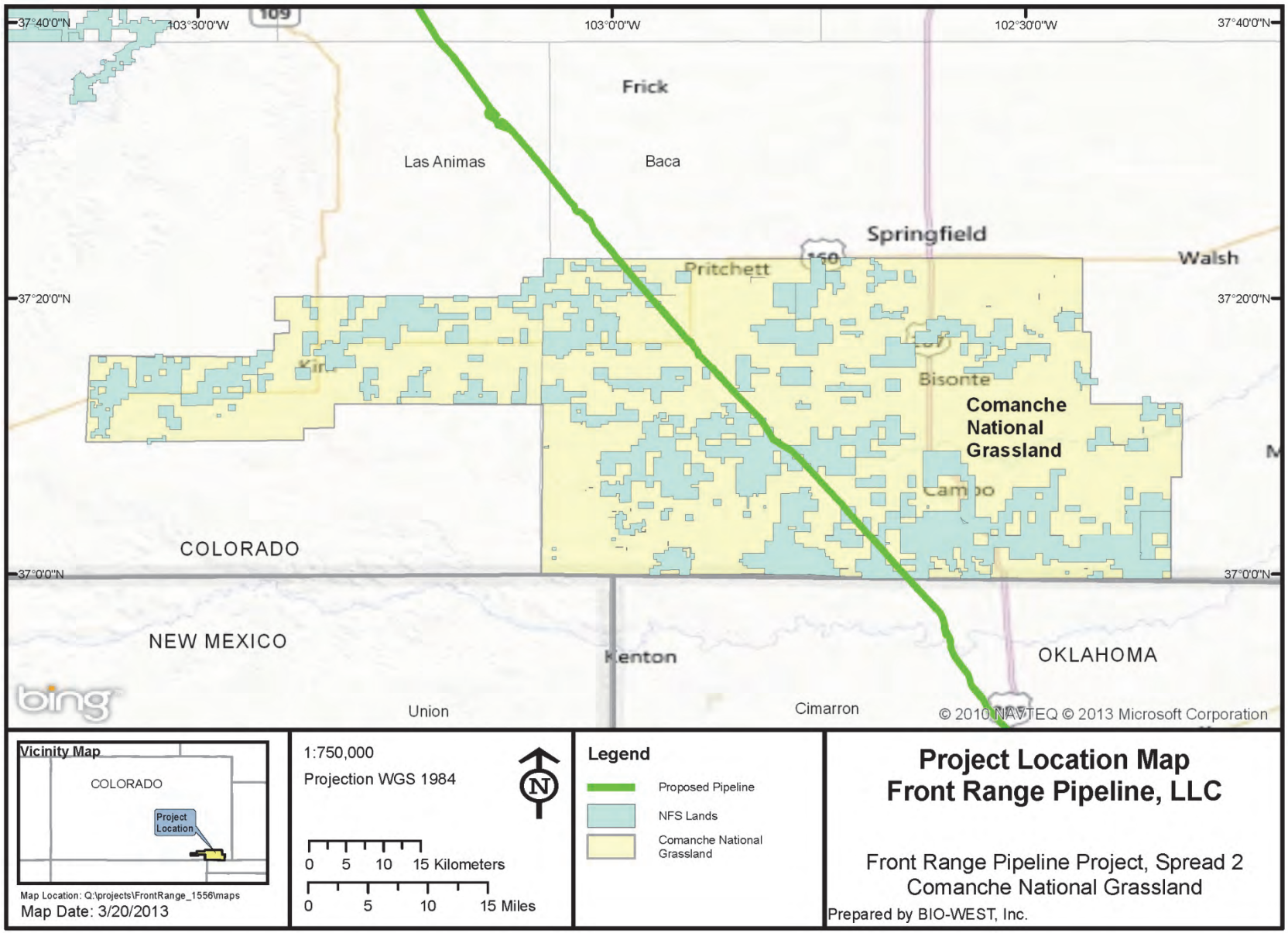


Figure 2a. Front Range Pipeline LLC Project Location Map.

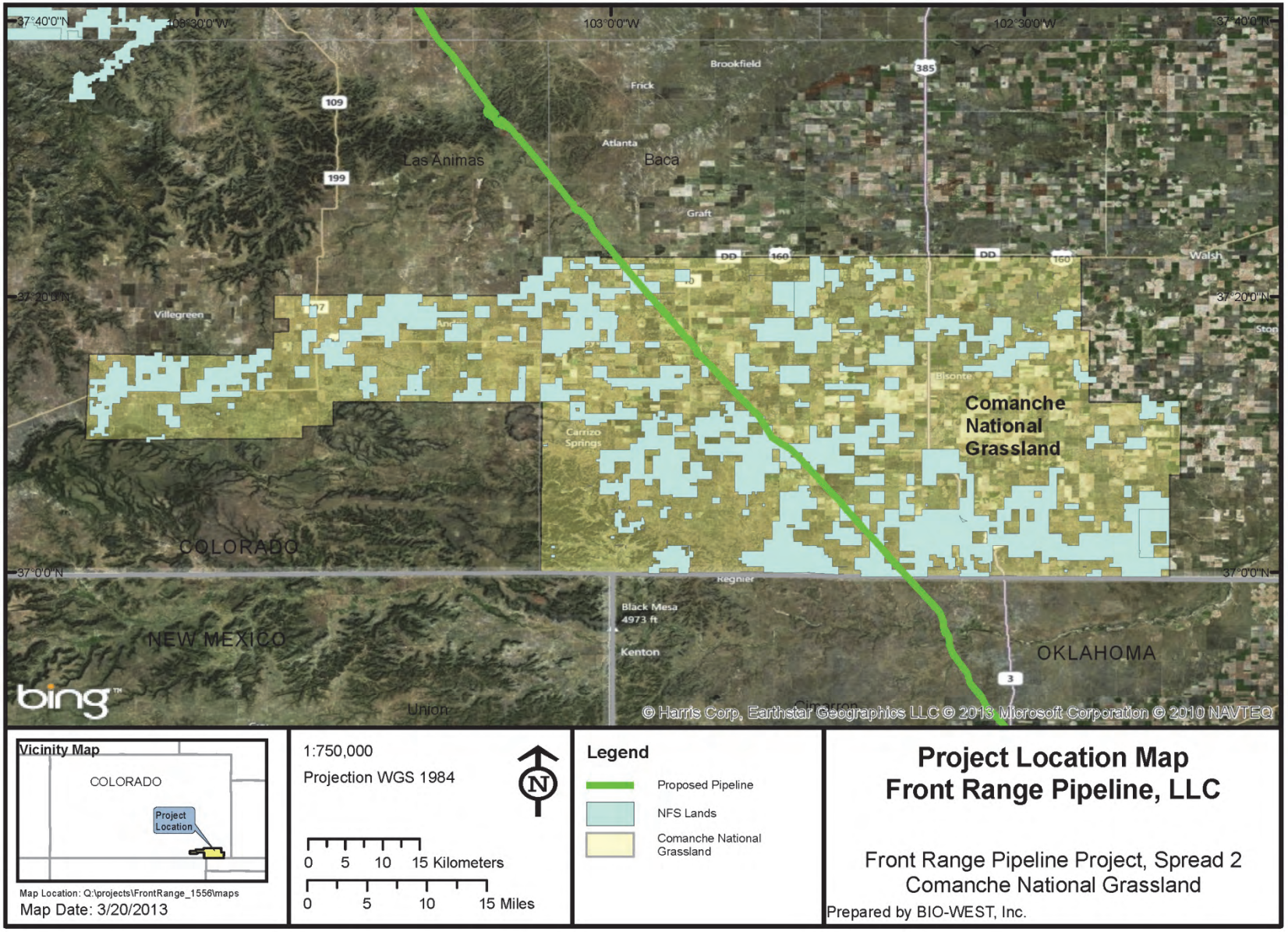


Figure 2b. Front Range Pipeline LLC Project Location Map on Aerial Background.

2.4 Pipeline Specifications

The FRPL specifications include the following:

- **System Parameters -** The pipeline would transport Y-Grade NGL. The maximum operating pressure (MOP) would be 1,480 pounds per square inch gage (PSIG) at a design factor of 0.72. All design would be in compliance with 49 Code of Federal Regulations (CFR) Part 195 and American Society of Mechanical Engineers (ASME) B31.4. All associated piping would also be designed for a 1,480 PSIG MOP. All valves and flanges would be ASME/ American National Standards Institute Class 600. The line pipe would be 16.00 inch outside diameter (OD) x 0.250 inch weight (wt), American Petroleum Institute (API) 5L X70 (minimum yield strength of 70 kilopounds per square inch) Product Specification Level 2 pipe. Road and water body-crossing pipe would be 16.00 inch OD x 0.406 inch wt, API 5L X60 pipe. Pipe under railroads would be 16.00 inch OD x 0.500 inch wt, APL 5L X70 pipe.

- **Corrosion/Cathodic Protection (CP) -** All underground piping would be coated with fusion-bond epoxy or two-part epoxy coating to resist corrosion. In addition, rectifiers and anode beds would be installed as designed by corrosion-control engineers, and CP test stations would be installed approximately every mile and/or at road crossings and fence rows, thus allowing company corrosion-control technicians to control the CP system. Above-ground piping would be painted.

- **Block Valves -** There would be 17 16-inch Class 600, above-ground, weld-in, manually operated ball valves at the following proposed locations: milepost (MP) 2.42, MP13.17, MP30.74, MP40.42, MP50.59, MP60.87, MP67.99 (north of the Arkansas River), MP71.54 (at pump station south of the Arkansas River), MP84.02 (north of the Purgatory River), MP84.68 (south of the Purgatory River), MP92.92, MP104.30, MP113.89, MP123.54, MP130.98, MP142.35, and MP152.28. Valves located at MP 130.98 and 152.28 would be located on NFS lands. The valve sites would be fenced to ensure the safety of neighboring inhabitants, human and otherwise.

- **Station Facilities -** The pump station proposed at MP71.54 would be on a 10-acre tract owned by FRPL. The proposed pump station location would also house necessary valves and piping, a 16-inch "pig receiver," a 16-inch "pig launcher," a motor-control building, and an associated electrical substation.

2.5 Pipeline Construction Techniques

Pipeline construction would occur as follows:

- **Construction Schedule -** The construction would begin on May 15, 2013 (approximately), and potentially last through November of 2013.

- **Average Construction Progression per Day** - Approximately 5,500 feet of pipe lay would occur each work day once the pipe-assembly process is completely underway. Additional time would be allocated for complete hydrostatic testing and the restoration process.

- **Construction Timing** - Optimum weather conditions for the region were considered when determining construction window.

- **How the Construction Would Accommodate Resource Issues –** The FRPL would be resolute concerning all applicable environmental laws and regulations, including implementation of environmental best management practices (BMP) determined by the environmental engineers and inspectors.

- **Labor Force -** Approximately 400 people would be involved in the overall pipeline development and installation process. Approximately 30 percent of the required labor force would be unskilled workers and about 60 percent of the manpower would be highly skilled equipment operators, welders, and other personnel. The remaining 10 percent of the labor force would be of a more professional nature. Pipeline construction contractors from all over the country would be invited to bid on the Project. The successful bidder would normally have some year-round staff who travel from project to project. Most skilled personnel would be retained on a per-project basis and acquired from all over the United States.

- **Equipment and Material** - These items would include bulldozers, trenching machines, track hoes, water trucks, fire water tanks, pickup trucks, utility vehicles, welding trucks, welding machines, hammer-hoes, pipe bending machines, side boom tractors, farm tractors, and farm implements such as discs, seeders, etc.

- **Staging and Storage Areas -** There are pipe storage yards located at County Road Y in Crowley County, State Road 109 at La Junta Airport, and County Road KK in Baca County, Colorado. The construction footprint would generally be 90 feet wide on private lands, and 80 feet wide on NFS lands. With few exceptions, servicing and fueling of equipment would occur in upland areas.

- **Preconstruction Activity -** The preconstruction activities would include engineering, land acquisition, survey and field verification, Federal and State permitting, highway crossing permit acquisition, and environmental assessment. Immediately prior to construction, the ROW limits would be staked and fence gaps installed at fence crossings.

- **Clearing and Grading of ROW -** The clearing and grading requirements and established procedures for the FRPL Project are unique and entirely different from the company's past projects. Front Range Pipeline LLC would not disturb terrain any more than absolutely necessary along the entire pipeline route within the State of Colorado. Mowing the Proposed Action route, rather than stripping the ground of vegetation, would shorten the recovery time for existing plant life.

- **Ditching -** The FRPL chosen route almost exclusively parallels an existing pipeline that was constructed in the mid-1940s. Specifications would be adopted to provide a minimum of 35 feet of clearance between the existing pipeline and the FRPL Project (see Figure 3). Requirements include a minimum depth of 3 feet of cover for the Proposed Action across pasture lands. The depth of cover within cultivated lands would be a minimum of 5 feet. Water bodies, arroyos, and creeks would require 7 feet of cover.

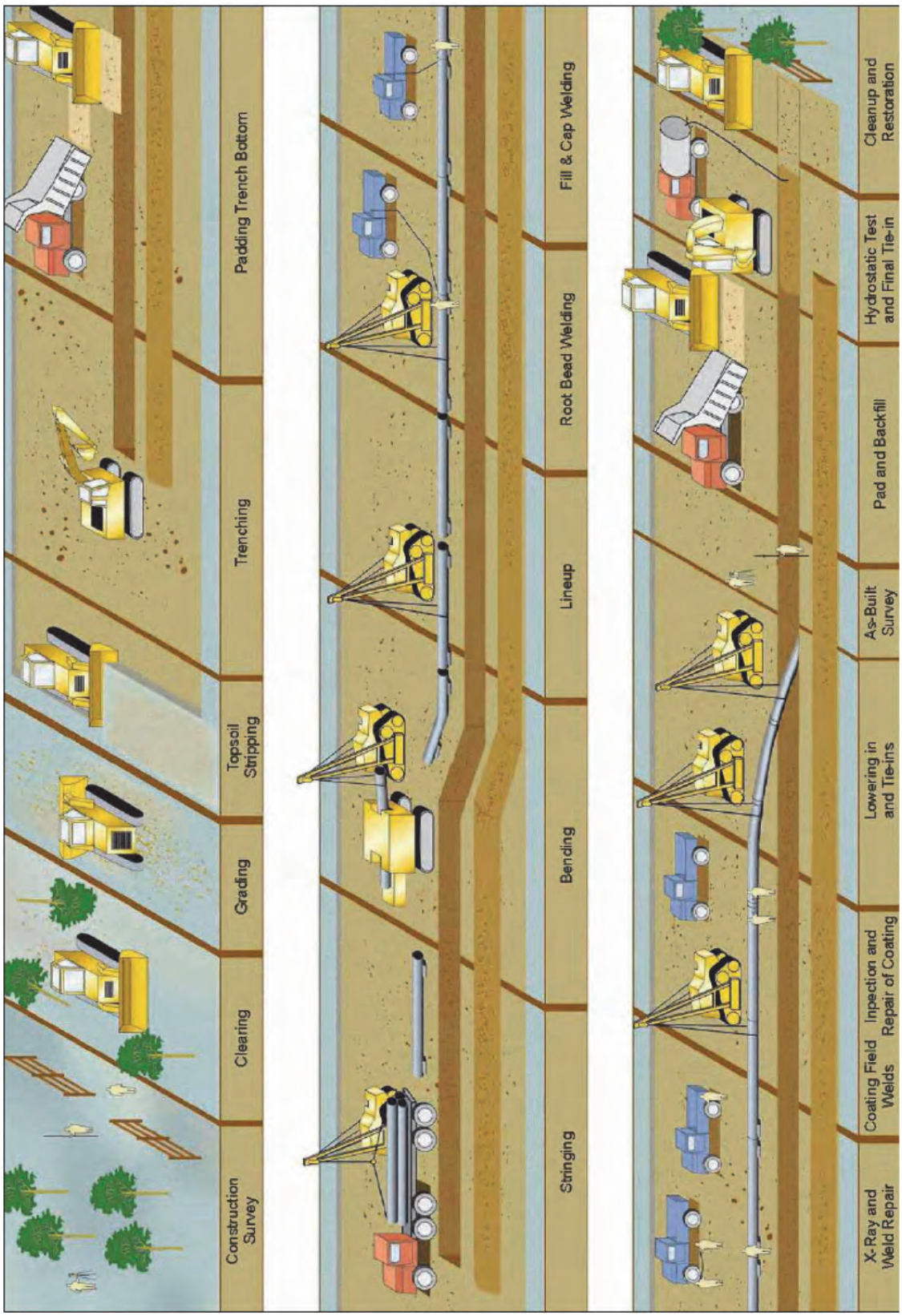


Figure 3. Typical Pipeline Construction Approach (Enterprise 2013a.)

- **Hauling and Stringing -** The 16-foot pipe would be transported by rail to various points near the Project Area. Pipe would be offloaded at rail facilities and transported by truck to an assortment of laydown yards located along the pipeline route. For construction, the pipe would once again be loaded on trucks and transported to the ROW. Pipe trucks would use public roads that are approved for heavy truck traffic, and only approved private access roads would be acquired.

- **Maintenance of Protective Coatings -** When the pipe is racked in the yards, it comes with a polypropylene rope installed around the pipe at several places to act as a cushion between the racked pipe joints. When in the field and during stringing operations, the pipe would be handled with care to protect the coating from scrapes, dings, and other damage. After the pipe is welded together, nondestructive evaluation (NDE) tested, and deemed acceptable, the weld area would be sandblasted to the prescribed blast pattern and coated using fusion-bonded epoxy or field-applied two-part epoxy, and the pipe would be subjected to "electrical holiday detection" to assure there are no faults or "holidays" in the coating.

- **Tying-In and Lowering -** After the pipe is welded into strings, X-rayed, and the coating verification process completed, the ditch would be inspected for rock and ditch bottom irregularities. Side boom tractors and/or track hoes, along with pipe cradles or slings, would carefully lift and ease the pipe into position and then lower the pipe into the ditch while avoiding impact on the ditch walls. If conditions require, a company representative would direct that rock shield or padding material be installed to protect the pipe coating. At locations where pipeline segments are joined together in the ditch, a bell hole would be excavated in accordance with Occupational Safety and Health Act (OSHA) requirements to allow safe entry of contractor employees who would fit and weld the pipe segments together. Pipeline Indicators or changes in trajectory would require field mechanical bending of certain pipe joints to ensure proper fit of the pipe sections. A factory pipe fitting is generally used to tie into an above-ground facility. After welding, all welds would be NDE tested (X-rayed). Once all necessary inspections are completed, the joints would be sand blasted and coated. The final coating would be inspected again.

- **Backfilling -** After the pipe is welded and the weld NDE tested, the field-applied coating and lowering-in process completed and accepted, the trench would be backfilled. The pipe may have to be set on padding consisting of soft, rock-free soil that is screened to remove rocks or on suitable backfilled material that would be brought onsite if conditions warrant (conditions that could damage the pipe coating). The contractor would use the "mop method" of backfill to prevent excessive damage to the native plant root zone along the ROW. Once a section of pipe has been lowered in, it would be backfilled by the end of that work day.

- **Hydrostatic Testing -** The line would be hydro-tested for 8 hours as required by Federal law and company specifications. Six independent test sections would be required for FRPL Segment 2. The topography and elevation changes along the entire ROW were carefully examined to determine the exact point of each hydraulic test location. Potable water has been acquired for all hydraulic testing purposes.

- **Clean-Up and Restoration -** All construction debris and miscellaneous items will be removed from the construction site and disposed of properly by the contractor. No trash will be buried. All fences and temporary access roads will be replaced/rebuilt as required by specific permit conditions and negotiated with the landowner. Disturbed portions of the construction workspace (including the permanent and temporary ROWs, as well as expanded workspaces) will be returned as close as possible to preconstruction grades and contours. Original drainage patterns will be reestablished and contours will be returned as close as possible to original condition. Topsoil will then be replaced over the ROW from the approximate area in which it was stripped.

  Reseeding and mulching will usually be completed as soon as possible, as outlined in FRPL's Revegetation and Reclamation Plan (Appendix B). Seeding may be dependent on permit stipulations, weather conditions, agency guidance, and landowner-specific requirements. Disturbed areas will be seeded and mulched. Any temporary BMPs will be removed and final BMPs (water bars, berms, slash material) will be installed as described in FRPL's plan. Reclamation of lands disturbed by construction will be in accordance with applicable regulations and permit requirements. Native species and seeding rates effective in controlling erosion will be used to revegetate the disturbed areas. Species have been selected with consideration of climatic adaptation, species adaptation to soil texture, possible adverse conditions such as drought or alkaline soils. Existing fences will be replaced and braces left in place upon completion of construction activities. Any gates or cattle guards damaged during construction will be repaired to landowner satisfaction.

2.5.1 Special Construction Issues

- **Pipeline Pump Station Construction -** No pump stations would be located on NFS lands. Four mainline valves (MLV) would be installed along the pipeline within the approximately 33-mile Project Area. These MLVs would be located at MP123.54, MP130.98, MP142.35, and MP152.28. Only two of these valves would be located on NFS land (MP 142.35 and 152.28). Each MLV would be situate adjacent to a County road and would require permanent access along the pipeline ROW.

Figure 4 represents construction techniques where the pipeline would cross linear features such as highways, railroads, trails, and water crossings. Figure 5 compares ROW configuration on NFS lands compared to lands owned by others. Figures 6a and 6b show the location of the four MLV.

- **Typical Cross Sections -** The cross sections would display the type of bottom the pipe would rest on and the depth from the top of the pipe to the surface of soil.

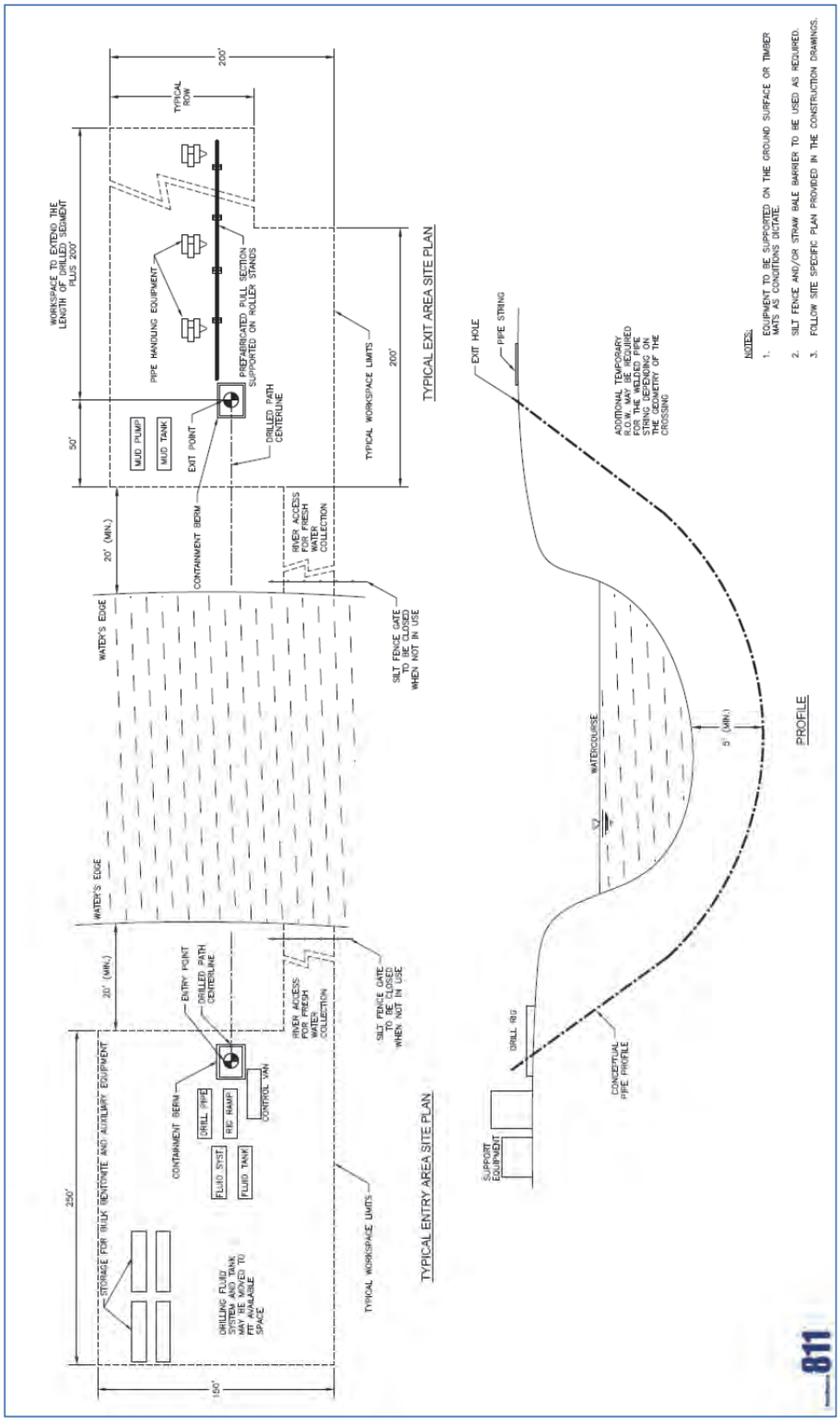


Figure 4. General Approach for Boring under Linear Features (Enterprise 2013b).

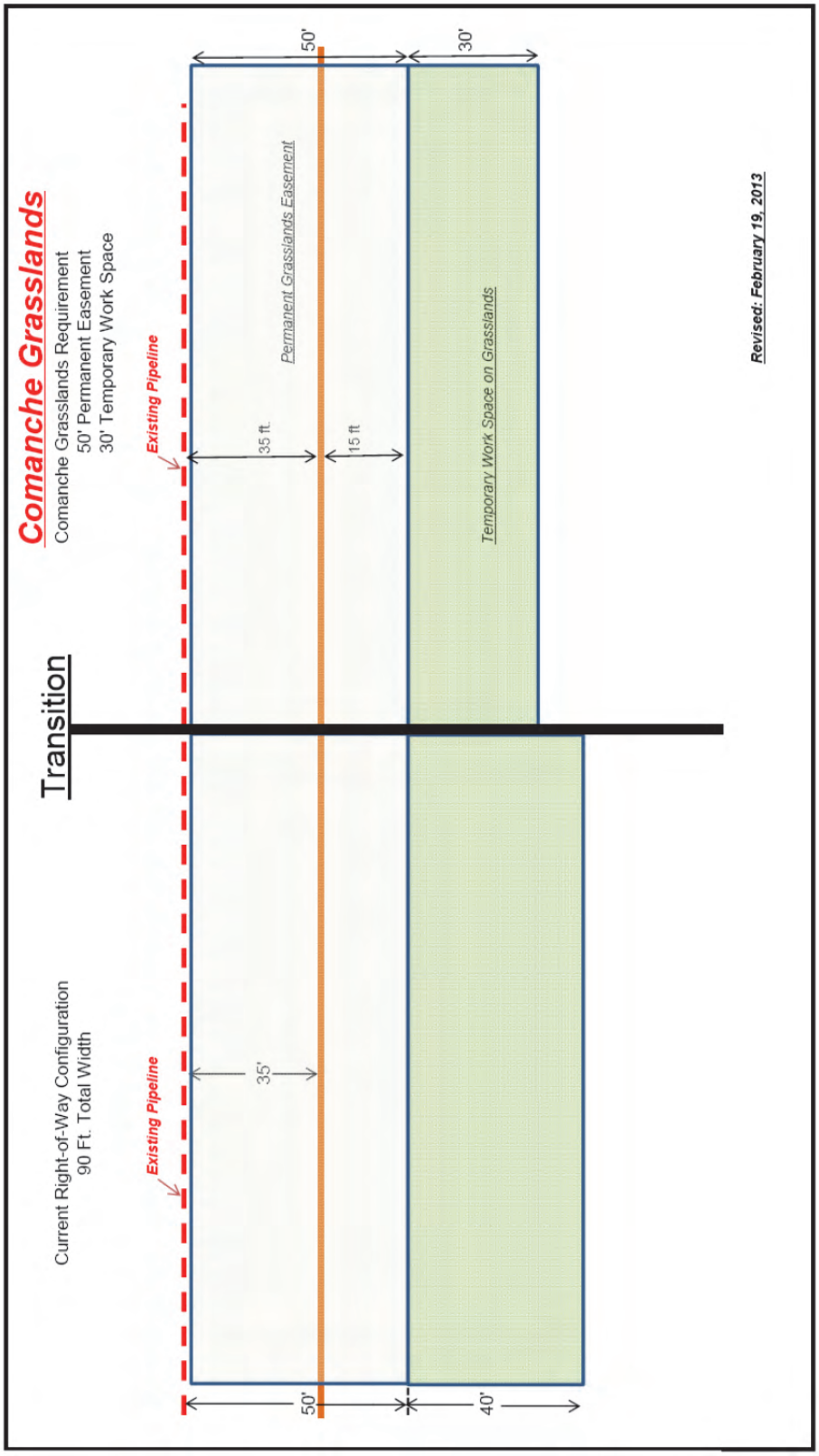


Figure 5. Right-of-Way Configuration (FRPL 2013).

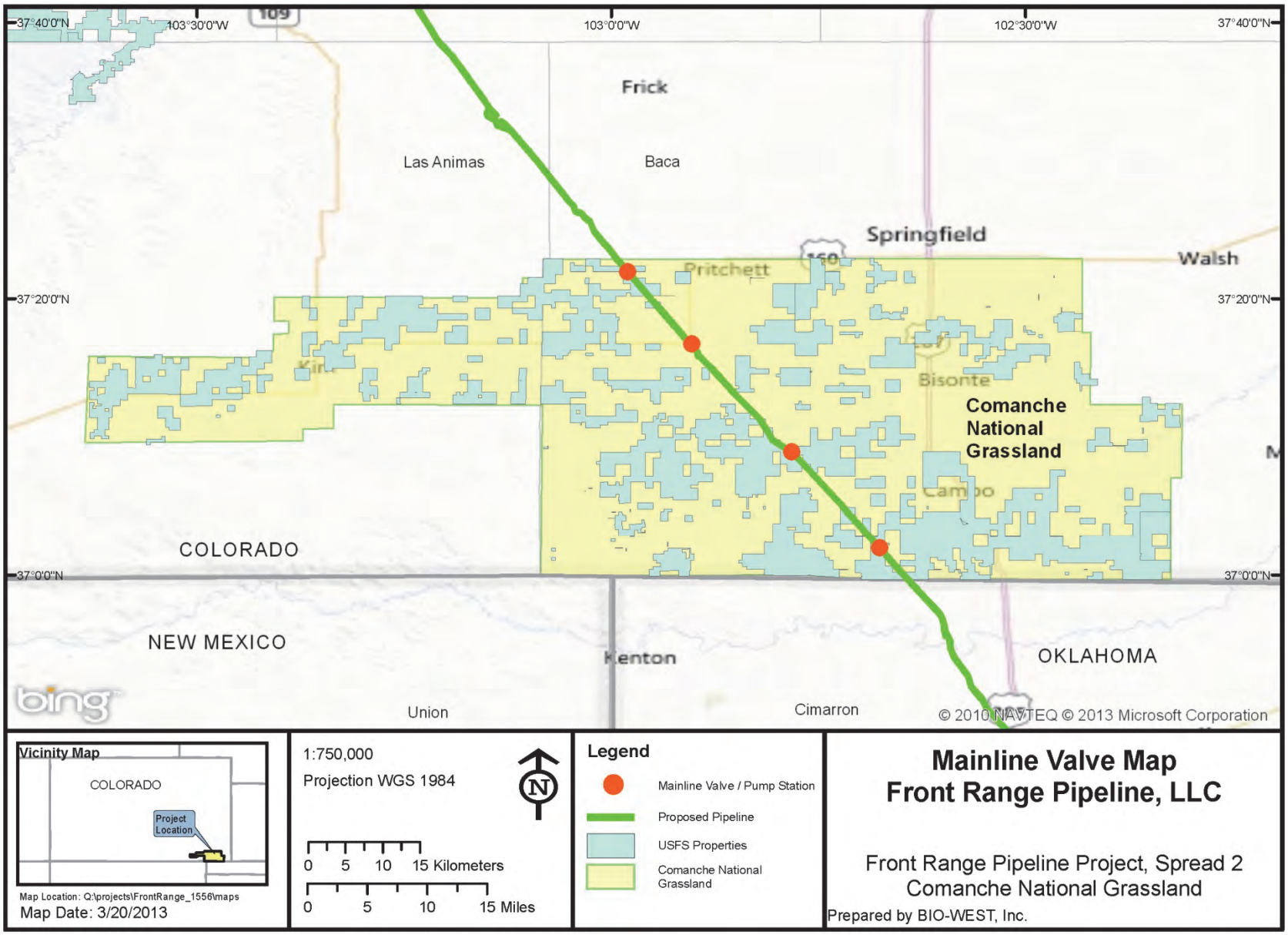


Figure 6a. Front Range Pipeline LLC Mainline Valve Map.

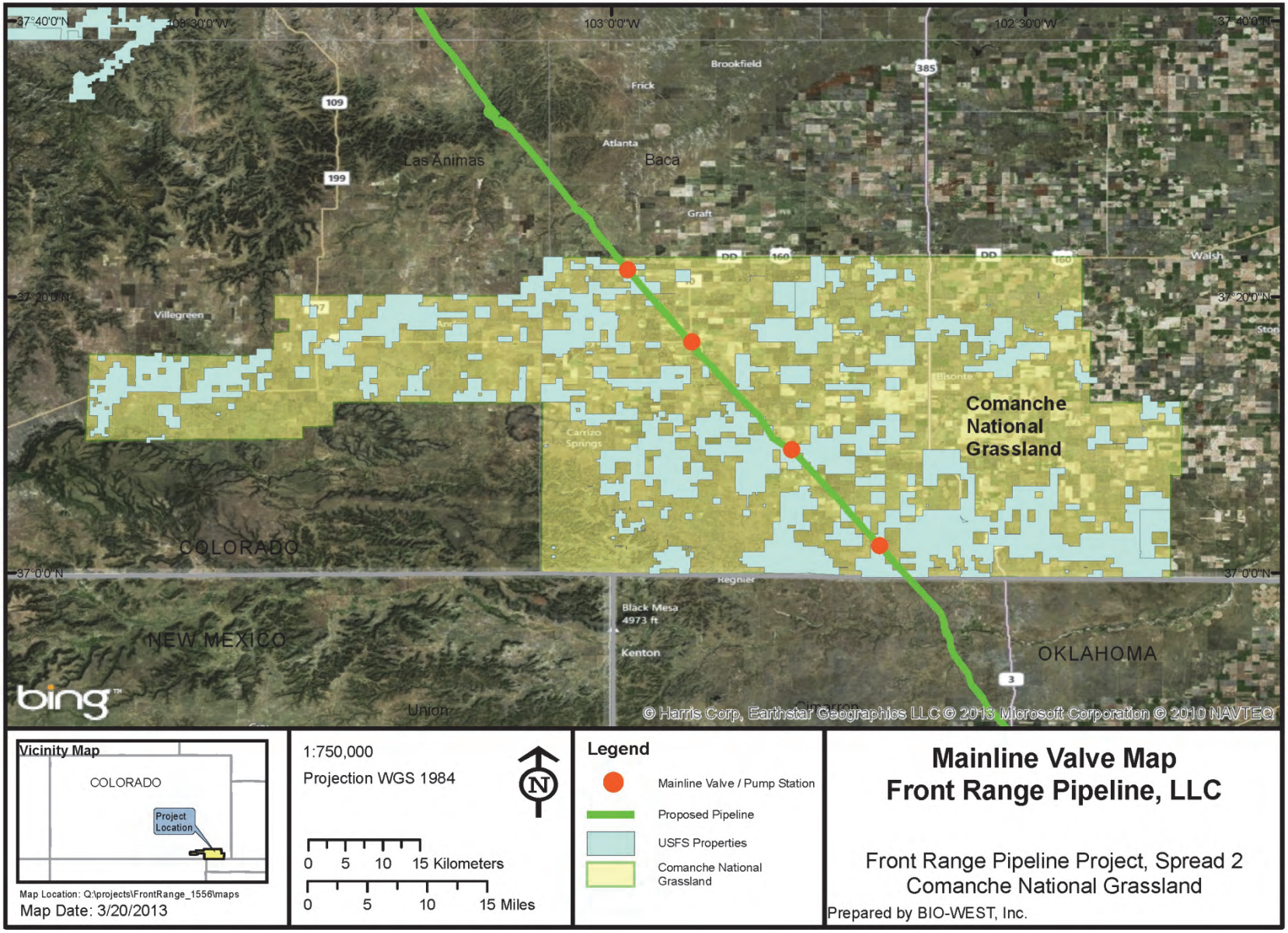


Figure 6b. Front Range Pipeline LLC Mainline Valve Map on Aerial Background.

- **Construction Utility Requirement -** It is anticipated that excess materials would be generated during construction. The materials may include pipe scraps, timber pipe braces, construction mats, etc. These excess construction materials would be removed from the Project Area and temporarily stored at designated contractor yards until inventoried and discarded at an approved facility or redistributed to other projects, if salvageable. Excess construction materials would not be left in the Project Area. Various waste materials, including trash and debris from construction materials and workers, as well as sanitary sewage from temporary sanitary waste facilities, would be generated during construction. Trash and discarded materials would be cleaned up at the end of each work day. Cleanup would consist of patrolling work areas to pick up trash, scrap debris, and other discarded materials. Construction trash and debris would be collected in appropriate containers and hauled offsite for disposal in authorized landfills. The construction contractor would be responsible for providing sanitary waste facilities, such as portable toilets, with adequate other storage tanks located on trailers or properly secured to the ground. Sanitary waste materials would be regularly pumped and transported offsite for proper disposal at approved facilities.

  The Proposed Action and its facilities would be operated and maintained according to accepted industry practices. During construction, operation, and maintenance, applicable OSHA requirements will be followed. These guidelines would be provided to all FRPL employees, contractors, and environmental monitors engaged in the planning, construction, operation, or maintenance of the FRPL Project. Employees and contractors would be required to follow these guidelines, where applicable, when planning, installing, and operating the Proposed Action and its facilities.

2.6 Operation and Maintenance

2.6.1 Maintenance Facilities/Activities

The FRPL would be required to operate and maintain its system in a manner consistent that provides its customers with a safe, dependable supply of NGL. Industry standards and proven practices would be implemented in accordance with the requirements of the U.S. Department of Transportation Office of Pipeline Safety and the U.S. Environmental Protection Agency. The FRPL Project would be incorporated into current pipeline facilities, which are under 24-hour, statewide, One-Call Systems.

Until vegetation is reestablished following construction, the FRPL would conduct annual inspections. After construction, periodic aerial patrols (26 times per year, not to exceed 3-week intervals) would be conducted to visually inspect for evidence of pipeline damage, nearby construction activities of landowners or other parties, erosion or wash-out areas, areas of sparse vegetation, damage to permanent erosion-control devices, exposed pipe, and other potential problems that may affect the safety and operation of the pipeline. Pipeline markers and signs would be maintained and replaced as necessary to ensure the pipeline location is visible from the air and ground. Patrols would be followed up with site-specific inspections to better identify potential problems and make repairs as needed.

Impressed current CP would be maintained along the pipeline to prevent or minimize corrosion of the pipeline in accordance with Federal regulations. The CP system would be monitored annually, at a minimum, depending on specific equipment and circumstances.

Front Range Pipeline LLC maintains a supply of pipe, leak-repair clamps, sleeves, etc. for emergency repairs and takes all measures necessary to protect the health and safety of all persons affected by activities performed in connection with the operation and maintenance of its pipelines.

The permanent ROW would be maintained in a manner consistent with preconstruction conditions. Herbicides, if needed on Federal lands, would not be used without prior written approval from the Forest Service. Herbicides would be applied in compliance with Forest Service and other applicable laws and regulations. Herbicides would not be applied within 100 feet of wetlands or floodplains.

Other Forest Service permit holders would be allowed to continue preconstruction land uses. Vegetation management practices may be modified in some localities in order to comply with applicable Federal, State, and County requirements.

2.6.2 Cathodic Protection System

Cathodic protection reduces and controls external pipeline corrosion by applying small chemical charges to the pipe in order to inhibit the electrochemical reactions that cause corrosion. As part of the CP system, regular testing would be conducted and compared against preexisting conditions, industry standards, and regulatory requirements to assure satisfactory performance of the entire system.

2.6.3 Depth of Cover

Federal regulations (49 CFR Part 192) establish minimum depth of cover requirements, which determine how deep a pipeline is buried as measured from ground surface to pipe top. Minimum depth of cover requirements vary by terrain and anticipated use of the ROW. The FRPL would meet or exceed minimum depth of cover standards during pipeline construction.

2.6.4 Hydrostatic Testing

Hydrostatic testing would be conducted to ensure the integrity of newly installed pipeline segments. Testing procedures include filling new pipeline segments with water and pressurizing them to 90–95 percent of the Specified Minimum Yield Strength while monitoring pressure and temperature inside the pipeline to verify system integrity.

2.6.5 One-Call System

To prevent third-party pipeline damage, operators of pipelines and other underground facilities participate in State-specific utility notification centers, which provide a one-call communication link between excavators and underground facilities. Excavators call the One-Call Center prior to excavating and provide specific information about the location of upcoming excavation. The One-Call Center then alerts all underground utilities and pipeline operators in the affected area. For impacted pipelines, FRPL's policy is to be onsite during excavation to ensure that its pipeline is safely uncovered and back-filled properly after excavation is completed. Front Range

Pipeline LLC would distribute One-Call Center and other safety information to landowners and residents in its areas of operation.

2.6.6 Public Education and Damage Prevention Programs

Front Range Pipeline LLC would employ existing public education programs that promote pipeline safety. These initiatives include community outreach programs that keep landowners informed of the pipelines that cross their property, comprehensive public awareness programs that address pipeline safety issues, and annual meetings with excavators and emergency responders to provide updated information specific to individual pipeline locations.

2.6.7 Radiographic Inspection

New pipeline girth welds, which join the ends of pipeline sections, would be inspected radiographically to ensure that no defects exist. Defective welds would be repaired and reradiographed.

2.6.8 Right-of Way Marking

Front Range Pipeline LLC would use markers to alert the public and potential excavators to the existence and location of its pipelines. The FRPL would be located adjacent to an existing NGL pipeline that is currently marked. Aboveground marker signs would display a warning message, the product transported, contact information, and a 24-hour emergency phone number.

2.6.9 Right-of-Way Monitoring.

Front Range Pipeline LLC would conduct routine inspections of its pipelines and aerially inspects pipeline ROWs at approximate 2-week intervals. Front Range Pipeline LLC would provide ROW access for long-term, third-party environmental monitoring for 5 years after acceptance of final pipeline reclamation.

2.6.10 Smart Pigs

A “smart pig” is an electronic instrument that transported fluid pushes through a pipeline. Smart pigs clean the inside of the pipeline and detect irregularities such as internal and external corrosion, changes in wall thickness, dents, gouges, and pipe deformities. Detected irregularities would be repaired to comply with applicable regulations and industry standards.

2.6.11 Supervisory Control and Data Acquisition

Front Range Pipeline LLC uses Supervisory Control and Data Acquisition (SCADA) to obtain current and comprehensive information on key operating aspects of pipeline systems, including operating pressures and the status of pumping equipment and remotely operated valves. The SCADA remotely collects data from satellite communication units located along the pipeline 24-hours a day. Supervisory Control and Data Acquisition would be used to detect changes in flow rate or pressure that indicate potential leaks. In the event of such a change, SCADA would alert the FRPL controller so that actions could be initiated to mitigate potential hazardous conditions.

2.6.12 Valve Spacing

Valves are used to restrict the flow of NGL through a pipeline in the event of a potentially hazardous incident. Block valves isolate pipeline segments and divert their flow, and check valves prevent reverse flow in the pipeline. In compliance with regulations and industry standards, FRPL would install the appropriate valve type in accessible locations at all pump stations and storage tank areas, on each side of water crossings greater than 100 feet wide, and at mainline locations and takeoff points that are determined to minimize the impacts of an accidental discharge. In addition to these specified locations, valves would be installed at approximate 10-mile intervals along the loop pipeline segments. See Figures 6a and 6b for valve locations.

2.6.13 Access

Access roads to the pump station and pipeline ROW include State and County roads already in existence in the area. These roads would provide access to FRPL personnel at all times. Block valve sites would be kept clear of woody vegetation. If road access to block valves was prevented due to extremely wet conditions, emergency access would be provided by helicopter if necessary.

2.6.14 Damage Prevention

Pipeline warning markers would be placed along the route to notify the public that a NGL is buried at that location. The marker would provide the name of the pipeline operator and a phone contact number. Upon notification, the pipeline operator would provide personnel to ensure proper procedures were followed in excavating and crossing the pipeline. During operation the pipeline would be monitored by aerial surveillance approximately every 2 weeks. In addition to the aerial patrol, pipeline operations personnel would make contact with the party involved in construction activities near the pipeline. Company personnel would locate the lane and ensure that the construction does not endanger the pipeline.

2.6.15 Product Spill and Emergency Plan

Front Range Pipeline LLC has prepared and would be required to follow an Emergency Response Plan (ERP). Approved by the Forest Service prior to construction across the CNG, the ERP would assist in planning and responding to a suspected or actual emergency involving FRPL. The ERP is also the Emergency Action Plan. The safety of employees, contractors, visitors, responding personnel, and the surrounding population is critical in every emergency response, as generally the products contained in the pipeline or facility are highly volatile when released. With this in mind, it is critical for emergency responders to train their personnel on the proper response to a suspected or actual emergency.

In the event of an emergency, FRPL would close any automated valves and local personnel would close manual valves as needed to mitigate a release. Front Range Pipeline LLC employees are required to be trained on the ERP. Each employee would be familiar with the plan and their duties under the plan. Front Range Pipeline LLC would provide a copy of the ERP to applicable agencies including 911 Call Centers, Fire Departments, Police Departments, Sheriff Departments, the Office of Emergency Management, and State Police.

2.6.16 Abandonment

The operating life of the pipeline would depend on the availability of refined product. Should additional supplies become available, the life of the facilities and/or their capacities could be extended beyond the projected 50-year life of the Project. Insufficient availability of product or other economic situations could make operation of the pipeline system infeasible beyond 50 years and result in the abandonment and disposal of all or portions of the system. The abandonment procedures used would be subject to appropriate existing local, State, and Federal regulations.

Product remaining in the system would be displaced to the terminal. The pipeline would be abandoned in place. The pipeline would be purged of petroleum and filled with an inert substance, such as nitrogen gas or water, and left buried. Though abandoned, the pipeline would remain the responsibility of FRPL.

Mainline pumps and motors would be disconnected and either stored or removed for other uses. Before the pump stations were abandoned, all product would be evacuated and equipment would be removed and/or salvaged. Any support facilities used in the abandonment procedures would be taken out of service, sold, or salvaged. This includes maintenance, communication, fire protection, and product cleanup facilities, as well as electrical support equipment. Unsalvageable material such as concrete would be disposed of at authorized sites. All disturbed areas would be regarded and revegetated in conformance with future land uses. Additional backfill might be required to restore the ROW to its original condition.

2.6.17 Alternatives

Only two alternatives are considered for analysis in this EA. The first is the Proposed Action to construct a 16-inch natural gas pipeline through the described Project Area across the CNG within the designated utility corridor, which includes 33.3 miles across the CNG, 11.7 miles of which are on NFS lands and 21.6 miles on private lands. The second alternative considered is the No-Action Alternative.

2.6.18 Alternatives Considered but Dropped from Further Analysis

Other alternatives considered include construction across CNG outside of the designated utility corridor. Additionally, as outlined in Amendment 10 of the Forest Plan, signed in 1987, “The Forest Plan requires that pipelines, 10 inches or longer, that cross National Forest System lands be within assigned utility corridors” (USFS 1987). Therefore, location of a pipeline outside of a designated utility corridor is not a viable alternative. This alternative was dismissed because it would require an amendment to the Forest Plan and would not address the needs of the Project. With a designated utility corridor already established that clearly meets Project needs, it was not practical to consider location of the FRPL in any other parts of the CNG.

Another alternative would consider transport of NGL using trucks that would transport NGL from the Denver-Julesburg Basin to the terminus of the proposed pipeline in Texas. This alternative was dismissed because of excessive costs, continued air quality impacts from vehicle emissions, and higher potential for loss of NGL products due to vehicle crashes.

2.6.19 No-Action Alternative

Under the No-Action Alternative, FRPL would not construct a 16-inch natural gas pipeline across the CNG. If the pipeline is not constructed, alternative methods of transport of NGL will need to be employed. For analysis purposes, only the impacts that would result from the Proposed Action are presented in detail. These would include using surface transportation such as trucks or rail. A table providing a comparison of impacts of the proposed action and the No Action Alternative is provided in Section 5.

3.0 AFFECTED ENVIRONMENT

This chapter describes how implementation of the Front Range Pipeline LLC (FRPL) (Proposed Action) would affect the environment and resources within FRPL Project Area (Project Area). The description reflects the existing environment and occurrence of natural resources as identified in technical reports, published literature, and consultation and coordination with agency personnel. Each section in this chapter describes existing conditions of a variety of resources. The existing conditions serve as the baseline for identifying any potential changes to Project Area resources or environmental consequences that would occur as a result of implementation of the Proposed Action. The potential effects of Project implementation are described in the following chapter: 4.0 Environmental Consequences and Mitigation.

For the purposes of this EA, the following definitions apply to the lands referenced in the analysis:

- "Project Area" – All lands within the 80 to 90-foot ROW across the 33.3 mile segment that crosses U.S. Department of Agriculture–Forest Service (Forest Service) and private lands within the Comanche National Grassland (CNG). In relation to the "overall Project Area" mentioned below, the "Project Area" is considered as Spread 2. Spread 1 includes the proposed FRPL pipeline north of CNG in Colorado, and Spread 3 includes the proposed FRPL pipeline south of Spread 2 in Oklahoma and Texas.

- "CNG Project Area" –Lands within the 80-foot ROW on the 11.7 miles that cross NFS lands.

- "Overall Project Area" – All lands within the 80 to 90-foot ROW throughout the 430 mile proposed pipeline route.

3.1 Water Resources

Water resources include the following: (1) surface water sources such as perennial streams, intermittent channels, lakes, ponds, reservoirs, springs and seeps; (2) water-distribution systems such as irrigation ditches; and (3) groundwater. In 2012 Atkins was retained to conduct a Project Area wetland delineation and submit a report. A 300-foot wide corridor was surveyed for potential jurisdictional waters of the United States (Atkins 2012a).

According to Atkins (2012a), 12 ephemeral streams were identified within the Project Area survey corridor. Each feature that was identified is considered a potential water of the United States subject to U.S. Army Corps of Engineers (USACE) jurisdiction under Section 404 of the Clean Water Act (CWA). No traditionally navigable waterbodies were located within the Project Area that would be subject to USACE jurisdiction under Section 10 of the Rivers and Harbors Act. No wetlands were identified within the Project Area survey corridor, but one pond was identified and it is considered a potential water of the United States subject to USACE jurisdiction under Section 404 of the CWA.

3.1.1 Streams

According to Atkins (2012a), "one type of linear waterbody, ephemeral stream, was documented within the survey corridor of the CNG. The ephemeral streams exhibited an outside high water mark (OHWM, introduction added) and are considered waters of the U.S." Within the Project Area, "surface tributary connections contribute to the Arkansas River Basin." Table 1 "provides a detailed list of all potentially jurisdictional waterbodies identified within the survey corridor. Ephemeral streams are waterbodies that flow only during and for a short duration after precipitation events in a typical year. Ephemeral streambeds are located above the water table year-round and groundwater is not a source of water for the stream. These streams may have an OHWM and would be considered a potential water of the U.S. subject to USACE jurisdiction under Section 404 of the Clean Water Act" (Atkins 2012a). Table 1 shows the 12 ephemeral streams located within the Project Area.

Table 1. Potential Jurisdictional Waterbodies Identified in the Survey Corridor within U.S. Forest Service Lands on the Comanche National Grassland.

WATERBODY	OUTSIDE HIGH WATER MARK (feet)	LINEAR FEET[a]	AREA (acres)[a]
Tributary to Bear Creek	3	536	.04
Bear Creek	4	363	.03
Tributary to Bear Creek	4	348	.03
Tributary to Lone Rock Draw	1	235	.01
Lone Rock Draw	1	378	.01
Tributary to Lone Rock Draw	1	375	.01
Tributary to Lone Rock Draw	1	1,695	.04
Tributary to Lone Rock Draw	1	196	<.01
Tributary to Lone Rock Draw	1	235	.01
North Fork Sand Arroyo	32	387	.28
South Fork Sand Arroyo	5	528	.06
Tributary to South Fork Sand Arroyo	5	557	.06

Source: Atkins (2012a).
[a]Linear feet and acres represent the totals identified within the survey corridor evaluated for the proposed Front Range Pipeline LLC Project.

3.1.2 Wetlands

"No wetlands were documented within the survey corridor of the administrative boundary of the CNG" (Atkins 2012a).

3.1.3 Ponds

"One pond was identified within the survey corridor (POND A18). This pond consists of a natural depression situated on a remnant channel of North Ute Canyon. Though a discernible OHWM was not observed feeding into or out of this depression, the pond is considered to exhibit a significant nexus to a waterbody subject to Section 404 of the Clean Water Act. The pond observed within the administrative boundary of the CNG was dry at the time of survey due to a persistent drought in the region" (Atkins 2012a). The pond is located just south of MP 144 of the proposed FRPL Project route and lies directly over the ROW. The pond is approximately 0.49 acre (Atkins 2012a) (Figure 7).

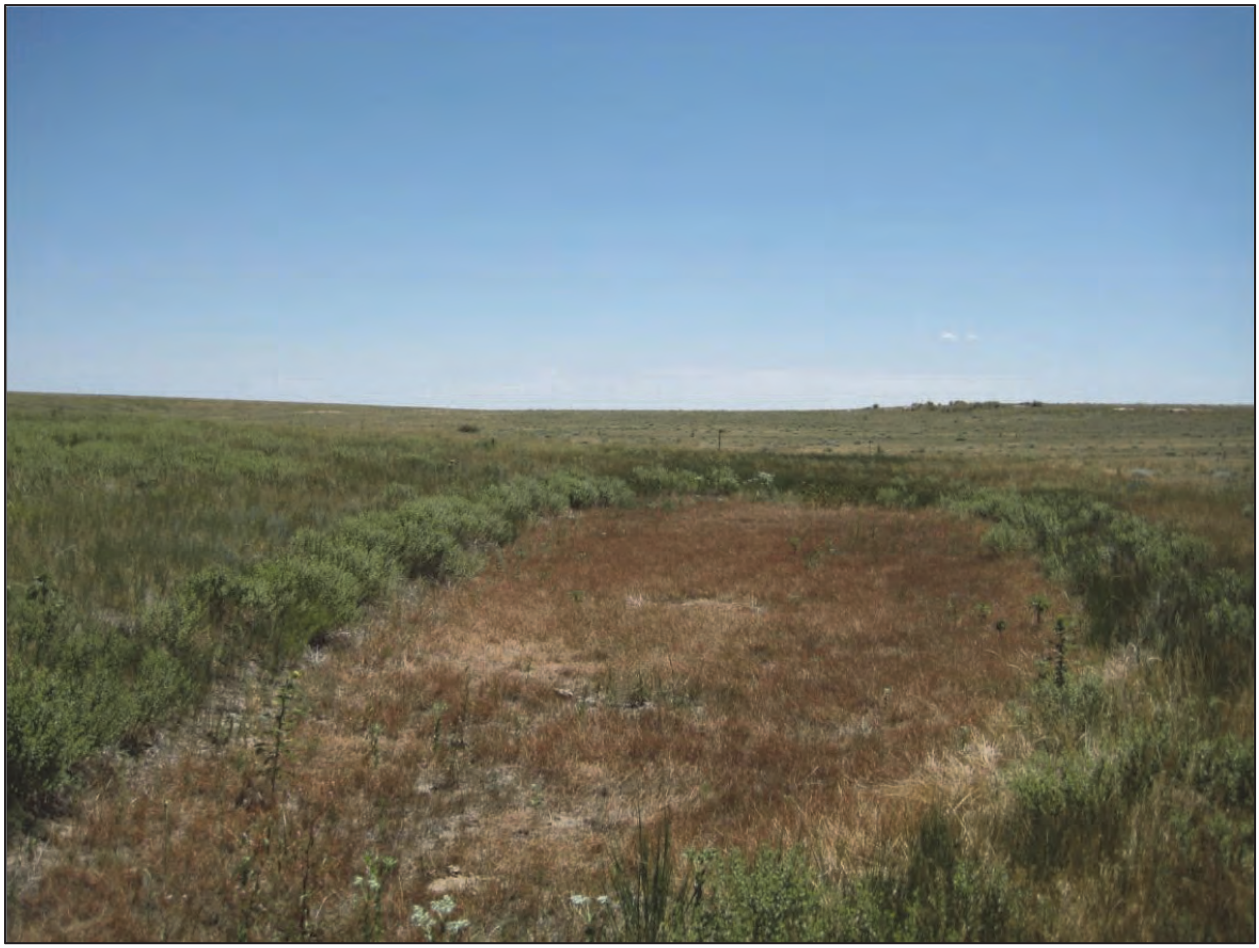


Figure 7. Pond near Milepost 144 of the Proposed Front Range Pipeline LLC Project Route (Atkins 2012a).

3.1.4 Groundwater

The Dakota Aquifer is the major underlying bedrock aquifer in southeastern Colorado. It covers much of Baca County, northeastern Las Animas County, and portions of Otero County near the Purgatoire River. The depth of wells drawing water from the Dakota Aquifer may exceed 800, but wells are much shallower in the alluvial aquifers along both perennial and intermittent drainage courses. Groundwater quality varies throughout southeastern Colorado. Some groundwater has a high sulfate content and in other locations groundwater has a high iron and sulfur content (USFS 1991a).

3.2 Climate and Air Quality

The climate of southeastern Colorado is classified as dry continental and characterized by low relative humidity, abundant sunshine, low rainfall, moderate to high winds, and a large range in temperature. Daily summer maximum temperatures are often above 90 degrees Fahrenheit (°F) and winter minimum temperatures rarely fall below 0°F. For all months the mean daily maximum is above freezing; however, with the high percentage of clear skies, the temperature falls rapidly at night. The first and last freezes occur in mid-October and late April. Temperature and precipitation data are shown in Table 2.

Table 2. Springfield, Colorado, Temperature and Precipitation Data.

MONTH	TEMPERATURE		AVERAGE PRECIPITATION (in inches)
	Average Daily Maximum	Average Daily Minimum	
January	46	19	0.48
February	49	21	0.47
March	58	28	1.12
April	68	37	1.56
May	77	47	2.22
June	87	57	2.69
July	92	62	3.45
August	89	61	3.01
September	82	52	1.47
October	70	39	1.56
November	57	28	0.59
December	46	19	0.56
Annual			**19.18**

Source: Weather.com (2013).

The average precipitation is approximately 19.18 inches per year. Approximately two-thirds of the annual precipitation occurs from April through September. Most of the summer precipitation is associated with thunderstorms, while most of the winter and early spring precipitation is in the form of snow.

Relative humidity in southeastern Colorado is typically low, averaging on an annual basis 35 percent in the afternoon and 60 percent in the early morning.

Wind speeds average approximately 9 miles per hour; however, strong winds frequently occur and are most common in the winter and spring. During dry periods, stronger winds can produce dust storms. The most frequent winds are from the west, east-southeast, east, and north.

3.2.1 Air Quality

The U.S. Environmental Protection Agency (EPA) has established national Air Quality Standards for six criteria pollutants: carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), ozone (O3), lead (Pb), and total suspended particulate matter. Pollutant concentrations that exceed the standards are considered unhealthy; concentrations below the standards are considered acceptable (EPA 2013).

The National Ambient Air Quality Standards are given in Table 3. The concentrations of the criteria pollutants along the Proposed Action route are below the Federal standards. Baca County is classified as “attainment/unclassifiable” by the State of Colorado, as submitted to the EPA (Colorado Department of Public Health and Environment 2007) (Table 2).

Table 3. National Ambient Air Quality Standards.

POLLUTANT	AVERAGE TIME	CONCENTRATION
Carbon Monoxide (CO) Primary Primary	 1-hour[a] 8-hour[a]	 35 ppm[b] 9 ppm
Ozone (O3) Primary and Secondary	 1-hour[c]	 0.12 ppm
Nitrogen Dioxide (No2) Primary and Secondary	 annual arithmetic mean	 0.053 ppm
Sulfur Dioxide (SO2) Primary Primary Secondary	 annual arithmetic mean 24-hour[a] 3-hour[c]	 0.03 ppm 0.14 ppm 0.5 ppm
Particulates less than 10 microns in diameter (PM10) Primary Primary	 annual arithmetic mean[c] 24-hour[e]	 50 ug/m3[d] 150 ug/m3
Lead (Pb) Primary	 calendar quarter	 1.5 ug/m3

Source: EPA, 2013.
[a]Not to be exceeded more than once per year.
[b]Parts of pollutant per million parts of air.
[c]Statistically estimated number of days with exceedances, averaged over a 3-year period, is not to be more than 1.0 per year.
[d]Micrograms of pollutant per cubic meter of air at 760 millimeters mercury (Hg) and 250° Centigrade.
[e]Federal guidelines only.

To protect ambient areas, the U.S. Congress established a system for the Prevention of Significant Deterioration (PSD) through the Clean Air Act Amendments of 1977 (42 USC § 7472). The system established air quality standards for three classes of geographical areas: Class I areas are areas in which virtually any degradation would be significant; Class II areas are areas that include moderate, controlled growth; and Class III areas are areas in which deterioration is acceptable, as long as National Ambient Air Quality Standards are maintained. The FRPL would not traverse any PSD Class I areas (NPS 2013). Concentrations of gaseous pollutants are well below Federal standards (Table 3).

Baca County is classified as “attainment/unclassifiable” for all criteria pollutants under the National Ambient Air Quality Standards (Colorado Department of Public Health and Environment 2007).

3.3 Noise

Project Area noise levels are relatively low due to the rural location of the proposed route. Natural noises such as wind, birds, and insects, combined with farm machinery and traffic, make up much of the existing noise.

During construction of the FRPL, sensitive noise receptors would be concentrated in the Purgatoire and Arkansas River Valleys. These receptors would be residences; there would be no other sensitive noise receptors (e.g., schools, hospitals, or other public or private institutions).

3.4 Land Use

Lands within the Project Area are primarily undeveloped. U.S. Department of Agriculture–Forest Service (Forest Service) lands within the CNG are open expanses of grasslands managed to preserve the grassland environment as described earlier. The Project Area includes an 80-foot construction corridor centered on the Proposed Action location. This area falls within the designated utility corridor that crosses the CNG. This corridor already includes three existing pipelines; the most recent of which was constructed in 1994. This designated utility corridor was identified in Amendment 10 of the Forest Plan (USFS 1987). Designation of this corridor was not considered a significant action when it was established in 1987, and the National Environmental Policy Act (NEPA) analysis was conducted as a Categorical Exclusion.

Project Area private lands are within Baca County, Colorado, and subject to County zoning ordinances. These lands are zoned for agricultural use, and location of utility infrastructure, including pipelines, is an allowed use within this category.

3.5 Wildlife Resources

The FRPL Project Area supports a wide diversity of wildlife species. The main habitat types in the area include grassland (shortgrass and midgrass), juniper woodlands, agricultural, cottonwood-willow riparian, and rock outcrops or cliffs. Each habitat type supports characteristic species. Higher species diversity is found where several habitats occur together. Riparian areas support the greatest wildlife species diversity of any local habitats. A complete list of species that are known to occur on the CNG is available from the Forest Service offices in La Junta or Springfield, Colorado. The list includes 19 fish, 12 amphibian, 33 reptile, 277 bird, and 59 mammal species (USFS 2009).

The grassland habitats that would be crossed by the pipeline are no longer pristine. Agricultural practices (reseeding with nonnative grasses, overgrazing, converting grasses to cultivated ground) have changed the grasslands drastically. Grassland-dependent species have declined over much of their range. One of the biggest changes to the grassland ecosystem has been the loss of vast acres of black-tailed prairie dog (*Cynomys ludovicianus*) colonies. Prairie dog colonies provide key habitat for a variety of wildlife species, including several sensitive species. Many wildlife species have declined with the reduction of prairie dog colonies (USFS 1993).

Several different wildlife species have been documented on the CNG. “Common game animals include elk, mule deer, pronghorn antelope, dove, quail, and turkey. Over 235 bird species present on the Grassland provide excellent bird watching opportunities” (USFS 2013b).

3.6 Aquatic Resources

The proposed FRPL pipeline would not cross any water that supports aquatic species within the Project Area. The route of the proposed pipeline outside of the Project Area would cross one stream (Timpas Creek) and two rivers (Purgatoire and Arkansas Rivers) that are known to support fisheries. These streams are characterized by high spring and early summer flows and low flows during the remainder of the year. Much of the water is diverted from these streams for irrigation. The Purgatoire and Arkansas Rivers support limited recreational warmwater fisheries in the Project Area. Common carp (*Cyprinus carpio*), black bullhead (*Ameiurus melas*), channel catfish (*Ictalurus punctatus*), and sunfish (Centrarchidae) are the most important fish to anglers.

Other species that have been found in the waters near the pipeline crossings include white sucker (*Catostomus commersonii*), flathead chub (*Platygobio gracilis*), sand shiner (*Notropis stramineus*), fathead minnow (*Pimephales promelas*), longnose dace (*Rhinichthys cataractae*), stoneroller (*Campostoma anomalum*), and plains killifish (*Fundulus zebrinus*).

3.7 Vegetation

The vegetation types that would be crossed by the FRPL Project include prairie grasslands, pinyon-juniper woodlands, wooded riparian habitats, active agricultural lands, and Conservation Reserve Program (CRP) lands.

3.7.1 Grassland Vegetation Types

The dominant grassland type in southeastern Colorado is the shortgrass prairie, with some areas of midgrass prairie.

The shortgrass prairie is usually dominated by blue grama (*Bouteloua gracilis*) and in some places by buffalo grass (*Bouteloua dactyloides*). Other species include western wheatgrass (*Pascopyrum smithii*), sand dropseed (*Sporobolus cryptandrus*), alkali sacaton (*Sporobolus airoides*), threeawn (*Aristida* spp.), and bluestem (*Andropogon* spp.).

The midgrass prairie is usually dominated by sideoats grama (*Bouteloua curtipendula*), sand lovegrass (*Eragrostis trichodes*), bluestem grasses, and switchgrass (*Panicum virgatum*). When climatic conditions are especially favorable, the grasses tend to be taller and have a physiognomic profile as “bunchgrasses.” Forbs fill in the areas between the bunchgrass clumps. Sand sagebrush and yucca (*Yucca* spp.) are common in most of the midgrass areas.

Overgrazing in the prairie grasslands and the juniper vegetation types has led to an increase of yucca and cactus (Cactaceae), as well as an invasion of annual grasses such as bromes (*Bromus* spp.), fescues (*Festuca* spp.), and barley (*Hordeum vulgare*).

3.7.2 Pinyon-Juniper Vegetation Type

The pinyon-juniper type appears as open woodlands with small, rounded trees. The dominant juniper species is Rocky Mountain juniper (*Juniperus scopulorum*). Pinyon pines (*Pinus edulis*) are not present in the Project Area. Common understory species include buffalo grass and several grama grasses (*Bouteloua* spp.). The pinyon-juniper woodlands are associated with hillslopes and mesas from the area northwest of Pritchett to just north of the Purgatoire River.

3.7.3 Wooded Riparian Vegetation Type

Wooded riparian habitats are found along some of the stream channels that would be traversed by the FRPL. Dominant species in the riparian zone include cottonwoods (*Populus* spp.), willow (*Salix* spp.), tamarisk (*Tamarix* spp.), and Russian olive (*Elaeagnus angustifolia*). Herbaceous plants, such as sedges (*Cyperus* spp.), may be found in the understory of the wooded riparian areas. The key riparian crossings would be the Purgatoire and Arkansas Rivers. At the crossing the Purgatoire River is dominated by tamarisk and cottonwoods, and the Arkansas River crossing is dominated by willows, cottonwoods, and tamarisk.

3.7.4 Agricultural Lands

Agricultural lands that would be crossed by the FRPL have been planted, or will be planted, with crops such as winter wheat (*Triticum aestivum*) and sorghum (*Sorghum bicolor*) in non-irrigated fields and alfalfa (*Medicago sativa*) in irrigated fields. Some of the nonirrigated agricultural lands have been put into CRP and planted with seed mixture. Big bluestem (*Andropogon gerardii*) and blue grama are the primary grasses in the seed mixture used on CRP lands. The vegetation structure of the CRP lands resemble the grassland vegetation types.

3.8 Grazing

The CNG is open range and portions are presently being grazed. On NFS lands, grazing allotments are permitted on lands capable of producing forage on a sustained-yield basis. Additionally, many of the agricultural lands in the Project Area may also be grazed.

The FRPL would cross the following grazing allotments managed by the Forest Service:

- Lyons Camp
- Pump Station
- Stateline
- Collins
- Wagon Wheel
- Elk View
- Bantam Swing
- Galleta
- Buffalo Wallow
- Mountain Plover
- Lone Rock East
- Lone Rock West
- Setonsburg

3.9 Threatened, Endangered, and Sensitive Species

3.9.1 Habitat Description

The terrain of the Carrizo Unit of the CNG is flat to rolling and underlain by sand or sandy loam soils. According to the Colorado Natural Heritage Program's (CNHP) Ecological Systems of Colorado (CNHP 2005), two ecological systems occur within the CNG survey corridor: Western Great Plains Sandhill Shrubland and Western Great Plains Shortgrass Prairie. During previously conducted field investigations (Atkins 2012b), two distinct vegetation community types were identified within the CNG corridor: sand sagebrush shrubland and shortgrass prairie.

Areas described as sand sagebrush shrubland within the CNG Project Area were characterized by a sparse to moderately dense woody layer dominated by sand sagebrush with short and midgrasses covering the intervening ground. Sand sagebrush shrubland communities occur on well drained, deep, sandy soils often associated with dune systems (CNHP 2005). Associated vegetation observed in sand sagebrush shrubland communities include soapweed yucca (*Yucca glauca*), purple threeawn (*Aristida purpurea*), sideoats grama, blue grama, hairy grama (*Bouteloua hirsuta*), and Russian thistle (*Salsola kali*). Areas described as shortgrass prairie in the Project Area typically consisted of native rangelands on flat to rolling uplands over loamy or sandy soils (CNHP 2005). These areas are commonly utilized for domestic livestock grazing. This community type often intergrades with sand sagebrush shrubland communities within the area. The vegetation observed in the shortgrass prairie communities included blue grama, hairy grama, sideoats grama, purple threeawn, buffalo grass, James' galleta (*Pleuraphis jamesii*), western wheatgrass, Japanese brome (*Bromus japonicus*), and Russian thistle.

3.9.2 Species Considered and Evaluated

A review of the U.S. Fish and Wildlife Service (USFWS) Federally listed threatened and endangered species of potential occurrence in Baca County (USFWS 2013), along with a review of CNHP data (CNHP 2012), was conducted to identify existing records regarding threatened and endangered species, sensitive natural communities, and other features of concern known or suspected to occur in the Project Area. Additionally, the Colorado Parks and Wildlife (CPW) Species of Concern list (CPW 2012) and the Forest Service Region 2 Regional Forester's Sensitive Species List (USFS 2009) were reviewed.

Field surveys were conducted in July 2012 to evaluate the Project Area for species listed as threatened and endangered by the USFWS, Colorado species of concern identified by CPW, and Forest Service sensitive species within the CNG. Results of the of the field surveys were compared against these lists, which were obtained prior to initiating surveys, to determine habitat suitability and species presence within the Project Area. Table 4 provides Federally listed threatened and endangered species of potential occurrence in Baca County.

Table 4. U.S. Fish and Wildlife Service Federally Listed Threatened and Endangered Species and U.S. Forest Service Region 2 Regional Forester's Sensitive Species Identified on the Comanche National Grassland (CNG) in Baca County, Colorado.

COMMON NAME	SCIENTIFIC NAME	STATUS	KNOWN OR SUSPECTED TO BE PRESENT	SUITABLE HABITAT PRESENT	EXPLAINATION OF SPECIES PRSENCE WITHINTHE COMMANCHE NATIONAL GRASSLAND
Mammals					
Black-tailed prairie dog	*Cynomys ludovicianus*	Sensitive	Yes	Yes	"Four prairie dog complexes were identified within the proposed Project Review Area. The boundary of one potentially active complex spanning approximately 0.4 mile along the proposed Project alignment between mileposts 124 and 125 was mapped during field investigations conducted in July 2012" (Atkins 2012b).
Swift fox	*Vulpes velox*	Sensitive	Yes	Yes	"Review of CNHP[a] records did not indicate any known historic occurrences of the swift fox within the proposed Project Review Area. However, two swift fox dens were found on the Carrizo Unit in 2010. Swift foxes in fragmented prairie landscapes rely almost exclusively on shortgrass prairie habitat (Kamler et al. 2002). No swift foxes or their dens were identified during Atkins' 2012 field investigations for the proposed Project" (Atkins 2012b).
Birds					
Grasshopper sparrow	*Ammodramus savannarum*	Sensitive	Yes	Yes	"The CNHP records did not indicate any historic occurrences of the species within the proposed Project Review Area. No individuals or nests were identified during Atkins' 2012 field investigations" (Atkins 2012b).
Burrowing owl	*Athene cunicularia*	Sensitive	Yes	Yes	A single burrowing owl was documented in 2012 survey conducted by Atkins, near the northern extent of the CNG within the Project Area (Atkins 2012b).

Table 4. Continued.

COMMON NAME	SCIENTIFIC NAME	STATUS	KNOWN OR SUSPECTED TO BE PRESENT	SUITABLE HABITAT PRESENT	EXPLAINATION OF SPECIES PRSENCE WITHINTHE COMMANCHE NATIONAL GRASSLAND
Birds					
Ferruginous hawk	*Buteo regalis*	Sensitive	Yes	Yes	"The proposed Project Review Area does not contain any preferred nesting sites for this species, such as trees, shrubs, and cliffs; however, ferruginous hawks do occasionally choose nesting sites on the ground (15 percent of the time) when necessary. No individuals or nests were identified during Atkins' 2012 field investigations" (Atkins 2012b).
Mountain plover	*Charadrius montanus*	Sensitive	No	Yes	". . . suitable habitat for mountain plovers was identified during field investigations. According to results of a survey conducted during the 2009 mountain plover nesting period, no nests were found on the Carrizo Unit of the CNG" (Atkins 2012b).
Northern harrier	*Circus cyaneus*	Sensitive	Yes	Yes	"The CNHP records did not indicate any historic occurrences of the species within the proposed Project Review Area. No individuals or nests were identified during Atkins' 2012 field investigations" (Atkins 2012b).
Bald eagle	*Haliaeetus leucocephalus*	Sensitive	No	No	". . . no occurrences of the bald eagle were observed during the field investigations due to the lack of tall trees overlooking large bodies of water to support breeding and foraging habitat" (Atkins 2012b).
Loggerhead shrike	*Lanius ludovicianus*	Sensitive	Yes	Yes	"The CNHP records did not indicate any historic occurrences of the species within the proposed Project Review Area. No individuals or nests were identified during Atkins' 2012 field investigations" (Atkins 2012b).

Table 4. Continued.

COMMON NAME	SCIENTIFIC NAME	STATUS	KNOWN OR SUSPECTED TO BE PRESENT	SUITABLE HABITAT PRESENT	EXPLAINATION OF SPECIES PRSENCE WITHINTHE COMMANCHE NATIONAL GRASSLAND
Birds					
Long-billed curlew	*Numenius americanus*	Sensitive	Yes	Yes	"The CNHP records indicate one known occurrence of the species crossing the proposed Project Review Area corridor and two additional occurrences within 1 mile of the proposed Project. During the 2012 field investigations, Atkins ecologists recorded three occurrences of the species, near pipeline mileposts 137, 142, and 148, flying over the proposed Project Review Area. Potential suitable habitat was observed within the proposed Project Review Area, but no nests were identified" (Atkins 2012b).
Brewer's sparrow	*Spizella breweri*	Sensitive	Yes	Yes	The CNHP records did not show any historic occurrences of the species within the proposed Project Review Area. No individuals or nests were identified during Atkins' 2012 field investigations (Atkins 2012b).
Lesser prairie-chicken	*Tympanuchus pallidicinctus*	Sensitive (USFWS Proposed)	No	Yes	Lesser prairie-chicken has historically been present in parts of the CNG. In surveys conducted by Atkins in 2012, the nearest historic lekking area is approximately 900 feet from the Project Area. "Suitable LPC[b] foraging habitat was widespread in the CNG; however, no LPCs were observed and based on recent survey efforts by the USFS, no LPCs are anticipated to occur" (Atkins 2012b).

Table 4. Continued.

COMMON NAME	SCIENTIFIC NAME	STATUS	KNOWN OR SUSPECTED TO BE PRESENT	SUITABLE HABITAT PRESENT	EXPLAINATION OF SPECIES PRSENCE WITHINTHE COMMANCHE NATIONAL GRASSLAND
Amphibians					
Plains leopard frog	*Lithobates blairi*	Sensitive	No	No	The plains leopard frog has been noted in other locations of the CNG, but no standing water habitats exist within the Front Range Pipeline LLC Project Area. (USFS 2013b).
Reptiles					
Desert massasauga	*Sistrurus catenatus*	Sensitive	No	Yes	"Review of CNHP records dated March 20, 2012, did not identify any known historic occurrences of the desert massasauga rattlesnake within the proposed Project Review Area" (Atkins 2012b).
Plants					
Wheel (dwarf) milkweed	*Asclepias uncialis*	Sensitive	Yes	Yes	"The early spring-flowering dwarf milkweed (*Asclepias uncialis*) occurs in eight states and in about 14 Colorado counties, but it is seldom abundant. It has been collected from Sand Canyon on the Comanche National Grassland" (USFS 2004). No occurrences were noted in the Project Area during the 2012 field survey (Atkins 2012b).
Sandhill goosefoot	*Chenopodium cycloides*	Sensitive	No	Yes	"The fall-flowering sandhill goosefoot (*Chenopodium cycloides*) is rare on the Comanche National Grassland. The sandhill goosefoot is known from six states and can be locally common in sandy soils" (USFS 2004). No occurrences were noted in the Project Area during the 2012 field survey conducted by Atkins (Atkins 2012b).

[a]Colorado Natural Heritage Program.
[b]Lesser prairie-chicken.

The CNG is home to several species listed as threatened, endangered, or sensitive. These species include burrowing owl (*Athene cunicularia*), desert massasauga (*Sistrurus catenatus*), northern harrier (*Numenius americanus*), ferruginous hawk (*Buteo regalis*), mountain plover (*Charadrius montanus*), long-billed curlew (*Numenius americanus*), loggerhead shrike (*Lanius ludovicianus*), grasshopper sparrow (*Ammodramus savannarum*), lesser prairie-chicken (*Tympanuchus pallidicinctus*) swift fox (*Vulpes velox*), black-tailed prairie dog (*Cynomys ludovicianus*), and plains leopard frog (*Lithobates blairi*). Additionally, CNG is also within a migratory route for bald eagle (*Haliaeetus leucocephalus*) and whooping crane (*Grus americana*) (USFS 2013b). Only species that have been documented to exist within the CNG are considered further in this document.

3.10 Recreation

There are no developed recreation resources within the Project Area. None of the Project Area is designated as wilderness or as a roadless, zoological, or research natural area. Recreation within the Project Area includes wildlife viewing, hunting, scenic driving, and hiking. The interspersed land ownership of Forest Service and private lands throughout the Project Area tends to result in very little recreational use, except for the above-mentioned activities.

Outside the CNG, the proposed FRPL Pipeline would cross the Cimarron Route of the Santa Fe National Historic Trail and the Granada-Fort Union Branch of the Santa Fe Trail. These historic trails are both heritage resources, as well as recreational resources. Though not managed by the Forest Service, these locations are important recreation resources within the overall Project Area.

3.11 Visual Resources

Visual resources throughout the Project Area include broad horizons and viewsheds typical of grassland and rangeland environments. National Forest lands typically represent undeveloped grasslands, while private lands vary in levels of development supportive of agricultural land uses. The entire Project Area, both National Forest and private lands, includes view sheds that have agricultural structures such as fencing, corrals, barns, support buildings, residential structures, and structures supporting utility transmission, such as above ground utility poles, pipeline location markers, and pipeline support structures. County roads traverse nearly all section lines within the Project Area. As a result, the entire Project Area is within view of a County road.

3.12 Socioeconomics

The primary economic foundations of the Project Area, especially Baca County, are agriculture and transportation. Agriculture, primarily ranching, serves as the leading industry. Commercial support of agriculture in the form of supply outlets, feedlots, and agricultural product distribution locations (auction houses, granaries, and transportation hubs – both rail and truck) supplements this agricultural base. Additionally, recent developments supporting transportation and utility development industries compliment other existing industries.

The Proposed Action traverses CNG lands and private agricultural lands. Nearby towns include Springfield, Campo, Pritchett, and Kim.

According to the 2010 Census, Baca County had a population of 3,795. Springfield serves as the County seat and has a population of approximately 1,451. The available labor force as of 2010 was approximately 1,840 workers (United States Census Bureau 2012). La Junta serves as the largest community in or near the Project Area. La Junta has a population of 7,098. Most community services are available in La Junta, including lodging, restaurants, shopping, and transportation terminals.

3.13 Cultural Resources

In 2012 a complete cultural resource inventory was conducted for the Project Area. This included a literature search to confirm previously identified cultural resources within 1,000 feet on either side of the proposed pipeline route and a pedestrian survey extending 150–200 feet on either side of the proposed FRPL Project route. The literature search was intended to identify areas with high potential for cultural resources and the types of sites that may be encountered within the Area of Potential Effect (APE). The wider background literature search was also used to help identify whether any National Register of Historic Places (NRHP) eligible or listed sites were adjacent to or within the Project Area. Although the entire Project Area was intensively inventoried, the areas within the CNG were based on procedures consistent with Section 106 of the National Historic Preservation Act. Areas outside CNG were based on U.S. Army Corps of Engineers protocols.

Human presence on the CNG dates back approximately 9,000 years. This time can be generally viewed as the early and late Prehistoric Periods and the Historic Period. Artifacts and other evidence from each of these periods are present in and around the CNG. The Cultural Resource Survey (Atkins 2012b) identifies resources found within the Project Area, as well as the wider Study Area. The details of this survey are not available to the public, and specific information regarding the sites is not included in this EA. However, information about these sites was examined and utilized in preparation of this EA, and subsequent mitigation is based on that information. Brief summaries of each of the periods, along with the descriptions types of artifacts found and other evidence, are presented in this section. These descriptions come directly from the Cultural Resource Survey report completed by Atkins in 2012 (Atkins 2012b).

3.13.1 Early Prehistoric Period

Note: The early prehistoric period includes the Paleoindian and Archaic periods. The text below is from Atkins (2012b).

> Paleo-Indians gradually shifted into the Archaic period around 9000 B.P. (years before present). The Archaic is characterized by small bands of people employing a variety of hunting and gathering activities. In the southeastern area of Colorado, recent investigations reveal a subsistence system with an emphasis on plant processing and small game. The Early Archaic period dates from about 7000-9000 B.P. With the extinction of numerous large mammal species and the possible reduction in population

size of others, human groups during this time frame were forced to adopt a more varied hunting and gathering subsistence pattern to survive.
The hallmark of the Middle Archaic period is a hunting lithic tool kit consisting of numerous manos, mortars, and other grinding tools. This is evident by an increase in ground stone artifacts and the occurrence of rock-filled hearths or roasting pits, which may have served to cook either vegetal or animal materials (Frison 1991). Most sites along the Arkansas and Cimarron Rivers are open encampments in areas with a great variety of vegetation. The taking of larger animals for subsistence increased during this time period as the number of larger prey animals, including bison, rebounded on the plains as the grasslands recovered from the drought conditions of earlier periods. Southwest of the Project Area, on the Chaquaqua Plateau, diagnostic dart points include Abasolo, Trinity, Pandale, and Travis forms (Eighmy 1984). Observed sites that are located between the Purgatoire and Apishapa Rivers include point assemblages such as the lanceolate McKean point style and the related Duncan, Hanna, and Mallory point types (Frison 1991).

By about 3000 B.P., the Late Archaic is marked by new cultural manifestations that replaced the Middle Archaic complex. The first of these manifestations is a series of dart points resembling Yarborough, Ellis, Edgewood, Palmillas, Shumla, and Marcos styles that are relatively common during the Late Archaic (Eighmy 1984). Another manifestation is an increasing abundance of ground stone implements. The emergence of ground stones, combined with site location data, imply extensive foraging activity orientated more toward the canyons. However, the subsistence economy remained much as it had been during the middle Archaic period with generalized large to small mammal and rodent hunting. In the Purgatoire/Apishapa area, sites continue to be found in a variety of environmental zones.

3.13.2 Late Prehistoric Period

The Late Prehistoric period is marked by the wide spread adoption of the bow and arrow and the appearance of ceramics. During this period, communal hunting techniques such as game drives and arroyo traps seem to have increased in number. Dietary protein from meat consumption appears to have risen due to these communal hunts. However, there was little change in the lifeways of these people from the preceding Archaic period; both followed a traditional hunting and gathering subsistence strategy. Unlike many other areas of the Southwest cultural area, southeastern Colorado never developed a truly sedentary lifestyle based on horticulture (Krieger 1946). This may have been a result of unpredictable rainfall within the area of the Great Plains.

The Late Prehistoric period is also marked by the emergence of ceramic usage. The type and style of ceramics is an indicator that the peoples of the area were trading with the Pueblo cultures of the southwest for food, i.e., maize. Maize was probably transported in ceramic vessels into southeastern Colorado, which was then planted. As a result, a semisedentary/seminomadic lifestyle developed to adapt to trade with the Pueblo culture and maintain seasonal crops during the year. Two phases of ceramic usage in this area have been proposed: the Early Ceramic and Middle Ceramic (Campbell 1976).

The Early Ceramic (2000–1000 B.P.) is indicated by the use of cordmarked, conoidal-shaped ceramic vessels (Cassels 1983). However, many of the dart types of the Late Archaic are still used in the Early Ceramic to continue hunting large or small mammals and rodent game (Cassels 1983). Scallorn, Alba, Young, Fresno, and Huffacker are dart points that can be associated with the correlative Early Ceramic phase around 500 B.P. (Eighmy 1984). The appearance of an increased number of ground stones also parallels the emergence of ceramics during this period. Observed from site assemblages, the use of ground stone technology greatly increase, which may indicate the introduction of maize horticulture. Maize was probably introduced into the region by way of long trade with the Ancestral Pueblos of the southwest (LeBlanc 1999).

During the Middle Ceramic phase (1000–450 B.P.), the use of ceramics continue to spread into the plains area, evidence of which is found in ceramic artifacts discovered along the Arkansas and Cimarron Rivers. The correlative projectile points that are characteristic of this phase are Washita and Reed (Eighmy 1984; LeBlanc 1999). Campbell (1976) and others related this material to an Apishapa Focus/Phase within a larger unit called the Panhandle Aspect. The Apishapa Focus was thought to be an outgrowth of the Graneros and the ancestors of the Antelope Creek Complex. However, studies suggest that the Apishapa and Antelope Creek complexes were actually contemporaries (Lintz 1978). These blended cultures appear to have adopted characteristics of the Pueblo to the southwest with aspects of the Great Plains.

By 500 B.P., this area of Colorado, Oklahoma, and Texas was basically abandoned as local peoples migrated into different areas (Brooks 2004; Winship 1904). The reason for this abandonment of the area is still subject to debate. Several causes have been theorized by archeologists. The theories range from human-created environmental degradation, drought conditions causing agriculture to become increasingly infeasible, to new migratory tribes exerting stress on already fragile local cultures (Brooks 2004, cited in Atkins 2012b).

3.13.3 Historic Period

The Historic Period generally extends from approximately 500 B.P., into the mid-20th century. It is characterized by the early Spanish Explorers, European expansion into western North American including development and utilization of the Santa Fe Trail, eventual settlement and homesteading, through the Dust Bowl era, including homesteading activities and eventual establishment of the Comanche National Grassland, and other Grasslands through the Great Plains.

The early historic period is characterized by exploration, primarily by Spanish interests, throughout the southern Great Plains, including present day Colorado, New Mexico, western Texas and the Oklahoma panhandle region. Though the Spanish explored the region, they never developed formal towns and missions within southeastern Colorado like they did in New Mexico (Bannon 1970). Rarely did early Spanish expeditions within Arkansas River valley extend further east of the Purgatoire River (Bannon 1970).

American exploration of the region started in the early 1800s, when the United States purchased the Louisiana Territory from France. The addition of Louisiana to the American territories also led to intense interest in the west. Several expeditions were sent into the area to ascertain what the new lands contained. In 1806, an expedition led by Zebulon Pike was dispatched to explore the Red and Arkansas Rivers (Coues 1965). The Pike Expedition entered the area by traveling along the southern banks of the Arkansas River across the Sangre de Cristo into the San Luis valley. In 1816, Major Stephen H. Long made the next official exploration of the Colorado region. He entered the area by way of the South Platte River and explored the Front and Rampart ranges, returning to the east by-way of the Arkansas and Canadian Rivers (Goetzmann 1979). Spanish dominance of the region ended in 1821 with the Mexican revolution and the establishment of the Republic of Mexico.

The newly established Mexican republic, in order to gain much needed income from the outer territories, opened the northern borders to traders (Duffus 1972). By the fall of 1822, American trade goods were flowing into northern New Mexico with the establishment of the Santa Fe Trail. The trail extended from Franklin, Missouri to Santa Fe, New Mexico. Within the region, the Santa Fe Trail generally followed the northern banks of the Arkansas River, turned south along the Purgatoire (Picketwire) River, crossed Raton Pass, and then continued to onto Santa Fe (Duffus 1972). The trail remained the primary route for transport of goods across the region until the 1860s. Railroad development in the late 1860s through the 1880s allowed for rail transport of goods and people, effectively ending the usefulness of the trail (Vestal 1996).

The 1860s marked the beginning of established agriculture in the region, beginning primarily with the cattle industry. Lands in the region served as grazing lands, yet were within functional proximity to larger markets via railroad. By the 1970s, southeastern Colorado was widely but thinly settled by a ranching and subsistence farming population (Merk 1978). However, over expansion of ranches, careless land management, and overgrazing led to the decline of the open range on the plains (Henderson 1951). Grazing remained an important factor in the economy of the region through 1900.

The Homestead Act of 1862 and its subsequent amendments allowed for development of lands across the Great Plains (Dick 1970). The decade of the 1910s was characterized by wet weather conditions, making farming quite favorable in the region, leading to the claim of many homesteads in the region. This lead to increases in farming and crop production through the 1920s, and the eventual drop in prices caused by over-abundance of agricultural crops, leading to the crash in prices and the Great Depression (Ubbelohde et al. 1982). Poor weather conditions in the early 1930s, coupled with common crop failures and farms abandoned with the Great Depression, led to dust bowl conditions (Wickens 1964). The government response to the dust bowl was the Agricultural Adjustment Act of 1933(PL 730-10, 48 Stat.31). Among other things, this act led to returning the lands to grassland, or rangeland, and acquisition of several tracts of land that were organized to be managed as the Comanche National Grassland (Atkins 2012b).

Based on this understanding of the area's history, Atkins conducted a survey of the Project Area (within the 80–90 foot ROW of the pipeline), as well as a broader, 300-foot-wide survey area, and a 2,000-foot-wide Study Area throughout the proposed FRPL Project corridor. Details of survey methodology and specific results are found in the survey report (Atkins 2012b).

During the survey, no cultural resources were identified within the proposed 80–90 foot Project Area through the CNG. One area outside the 80–90 foot proposed ROW included a historic site that appears to be the location of buildings associated with early 20th century settlement and farming. A second area in the FRPL Project corridor is located between two known prehistoric sites. While no cultural resources were located during the pedestrian survey in this specific location, this area is considered to have moderate to high potential for buried cultural deposits even though no surface cultural resources were located within the APE. As a result, this area would be monitored during construction activities to identify any potential cultural materials that might be uncovered by FRPL Project activities.

3.13.4 Survey Methodology

As part of the overall Project, FRPL contracted a cultural resource survey of the Project Area to be completed by qualified cultural resource experts (Atkins 2013a). Methodologies and survey results represent the conditions at that time. Methodologies described below directly reflect this survey. It needs to be noted that for the purposes of this EA, cultural resources are not specifically identified to protect the integrity of these resources. Information germane to the purposes of the EA are included, in a level of appropriate detail that allows for accurate and representative analysis without disclosing site-specific details that could compromise the integrity of the resources.

The entire 430.0 linear miles (15,536.69 acres) of the Project Area were surveyed for cultural resources. The CNG Project Area includes the 33.3 linear miles within the CNG's Administrative boundary, although only 11.7 miles are actually on NFS system lands. Approximately 3,972 acres were surveyed within the CNG Project Area. In areas where the Proposed Action would parallel an existing, maintained ROW, four pedestrian survey transects were placed opposite the construction side of the proposed FRPL Project corridor. The transects were generally placed 15, 30, 45, and 60 meters from the edge of the existing, maintained easement (Atkins 2012a, 2012b, 2012c).

The Proposed Action would require a maximum of 80 feet of standard workspace to perform the necessary construction activities, including a 50-foot permanent easement. The cultural resource surveys were conducted within a corridor approximately 300 feet in width to ensure adequate coverage and allow flexibility for minor adjustments in pipeline alignment. All proposed access roads that would require significant upgrade were surveyed with a corridor of 50 feet along both sides. Also, areas for three proposed pipe yards, a single pumping station, and a pipe unloading yard were block surveyed.

Archeological sites were defined by the presence of five or more cultural artifacts at least 50 years in age and maintained a reasonable amount of surface provenience within a 50-square-meter area. Areas where five or less artifacts were located within a 30-meter radius were

considered Isolate Occurrences (IOs). Typically, IOs are considered transportable artifacts that represent a single activity.

Once a site was identified, various delineation methodologies were consistently applied to identify each of the sites' boundaries. Determinations were made based on both surface artifact density and observed features, as well as any other physical limitations such as escarpments, water courses, etc. Controlled surface inspections performed at 5.0-meter intervals were conducted to determine site boundaries based on a clear reduction in surface artifact density within the proposed ROW. Every site was mapped by pace and compass, recorded with a Trimble GeoXT, and photographed. Diagnostic artifacts were scale photographed. No artifacts were collected during the survey.

The location of each archeological site was recorded on a U.S. Geological Survey (USGS) topographic map, and a sketch map was drawn showing the location of the boundary and all other salient site features. A temporary field designation was assigned, and a Colorado site form was completed and submitted to the Colorado Office of Archaeology and Historic Preservation (OAHP) for assignment of a permanent trinomial designation.

The survey employed a "no collection policy," and no artifacts were removed from the Project Area. All potentially diagnostic artifacts were digitally photographed and evaluated by lab personnel to determine cultural affiliation and approximate date of manufacture. All official State site forms and site-specific documentation will be submitted to the OAHP for curation.

3.13.5 Site Probability

Atkins (2012b) conducted a records and literature review utilizing the files stored on the OAHP online secure Compass System for the purpose of determining the location of previously recorded archeological sites (sites issued a trinomial/recorded at OAHP) within the proposed Project Area. Using the shape files provided by OAHP, previously recorded archeological sites were plotted on USGS 7.5-minute quadrangle maps. The Compass System also was used to identify listed and eligible NRHP properties and sites.

The Colorado State Register of Historic Properties was used to identify State Archeological Landmarks, certified historic districts, State Historic Monuments, National Memorials, National Historic Sites, and National Historic Parks, to ensure the completeness of the study. As a secondary source of NRHP properties and National Historic Landmarks (NHL), the National Park Service's NRHP GIS Spatial Data and Lists of NHL were also consulted.

Within the 2,000-foot-wide Study Area for the Proposed Action, the literature and records review identified 26 previously recorded archeological sites. Four of the 26 previously recorded sites are located within the proposed APE; however, based on the number of sites that are recorded within 1,000 feet of the centerline, the Project Area is classified as sensitive for cultural resources. Since 2001 there have been 35 previous cultural resource surveys conducted in the Project Area vicinity . Eight of these surveys were conducted within Baca County for different projects including a water project, burial of electrical lines, construction of the Picture Canyon Road and Picnic Area, a pipeline and tank survey, two other pipeline projects, and location of

two sets of seismic lines. Other multicounty cultural resource surveys were completed for pipeline, gas exploration, and prescribed fire projects, which included a Class II survey of the CNG.

A survey of approximately 3,972 acres was completed to support the Proposed Action on the CNG Project Area (Atkins 2013a). This survey was conducted in 2012 and included a pedestrian survey of the entire Project Area through the CNG's administrative boundary. The survey resulted in the relocation of two cultural resource sites and the location of a single isolated find. Of the two cultural resource sites encountered during this survey, one is historic and one is prehistoric.

3.14 Paleontological Resources

Significant paleontological resources have been discovered on different parts of the Carrizo Unit of the CNG. These discoveries have been primarily located in places where fossil-bearing layers have been exposed, primarily in canyon-type settings such as the Picketwire Canyonlands (USFS 2005a).

A literature search conducted in 2012 by Atkins indicated that a "check of the site project and site files conducted by the OAHP indicates that no previously recorded paleontological sites have been located within 1,000 feet of the current Project Area" (Atkins 2012c).

3.15 Geology, Topography, and Soils

The terrain of the Project Area is flat to rolling lands, with minimal slope. Soils are primarily sand or sandy loam. According to the CNHP's Ecological Systems of Colorado (CNHP 2005), two ecosystems occur within the CNG survey corridor: Western Great Plains Sandhill Shrubland and Western Great Plains Shortgrass Prairie.

Geologically, the CNG is located within the Apishapa Uplift and skirts just to the southwest of the Las Animas Arch and terminates just before the Denver Basin. The surface rock that would be traversed by the FRPL Project are Cenozoic sediments along the southeast portion of the Proposed Action and in stream drainages (alluvium), and Mesozoic sandstones, shales, and limestones from the central portion of the FRPL Project to the Arkansas River (USFS 1993). Older rocks are exposed along the stream drainages and the mesa areas south of the Purgatoire River.

3.15.1 Economic Minerals

In terms of economics and natural resources, the FRPL Project traverses a region of oil and gas resources; however, it does not cross any oil or gas fields. No major coal-producing districts are located within the Project Area.

3.15.2 Geologic Hazards

Landslides

Terrain within the Project Area on the CNG is of such gradual slope that it is not conducive to landslides.

Seismicity

Colorado is considered to be a region of minor seismic conditions. The Project Area route is a zone of minor damage where earthquakes have maximum intensities corresponding to V and VI on the Modified Mercalli Intensity Scale (Dames and Moore 1978). An earthquake within a 100-mile area of the Proposed Action with a Richter magnitude of 4.0 or greater was recorded near Trinidad in 1966. Less intense earthquakes have had epicenters near Rocky Ford in 1955 and Lamar in 1956 (Kirkham and Rodgers 1985).

3.16 Soils

The FRPL Project would traverse four soil associations in Baca County in the area of the CNG: The Otero-Potter Association, Travessia-Kim Association, Vona-Manter-Dalhart Association, and Baca-Wiley Association. Information about the soil types below has been paraphrased from the *Soil Survey of Baca County, Colorado* (USDA SCS 1973).

3.16.1 Otero-Potter Association

The Otero-Potter Association is an area of low, irregular relief. The overall, gently undulating topography is broken by nearly level flats, shallow drainage ways with steep side slopes, and a few rolling areas. Otero soils make up about 60 percent of the association, and the Potter soils comprise approximately 30 percent. The remaining 10 percent are made up of Vona, Tivoli, and Dalhart soils. Otero-Potter soils account for approximately 4.04 miles of the ROW, as it crosses Baca County. Otero soils are deep, undulating, light-colored, dominantly sandy loams and are limy throughout. Otero soils are susceptible to soil blowing. Potter soils are strongly calcareous, shallow, light-colored gravelly loams that overlie caliche. They are mostly on the stronger slopes and particularly on side slopes to drainage ways. Potter soils are susceptible to soil blowing and water erosion.

3.16.2 Travessilla-Kim Association

The Travessilla-Kim Association consists of shallow, strongly sloping sandy loams on sandstone breaks and bluffs and deep, dominantly gently sloping loams border on foot slopes. Travessilla soils make up about 50 percent of the association and Kim soils about 15 percent. The remaining 35 percent consists of extensive areas of rough stony land in the most steeply sloping part of the association and fairly extensive areas of McCook and Nunn soils on terraces adjacent to streams. Travessilla soils are shallow, strongly sloping, and light-colored stony sandy loams. They average less than 15 inches in depth. Kim soils are light-colored loams that occupy the foot slopes and fans below Travessilla soils. Travessilla-Kim soils account for approximately 2.78 miles of the ROW as it crosses Baca County.

3.16.3 Vona-Manter-Dalhart Association

The Vona-Manter-Dalhart Association consists of deep, nearly level to gently undulating sandy loams and loamy sands on uplands. Vona soils make up about 34 percent of the association, Manter soils about 15 percent, and Dalhart soils about 15 percent. The remaining 40 percent is extensive Otero soils on and adjacent to slopes along drainageways where the Proposed Action route crosses. Vona soils are light-colored sandy loams and loamy sands that have a sandy-loam subsoil. They are mostly in the gently undulating part of the association. Manter soils are like the Vona soils, but they are darker in color and are in more smoothly sloping areas. Dalhart soils are dark in color, but unlike Vona soils, they have a finer textured, dominantly sandy, clay loam subsoil. Dalhart soils are the most nearly level and occupy the flatter parts of the association. Vona-Manter-Dalhart Association accounts for approximately 23.69 miles of the ROW as it crosses Baca County.

3.16.4 Baca-Wiley Association

The Baca-Wiley Association consists of deep, nearly level to sloping clay loams and loams on loess uplands. Baca soils make up about 40 percent of the association, and Wiley soils about 38 percent. The remaining 22 percent are relatively large areas of Campo and Harbord soils and small areas of Colby soils. Baca soils are nearly level, light-colored light clay loams. Their subsoil is typically clay loam and silty clay loam and has a strongly developed blocky structure. Baca soil types are leached of lime in the upper few inches but are strongly calcareous in the lower parts of the subsoil. Wiley soils have a loam surface layer and a silty clay loam and silty loam subsoil. Wiley soils are generally calcareous throughout. They are nearly level and sloping and usually slightly more sloping than Baca soils. Wiley soils are susceptible to both soil blowing and water erosion. The Baca-Wiley Association accounts for approximately 14.5 miles of the ROW as it crosses Baca County.

3.17 Environmental Justice

The utility corridor, as it is established, is located primarily across privately owned agricultural lands and the CNG managed by the Forest Service. The utility corridor is not located near any concentrations of economically disadvantaged or minority populations.

4.0 ENVIRONMENTAL CONSEQUENCES AND MITIGATION

This chapter describes the potential impacts to the affected environment as described in Chapter 3.0. The information presented below is based on published and unpublished sources, consultation and coordination with various agency personnel, and professional judgment. Each of the following sections describes potential impacts, any mitigation necessary to reduce or eliminate negative impacts, and conservation measures to be implemented for each of the resources or areas of concern.

As a result of implementing the Front Range Pipeline LLC (FRPL) Project, (Proposed Action), a number of potential impacts to the existing environment may occur. These impacts range from beneficial to adverse. For each resource discussed previously in the document, potential impacts and mitigation measures (avoidance and minimization of impacts) are discussed. The effects will not threaten a violation of Federal, State or local law requirements imposed for the protection of the environment. The proponent must comply with all Federal and State laws or regulations including but not limited to:

1. Federal and State air quality standards including the requirements of the Clean Air Act, as amended (42 U.S.C. 1857 et seq.).

2. Federal and State water quality standards, including the requirements of the Federal Pollution Control Act, as amended (33 U.S.C. 1151 et seq.).

3. Federal and State standards for the use or generation of solid wastes, toxic substances and hazard substance, including the requirements of the Comprehensive Environmental Response, Compensation and Liability Act, as amended (42 U.S.C. 9601 et seq., and its implementing regulations 40 Code of Federal Regulations (CFR) Chapter 1, Subchapter J, and the Resource Conservation and Recovery Act (42 S.C. 6901 et seq.).

4.1 Water Resources

4.1.1 Streams

The proposed pipeline would cross twelve ephemeral streams within the Project Area. If water is present at time of construction, the pipeline would be installed using boring techniques to go under the streams. If not, trenching techniques will be used and the stream bed will be restored to its preexisting condition. The best management practices (BMP) outlined in U.S. Department of Agriculture–Forest Service (Forest Service) Manual 2500 (AcEco – 4 Stream Channels and Shorelines) (USFS 1990) will be followed to minimize any impacts that may occur. Utilizing this approach, the effects on the surface water resources will be minimal through the application of BMPs within the operating plan.

4.1.2 Wetlands

"No wetlands were documented within the survey corridor of the administrative boundary of the Comanche National Grasslands (CNG, introduction added)" (Atkins 2012a). No direct or indirect impacts would occur.

4.1.3 Ponds

The proposed FRPL Project would cross one pond within the Project Area. If water is present at time of construction, the pipeline would be installed using boring techniques to go under the pond. If water is not present, trenching techniques would be used and the stream bed would be restored to its preexisting condition. The BMPs outlined in Forest Service Manual 2500 (AqEco-3 Ponds and Wetlands) (USFS 1990) would be followed to minimize any impacts that might occur. Utilizing this approach, the effects on surface water resources would be minimal through the application of BMPs within the Project Area.

4.1.4 Groundwater

Construction depths for the proposed FRPL Project are 3 feet across pasture lands, 5 feet across cultivated lands, and 7 feet under water bodies, arroyos, and streams. Because of the depth of the Dakota Aquifer relative to the depth of trenching and placement of the FRPL Project, there would be no impact to groundwater from implementation of the Proposed Action. While the alluvial aquifers could be affected by potential pipeline leaks or ruptures, the FRPL Project is designed to minimize the potential for leaks or ruptures and the volume of product lost should an accident occur. The magnitude and duration of hydrological changes would depend on the volume of the spill, slope, aspect, gradient, depth to aquifer, rainfall, and success of containment. During construction the integrity of the pipeline would be tested using hydrostatic water-testing procedures. Withdrawal and use of hydrostatic test water would be accomplished to minimally reduce other beneficial uses of the water. Water would be obtained from private water supply sources. Hydrostatic test water would not be discharged into streams or drainages of the waters of the State of Colorado or of the United States.

4.2 Climate and Air Quality

4.2.1 Climate

No impacts on the local or regional climate are expected due to construction or operation of the FRPL Project.

4.2.2 Air Quality

Construction impacts would be temporary and transient. The primary impact of FRPL Project construction activity would be fugitive dust from construction equipment. The quantity of fugitive dust generated by the equipment depends on variables such as vehicle speed, wind speed, vegetative cover, moisture content, and soil type. During periods of unstable atmospheric conditions, meteorological factors would cause rapid dispersion, resulting in minimal particulate impact. During stable atmospheric conditions, equipment-induced dust may not readily disperse and there may be local high particulate levels.

Other much less significant impacts would be equipment emissions, such as carbon monoxide, nitrogen oxides, hydrocarbons, and odors. However, due to relatively small emission rates, the area and mobile characteristics of the sources, these impacts would be barely detectable, even a short distance from the construction equipment. No impacts from pipeline operation are likely. The pump stations would be electric and would not generate emissions. Maintenance and operation of the pipeline would require vehicle travel from time to time but would not significantly increase overall road travel within the Baca County area.

4.3 Noise

Noise associated with construction would occur at localized points along the FRPL Project route through Baca County. It would be highly localized to active construction activities and would not be sustained over long periods of time. Individuals near construction activities may experience temporary annoyance, though the impact of the environmental noise level at any specific location during construction would be short term. Nighttime noise levels would be unaffected, as construction would be limited to daylight hours.

Because pipeline construction noise would be temporary and localized, changes to noise quality should be minor and no mitigation would be necessary. The operation of the proposed pump stations may increase noise levels; however, increases would be very small. Rural ambient noise levels are normally in the 40–50 decibels on the A-weighted scale (dBA) range. The noise levels generated by the FRPL Project pumps are well below Colorado Noise Abatement standard (CRS 25-12-103) of 80 dBA at 25 feet outside of the property line.

4.4 Land Use

The entire FRPL Project, as it crosses the CNG, would be contained within the established utility corridor and within the ROW that would be granted by permit if the Proposed Action is approved. Three other pipelines are already located within this designated corridor. As a collocated pipeline, the FRPL Project would be consistent with existing land uses across private, State, County, and Federal lands. During construction, a total of 349.1 acres (113.5 acres on CNG and 235.6 acres on other lands) would be disturbed. These lands will be restored in accordance with the restoration terms of the permit.

4.5 Wildlife Resources

Construction impacts on wildlife would include the following: short-term disturbance and displacement of animals away from construction activities; mortality of small, less-mobile animals; possible increased legal and illegal hunting by construction personnel; and disturbance of vegetation within the construction ROW. Construction would impact approximately 322.9 acres (113.5 acres on CNG and 235.6 acres on other lands) within the Project Area. Habitats disturbed during construction will be restored in accordance with the restoration terms of the permit. These include prescriptions for seed mixtures, reseeding protocols, and ground contouring to maximize the restorative efforts. Habitat disturbances followed up with BMPs for

restoration will generally be evident for 3–5 years, as the restoration efforts grow, depending on climatic conditions during that time.

Construction impacts to wildlife would cause disturbance of animals, short- and long-term habitat loss, and limited wildlife mortality to species with limited ranges, such as rodents, reptiles, and amphibians. The small mortality associated with pipeline construction would be localized to the ROW. No species would be affected at the population level.

Ground-disturbance activities associated with FRPL Project operation would be limited to areas needing repair or maintenance. The limited number of personnel involved in operation and maintenance would cause minimal potential increases in poaching and harassment of wildlife. Operation impacts to wildlife would be minimal or nonexistent.

Under potential upset conditions, the FRPL Project could leak or rupture and spill natural gas products. In such a scenario, the most sensitive areas would be at perennial stream crossings. There are no such crossings across the CNG, so this would not be an issue. Areas where the pipeline would cross such streams outside the Project Area are discussed in the cumulative impacts section.

4.6 Aquatic Resources

There are no aquatic resources within the proposed ROW within the CNG. Therefore, there will be no impacts to aquatic resources. There are places outside the CNG where the Proposed Action would cross surface-water resources that have aquatic resources. Impacts to these areas are discussed in the cumulative impacts section.

4.7 Vegetation

Construction of the FRPL Project would disturb approximately 349.1 acres (113.5 acres on CNG) as it crosses the CNG in Baca County, Colorado. Disturbance would be on shortgrass and midgrass prairie communities. From a vegetation standpoint, impacts of the FRPL Project would be negligible. The FRPL would be required to comply with the revegetation plan outlined in the permitting process (Appendix B). This revegetation plan outlines such things as soil management through the trenching process, replacement of the soils in the trench, grading and soil preparation prior to seeding, seeding practices and seed mixtures to be used, and completion of the revegetation process. Vegetation impacts that would result from the construction process would be minimal and short term, as the revegetation plan will be implemented to mitigate any impacts that would occur.

On private crop lands, the FRPL will utilize the recommended seed mixture outlined by the property owner as an effort to stabilize soils and revegetate the disturbed areas of the ROW.

4.8 Grazing

Impacts to grazing would be temporary. During construction there would be a potential of disrupting cattle movement on a localized scale. Forage crops would be removed within the ROW due to construction activities. However, after construction, the disturbed areas would be reseeded according to the revegetation plan (Appendix B) and in accordance with plans outlined by all landowners within the ROW.

4.9 Threatened, Endangered, and Sensitive Species

Based on a review of documented special status species occurrences in the Project Area and what is known of Project Area existing habitat, one Federal candidate species and 16 Forest Service Region 2 sensitive species potentially occur within the Project Area. Each of these species and their associated habitat within the proposed Project Area is discussed in greater detail below.

This FRPL Environmental Assessment (EA) provides a determination of the likely effects of the Proposed Action on each species or species group. The types of determinations that can be made for those species protected under the Endangered Species Act (ESA) are provided by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service. The determinations made for Federally listed and proposed species are as follows:

- No Effect
- May Effect, but Is Not Likely to Adversely Effect
- May Effect and Is Likely to Adversely Effect

According to Forest Service Manual (FSM) 2670.42 (USFS 2005b), Region 2 Forest Service-designated sensitive species are covered under the following impact determinations:

- No impact
- Beneficial impact
- May adversely impact individuals, but is not likely to result in a loss of viability in the planning area nor cause a trend to Federal listing or a loss of species viability range wide
- Likely to result in a loss of viability on the planning area in a trend to Federal listing

4.9.1 Federally Listed Proposed, Threatened, and Endangered Species

Lesser Prairie-chicken (*Tympanuchus pallidicinctus*)

The lesser prairie-chicken has one of the smallest population sizes and most restricted distributions of North American grouse, second only to Gunnison sage-grouse (*Centrocercus minimus*). The lesser prairie-chicken inhabits rangelands dominated primarily by shinnery oak (*Quercus havardii*) or sand sagebrush in five states within the southern Great Plains. Its distribution and population size have been reduced by the activities of humans, even though it occurs in areas with low human population densities. Recurrent droughts, combined with excessive grazing of rangelands by livestock and conversion of native rangelands to cropland, have significantly reduced populations and the distribution of the lesser prairie-chicken since the early 1900s. Currently, the species is most common in dwarf shrub–mixedgrass vegetation associated with sandy soils, sometimes interspersed with shortgrass or mixedgrass habitats on loamy or clayey soils. In Colorado the species is typically restricted to sand sagebrush communities dominated by sand dropseed (*Sporobolus cryptandrus*), side oats grama (*Bouteloua curtipendula*), threeawn (*Aristida* spp.), and blue grama (Hagen and Giesen 2005). Although suitable habitat for this species exists in the Project Area vicinity and habitat would likely be disturbed during construction, these disturbances are short term, especially since the Project Area will be revegetated (Appendix B) upon completion of the FRPL Project. As such, this species would not likely be adversely effected as a result of FRPL Project implementation (Atkins 2012b). Though not listed as threatened or endangered under the ESA, USFWS has proposed that the lesser prairie chicken be listed, and therefore is included in this section.

Direct, Indirect, and Cumulative Effects on Breeding Birds

For the purposes of this document, cumulative effects are those past, present, and future activities planned to occur within the administrative boundary of the CNG. No major changes in land use are expected within the next 5–10 years on NFS lands in the area. Grazing by livestock will continue to be the primary land use, and it will interact with the effects of any wildfire and prescribed burns. Recreational use on the CNG mainly consists of hunting, hiking, and bird watching, which are not likely to impact these species.

Construction activities associated with the Proposed Action could temporarily displace individual foraging and breeding birds. However, these avians have the ability to move to other suitable habitats during construction and could return once activities are completed. The ground disturbance created by the construction of the Proposed Action would generally be reclaim within 3–5 years, depending on the amount of precipitation. Although no nesting activities were observed during field investigations of the Project Area (Atkins 2012b), burrowing owl, long-billed curlew, ferruginous hawk, loggerhead shrike, mountain plover, and northern harrier and/or their associated habitats were observed during 2012 field investigations (Atkins 2012b).

Burrowing owls could be directly affected by FRPL Project implementation where the Project is located within or near existing, occupied habitat/prairie dog colonies. Burrowing owls may shift their locations overtime according to the moving locations of black-tailed prairie dog colonies. Burrowing owls could be indirectly impacted if currently unoccupied prairie dog colonies are permanently destroyed by the FRPL Project. However, due to the limited duration of ground

disturbance during construction, implementation of preconstruction surveys, scheduling of construction activities outside of the breeding season, and reclamation of the Project Area to preconstruction conditions (Appendix B), no cumulative effects on burrowing owls would be anticipated as a result of the FRPL Project.

Long-billed curlews could be directly affected by the Proposed Action if the FRPL Project is located within or near existing breeding habitat consisting of shortgrass and mixedgrass prairies less than 30 centimeters tall. Long-billed curlews could be indirectly impacted if suitable habitat is permanently destroyed by the Proposed Action. However, due to the limited duration of ground disturbance during construction, implementation of preconstruction surveys, scheduling of construction activities outside of the breeding season, and reclamation of the Project Area to preconstruction conditions (Appendix B), no cumulative effects on long-billed curlews would be anticipated as a result of the FRPL Project.

There are no known locations of ferruginous hawk or loggerhead shrike nests within the Project Area. Trees or other vertical structures, such as windmills, would not be removed during the FRPL Project implementation. The Proposed Action would impart no direct, indirect, or cumulative effects on these species.

Atkins (2012b) noted no mountain plover individuals or nests during Project Area field investigations, which coincided with the mountain plover's critical nesting period. However, suitable habitat for mountain plovers was identified at that time. According to results of a survey conducted during the 2009 mountain plover nesting period, no nests were found on the Carrizo Unit of the CNG (USFWS 2009). Based on literature reviews and field investigations, direct, indirect, or cumulative effects on the mountain plover would not be anticipated as a result of construction of the Proposed Action.

The Colorado Natural Heritage Program (CNHP) records did not indicate any historic occurrences of northern harrier within the Project Area. No individuals or nests were identified during field investigations (Atkins 2012b). While the northern harrier may be present during FRPL Project construction, it could avoid the area temporarily. Habitat for this species would not be impacted by the Proposed Action. Based on literature reviews and field investigations, direct, indirect, or cumulative effects on the northern harrier would not be anticipated as a result of construction of the FRPL Project (Atkins 2012b).

Determination

Occupied or unoccupied habit for these species would not be permanently impacted; however, temporary disturbances to individual bird species may occur during construction of the Proposed Action. As a result, a determination of adversely impact individuals may be made, but is not likely to result in a loss of species' viability in the Project Area or cause a trend to Federal listing or a loss of species' viability rangewide (Atkins 2012b).

Direct, Indirect, and Cumulative Effects

There is no occupied habitat, and very little suitable habitat, for any Federally listed species within the Project Area. The Proposed Action is located in shortgrass prairie and sand sagebrush (*Artemisia filifolia*) shrubland communities. The affected area is mostly gently rolling with a slight slope. Once the FRPL Project is completed and the vegetation has time to grow and reclaim the ROW, there will be very little net habitat loss from implementation of the Proposed Action. Small areas, totaling approximately 0.32 acre, associated with the three mainline valves (MLV) proposed at MP123.5, MP142.3, and MP152.3, as well as three permanent roads accessing the MLVs, would be permanently affected. Of those, two MLVs and their associated permanent access roads would be placed on Forest Service-owned properties and result in 0.22 acre of permanent surface impacts. Additionally, permanent surface impacts would result on approximately 1.43 acres of private land as a result of pump station construction. All of the above-listed stations would be located immediately adjacent to existing roads and, therefore, would not result in habitat fragmentation. All other impacts from the Proposed Action would be localized and short term; therefore, any surrounding habitat that may support threatened or endangered species would not be impacted. The FRPL Project is expected to have no direct or indirect effects on threatened and endangered species. In addition, because the FRPL Project will not cause habitat loss for any Federally listed species, the Proposed Action is not expected to have cumulative effects in relation to other ongoing management activities within the CNG (primarily livestock grazing) (Atkins 2012b).

Determination

Construction of the Proposed Action would not affect the aforementioned Federally listed or candidate species. There is no occupied habitat, and very little suitable habitat, for any Federally listed species within the Project Area. Unoccupied potential habit would not be permanently impacted, with the exception of small areas totaling approximately 0.32 acre and associated with the three MLVs proposed at MP123.5, MP142.3, and MP152.3, as well as three permanent roads accessing the MLVs. Of those, two MLVs and their associated permanent access roads would be placed on Forest Service-owned properties, which would cause 0.22 acre of permanent surface impacts on Forest Service-owned properties. Additionally, permanent surface impacts on approximately 1.43 acres of private land would occur from construction of a pump station. All of the above-listed stations would be located immediately adjacent to existing roads and, therefore, would not result in habitat fragmentation. Therefore, there would be no direct, indirect, or cumulative effects to these species (Atkins 2012b).

4.9.2 U.S. Forest Service Region 2 Forest Service Sensitive Species

Black-tailed Prairie Dog (*Cynomys ludovicianus*)

The black-tailed prairie dog is widely considered to be a keystone species (Miller et al. 1994, USFWS 2000, Sidle et al. 2001) that plays an important role in maintaining the biotic integrity of prairie ecosystems. Prairie dogs modify grasslands in many ways, by influencing vegetative structure, affecting grazing by ungulates, and nutrient cycling (Kotliar et al. 1999, Kotliar 2000). However, where prairie dog colonies once occupied 155,000–386,000 square miles of the Great Plains before European settlement, prairie dog colonies now rarely exceed 100 acres in total size (Miller et al. 1990). The fragmentation of prairie dog distributions has resulted in the degradation of biodiversity on prairies (Miller et al. 1994), and at least one species, the black-footed ferret,

which is dependent on prairie dogs for food and cover, has been given Federal protection under the ESA (USFWS 2000).

Generally, prairie dog habitat can be characterized as flat or gently sloped terrain for their burrows with a variable mixture of short grasses, forbs, and other low-lying vegetation (Clippinger 1989). Examples of short grasses typically associated with prairie dog colonies include blue grama (*Bouteloua gracilis*), needleleaf sedge (*Carex duriuscula*), and buffalograss (*Bouteloua dactyloides*) (Agnew et al. 1986, Stapp 1998). The most common forbs associated with prairie dog towns include scarlet globemallow (*Sphaeralcea coccinea*), American vetch (*Vicia Americana*), and lanceleaf sage (*Salvia reflexa*) (Agnew et al. 1986).

On the CNG black-tailed prairie dogs occur primarily in shortgrass prairie. Occupied black-tailed prairie dog colonies within the CNG were inventoried by the Forest Service using GPS technology in 1999 and from 2001 to 2011. The inventory results are provided in Table 5 (Atkins 2012b).

Table 5. Acreage of Black-tailed Prairie Dog Colonies within the Comanche National Grassland from 1999 to 2011.

YEAR OF SURVEY	ACREAGE OF BLACK-TAILED PRAIRIE DOG COLONIES
1999	1,930
2001	4,213
2002	5,702
2003	6,619
2004	12,128
2005	14,893
2006	6,774
2007	4,629
2008	3,695
2009	5,342
2010	7,413
2011	7,734

Note: Data were not available for 2000.
Source: Atkins (2012b).

Although a small amount of the increase from 1999 to 2005 is due to new colonies being discovered each year, these surveys primarily reflect a rapidly increasing black-tailed prairie dog population on the CNG, representing a recovery from government-supported eradication programs, habitat destruction, and disease (Kretzer and Cully 2001). In 2005 the plague had an impact on the black-tailed prairie dog population, mainly in the Carrizo Unit. The resulting acreage of active black-tailed prairie dog towns was less than half in 2006, compared with 2005. Recently, the acreage of black-tailed prairie dog colonies has increased (Atkins 2012b).

Direct, Indirect, and Cumulative Effects

No major changes in land use are expected within the next 5–10 years on NFS lands in the area. Livestock grazing would continue to be the primary land use and would interact with the effects of any wildfire and prescribed burns. Recreational use of the CNG mainly consists of hunting, hiking, and bird watching, which would not likely impact this species(Atkins 2012b).

Four black-tailed prairie dog complexes were identified within the Project Area. The boundary of one potentially active complex, spanning approximately 0.4 mile along the FRPL Project alignment between MP124 and 125, was mapped during field investigations conducted in July 2012. During these field investigations, three other black-tailed prairie dog complexes were identified and the locations recorded (Atkins 2012b).

Boundaries were interpreted and digitized using recent (September 2012) true-color aerial imagery of the Project Area. One active complex intersecting approximately 800 feet of the FRPL Project alignment was identified at the northern boundary of the CNG, near MP122. Adjacent to the northern boundary of this active complex, a potentially active complex intersecting approximately 400 feet of the FRPL Project alignment was identified. One inactive complex intersecting approximately 1,200 feet of the FRPL Project boundary was identified at MP144 (Atkins 2012b).

The Proposed Action may temporarily impact black-tailed prairie dog habitat, but this would not be expected to impart an adverse effect on the species. Active black-tailed prairie dog burrows are expected to be encountered within the construction areas. However, the species is highly mobile and can utilize nearby available habitat during construction activities and return to current areas after construction activities have ceased (Atkins 2012b).

Determination

Occupied or unoccupied habitat for this species would not be permanently impacted; however, temporary disturbances to individual black-tailed prairie dogs may occur during Project implementation. As a result, a determination may be made of adverse impact on individuals, but it is not likely to result in a loss of viability in the Project Area, nor cause a trend to Federal listing or a loss of species viability range-wide (Atkins 2012b).

Swift Fox (Vulpes velox)

The swift fox is the smallest canid of the Great Plains. It has long, lax pelage and a notable bushy tail. It is buff to reddish gray above and paler on the venter. Some orange appears on the legs, neck, back, and ears. The tail has a black tip, and there are black patches on each side of the muzzle (Egoscue 1979). The swift fox is predominately found on shortgrass and mixedgrass prairies in gently rolling or level terrain (Higgins et al. 2002). It has been found to den and forage in fallow fields (Jones et al. 1983). Survival and reproductive rates between swift foxes in grassland and cropland sites were not significantly different, suggesting they may be able to adapt to cultivated habitats in some cases (Egoscue 1979).

Direct, Indirect, and Cumulative Effects

The CNHP records did not indicate any historic occurrences of the swift fox within the Project Area. No individuals or nests were identified during field investigations conducted by Atkins (2012b). Habitat for this species would not be permanently impacted by the Proposed Action.

Based on literature reviews and field investigations, direct, indirect, or cumulative effects to this species would not be anticipated as a result of construction of the Proposed Action (Atkins 2012b).

Determination

Construction of the Proposed Action would not likely adversely impact individuals, result in a loss of viability in the Project Area, or cause a trend to Federal listing or a loss of species viability rangewide. Occupied habitat for this species would not be permanently impacted. As a result, a determination of no impact is warranted for this species (Atkins 2012b).

Burrowing Owl (*Athene cunicularia*)

The burrowing owl is an easily recognized icon of the grasslands and arid regions of western North America, Florida, and the Caribbean. Unique among North American owls, this species is active day and night, nests in underground burrows, and typically nests in small groups. Suitable habitat throughout the breeding range typically includes open, treeless areas within grassland, steppe, and desert biomes. Burrowing owl generally inhabit gently sloping areas, characterized by low, sparse vegetation. The species is often associated with high densities of burrowing mammals such as black-tailed prairie dogs. In addition to natural breeding habitats, areas such as agricultural fields, golf courses, cemeteries, road allowances, airports, vacant urban lots, and fairgrounds are regularly used. In Colorado the burrowing owl is present during the breeding season, which generally extends from March through May (Poulin et al. 2011), and through the summer months. Burrowing owls could be directly affected by FRPL Project implementation where the FRPL Project is located within or near existing occupied habitat or black-tailed prairie dog colonies. The burrowing owl may shift its locations with the moving of black-tailed prairie dog colony locations over time. Burrowing owls could be indirectly impacted if currently unoccupied prairie dog colonies are permanently destroyed by implementation of the Proposed Action. However, due to the limited duration of ground disturbance during construction, the implementation of preconstruction surveys, scheduling of construction activities outside of the breeding season, and the reclamation of the Project Area to preconstruction conditions (Appendix B), no adverse effects to the species would be anticipated (Atkins 2012b).

Cassin's Sparrow (*Aimophila cassinii*)

Cassin's sparrow is a somewhat elusive resident of arid shrub grasslands of the southern High Plains, the southwestern United States, and northern Mexico. It is dull and plain in appearance but complex in its natural history. This species is highly responsive to vegetative structure of arid shrub grasslands and is, therefore, potentially affected by grazing, shrub clearing, and other human activities that change habitat structure. Breeding range, which includes the Project Area, is generally characterized as arid grasslands with scattered shrubs, yuccas, or low trees such as mesquite, and oaks. Although the Cassin's sparrow occurs near thickly vegetated draws, it prefers open slopes and rarely goes into dense brush. Distribution of this species in Colorado is restricted to rabbitbrush grasslands in Logan County and along the South Platte River (Dunning et al. 1999).

Although the Project Area lies within the Cassin's sparrow's known breeding range, the species is restricted in distribution and only occurs along the South Platte River and in Logan County. As such, there would be no adverse effects to the species during construction and operation of the FRPL Project (Atkins 2012b).

Grasshopper Sparrow (*Ammodramus savannarum*)

While suitable grasshopper sparrow habitat is present within the Project Area, the species is not likely present since its distribution in Colorado is largely restricted to the extreme northern portions of the State. As such, there would be no adverse effects to the species as a result of FRPL Project implementation (Atkins 2012b).

Ferruginous Hawk (*Buteo regalis*)

The ferruginous hawk is an open-country species that inhabits grasslands, shrubsteppes, and deserts of North America, nesting in 17 states in the United States and three provinces in Canada. This hawk avoids montane forests, aspen (*Populus* spp.) parkland, and habitats recently altered by agricultural cultivation. Before the elimination of bison (*Bison bison*) in the west, its nests were often partially constructed of bison bones and wool. Today, this hawk uses nesting substrates ranging from cliffs, trees, utility structures, and farm buildings to haystacks and relatively level ground (Berchard and Schmutz 1995). The Project Area, which is located in an area that is generally consider to be year-round habitat, may provide suitable breeding habitat for the species. However, the primary purpose of habitat in the Project Area vicinity would be for hunting. Although construction of the FRPL Project would alter habitat within the Project Area, the affects to habitat would be short term and habitat would be restored (Appendix B). As such, there would be no adverse effects to the species as a result of FRPL Project implementation (Atkins 2012b).

Mountain Plover (*Charadrius montanus*)

The mountain plover breeds in central Montana, Wyoming, central and eastern Colorado, much of northern New Mexico, the western Oklahoma panhandle, and northwestern Texas; an isolated population breeds in the Davis Mountains of Texas. The species winters in central California, central and southern Arizona, and southern Texas south to central Mexico (Knopf and Wunder 2006). This species breeds in shortgrass prairies, heavily grazed tallgrass prairies, and arid areas with scattered short shrubs. It is commonly associated with prairie dog complexes. In agricultural areas it nests in fallow or recently tilled fields (Knopf and Wunder 2006). Similar habitat is used during migration. In winter it uses fields that are tilled, heavily grazed, or burned. Historically, mountain plover used coastal prairies in Texas and California (Knopf and Wunder 2006). Although suitable habitat for this species occurs in the Project Area, including seven complexes identified within the Project Area in July 2012, as noted above in the discussion of black tailed prairie dogs, there would be no adverse effects on this species resulting from implementation of the FRPL Project (Atkins 2012b).

Northern Harrier (*Circus cyaneus*)

The northern harrier is a slender, white-rumped, medium-sized, low-flying raptor of upland grasslands and freshwater and saltwater marshes. Northern harriers typically nest on the ground, usually in tall, dense clumps of vegetation, either alone or in loose colonies. Breeding habitat is generally characterized as open wetlands including marshy meadows; wet, lightly grazed pastures; old fields; freshwater and brackish marshes; and tundra. They also breed in dry uplands, including upland prairies, mesic grasslands, drained marshlands, croplands, cold desert shrub-steppes, and riparian woodlands. In the western United States, highest densities of this species are typically associated with large tracts of undisturbed habitats dominated by thick vegetation (Smith et al. 2011). Given the absence of water and thick vegetation, this species is

not likely to be very abundant within the Project Area and would not be adversely effected by implementation of the FRPL Project (Atkins 2012b).

Loggerhead Shrike (*Lanius ludovicianus*)

The loggerhead shrike is the only one of the world's 30 species of true shrikes that occurs exclusively in North America. Like other shrikes, it inhabits ecotones, grasslands, and other open habitats and feeds on a variety of invertebrate and vertebrate prey. Compared to most birds, its head is large in proportion to its body size—hence the name "loggerhead." Throughout most of the southern part of its range, the loggerhead shrike is resident; northern populations are migratory. Where resident, this species usually lives in pairs on permanent territories. Some pairs spend the entire year on a single territory. Outside of the breeding season, mates may defend neighboring territories, which are coalesced at the beginning of nesting. Nesting habitat is typically characterized as consisting of open country with short vegetation: pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, agricultural fields, riparian areas, and open woodlands. Breeders usually settle near isolated trees or large shrubs. The highest-quality habitat for breeding loggerhead shrikes consists of short grasses that are actively grazed with many perches (Yosef 1996). Suitable year-round habitat for the species exists within the Project Area. Loggerhead shrike habitat is likely to be disturbed during construction of the FRPL Project; however, these disturbances are short term and would not adversely affect the species (Atkins 2012b).

Long-billed Curlew (*Numenius americanus*)

The largest North American shorebird and one of only nine species of grassland birds considered endemic to the Great Plains, the long-billed curlew has the southernmost breeding distribution and northernmost wintering distribution of the four curlew species found in North America. This species nests primarily in shortgrass or mixedgrass prairie habitat with flat to rolling topography. Habitats with trees, high density of shrubs, and tall, dense grass are generally avoided (Dugger and Dugger 2002). Although suitable breeding habitat for this species exists in the Project Area vicinity and habitat would likely be disturbed during construction, these disturbances are short term, especially since the Project Area will be revegetated (Appendix B). As such, this species would not be adversely effected as a result of FRPL Project implementation (Atkins 2012b).

Brewer's Sparrow (*Spizella breweri*)

The Brewer's sparrow is a small, drab *Spizella* sparrow that is a sagebrush obligate (Rotenberry et al. 1999). It has a complete white eye-ring, gray-brown upperparts with dark streaking, and an unstreaked, gray breast (Rotenberry et al. 1999; Sibley 2003). Throughout its breeding range, this species is declining due to habitat loss, grazing, and the introduction of nonnative plant species (Rotenberry et al. 1999).

The Brewer's sparrow breeds from southern British Columbia, Alberta, and Saskatchewan, Canada, south through Montana, Colorado, southern California, northern New Mexico, and Arizona (Rotenberry et al. 1999). Rangewide habitat for this species is typically characterized as being dominated by big sagebrush (*Artemisia tridentata*). Compared with surrounding habitat, Brewer's sparrow nests are located in significantly taller, denser shrubs with reduced bare ground and herbaceous cover. Although suitable breeding habitat for this species exists in the Project Area vicinity and habitat is likely to be disturbed during construction, these disturbances

would be short term, especially since the Project Area will be revegetated (Appendix B). As such, this species would not be adversely effected as a result of Project implementation (Atkins 2012b).

American Peregrine Falcon (*Falco peregrinus anatum*)

Based on field surveys (see Atkins 2012a) and literature reviews, risk of disturbance to the American peregrine falcon caused by activity associated with implementation of the Proposed Action is very low. Additionally, no occurrences of this species have been documented, presumably because of a lack of suitable breeding habitat. Therefore, no effect to the American peregrine falcon would be anticipated as a result of construction and operation of the FRPL Project (Atkins 2012b).

Bald Eagle (*Haliaeetus leucocephalus*)

Based on a literature review, risk of disturbance to bald eagles as a result of activity associated with implementation of the Proposed Action is very low. Additionally, no bald eagles have been observed within the Project Area since suitable habitat and foraging opportunities are largely absent. Therefore, no effect to the bald eagle would be anticipated as a result of construction and operation of the FRPL Project (Atkins 2012b).

Desert Massasauga (*Sistrurus catenatus*)

The desert massasauga occurs most commonly in arid grasslands and is broadly distributed over much of the shortgrass prairie and sand sagebrush shrubland habitat of southeastern Colorado, with the core population occurring in Lincoln County (Mackessy 2005, 2007). The species is primarily nocturnal, with juveniles feeding on lizards and adults feeding on both lizards and rodents. An extensive road survey conducted by Hobert at al. (2004) in southeastern Colorado documented two specimens from Otero County on the Timpas Unit of the CNG. Similar surveys documented only one specimen in Baca County on private land north of the CNG Carrizo Unit. Based on results of a literature review, risk of disturbance to the desert massasauga caused by activity associated with the Proposed Action would be very low and not likely result in adverse effects on the species (Atkins 2012b).

Direct, Indirect, and Cumulative Effects

The construction of the FRPL Project could occur when desert massasauga are bearing young snakes in their dens. There is a potential risk that the FRPL Project route would disturb desert massasaugas, but there are no known breeding sites in the area (Mackessy 1998, 2007) so the risk is very low.

Determination

Construction of the Proposed Action may adversely impact desert massasauga individuals, but it would not likely result in a loss of the species' viability in the Project Area or cause a trend to Federal listing or a loss of viability rangewide. Due to a lack of recorded occurrences in the Project Area, impacts to the species would be unlikely. Unoccupied potential habit would not be permanently impacted (Appendix B) (Atkins 2012b).

Wheel (Dwarf) Milkweed (Asclepias uncialis)

Wheel milkweed is a very small milkweed (1–2.5 inches) that is found only in grama (*Bouteloua* spp.)-buffalograss communities in the shortgrass prairie of Colorado in Forest Service Region 2. It is known in Colorado from at least the CNG, and possibly the Pawnee National Grassland. The species occupies the lower slopes of escarpments and mesas in semiarid shortgrass prairie in Colorado and New Mexico, a widespread but isolated landform. It is one of the few endemic or near-endemic plants of the Great Plains and may be the smallest member of the milkweed (*Asclepias*) family (Atkins 2012b). There are at least eight extant populations in Colorado, of which, three are on the CNG.

Wheel milkweed occurs on sloping sites with shallow depth to bedrock and on soils with small stone chips or gravel. No particular soil type has been identified for this plant's habitat. It is characterized by few populations and extremely small population sizes (5–10 plants). Small clusters of plants can be grouped together within a 1 square-meter area.

This species is considered rare in Forest Service Region 2 and has very low population numbers. In eastern Colorado, it is known from four extant and less than 20 historical occurrences in 10 counties. These occurrences appear to be scattered throughout the eastern half of Colorado. This plant is very small and easily overlooked, and there is no evidence that suitable habitats have been extensively explored for this species. It appears to occur in discrete habitats separated by widely distributed suitable habitat in Forest Service Region 2 (USFS 2013c). It is likely that preconstruction surveys for the species would be conducted in the spring of 2013 to minimize any possible adverse effect to this species within the Project Area (Atkins 2012b).

Sandhill Goosefoot (Chenopodium cycloides)

Sandhill goosefoot is an annual leafy forb endemic to sandy soils of eastern Colorado, western Nebraska, western Kansas, eastern New Mexico, and western Texas (Ladyman 2006). In Colorado it has been found in Bent, Cheyenne, El Paso, Las Animas, Pueblo, Weld, and Yuma Counties (USFS 2013d). The species occurs on the Cimarron National Grassland in southwestern Kansas and has been reported from two locations near the CNG, but occurrences on the CNG are unverified (Ladyman 2006). This species grows in areas with sandy soil and slopes of 0–5 percent, though it may be found on steeper inclines (Ladyman 2006). It is most often reported in sand sagebrush communities and less commonly in shortgrass prairie communities (Ladyman 2006). The species may be found in areas of sandy, semistable, or disturbed substrate, such as around the edges of sand dune blowouts (USFS 2013d). It is likely that preconstruction surveys for the species would be conducted in the spring of 2013 to minimize any possible adverse effect to this species within the Project Area (Atkins 2012b).

Direct, Indirect, and Cumulative Effects

Although the literature indicates the presence of both species within the CNG, no sensitive plants or their preferred habitats are likely to occur in the Project Area. No major changes in land use are expected within the next 5–10 years on NFS lands in the area. Based on literature reviews and field investigations, direct, indirect, or cumulative effects to this species would not be anticipated as a result of implementation of the Proposed Action (Atkins 2012b).

Determination

A review of the FRPL Project route by Forest Service botanist Steven Olson in July 2012 indicated that no sensitive plants likely occurred within the CNG survey corridor. Additionally, no individuals have been previously reported from the area. Therefore, a determination of no impact is warranted for these species (Atkins 2012b).

4.10 Recreation

Project construction activities would be short term and temporary. Some short-term disturbance impacts could occur during various hunting seasons because of construction activities. Other recreational activities that may occur on CNG lands include hiking, scenic driving or wildlife viewing. During construction, equipment and construction activity would be visible in the viewshed. However, such activities are visually fairly consistent with activities associated with agriculture and road maintenance – both very common in the Project Area. Additionally, the FRPL Project would be co-located with other pipelines within an existing ROW, which would not change the visual experience within the CNG from its existing condition once construction is complete.

4.11 Visual Resources

The FRPL would be installed within an existing ROW and co-located where three pipelines already exist. The pipeline would traverse fairly level terrain, with viewsheds extending many miles. Currently, these viewsheds include low vegetation areas; agricultural lands; farming equipment or machinery; structures associated with agriculture such as fencing, corrals, livestock load outs, equipment sheds, and barns; residential structures; windmills; utility poles; pump stations; and livestock. During construction of the FRPL Project, equipment would temporarily add to the visual aspects of the area. Construction of the pump stations would add permanently to the visual aspects of the area. However, the presence of construction equipment and pump station would not be not out of character with existing developments in and around the Project Area.

4.12 Socioeconomics

Socioeconomic impacts that might occur would be associated with possible increases in demands for goods and services within the local communities during construction. Demand for services, such as lodging and meals, has the potential to exceed the current capacity that local communities can provide. Short-term impacts during construction could involve shortage of motels or other housing in some locations for up to 4 months after the special use permit is granted by the Forest Service. Approximately 400 employees would be needed for construction of the FRPL Project. It is anticipated that the majority of this workforce would be from the

Project Area region—namely Texas, Oklahoma, Kansas, and Colorado—and may require temporary, local housing. Construction workers would inject money into local economies during the FRPL Project construction, and impacts would include spending in local motels, food outlets, and grocery stores; these impacts would be positive. Tax revenues would also be realized by the counties and the State of Colorado through sales and property taxes. No long-term adverse impacts to local or regional economies are expected as a result of implementing the Proposed Action. It is estimated that approximately $3 million of spending would occur in economies with in the CNG area during construction.

4.13 Cultural Resources

In summary, there are three sites identified within or near the Project Area as it crosses through the CNG. These sites are identified in Chapter 3. None of these sites are directly within the construction ROW, and they would not be impacted in any way. If any additional cultural resources are discovered in the construction process, construction activities would be stopped and standard practices for identification of a such resources would be followed, including notification of the Colorado State Historic Preservation Office (SHPO), the land owner, and other appropriate officials with jurisdiction in that particular location.

4.13.1 Definition of Impact

As is legally required, it is necessary to define "impact" as it relates to cultural resources. Impacts are regarded as significant if they inflict irreversible damage on cultural resources that are listed on, or meet the eligibility criteria of, the National Register of Historic Places (NRHP) eligibility criteria are enumerated in 36 CFR 60 and described as follows:

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> a) are associated with events that have made a significant contribution to the broad patterns of our history; or,
>
> b) are associated with the lives of persons significant in our past; or
>
> c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> d) have yielded, or may be likely to yield, information important in prehistory or history.

To qualify for NRHP eligibility, a property must meet two separate types of requirements. It must (1) exhibit integrity of location, design, materials, etc.; and (2) meet one or more of the four additional criteria. A site need not be of national significance to be eligible for the NRHP; sites of local, State, and regional importance may also be listed, and thus are significant (McGimsey

1972). The phrasing of the National Historic Preservation Act is critical with respect to actual management of cultural resources. A site does not have to be included on the NRHP to receive protection under the law; it must simply meet NRHP eligibility requirements.

To bring the NRHP evaluation process into better focus, the Colorado Office of Archaeology and Historic Preservation has produced a series of regional prehistoric and historic contexts (Eighmy 1984, Zier et al. 1999, Church et al. 2007). These documents identify pertinent research themes and attendant deficiencies in current prehistoric and historic databases. Sites that can yield information important to one or more research themes and that exhibit physical integrity are more likely to be judged eligible for the NRHP.

Impacts to cultural resources may be direct or indirect. Direct impacts are those that occur as a primary result of Project designs and might be associated with actual FRPL Project construction (including ancillary activities such as establishment of equipment staging areas or building of temporary access roads), pipeline operation, or maintenance. The greatest direct impacts would occur early in a project when surface disturbances takes place. Indirect impacts occur as a secondary consequence of a project and are generally associated with increased human activity in previously inaccessible areas; illicit surface collection of sites is a common form of indirect impact. Indirect impacts can occur any time during or after construction.

4.13.2 Design Criteria to Mitigate Effects to Cultural Resources

Mitigation is defined as any of several forms of management action that reduce or eliminate deleterious impacts to eligible sites. Avoidance is usually the preferred form of mitigation because it is nondestructive and ensures the continued existence of a site. If avoidance is not possible, or if the long-term welfare of a significant site cannot be guaranteed, mitigation must consist of some sort of data retrieval. Data retrieval options include full-scale or partial excavation, surface collection, photo documentation, treatment, and maintenance and recording that meet the standards of the SHPOs and follow procedures outlined in 36 CFR 800, per the Historic American Building Survey/Historic American Engineering Record standards, as appropriate. Based on the findings of the 2012 cultural resources survey, Atkins recommends that mitigation strategies be employed during construction to ensure that cultural resources are not impacted (Atkins 2013a, Atkins 2013b, and Atkins 2013c). In relation to the FRPL Project on the CNG, mitigation measures as they relate to cultural resources include the following:

a) Monitor construction activities near selected areas with moderate to high potential for subsurface cultural resources.

b) Avoid significant sites by (1) boring under these sites and (2) using directional drilling techniques to avoid disturbing the surface of sites.

c) Erect protective fencing during Project activities around sensitive portions of the site.

d) Where the FRPL Project crosses the Santa Fe Trail's Cimarron Trail Cutoff, and other National Register eligible linear sites, utilize avoidance measures to ensure that the trail is not damaged during any proposed construction activities. Avoidance measures include the installation of the proposed FRPL pipeline at this location utilizing a conventional bore. The

bore entry and exit points will be avoided to ensure that impacts to existing swales do not occur. Equipment mats (e.g., timber construction mats) will be used to establish a travel lane between bore entry and exit points. The travel lane will be established as close to the existing, maintained, and previously disturbed pipeline ROW as is practicable. Where swales are present along the travel lane, equipment bridges will be utilized to span swales without disturbing existing condition of the swale.

e) Cease construction activities if cultural resources are encountered during FRPL Project construction at any point until a qualified professional archeologist can assess the significance of the findings and, if necessary, coordinate with the land owner and appropriate jurisdictional agency(ies).

Compliance with these mitigation measures will ensure that significant cultural resource sites will not be adversely impacted either directly or indirectly, and that potential impacts to currently unknown resources will be minimized (Atkins 2013a).

4.13.3 Cultural Resources Conclusion

It is recommended that the one historic site and one area near the prehistoric camp on the CNG be monitored during the construction of the proposed FRPL pipeline. No other sites were identified within the survey corridor on the proposed pipeline route or access road within the CNG.

If cultural resources are encountered during the pipeline construction, the project should cease activities at that location until a qualified professional archeologist can assess the significance of the findings (Atkins 2012c).

4.14 Geology, Topography, and Soils

Implementing the Proposed Action would not have significant impacts to the geology, topography, or soils with the Project Area.

4.14.1 Geology

There are two categories of geological impacts that could occur within the Project Area. First, the impacts to the geologic environment as a result of FRPL Project construction and operation, and second, impacts to FRPL Project facilities as a result of geological hazards or risks in the area, such as landslide or earthquake.

No natural landslides were observed within the Project Area along the FRPL route (G. Armstrong, personal observation). Slopes within the route are less than 2 percent throughout the Project Area and are not prone to landslides. The Project Area is not located on or near known active fault lines; earthquake events are extremely rare within the area. Hence no special building practices or mitigation is necessary.

4.14.2 Soils

The entire Project Area through Baca County includes 349.1 acres (113.5 on CNG and 235.6 on private lands). This includes the maximum area that might be disturbed during FRPL Project

construction, though the actual trenching for the pipeline would be centered within this construction ROW. Potential impacts from Proposed Action implementation include removal of vegetation, disturbance and exposure of the soil through FRPL Project construction, mixing of soil horizons, loss of topsoil productivity, an increase in the susceptibility of the soil to wind and water erosion, and loss of the soil resource due to spills and leaks of substances such as oil and gasoline.

Mitigation of impacts to soil resources include the following:

a) Controlling erosion caused by wind, water, and loss of vegetation.

b) Implementing top soil segregation procedures.

c) Implementing the revegetation plan following construction, as outlined in the terms of the special use permit (see Appendix B).

The objective of implementing soil erosion measures is to reduce soil erosion and compaction, enhance revegetation of disturbed areas, and provide for long-term conservation of soil resources within the Project Area. On Federally administered lands, the Forest Service will monitor for compliance and successful implementation of the mitigation measures. On private land, the implementation of mitigation measures will be between FRPL and the land owner.

4.15 Environmental Justice

Proposed Action would be constructed within an established utility corridor. This corridor is not located near or through concentrated populations of economically disadvantaged or minority populations. There would be no impact relative to environmental justice relative to the implementation of the Proposed Action.

4.16 Cumulative Effects Analysis

This EA evaluates the impacts associated with implementation of the Proposed Action within an established utility corridor as it passes through the CNG in Baca County. This EA includes evaluation of the impacts associated with construction of 33.3 miles of pipeline, 11.7 of which are on lands administered by the Forest Service. However, this is part of a larger project that extends 430 miles, from the Julesberg –Denver Basin in Colorado to just outside of Skellytown, Texas, crossing parts of Colorado, Oklahoma, and Texas. The CNG is the only portion of the route that crosses Federally administered lands, creating the Federal nexus that requires the completion of an EA to determine the level of impacts that would result from implementation of the Proposed Action. Where the EA is only required to directly address the impacts that the FRPL Project would have on the CNG, it is necessary to consider the context of this entire Project. It is important to note that the entire 430 mile pipeline project is within existing utility corridors, and the proposed pipeline would be co-located with pipelines already in place. As noted, the FRPL on the CNG would be located within a utility corridor designated in Amendment 10 of the Forest Plan. This plan amendment was analyzed through a Categorical Exclusion under the National Environmental Policy Act (NEPA). Two pipelines constructed

since Amendment 10 was adopted in 1987 have been sufficiently analyzed under NEPA with environmental assessments, both resulting in Finding of No Significant Impact.

The purpose of this cumulative impacts section is to consider the overall impacts associated with implementation of the Proposed Action and provide a context to determine whether the overall impacts are significant.

4.16.1 Overall Cumulative Effects

The FRPL pipeline originates at County Road (CR) 2b in Lincoln County, Colorado, just east of the intersection of Elbert, El Paso, and Lincoln Counties, extending southeast through the CNG to the Colorado–Oklahoma State Line, a total of 156 miles. At the Colorado–Oklahoma State Line, the Project would extend southeast across the Oklahoma panhandle into Texas. The FRPL Project ends near Skellytown, Texas, northeast of Amarillo. Figure 8 shows the overall Project Area across the three states and the overall reach of the FRPL Project across Texas, Oklahoma, and Colorado.

Through most of the Project Area, the pipeline would be constructed within a 90-foot easement that consists of a 50-foot permanent easement and 40-foot temporary workspace. On the 11.7 miles where the pipeline crosses the CNG, the temporary workspace would only be 30 feet. This configuration places the new pipeline 35 feet from an existing pipeline already within the established utility corridor. Throughout the entire Project Area, the pipeline would be located within an existing utility corridor and would run parallel to existing pipelines.

Through the entire 430-mile length of the FRPL Project, a total of 4,676 acres (7.31 square miles) would be within the permanent easement and temporary workspace, and therefore subject to impacts incurred during construction. One-hundred thirteen acres (.17 square miles) of this total are within the CNG on lands administered by the Forest Service. The remaining 4,563 acres (7.13 square miles) are on lands privately held or held by a local, County, or State entity.

4.17 Cumulative Impacts to Resources

4.17.1 Water Flows and Quality

There are approximately 91 perennial and 74 intermittent streams crossings along the entire length of the FRPL Project, all of which are outside the CNG. The FRPL Project would be buried at all water crossings, including named intermittent streams. Special temporary land requirements for pipeline construction would be required for all river crossings. For the major rivers, if the line is buried, the depth of line and extra equipment would increase the width of the working area. The pipe would be buried in the stream or riverbed at a minimum depth of 4 feet below the probable scour depth of a 100-year flood. It is anticipated that directional drilling techniques would be utilized to go under major stream or river crossings. Authorization from the appropriate regulatory authority would be secured prior to construction, which would outline the terms of construction and any mitigation required to reduce or eliminate any impacts to the water courses.

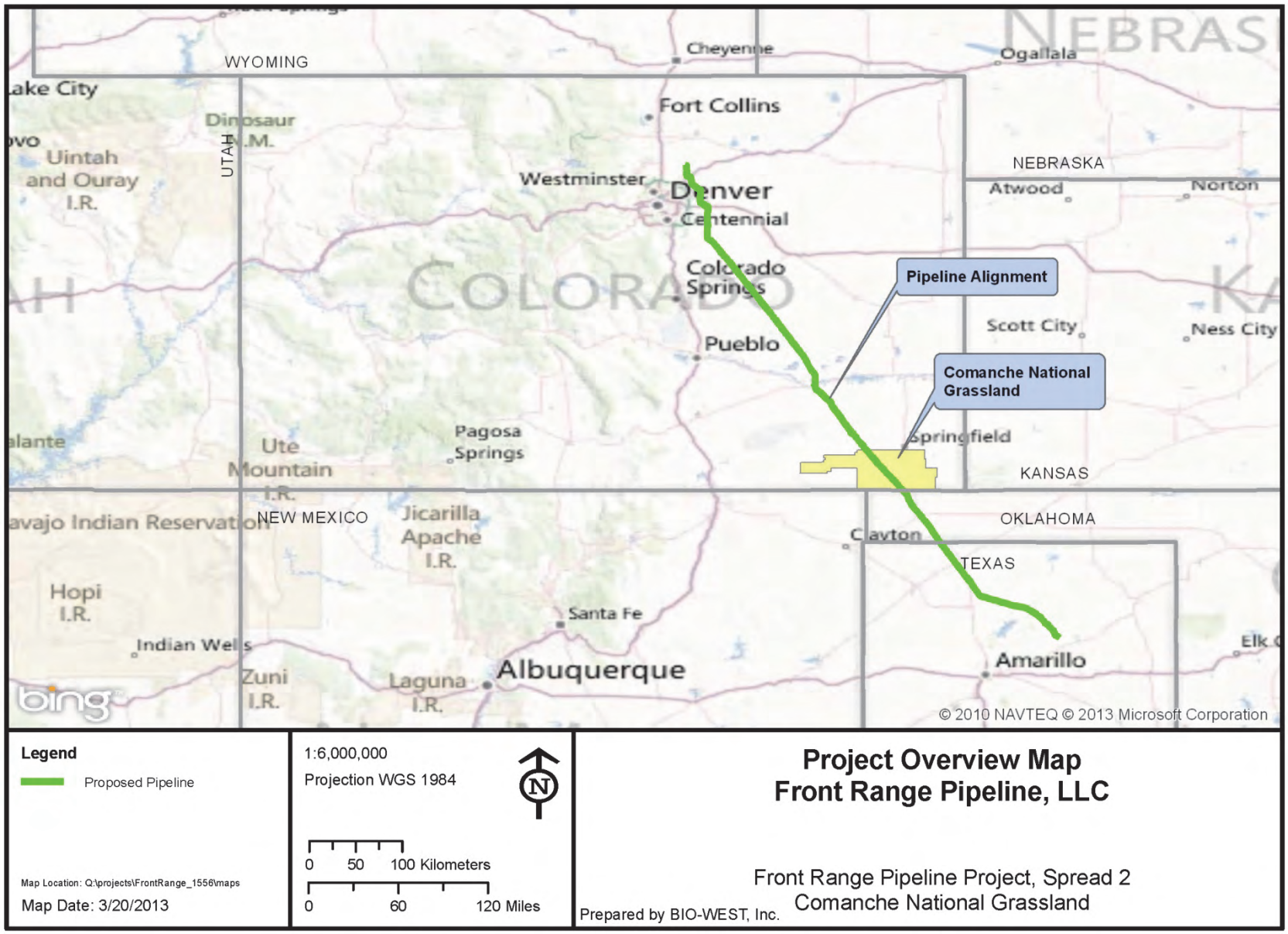


Figure 8. Front Range Pipeline LLC Project Overview Map.

4.17.2 Climate and Air Quality

No areas within the length of the entire FRPL Project are nonattainment for criteria pollutants. Construction activities that would be associated with the proposed pipeline would be short term, highly localized, and would not result in reduction of air quality that would push an area to nonattainment.

4.17.3 Noise

Noise impacts would be highly localized to FRPL Project construction sites. Noise would be short term during construction and not cumulative in nature.

4.17.4 Land Use

Throughout the Project Area, the pipeline would be constructed within established utility corridors, parallel to existing pipelines. These corridors traverse open range lands, agricultural lands, and essentially undeveloped lands throughout the FRPL Project corridor. Placement of the pipeline would be consistent with existing land uses throughout the Project's length. Additionally, construction of the Proposed Action would be in accord with zoning, land use, and appropriate land use policy according to land owner agreements and local jurisdiction.

4.17.5 Wildlife

Central to cumulative impacts associated with wildlife resources is the impact on the lands disturbed during implementation of the Proposed Project. As has been noted, 4,676 acres, or 7.31 square miles, would be disturbed throughout the 430-mile length of the FRPL Project. The FRPL has been in contact with USFWS, as well as State wildlife management agencies in Texas, Oklahoma, and Colorado, and determined that there would be no significant impact to wildlife resources within any state. Habitat impacts associated with the implementation of the Proposed Action would be short term, and the lands will be reclaimed or revegetated according to permitting and agreements with land owners.

4.17.6 Aquatic

While the Proposed Action would not cross any water courses that support aquatic resources within the CNG, it would cross several courses along the FRPL Project route through Texas, Oklahoma, and Colorado. There are a total of 59 crossings of perennial or intermittent stream courses. These include the Purgatoire and Arkansas Rivers, which host the primary aquatic resources. Crossings at these rivers would be co-located with existing pipeline crossings. Construction techniques would utilize boring under the water courses to minimize or eliminate impacts to the water course and its aquatic resources. Construction at each crossing would be in accordance with permitting from the appropriate regulatory agency, in most cases the U.S. Army Corps of Engineers. In conformance with these permits, no impacts to aquatic resources would be anticipated in specific locations or within the realm of the cumulative impacts from implementation of the Proposed Action.

4.17.7 Vegetation

The entirety of the FRPL Project would cross a variety of vegetative communities throughout the Project Area. Areas within the CNG have already been discussed. However, it is important to note that similar vegetative communities exist throughout the Project Area. Communities include

shortgrass and midgrass prairie, but they are dominated by agricultural lands. Due to the nature of changing vegetation within agricultural lands (those purposed for grazing and crops), it is not practical to address every vegetative community within the entire FRPL Project corridor. Like on the CNG lands, which will require revegetation and reclamation of a vegetative community that currently exists, FRPL would work with all land owners through the leasing and establishment of the ROW to revegetate the land according to specific needs on specific locations, per those agreements. The key item of consideration is that through the entire FRPL Project is that 4,676 acres of land and vegetative communities would be disturbed. However, these lands will be restored to the vegetative communities that existed prior to construction; hence any impacts would be temporary and short term.

4.17.8 Grazing

If viewed as a whole, the potential, temporary loss of 4,676 acres of grazing forage might be considered a major impact to grazing resources. However, these 4,676 acres are stretched over 430 miles: No more than 10.9 acres would be disturbed per section (640 acres total). These disturbances would be short term and temporary; revegetation plans will be implemented following construction in accordance with the revegetation plan (Appendix B).

4.17.9 Threatened and Endangered Species

No impacts to threatened or endangered species would result from implementation of the Proposed Action within the Project Area. Similar construction practices would be applied throughout the entire FRPL Project corridor, following the same protocols related to all wildlife species in these areas. Mitigation measures in each state are guided by that state's wildlife management agencies. Each state wildlife management agency has responded with prescriptions for mitigation that are in line with those outlined in this EA. Compliance with these mitigations throughout the FRPL Project will ensure that there is no impact to any threatened or endangered species resulting from implementation of the Proposed Action. Correspondence letters from wildlife management agencies from Texas, Oklahoma, and Colorado are included in Appendix C.

4.17.10 Recreation

Except for the 11.7 miles of the FRPL Project that would traverse the CNG in southeastern Colorado, the remainder of the pipeline would cross private lands unavailable for public recreation. The FRPL Project would cross three different sections of the Santa Fe Trail (Mountain Route, Cimarron Cutoff and the Granada-Fort Union Branch). These trail segments offer recreational value, as well as historic value. At these crossings, the FRPL Project would be constructed using boring techniques so as to not disturb the trail crossing with trenching activities. Proposed Action construction activities would distract those using the Santa Fe Trail at the time. Distractions would include view of construction equipment, noise associated with construction, and the potential for fugitive dust and emissions from construction equipment. However, these impacts would be short term, limited only to the time of construction at that part of the trail, and would not continue once the FRPL Project is in place.

4.17.11 Visual

Once in place the FRPL Project would not be visible, with the exception of signage that is required by law where the pipeline would cross roads, trails, or other linear corridors. Visual impacts would be limited to view of equipment and materials during the construction period. These impacts would be short term and temporary, and they would actually be quite similar to viewing agricultural equipment in operation – a very common occurrence in the areas that the pipeline would traverse. Whereas the FRPL Project would run parallel to existing pipelines within established utility corridors throughout the entirety of the Project, implementing the Proposed Action would result in visual resources consistent with what currently exists throughout the Project Area corridor.

4.17.12 Socioeconomic

Socioeconomic impacts from the FRPL Project would include the localized economic benefits for communities along the FRPL Project route. As construction progresses, pipeline workers would stay along the route, from Skellytown, Texas, through northern Texas, through Oklahoma, and into southeastern Colorado. Economic impacts would be localized and positive, as construction crews utilize local lodging and meal services along the corridor.

4.17.13 Cultural

In conjunction with the FRPL Project, a comprehensive cultural resource survey was conducted for the entire Proposed Action (Atkins 2013a, b, c). The Project Area was divided into three segments or "spreads." Separate reports for each spread were developed and are on file with the Forest Service, the Colorado State Historic Preservation Office, Oklahoma Archaeological Survey, and Texas Historical Commission. Due to the sensitive nature of cultural resources, specifics of those surveys are not included in this EA. Information contained in the survey reports is confidential and access to this information is restricted by Section 304 of the National Historic Preservation Act of 1966 (as amended) and the Archaeological Resources Protection Act of 1979 (as amended). However, it is important to note the overall results of those surveys in addressing the cumulative impacts that FRPL Project implementation would have on cultural resources throughout the Project Area, in areas outside of the CNG (Table 6). It is also important to note that FRPL has consulted with the Texas, Oklahoma, and Colorado SHPOs (correspondence included in Appendix C). The Texas and Oklahoma SHPOs have concurred that implementation of the Proposed Action would have no significant impact on cultural resources throughout the Project Area, provided the recommended mitigation measures are implemented. Table 7 identifies the number of sites within each spread and their eligibility status. Concurrence has been requested from the Colorado SHPO but has not yet been received; however, it will be obtained before the FRPL Project is implemented in Colorado.

Table 6. Cumulative Summary of Cultural Resources in the Front Range Pipeline LLC Project Area.

SPREAD OR PIPELINE SEGMENT	IDENTIFIED CULTURAL RESOURCE SITES	REQUIRED MITIGATION (IF ANY)
Spread 1–130.8 miles Colorado–Weld, Adams, Arapaho, Elbert, and El Paso Counties	Eligible site types include homestead and/or ranching, linear(irrigation, railroad, and transmission line), and prehistoric lithic scatter.	-Several linear resources (railroads and canals) were identified – mitigation will include boring under or using directional drilling techniques to avoid surface disturbance in pipeline construction. -Monitoring during construction near selected sites. -If additional artifacts are discovered during construction, activities would cease until a qualified professional archeologist could attend the site to determine the next appropriate step for documentation and possible mitigation as per policy of the appropriate jurisdictional authority (Atkins 2013b).
Spread 2 – 155.5 miles Colorado – Lincoln, Crowley, Otero, Bent, Las Animas, and Baca Counties.	Eligible site types include cemetery, homestead and/or ranching, linear (irrigation, railroad, and trail) school, and prehistoric habitation.	-Several linear resources (railroads and canals) were identified – mitigation would include boring under or using directional drilling techniques to avoid surface disturbance during pipeline construction. -Monitoring during construction near selected sites. -If additional artifacts are discovered during construction, activities would cease until a qualified professional archeologist could attend the site to determine the next appropriate step for documentation and possible mitigation as per policy of the appropriate jurisdictional authority (Atkins 2013a).
Spread 3 – 137 miles Oklahoma (40 miles) and Texas (97 miles) Panhandles	Eligible site types include a historic trail.	- Avoidance: most sites are 100 feet or more from the proposed pipeline alignment (Atkins 2013c). -One linear resource (a trail) was identified: mitigation includes boring under the trail to avoid surface disturbance during pipeline construction. Equipment mats will be used to establish a travel lane between bore entry and exit points. The travel lane will be established as close to the existing, maintained, and previously disturbed pipeline right-of-way as is practicable. Where swales are present along the travel lane, equipment bridges will be used to span swales without disturbing the swale's existing condition. -If additional artifacts are discovered during construction, activities will cease until a qualified professional archeologist can attend the site to determine the next appropriate step for documentation and possible mitigation as per policy of the appropriate jurisdictional authority (Atkins 2013c).

Table 7. National Register of Historic Places (NRHP) Eligibility Status of Identified Cultural Resources in the Overall Project Area.

CULTURAL RESOURCE	ELIGIBLE	NOT ELIGIBLE	NEED DATA
Spread 1: 130.8 Miles – Weld, Adams, Arapaho, Elbert, and El Paso Counties, Colorado[a]			
Historic	18	16	4
Bridge and/or Culvert		1	
Homestead and/or Ranching	1	3	1
Linear, Irrigation	11	9	
Linear, Railroad	4	1	
Linear, Trail			2
Linear, Transmission line	2	1	
Trash Scatter		1	1
Prehistoric	1	20	1
Lithic Scatter	1	20	1
Spread 2: 155.5 Miles – Lincoln, Crowley, Otero, Bent Las Animas, and Baca Counties, Colorado[b]			
Historic	10	11	8
Bridge and/or Culvert		4	
Cemetery			1
Homestead and/or Ranching	1	1	6
Hunting Blind		1	
Linear, Irrigation	3	1	
Linear, Railroad	3		
Linear, Trail	1		
School	2		
Trash Scatter		4	1
Bridge and/or Culvert		4	
Prehistoric	1	3	
Habitation Feature	1		
Lithic Scatter		3	
Spread 3: 137 Miles – Oklahoma (40 Miles) and Texas (97 Miles)[c]			
Historic	1	3	1
Homestead and/or Ranching		1	1
Linear, Railroad			
Linear, Trail	1		
Trash Scatter		2	
Prehistoric		4	1
Lithic Scatter		4	1

Note: Each linear site segment is recorded separately in the table above.
[a]Atkins (2013b), [b]Atkins (2013a), [c]Atkins (2013c).

4.17.14 Paleontological

Surveys of the entire FRPL Project corridor did not identify any paleontological resources within the proposed ROW (Atkins 2012c). Therefore, no impacts to paleontological resources would occur within the CNG or the entire Project Area.

4.17.15 Geology, Topography, and Soils

The cumulative area of disturbance of the entire FRPL Project is 4,576 acres, or 7.31 square miles. Soil disturbance would be minimized by utilizing mowing techniques to reduce vegetation in the construction areas and limiting trenching to only that necessary to construct the pipeline. All construction would be in accordance with BMPs outlined in the permitting processes of the appropriate regulatory agencies in each state or according to the terms of the ROW agreement with each individual land owner. After construction, trenches will be backfilled, the lands and soils contoured to preconstruction conditions, and the lands reseeded to invigorate vegetation grow to minimize water and wind erosion.

4.17.16 Environmental Justice

Throughout the entire Project Area, the FRPL Project would be co-located within an existing utility corridor. This corridor extends primarily through private lands that are currently used for agricultural purposes, either for grazing or for crops. There is no concentration of economically disadvantaged populations or minorities in the Project Area. No economically disadvantaged or minority population would be adversely impacted by implementation of the Proposed Action.

5.0 COMPARISON OF THE PROPOSED ACTION WITH THE ALTERNATIVES

Two alternatives are considered in this Environmental Assessment. These include the construction of the Front Range Pipeline LLC (FRPL) within the established utility corridor (Proposed Action), and the No-Action Alternative. Constructing the FRPL Project across the Comanche National Grassland outside of the established utility corridor is neither an available option nor a practical option. The impacts outlined in Chapter 4 discuss what would be incurred with the implementation of the Proposed Action and articulate the changes that would occur relative to the existing condition, or No-Action Alternative. Table 8 below summarizes the differences by resource between implementing the Proposed Action and the No-Action Alternative.

Table 8. Comparison of the Implementing the Front Range Pipeline LLC (Proposed Action) with the No-Action Alternative in the Comanche National Grassland.

RESOURCE	PROPOSED ACTION ALTERNATIVE	NO ACTION ALTERNATIVE
Safety	Transport of natural gas liquids (NGL) through a pipeline is the safest possible mode of transport. Once in place, a pipeline allows for continuous, unimpeded flow of product not subject to traffic, weather, or other conditions that could increase chance of accident if NGL are transported using ground transportation.	NGL would be transported using surface transportation methods such as trucks and rail. While such methods are relatively safe under most conditions, weather, road conditions, and other vehicles allows for greater potential for conflict. Additionally, surface transportation methods result in increases in road use, traffic, and vehicle emissions.
Water Resources	The Proposed Action would cross one pond and 12 ephemeral streams. Adherence to BMPs outlined in FSM 2500 would insure that water resources within the Project Area would not be affected.	There would be no change to water flows or quality as a result of the No-Action Alternative.
Climate and Air Quality	There would be slight increases of fugitive dust and vehicle emissions associated with construction. Increases would be locally isolated and temporary.	If NGL is transported using surface methods such as trucks and rail, vehicle emissions will increase.
Noise	There would be slight increases in noise during construction. Increases would be highly localized to construction sites as they moved along the pipeline.	Vehicles used to transport NGL would add increased road and rail traffic, resulting in overall noise increases along roads and railroads.
Land Use	The established utility corridor would continue to be used as utility corridor. The nature of the land use would not be changed.	There would be no change to land use in the Project Area as a result of the No-Action Alternative.
Wildlife Resources	Wildlife at construction sites would dissipate with the increased activity. Such disturbance would be short term and temporary, and wildlife would return after construction activities are complete and the revegetation plan is implemented.	There would be no change to wildlife resources as a result of the No-Action Alternative.

Table 8. Continued.

RESOURCE	PROPOSED ACTION ALTERNATIVE	NO ACTION ALTERNATIVE
Aquatic Resources	No aquatic resources would be impacted within the CNG, as the Proposed Action does not cross any water courses or impoundments. Outside the CNG, water crossings would be crossed, but construction practices would reduce or eliminate any impacts to aquatic resources in those areas.	There would be no change to aquatic resources as a result of the No-Action Alternative.
Vegetation	Vegetation within the Project Area would be impacted by construction. This would be limited to the vegetation disturbed by trenching and other construction activities, which accounts for a total of 113 acres within the CNG and 4,563 acres outside the CNG. Implementation of the revegetation plan would mitigate any of these impacts.	There would be no change in vegetation resources as a result of the No-Action Alternative.
Grazing	Some grazing lands would be disturbed by construction. However, implementation of the revegetation plan would mitigate any of these impacts.	There would be no change in grazing resources as a result of the No-Action Alternative.
Threatened and Endangered Species	No threatened or endangered species would be adversely affected by implementation of the Proposed Action.	No threatened or endangered species would be adversely affected by the No-Action Alternative.
Recreation	There would be no changes in recreation within the Project Area that would occur as a result of the proposed action.	There would be no changes in recreation that would result from the No-Action Alternative.
Visual Resources	During construction, equipment and materials would be visible within the Project Area. This impact would be short term and temporary. Upon completion of construction and implementation of the revegetation plan, the visual resources in the Project Area would be restored to preconstruction condition.	There would be no changes in visual resources that would result from the No-Action Alternative.
Socioeconomics	During construction, workers would utilize local lodging, food, and shopping resources, injecting approximately $3 million dollars into the local economy.	There would be no change in the socioeconomic resources in the region as a result of the No-Action Alternative.

Table 8. Continued.

RESOURCE	PROPOSED ACTION ALTERNATIVE	NO ACTION ALTERNATIVE
Cultural Resources	No significant cultural resources would be adversely impacted by implementation of the Proposed Action. If additional cultural resources are discovered during construction, activities will stop until a qualified professional archeologist can inspect and document the resources and notify the appropriate regulatory authority(ies) and land owner(s) and proceed as legally required.	No cultural resources would be impacted by the implementation of the No-Action Alternative.
Paleontological Resources	No paleontological resources would be impacted by implementation of the Proposed Action. If resources are discovered in construction, activities would stop until the site could be assessed by a qualified professional paleontologist to determine the best course of action.	No paleontological resources would be impacted by the implementation of the No-Action Alternative.
Geology, Topography, and Soils	Up to 113 acres of soil disturbance would occur within the CNG and up to 4,563 acres would occur along the entire Project Area with implementation of the Proposed Action. Prescribed construction techniques including keeping top soils separated, replacing soils, and implementing the revegetation plan would mitigate any impacts to soils within the Project Area.	There would be no changes to geology, topography, or soils by the implementation of the No-Action Alternative.
Environmental Justice	No economically disadvantaged or minority population would be adversely impacted by implementation of the Proposed Action.	No economically disadvantaged or minority population would be adversely impacted by implementation of the No-Action Alternative.

6.0 SUMMARY AND RECOMMENDATIONS

Front Range Pipeline LLC (FRPL) has applied for permits to construct a natural gas pipeline that would cross the Comanche National Grassland (CNG) in southeast Colorado (Proposed Action). This pipeline would cross the CNG area covering 33.3 miles, of which 11.7 miles would be on CNG lands administered by the U.S. Department of Agriculture–Forest Service. Crossing these Federally managed lands provides the Federal nexus that requires completion of an Environmental Assessment (EA) to determine whether the Proposed Action would cause significant environmental impacts. This EA focuses on impacts that would occur on the CNG, although the cumulative impacts of the entire FRPL Project outside the CNG is also considered.

As proposed, it is determined that the Proposed Action would not result in significant impacts to the environment, and it is anticipated the EA process would result in a Finding of No Significant Impact. Table 9 provides a summary of the environmental consequences resulting from and proposed mitigation for implementation of the Proposed Action.

Table 9. Summary of the Environmental Consequences from and Mitigation Measures for Implementation of the Front Range Pipeline LLC Project (Proposed Action) in the Comanche National Grassland (CNG).

AFFECTED RESOURCES[a]	ENVIRONMENTAL CONSEQUENCES	MITIGATION MEASURES
Water Resources	There are 12 ephemeral streams and one pond that would be crossed by the proposed pipeline within the CNG. Outside the CNG, the Proposed Action would cross a number of water courses, including the Purgatoire and Arkansas Rivers.	At water crossings, construction techniques will be employed to eliminate any impacts to the water course. These will include boring under the water course or restoring the water course, such as canals, when the trenching and burial of the pipeline has been completed.
Vegetation	Vegetation in the Project Area would be temporarily disturbed by Proposed Action construction activities.	Areas of disturbed vegetation will be restored according to the revegetation plan. Additionally, mowing of existing vegetation will be employed instead of blading in order to preserve as much existing vegetation as possible.
Grazing	Some grazing forage would be impacted during Proposed Action construction activities.	Areas of disturbed vegetation will be restored according to the revegetation plan. Additionally, mowing of existing vegetation will be employed instead of blading in order to preserve as much existing forage as possible.
Cultural	There would be no adverse impacts to significant cultural resources on CNG or other lands from implementation of the Proposed Action provided the proposed mitigations are implemented. Outside the CNG, the Proposed Action would cross beneath some linear cultural resources, such as historic rail beds and the Santa Fe Trail.	Mitigations include avoidance of known cultural resources, monitoring during construction, and utilizing nonimpactive construction techniques where the Proposed Action crosses linear cultural resources, such as boring under historic rail beds and the Santa Fe Trail.
Soils	Soils would be disturbed during construction of the Proposed Action.	Construction techniques will be employed, such as keeping top soils separated from deeper soils as the trenches are dug and then backfilled and placing top soils back in place. The construction area will be contoured and revegetated according to the revegetation plan to reduce erosion potential and restore the soils to preconstruction conditions.

[a]Some resources were not given in this table because they would not be affected by implementation of the Proposed Action.

7.0 PERSONS AND ORGANIZATIONS CONTACTED

ORGANZIATIONS THAT RECEIVED THE SCOPING NOTICE	
Arkansas Valley Audubon Society PO Box 522 Pueblo, CO 81002	Colorado Cattleman's Association 8833 Ralston Road Arvada, Colorado 80002
Colorado Environmental Coalition 1536 Wynkoop St. #5 Denver, Colorado 80202	Las Animas County Commissioners 200 East 1st Street Trinidad, Colorado 81082
National Wildlife Federation 2200 Baseline Boulder, Colorado 80302	Natural Resources Conservation Service 200 South 10th Street Rocky Ford, CO 81067
Colorado State Office 2424 Spruce Street Boulder, Colorado 80302	Ran Bailey Las Animas County Co-op Extension 200 East First Street, Room 101 Trinidad, Colorado, 81082
Natural Resources Conservation Service 318 Lacey Avenue La Junta, Colorado 84050	Sandy Vana-Miller USFWS – Field Office PO Box 25486 Denver, Colorado 80225
Bob Morrow Baca County Quail Unlimited 310 East Willow Walsh, Colorado 81090	Timpas Grazing District PO Box 112 Prichett, Colorado 81064
Otero County Courthouse PO Box 511 La Junta, Colorado 81050	Baca County Courthouse 741 Main Street Springfield, Colorado 81073
Branson-Trinchera Soil Conservation District 1134 County Road 34 Pritchett, Colorado 81064	Campo Grazing Association PO Box 692 Vilas, Colorado 81087
Colorado Wildlife Federation 1410 Grant Street, Suite C-311 Denver, Colorado 80203	Town of Kim PO Box 70 Kim, Colorado 81049
Kim Grazing Association PO Box 138 Kim, Colorado 81049	Natural Resources Conservation Service 3590 East Main Street Trinidad, Colorado, 81082
Pritchett City Clerk PO Box 56 Pritchett, Colorado 81064	Pritchett Grazing Association PO Box 111 Pritchett, Colorado 81064
Springfield Chamber of Commerce PO Box 12 Springfield, Colorado 81073	Colorado Division of Wildlife 2500 South Main Street Lamar, Colorado 81052
Natural Resources Conservation Service 27200 U.S. Highway 287 Springfield, Colorado 81073	Nicole Rosemarino Southern Plains Land Trust 6439 East Maplewood Ave. Centennial, Colorado 80111

TRIBES THAT RECEIVED THE SCOPING NOTICE	
Chairman Amber Toppah Kiowa Tribe of Oklahoma PO Box 369 Carnegie, OK 73015	Chairman Donnie Cabaniss Apache Tribe of Oklahoma PO Box 1330 Anadarko, OK 73005
Chairman Jeff Houseer Fort Sill Apache Tribe 431 US Highway 281 Apache, OK 73006	Chairman Jim Sakespeare Northern Arapaho Tribe PO Box 396 Fort Washakie, WY 82514
Chairman Jimmy Newton, Jr. Southern Ute Indian Tribe 356 Ouray Drive Ignacio, Colorado 81137	Chairman Wallace Coffey Comanche Nation of Oklahoma PO Box 908 Lawton, OK 73502
Dr. Jeffrey Blythe Jicarilla Apache Tribe PO Box 1367 Dulce, New Mexico 87528	Governor Janice Prairie Chief Boswell Cheyenne and Arapaho Tribes of Oklahoma PO Box 38 Concho, Oklahoma 73022
Mr. Conrad Fisher Northern Cheyenne Tribe PO Box 128 Lame Deer, Montana 59043	Mr. Dale Hamilton Cheyenne and Arapaho Tribes of Oklahoma 200 Wolf Robe Circle Concho, Oklahoma 73022
Mr. Gifford Velarde Jicarilla Apache Nation PO Box 1367 Dulce, New Mexico 87528	Mr. Gordon Adams Pawnee Nation of Oklahoma PO Box 470 Pawnee, Oklahoma 74058
Mr. Jimmy Arterberry Comanche Nation of Oklahoma PO Box 908 Lawton, Oklahoma 73502	Mr. Leland Michael Darrow Fort Sill Apache Tribe Route 2, Box 121 Apache, Oklahoma 73006
President Marshall R. Gover Pawnee Nation of Oklahoma 881 Little Dee Drive Pawnee, Oklahoma 74058	President Levi Pesata Jicarilla Apache Nation PO Box 507 Dulce, New Mexico 87528
Ms. Karen Little Coyote Cheyenne and Arapaho Tribes of Oklahoma 200 Wolf Robe Circle Concho, Oklahoma 73022	President Leroy Spang Northern Cheyenne Tribe PO Box 128 Lame Deer, Montana 59043
President Leslie Standing Wichita & Affiliated Tribes PO Box 729 Anadarko, Oklahoma 73005	

8.0 LIST OF PREPARERS

8.1 U.S. Forest Service – Pike & San Isabel National Forests, Cimarron & Comanche National Grasslands

Jeff Stoney
Richard Bennin
Michelle Stevens
Len Newton
John Dow
Steve Olson
Ian Ritchie
Bruce Schumacher
Andy Chappell
Earl Tanner
Kurt Staton
Pat Hessenflow
Bill Pelowski
Steven A. Sanchez

8.2 Consultants

Scott Jecker – Whitenton Group, Inc.
Brian Whisenunt – Whitenton Group, Inc.
Gary Armstrong – BIO-WEST, Inc.
Marty Heaney – BIO-WEST, Inc.
Alyson Eddie – BIO-WEST, Inc.
Mike Sipos – BIO-WEST, Inc.
Sandy Davenport – BIO-WEST, Inc.
Sandra Livingston Turner – BIO-WEST, Inc.
Robert Rowe – Atkins North American, Inc.

9.0 REFERENCES CITED

Agnew, W., D.W. Uresk, and R.M. Hansen. 1986. Flora and fauna associated with prairie dog colonies and adjacent ungrazed mixed-grass prairie in western South Dakota. Journal of Range Management 39:135-139.

Atkins. 2012a. Wetland Delineation Report. Front Range Pipeline Project Spread 2, Comanche National Grassland, Baca County, Colorado. Prepare for Front Range Pipeline LLC by Atkins, December 2012.

Atkins. 2012b. Rare and sensitive species report, Front Range Pipeline Project, spread 2, Comanche National Grassland Baca County, Colorado. Prepared for Front Range Pipeline LLC, Prepared by Atkins, December 2012.

Atkins. 2012c. Paleontology technical report Front Range Pipeline Project spread 2, Lincoln, Crowley, Otero, Bent, Las Animas, and Baca Counties, Colorado. Prepared for Front Range Pipeline LLC by Atkins, October 2012.

Atkins. 2013a. A class III cultural resources survey of spread 2 of the Front Range Pipeline Project, Lincoln, Crowley, Otero, Bent, Las Animas, and Baca Counties, Colorado. Prepared for Front Range Pipeline LLC by Atkins, February 2013.

Atkins. 2013b. A class III cultural and class I paleontological resources survey of spread 1 of the Front Range Pipeline Project, Weld, Adams, Arapahoe, Elbert, and El Paso Counties, Colorado. Prepared for Front Range Pipeline LLC by Atkins, February 2013.

Atkins. 2013c. A phase I cultural resources survey for the proposed Front Range Natural Gas Pipeline Project spread 3 in the Oklahoma and Texas Panhandles. Prepared for Front Range Pipeline LLC by Atkins, February 2013.

Bannon, J.F. 1970. The Spanish borderlands frontier. Holt, Rinehart, and Winston, New York. pp. 1,531–1,821.

Brooks, R.L. 2004. From stone slab architecture to abandonment: A revisionist view of the Antelope Creek phase. Pages 331–344 *In*: The Prehistory of Texas, edited by T.K. Perttula. Texas A & M University Press, College Station.

Cassels, E.S. 1983. The archaeology of Colorado. Johnson Books, Boulder.

Church, M.C., S.G. Baker, B.J. Clark, R.F. Carrillo, J.C. Horn, C.D. Spath, D.R. Guilfoyle, and E.S. Cassells. 2007. Colorado history: a context for historical archaeology. Colorado Council of Professional Archaeologists, Denver. 600 p.

Clippinger, N.W. 1989. Habitat suitability index models: black-tailed prairie dog. U.S. Fish and Wildlife Service Biological Report 82(10.156). 21 p.

Colorado Department of Public Health and Environment. 2007. Letter from Department Director James B. Martin to EPA Regional Administrator Robert E. Roberts, regarding Colorado designations for PM2.5 NAAQS. Location: http://www.epa.gov/air/particles/designations/2006standards/rec/letters/08_CO_rec.pdf. Accessed 3/1/2013.

[CNHP] Colorado Natural Heritage Program. 2012. CNHP Conservation status handbook (tracking lists). Location: http://www.cnhp.colostate.edu/download/list.asp. Accessed 2/2013.

[CNHP] Colorado Natural Heritage Program. 2005. Ecological systems of Colorado: Western Great Plains Sandhill Shrubland and Western Great Plains Shortgrass Prairie. Location: http://www.cnhp.colostate.edu/download/projects/eco_systems/eco_systems.asp. Accessed 2/2013.

[CPW] Colorado Parks and Wildlife. 2012. Threatened and endangered list. Available online at http://wildlife.state.co.us/wildlifespecies/speciesofconcern/threatenedendangeredlist/pages/listofthreatenedandendangeredspecies.aspx. Accessed 2/2013 (Last Updated 12/21/2011).

Coues, E. (editor). 1965. Zebulon Montgomery Pike. Pages unknown *In:* The expedition of Zebulon Montgomery Pike to headwaters of the Mississippi River, through Louisiana Territory, and in New Spain, during the Years 1805-06-07. Ross & Haines, New York.

[CRS] Colorado Revised Statute. 25-12-103. Colorado Noise Statute, maximum permissible noise levels. Accessed 3/1/2013 at http://www.nonoise.org/lawlib/states/colorado/colorado.htm .Comanche National Grassland (CNG). 2012. Aerial survey photographs, 1930. Photos on file at Comanche National Grassland, La Junta, Colorado.

Dames and Moore. 1978. Environmental assessment for Pinion Canyon Parcel in Las Animas and Otero Counties, Colorado. Department of the Army.

Dick, E. 1970. The lure of the land: A social history of the public lands from the Articles of Confederation to the New Deal. University of Nebraska Press, Lincoln.

Duffus, R. 1972. The Santa Fe Trail. University of New Mexico Press, Albuquerque.

Dugger, B.D. and K.M. Dugger. 2002. Long-billed curlew (*Numenius americanus*). The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/628

Dunning, Jr., J.B., R.K. Bowers, Jr., S.J. Suter and C.E. Bock. 1999. Cassin's sparrow (*Peucaea cassinii*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/471

Egoscue, H.J. 1979. *Vulpes velox*. Mammalian Species 122:1–5.

Eighmy, J.L. 1984. Colorado Plains prehistoric context for management of Prehistoric resources of the Colorado Plains. Colorado Historical Society, Denver. 172 p.

[Enterprise] Enterprise Products Partners, L.P.2013a. Typical pipeline construction approach. Personal communication with G. Armstrong of BIO-WEST, Inc. regarding pipeline construction. E-mail dated 3/1/2013.

[Enterprise] Enterprise Products Partners, L.P. 2013b. General approach for boring under linear features. Personal communication with G. Armstrong of BIO-WEST, Inc. regarding pipeline construction. E-mail dated 3/1/2013.

[EPA] Environmental Protection Agency. 2013. National Ambient Air Quality Standards. Location: http://www.epa.gov/air/criteria.html. Accessed 3/1/2013.

Frison, C.G. 1991. Prehistoric hunters of the High Plains. Second Edition. Academic Press, New York.

[FRPL] Front Range Pipeline LLC. 2013. Right-of way-configuration. Personal communication with G. Armstrong of BIO-WEST, Inc. regarding pipeline construction. E-mail dated 3/1/2013.

Goetzmann, W.H. 1979. Army exploration in the American West, 1803–1863. University of Nebraska Press, Lincoln.

Hagen, C.A. and K.M. Giesen. 2005. Lesser prairie-chicken (*Tympanuchus pallidicinctus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/364

Henderson, D.A. 1951. The beef cattle industry of Colorado. Master's thesis, University of Colorado, Boulder.

Higgins, K.F., E.D. Stukel, J.M. Goulet, and D.C. Backlund. 2002. Wild mammals of South Dakota, 2nd edition. South Dakota Department of Game, Fish and Parks, Pierre, South Dakota.

Jones, J.K., Jr., D.M. Armstrong, R.S. Hoffmann, and C. Jones. 1983. Mammals of the northern Great Plains. University of Nebraska Press, Lincoln, Nebraska.

Kamler, J.F., W.B. Ballard, E.B. Fish, P.R. Lemons, K. Mote, and C.C. Perchellet. 2002. Habitat use, home ranges, and survival of swift foxes in a fragmented landscape: conservation implications. Journal of Mammalogy 84:989–995.

Kirkham, R.M. and W.P. Rogers. 1985. Colorado earthquake data and interpretations – 1967 to 1985. Bulletin 46. Colorado Geological Survey.

Knopf, F.L. and M.B. Wunder. 2006. Mountain plover (*Charadrius montanus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/211

Kotliar, N.B. 2000. Application of the new keystone species concept to prairie dogs: How well does it work? Conservation Biology 14:1715–1721.

Kotliar, N.B., B.W. Baker, and A.D. Whicker. 1999. A critical review of assumptions about the prairie dog as a keystone species. Environmental Management 24:177–192.

Kretzer, J.E., and J.F. Cully. 2001. Effects of black-tailed prairie dogs on reptiles and amphibians in Kansas shortgrass prairie. Southwestern Naturalist 46:171–177. Accessed November 1, 2012. Available on-line at https://www.ksu.edu/kscfwru/Cully/Publications/38%20KretzerCully%20SWNat%202001.pdf.

Krieger, A.D. 1946. Cultural Complexes and Chronology of Northern Texas. The University of Texas at Austin.

Ladyman, J.A.R. 2006. *Chenopodium cycloides* A. Nelson (sandhill goosefoot): a technical conservation assessment. USDA Forest Service, Rocky Mountain Region. Location: http://www.fs.fed.us/r2/projects/scp/assessments/chenopodiumcycloides.pdf . Accessed 2/25/2013.

LeBlanc, S.A. 1999. Prehistoric warfare in the American Southwest. University of Utah Press, Salt Lake City.

Lintz, C.R. 1978. Architecture and radiocarbon dating on the Antelope Creek Focus: A test of Campbell's model. Plains Archaeologist 23(82, Part 1):319–328.

Mackessy, S.P. 2007. Ecology of the desert massasauga rattlesnake in Colorado: Habitat and resource utilization. A report to the CDOW and USFWS for the Colorado Wildlife Conservation Grant Program.

Mackessy, S.P. 2005. Desert massasauga rattlesnake (*Sistrurus catenatus edwardsii*): A technical conservation assessment. USDA Forest Service, Rocky Mountain Region. Accessed September 25, 2012. Available on-line at http://www.fs.fed.us/r2/projects/scp/assessments/massasauga.pdf.

Mackessy, S.P. 1998. A survey of the herpetofauna of southeastern Colorado with a focus on the current status of two candidates for protected species status: the massasauga rattlesnake and the Texas horned lizard. Final report to the Colorado Division of Wildlife, April 1998.

McGimsey, C.R., III. 1972. Public archeology. Seminar Press, New York.

Merk, F. 1978. Great Plains and the cattlemen. Pages 457–463 *In*: History of the Westward Movement. Alfred A. Knopf, New York.

Miller, B., C. Wemmer, D. Biggins, and R. Reading. 1990. A proposal to conserve black-footed ferrets and the prairie dog ecosystem. Environmental Management 14:763–769.

Miller, B., G. Ceballos, and R. Reading. 1994. The prairie dog and biotic diversity. Conservation Biology 8:677–681.

[NPS] National Park Service. 2013. Class I receptors overview. Location: http://nature.nps.gov/air/maps/Receptors/index.cfm . U.S. Department of the Interior. Accessed 3/1/2013.

Poulin, R., L.D. Todd, E.A. Haug, B.A. Millsap, and M.S. Martell. 2011. Burrowing owl (*Athene cunicularia*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/061

Rotenberry, J.T., M.A. Patten and K.L. Preston. 1999. Brewer's sparrow (*Spizella breweri*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/390

Sidle, J.G., D.H. Johnson, and B.R. Euliss. 2001. Estimated areal extent of colonies of black-tailed prairie dogs in the northern Great Plains. Journal of Mammalogy 82:928–936.

Smith, K.G., S.R. Wittenberg, R.B. Macwhirter, and K.L. Bildstein. 2011. Northern harrier (*Circus cyaneus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/210

Stapp, P. 1998. A reevaluation of the role of prairie dogs in Great Plains grasslands. Conservation Biology 12:1,253–1,259.

United States Census Bureau. 2013. State and county quick facts: Baca County, Colorado. Location: http://quickfacts.census.gov/qfd/states/08000.html . Accessed 3/1 2013.

[USDA SCS] United States Department of Agriculture Soil Conservation Service. 1973. Soil survey of Baca County, Colorado. USDA SCS and United States Forest Service in cooperation with the Colorado Agricultural Experiment Station. U.S. Government Printing Office, Washington, D.C. 55 p plus indices.

[USFS] United States Forest Service. 2013a. Forest Service Handbook 1909.15. Accessed 3/1/2013 at http://www.fs.fed.us/cgi-bin/Directives/get_dirs/fsh?1909.15 .

[USFS] United States Forest Service. 2013b. Comanche National Grassland, Timpas Unit: Wildlife. Location: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsm9_032427.pdf. Accessed 3/1/2013.

[USFS] USFS Rocky Mountain Region. 2013c. Species Evaluation Index – Dicots. Wheel milkweed #1 and #2. Accessed 2/25/2013 at http://www.fs.fed.us/r2/projects/scp/evalrationale/evaluations/dicots/index.shtml.

[USFS] USFS Rocky Mountain Region. 2013d. Species Evaluation Index – Dicots. Sandhill goosefoot. Accessed 2/25/2013 at http://www.fs.fed.us/r2/projects/scp/evalrationale/evaluations/dicots/index.shtml.

[USFS] U.S. Forest Service. 2012. National best management practices for water quality management on National Forest System Lands. http://www.fs.fed.us/biology/resources/pubs/watershed/FS_National_Core_BMPs_April2012.pdf

[USFS] U.S. Forest Service. 2009. Region 2 Regional Forester's Sensitive Species List. Accessed February 2013 (Last updated June 15, 2009). Available online at http://www.fs.fed.us/r2/projects/scp/sensitivespecies/index.shtml.

[USFS] United States Forest Service. 2008. Forest Service Manual 1950 – Planning. As amended 2008. Accessed 3/1/2013 at http://www.fs.fed.us/emc/nepa/nepa_procedures/includes/1950.pdf .

[USFS] United States Forest Service. 2005a. Specialist Reports – Existing Condition Descriptions – Paleontological Resources. 5/10/2005. Accessed 3/1/2013 at http://www.fs.fed.us/outernet/r2/psicc/projects/forest_revision/pt1_ch13_paleo_061228.pdf .

[USFS] United States Forest Service. 2005b. Forest Service Manual 2600, Chapter 2670 – threatened, endangered, and sensitive plants and animals. Amendment 2600-2005-1. Accessed 3/1/2013 at http://www.rosemonteis.us/files/references/usfs-2005a.pdf.

[USFS] United States Forest Service. 2004. Vascular Plant Species of the Comanche National Grassland in Southeastern Colorado. Prepared by Donald Hazlett, Rocky Mountain Research Station.

[USFS] United States Forest Service. 1993. Diamond Shamrock Colorado Springs Pipeline Project Final Environmental Assessment. Prepared by L.W. Reed Consultants, Inc., for Diamond Shamrock, Pipeline, Co.

[USFS] United States Forest Service. 1991a. Final Oil and Gas Leasing Environmental Impact Statement: Pike and San Isabel National Forests, Comanche and Cimarron National Grassland. U.S. Department of Agriculture.

[USFS] U.S. Forest Service. 1990. Title 2500 - Watershed and Air Management Amendment No. 2500-90-1. Location: http://www.fs.fed.us/im/directives/fsm/2500/2500-90-1_transmittal.txt.

[USFS] United States Forest Service. 1987. Pike and San Isabel National Forests and Comanche and Cimarron National Grassland Land and Resource Management Plan, Amendment Number 10.

[USFWS] U.S. Fish and Wildlife Service. 2013. Endangered Species Act species list. Accessed February 2013 (Last Updated February 19, 2013). Available online at http://ecos.fws.gov/ipac/.

[USFWS] U.S. Fish and Wildlife Service. 2009. Mountain plover population inventory and habitat management. Comanche National Grassland.

[USFWS] United States Fish and Wildlife Service. 2000. Endangered and threatened wildlife and plants: 12 month finding for a petition to list the black-tailed prairie dog as threatened. Federal Register 65:5476–5488.

Ubbelohde, C., M. Benson, and D. Smith. 1982. A Colorado history. Pruett Press, Boulder.

Vestal, S. 1996. The Old Santa Fe Trail. University of Nebraska Press. Lincoln.

Weather.com. 2013. Monthly averages for Springfield, Colorado. Location: http://www.weather.com/weather/wxclimatology/monthly/USCO0367. Accessed 3/1/2013.

Wickens, J.F. 1964. Colorado in the Great Depression. Ph.D. dissertation, University of Denver.

Winship, G.P. 1904. The journey of Coronado, 1540–1542, from the City of Mexico to the Grand Canyon of the Colorado and the Buffalo Plains of Texas, Kansas and Nebraska, As told by himself and his followers. A.S. Barnes & Co., New York.

Yosef, R. 1996. Loggerhead shrike (*Lanius ludovicianus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/231

Zier, C.J., S.M. Kalasz, and M.W. Painter. 1999. Colorado prehistory: A context for the Arkansas River Basin. Colorado Council of Professional Archaeologists, Denver. 383 p.

APPENDIX A: PUBLIC SCOPING INFORMATION

United States Department of Agriculture | Forest Service | Comanche National Grassland | P.O. Box 127
27204 Hwy 287
Springfield, CO 81073
719-523-6591

File Code: 2720

Date: December 17, 2012

SUBJECT: Front Range Pipeline, LLC – Pipeline Construction through the Comanche National Grasslands

Arkansas Valley Audubon Society
PO Box 522
Pueblo, CO 810002

Dear Sir or Madam,

The Comanche National Grassland has prepared this notice to inform you of a proposal submitted by Front Range Pipeline, LLC, to construct a pipeline across the Comanche National Grassland in southeastern Colorado. As part of the application process and in compliance with the National Environmental Policy Act, the Forest Service is completing an environmental review to identify the environmental consequences of completing this proposal. The first step of the environmental review will be completion of an environmental assessment (EA) to determine if the impacts of the proposal are significant. You will be sent a copy of that EA when it is complete. The News Release describing the proposal has been included in this letter.

To summarize the proposal, Front Range Pipeline, LLC proposes to construct and operate a 16 sixteen (16) inch diameter natural gas liquids pipeline that would traverse 11.7 miles of Federal land designated as the Comanche National Grassland and administered by the USDA, Forest Service (USFS). The proposed pipeline parallels three existing pipelines within an existing utility corridor as identified in Forest Plan, and traverses portions of the following Forest Service lands: Section 16, T.35S. R.46W., Section 2, T.35S. R.47W., Sections 16, 21, 27, 35, T.34S. R.47W., Section 31, T.33S. R.47W., Sections 9, 15, 22, 23, 26, 25, T.33S. R.48W., Sections 2, 17, 18, 20, T.31S. R.49W., and Section 12, T.31S. R.50W., Baca County, Colorado 6th P.M. A map of the project area has been included with this letter.

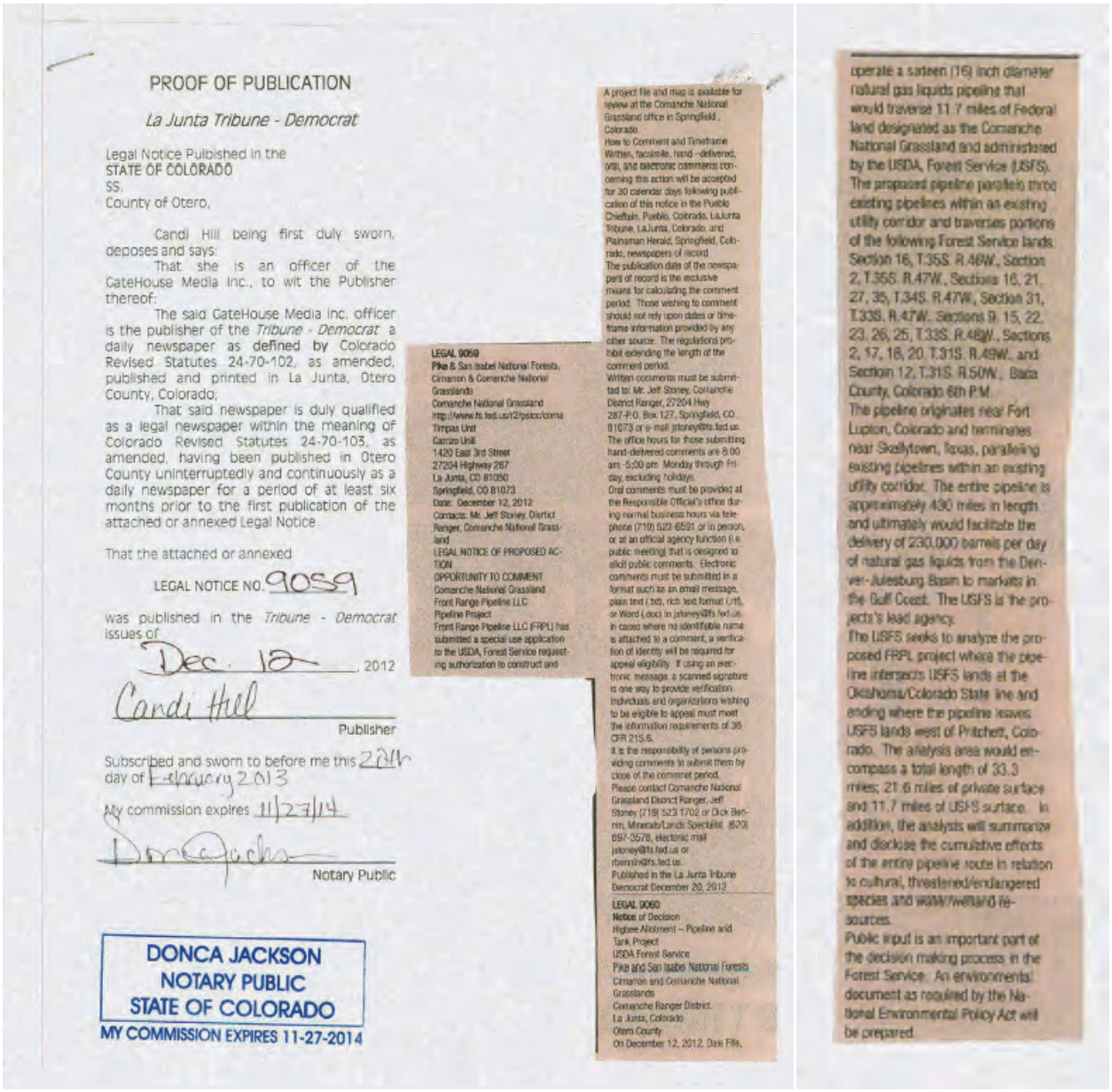
This section of pipeline is part of a larger pipeline project that originates near Fort Lupton, Colorado and terminates near Skellytown, Texas and will be constructed parallel to existing pipelines within existing utility corridors. The entire pipeline will be approximately 430 miles and would facilitate the delivery of 230,000 barrels per day of natural gas liquids from the Denver-Julesburg Basin, to markets in the Gulf Coast.

The Forest Service welcomes your input in identifying any issues that may be considered in the development of the EA. If you have any questions or comments about the project, please contact me or submit your comments in writing at the above listed address by January 20, 2013. We appreciate your point of view and value your perspective in this important review process.

Sincerely,

/s/ *Jeff Stoney*
Comanche District Ranger

Caring for the Land and Serving People



PROOF OF PUBLICATION

La Junta Tribune - Democrat

Legal Notice Published in the
STATE OF COLORADO
SS.
County of Otero,

Candi Hill being first duly sworn, deposes and says:

That she is an officer of the GateHouse Media Inc., to wit the Publisher thereof:

The said GateHouse Media Inc. officer is the publisher of the *Tribune - Democrat* a daily newspaper as defined by Colorado Revised Statutes 24-70-102, as amended, published and printed in La Junta, Otero County, Colorado;

That said newspaper is duly qualified as a legal newspaper within the meaning of Colorado Revised Statutes 24-70-103, as amended, having been published in Otero County uninterruptedly and continuously as a daily newspaper for a period of at least six months prior to the first publication of the attached or annexed Legal Notice.

That the attached or annexed

LEGAL NOTICE NO. 9059

was published in the *Tribune - Democrat* issues of

Dec. 12, 2012

Candi Hill
Publisher

Subscribed and sworn to before me this 28th day of February 2013

My commission expires 11/27/14

Donca Jackson
Notary Public

DONCA JACKSON
NOTARY PUBLIC
STATE OF COLORADO
MY COMMISSION EXPIRES 11-27-2014

LEGAL 9059
Pike & San Isabel National Forests, Cimarron & Comanche National Grasslands
Comanche National Grassland
http://www.fs.fed.us/r2/psicc/coma
Timpas Unit
Carrizo Unit
1420 East 3rd Street
27204 Highway 287
La Junta, CO 81050
Springfield, CO 81073
Date: December 12, 2012
Contacts: Mr. Jeff Stoney, District Ranger, Comanche National Grassland
LEGAL NOTICE OF PROPOSED ACTION
OPPORTUNITY TO COMMENT
Comanche National Grassland
Front Range Pipeline LLC
Pipeline Project
Front Range Pipeline LLC (FRPL) has submitted a special use application to the USDA, Forest Service requesting authorization to construct and operate a sixteen (16) inch diameter natural gas liquids pipeline that would traverse 11.7 miles of Federal land designated as the Comanche National Grassland and administered by the USDA, Forest Service (USFS).
The proposed pipeline parallels three existing pipelines within an existing utility corridor and traverses portions of the following Forest Service lands: Section 16, T.35S. R.46W., Section 2, T.35S. R.47W., Sections 16, 21, 27, 35, T.34S. R.47W., Section 31, T.33S. R.47W., Sections 9, 15, 22, 23, 26, 25, T.33S. R.48W., Sections 2, 17, 18, 20, T.31S. R.49W., and Section 12, T.31S. R.50W., Baca County, Colorado 6th P.M.
The pipeline originates near Fort Lupton, Colorado and terminates near Skellytown, Texas, paralleling existing pipelines within an existing utility corridor. The entire pipeline is approximately 490 miles in length and ultimately would facilitate the delivery of 230,000 barrels per day of natural gas liquids from the Denver-Julesburg Basin to markets in the Gulf Coast. The USFS is the project's lead agency.
The USFS seeks to analyze the proposed FRPL project where the pipeline intersects USFS lands at the Oklahoma/Colorado State line and ending where the pipeline leaves USFS lands west of Pritchett, Colorado. The anlaysis area would encompass a total length of 33.3 miles; 21.6 miles of private surface and 11.7 miles of USFS surface. In addition, the analysis will summarize and disclose the cumulative effects of the entire pipeline route in relation to cultural, threatened/endangered species and water/wetland resources.
Public input is an important part of the decision making process in the Forest Service. An environmental document as required by the National Environmental Policy Act will be prepared.
A project file and map is available for review at the Comanche National Grassland office in Springfield, Colorado.
How to Comment and Timeframe
Written, facsimile, hand –delivered, oral, and electronic comments concerning this action will be accepted for 30 calendar days following publication of this notice in the Pueblo Chieftain, Pueblo, Colorado, La Junta Tribune, La Junta, Colorado, and Plainsman Herald, Springfield, Colorado, newspapers of record.
The publication date of the newspapers of record is the exclusive means for calculating the comment period. Those wishing to comment should not rely upon dates or timeframe information provided by any other source. The regulations prohibit extending the length of the comment period.
Written comments must be submitted to: Mr. Jeff Stoney, Comanche District Ranger, 27204 Hwy 287-P.O. Box 127, Springfield, CO. 81073 or e-mail jstoney@fs.fed.us. The office hours for those submitting hand-delivered comments are 8:00 am -5:00 pm Monday through Friday, excluding holidays.
Oral comments must be provided at the Responsible Official's office during normal business hours via telephone (719) 523-6591 or in person, or at an official agency function (i.e. public meeting) that is designed to elicit public comments. Electronic comments must be submitted in a format such as an email message, plain text (.txt), rich text format (.rtf), or Word (.doc) to jstoney@fs.fed.us. In cases where no identifiable name is attached to a comment, a verification of identity will be required for appeal eligibility. If using an electronic message, a scanned signature is one way to provide verification. Individuals and organizations wishing to be eligible to appeal must meet the information requirements of 36 CFR 215.6.
It is the responsibility of persons providing comments to submit them by close of the comment period.
Please contact Comanche National Grassland District Ranger, Jeff Stoney (719) 523-1702 or Dick Benrn, Minerals/Lands Specialist (620) 697-3578, electronic mail jstoney@fs.fed.us or rbernin@fs.fed.us.
Published in the La Junta Tribune Democrat December 20, 2012

LEGAL 9060
Notice of Decision
Higbee Allotment – Pipeline and Tank Project
USDA Forest Service
Pike and San Isabel National Forests
Cimarron and Comanche National Grasslands
Comanche Ranger District
La Junta, Colorado
Otero County
On December 12, 2012, Dale Fills,

Pawnee Nation of Oklahoma

Office of Historic Preservation

657 Harrison Street
P.O. Box 470
Pawnee, OK 74058

December 28, 2012

United State Department of Agriculture
Comanche National Grassland
ATTN: Jeff Stoney
Post Office Box 127
27204 Highway 287
Springfield, Colorado 81073

Re: Section 106 Review and Consultation Request on Front Range Pipeline, LLC – Pipeline Construction through the Comanche National Grasslands. There will be no Potential to Adversely Affect Historic or Traditional Places.

Dear Mr. Stoney,

The Pawnee Nation Office of Historic Preservation received your request for comment dated December 17, 2012. As you know, our comment on these projects and their potential to affect Historic Properties or Traditional Cultural Places (TCP) is required by Section 106 of the National Historic Preservation Act of 1966 (NHPA), and 36 CFR Part 800. The people of the Pawnee Nation thank you for submitting your project proposal for our review and comment.

Given the information provided, you are hereby notified that there should be no Pawnee historic or archeological properties within your project site. Your proposed project location should have no potential to adversely affect any known archeological or historical Pawnee sites. Therefore, in accordance with 36 CFR 800.4(d)(1), you may proceed with your proposed project. However, should you encounter any unanticipated Pawnee human remains or cultural properties you must report them to us immediately as required by NEPA, NRHP and NAGPRA regulations.

Please retain this correspondence to show compliance with Section 106. Furthermore, refer any questions you may have to Mr. Gordon Adams, Pawnee Historic Preservation Officer, at the points of contact contained herein. We look forward to working with you.

I Wish You Well,

Gordon F. Adams

Gordon F. Adams, MPA
Tribal Historic Preservation Officer
Ph: 918.762.3227 Ext. 30
gadams@pawneenation.org
Fax: 918.762.3662

AFFIDAVIT OF PUBLICATION

THE PUEBLO CHIEFTAIN

State of Colorado)

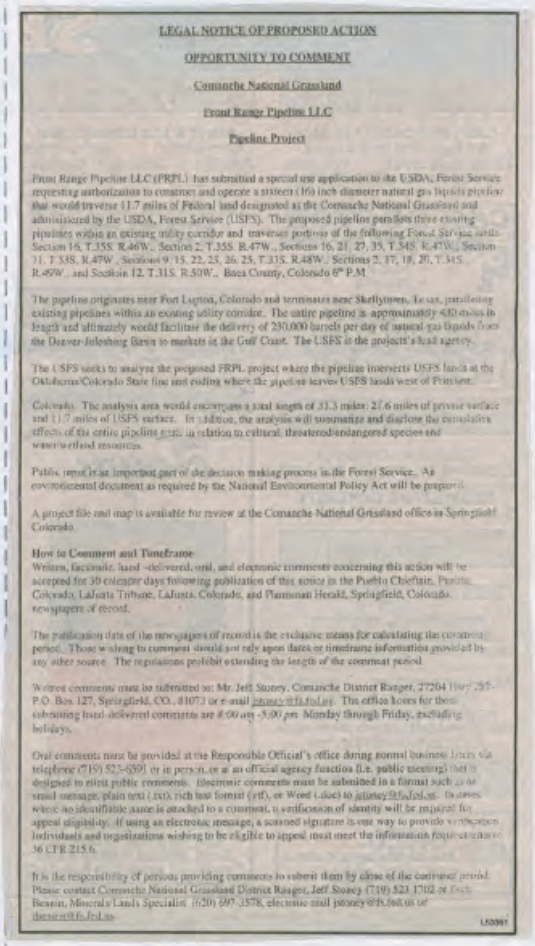
Pueblo Chieftain

CINDY CALLAHAN
USDA FOREST SERV-SPRINGFIELD
PO BOX 127
SPRINGFIELD CO 81073

REFERENCE: 811462
L53361 FRPL SPECIAL USE APP

GERRI ELIZONDO, being first duly sworn upon her oath says: That she is a representative of THE STAR-JOURNAL PUBLISHING CORPORATION, and has personal knowledge of the facts set forth herein; that said Corporation is a corporation organized under the laws of the State of Colorado and that its principal office and place of business is in the city of Pueblo, in the County of Pueblo, in the State of Colorado; that it is the proprietor, printer and publisher of THE PUEBLO CHIEFTAIN, which is, and at all times herein mentioned was a daily newspaper of general circulation printed and published in said City of Pueblo; that said newspaper is, and at all times herein mentioned was, published daily: has been admitted to the United States Mails as a second class matter under the provisions of the Act of Congress of March 3, 1879, and any amendments thereof, and is duly qualified for publishing legal notices and advertisements within the meaning of the laws of the state of Colorado of which is attached a true copy cut from said newspaper and was published on the following dates:

PUBLISHED ON: 12/20



LEGAL NOTICE OF PROPOSED ACTION

OPPORTUNITY TO COMMENT

Comanche National Grassland

Front Range Pipeline LLC

Pipeline Project

Front Range Pipeline LLC (FRPL) has submitted a special use application to the USDA, Forest Service requesting authorization to construct and operate a sixteen (16) inch diameter natural gas liquids pipeline that would traverse 11.7 miles of Federal land designated as the Comanche National Grassland and administered by the USDA, Forest Service (USFS). The proposed pipeline parallels three existing pipelines within an existing utility corridor and traverses portions of the following Forest Service units: Section 16, T.35S. R.46W., Sections 2, T.35S. R.47W., Sections 16, 21, 27, 35, T.34S. R.47W., Section 31, T.34S. R.47W., Sections 9, 15, 22, 23, 26, 25, T.33S. R.48W., Sections 2, 17, 18, 20, T.34S. R.49W., and Section 12, T.34S. R.50W., Baca County, Colorado 6th P.M.

The pipeline originates near Fort Lupton, Colorado and terminates near Skellytown, Texas, paralleling existing pipelines within an existing utility corridor. The entire pipeline is approximately 430 miles in length and ultimately would facilitate the delivery of 230,000 barrels per day of natural gas liquids from the Denver-Julesburg Basin to markets in the Gulf Coast. The USFS is the project's lead agency.

The USFS seeks to analyze the proposed FRPL project where the pipeline intersects USFS lands at the Oklahoma/Colorado State line and ending where the pipeline leaves USFS lands west of Pritchett, Colorado. The analysis area would encompass a total length of 33.3 miles: 21.6 miles of private surface and 11.7 miles of USFS surface. In addition, the analysis will summarize and disclose the cumulative effects of the entire pipeline route in relation to cultural, threatened/endangered species and water/wetland resources.

Public input is an important part of the decision making process in the Forest Service. As environmental document as required by the National Environmental Policy Act will be prepared.

A project file and map is available for review at the Comanche National Grassland office in Springfield Colorado.

How to Comment and Timeframe

Written, facsimile, hand -delivered, oral, and electronic comments concerning this action will be accepted for 30 calendar days following publication of this notice in the Pueblo Chieftain, Pueblo, Colorado, LaJunta Tribune, LaJunta, Colorado, and Plainsman Herald, Springfield, Colorado, newspapers of record.

The publication date of the newspapers of record is the exclusive means for calculating the comment period. Those wishing to comment should not rely upon dates or timeframe information provided by any other source. The regulations prohibit extending the length of the comment period.

Written comments must be submitted to: Mr. Jeff Stoney, Comanche District Ranger, 27204 Hwy 287, P.O. Box 127, Springfield, CO., 81073 or e-mail jstoney@fs.fed.us. The office hours for those submitting hand-delivered comments are 8:00 am - 5:00 pm Monday through Friday, excluding holidays.

Oral comments must be provided at the Responsible Official's office during normal business hours via telephone (719) 523-6591 or in person, or at an official agency function (i.e. public meeting) that is designed to elicit public comments. Electronic comments must be submitted in a format such as an email message, plain text (.txt), rich text format (.rtf), or Word (.doc) to jstoney@fs.fed.us. In cases where no identifiable name is attached to a comment, a verification of identity will be required for appeal eligibility. If using an electronic message, a scanned signature is one way to provide verification. Individuals and organizations wishing to be eligible to appeal must meet the information requirements of 36 CFR 215.6.

It is the responsibility of persons providing comments to submit them by close of the comment period. Please contact Comanche National Grassland District Ranger, Jeff Stoney (719) 523-1702 or Rich Beaton, Minerals Lands Specialist (620) 697-3578, electronic mail jstoney@fs.fed.us or rbeaton@fs.fed.us.

L53361

FILED ON: 12/23/12

In witness whereof, I have hereunto set my hand this 24 day of December A.D. 20 12

Gerri Elizondo

Subscribed and sworn to before me this 24 day of Dec. A.D. 20 12
My commission expires March 5, 2013.

Notary Lynda K Connors

LYNDA K. CONNORS NOTARY PUBLIC STATE OF COLORADO My Commission Expires 03/5/2013

PROOF OF PUBLICATION

Plainsman Herald

STATE OF COLORADO)
(SS.
COUNTY OF BACA,)

I, Amber Cohoon, do solemnly swear that I am the publisher of the Plainsman Herald; that the same is a weekly newspaper published in the county of Baca, State of Colorado, and has a general circulation therein; that said newspaper has been published continuously and uninterrupted in said County of Baca, for a period of more than fifty-two consecutive weeks next prior to the first publication of the annexed legal notice or advertisement; that said newspaper has been admitted to the United Sates mails as second-class matter under the provisions of the Act of March 3, 1879, or any amendments thereof, and that said newspaper is a weekly newspaper duly qualified for publishing legal notices and advertisements within the meaning of the laws of the State of Colorado.

That the annexed legal notice or advertisement was published in the regular and entire issue of every number of said weekly newspaper for a period of 1 consecutive insertion(s); and that the first publication of said notice was in the issue of said weekly newspaper dated December 20 A.D., 2012 and that the last publication of said notice was in the issue of said newspaper, dated December 20 A.D., 2012.

In witness whereof I have hereunto set my hand this 4th day of January 2013.

Publisher

Subscribed and sworn to before me, a notary public in and for the county of Baca, State of Colorado, this 4th day of January 2013.

Notary Public

My Commission Expires

Spencer K. Homsher
125 Main Street
Springfield, Co 81073
My Commission Expires 08-26-2014

SPENCER K. HOMSHER NOTARY PUBLIC STATE OF COLORADO

LEGAL NOTICE OF PROPOSED ACTION OPPORTUNITY TO COMMENT Comanche National Grassland Front Range Pipeline LLC Pipeline Project

Front Range Pipeline LLC (FRPL) has submitted a special use application to the USDA, Forest Service requesting authorization to construct and operate a sixteen (16) inch diameter natural gas liquids pipeline that would traverse 11.7 miles of Federal land designated as the Comanche National Grassland and administered by the USDA, Forest Service (USFS). The proposed pipeline parallels three existing pipelines within an existing utility corridor and traverses portions of the following Forest Service lands: Section 16, T.35S, R.46W., Section 2, T.35S, R.47W., Sections 16, 21, 27, 35, T.34S, R.47W., Section 31, T.33S, R.47W., Sections 9, 15, 22, 23, 26, 25, T.33S, R.48W., Sections 2, 17, 18, 20, T.31S, R.49W., and Section 12, T.31S, R.50W., Baca County, Colorado 6th P.M.

The pipeline originates near Fort Lupton, Colorado and terminates near Skellytown, Texas, paralleling existing pipelines within an existing utility corridor. The entire pipeline is approximately 430 miles in length and ultimately would facilitate the delivery of 230,000 barrels per day of natural gas liquids from the Denver-Julesburg Basin to markets in the Gulf Coast. The USFS is the projects's lead agency.

The USFS seeks to analyze the proposed FRPL project where the pipeline intersects USFS lands at the Oklahoma/Colorado State line and ending where the pipeline leaves USFS lands west of Pritchett, Colorado. The analysis area would encompass a total length of 33.3 miles; 21.6 miles of private surface and 11.7 miles of USFS surface. In addition, the analysis will summarize and disclose the cumulative effects of the entire pipeline route in relation to cultural, threatened/endangered species and water/wetland resources.

Public input is an important par

LD, COLORADO

The publication date of the newspapers of record is the exclusive means for calculating the comment period. Those wishing to comment should not rely upon dates or timeframe information provided by any other source. The regulations prohibit extending the length of the comment period.

Written comments must be submitted to: Mr. Jeff Stoney, Comanche District Ranger, 27204 Hwy 287-P.O. Box 127, Springfield, CO., 81073 or e-mail jstoney@fs.fed.us. The office hours for those submitting hand-delivered comments are *8:00 am -5:00 pm* Monday through Friday, excluding holidays.

Oral comments must be provided at the Responsible Official's office during normal business hours via telephone (719) 523-6591 or in person, or at an official agency function (i.e. public meeting) that is designed to elicit public comments. Electronic comments must be submitted in a format such as an email message, plain text (.txt), rich text format (.rtf), or Word (.doc) to jstoney@fs.fed.us. In cases where no identifiable name is attached to a comment, a verification of identity will be required for appeal eligibility. If using an electronic message, a scanned signature is one way to provide verification. Individuals and organizations wishing to be eligible to appeal must meet the information requirements of 36 CFR 215.6.

It is the responsibility of persons providing comments to submit them by close of the comment period. Please contact Comanche National Grassland District Ranger, Jeff Stoney (719) 523 1702 or Dick Bennin, Minerals/Lands Specialist (620) 697-3578, electonic mail jstoney@fs.fed.us or rbennin@fs.fed.us.

Plainsman Herald
Published Dec. 20, 2012

APPENDIX B: REVEGETATION PLAN

FRONT RANGE PIPELINE COMPANY LLC
Reclamation/Operating Plan
Natural Gas Liquids (NGL) 16-inch Pipeline
Comanche National Grassland

GENERAL REQUIREMENTS

1. The permit holder shall designate a representative for the Project. This individual shall be qualified to represent the holder and shall be present or have a qualified acting representative present at all times while the project construction/rehabilitation activities are taking place. This individual shall be the individual who receives on-the-ground approvals and direction from the designated U.S. Forest Service (Forest Service) representative.

2. A prework meeting involving the permit holder, contractors, and Forest Service will be conducted prior to right-of-way (ROW) construction.

3. The operating/reclamation plan will be tiered to the Environmental Assessment (EA). The construction techniques/mitigations addressed within EA and mitigations addressed within the Wildlife and Plant Biological Evaluations/Assessments, Cultural and Paleontological surveys and or specialists reports will become a part of this operating plan.

CONSTRUCTION REQUIREMENTS

1. Right-of –way construction width restricted to 80 feet; with increased width distances at site specific locations addressed within EA to accommodate side slopes, road borings, drainage crossings, etc. The operational width will be 50 feet—25 feet on either side of the pipeline.

2. All vehicles and gasoline/diesel powered equipment must have an adequate spark arrestor/muffler and be equipped with a fire extinguisher and shovel.

3. Mowing vegetation within entire ROW is recommended.

4. Grader blading (general stripping) of entire ROW will not be allowed. Blading will be allowed on a limited basis. Ground/vegetative disturbance will be limited to (approximately an 8-foot width to accommodate the pipeline trench, road borings, drainage crossings) where it is necessary to create a safe work space. In the backfilling process, the "mop method" utilizing a brush will be employed to minimize disturbance to the vegetative root zone. The ROW will be restored to preconstruction contours.

5. Topsoil (minimum 6 inches) from trench area will be segregated from subsurface soil through a double trenching process.

6. Fences crossing the ROW will be cut, braced with corner H bracing utilizing 5-inch diameter wooden posts, and temporarily fitted with a gate to permit passage. During the construction phase, the opening will be controlled as needed to prevent undesired passage and livestock movement. Upon completion, fences will be restored to original condition.

7. Weather/fuel conditions may warrant the necessity of requiring a water truck/pumper to accompany the construction crew, particularly the welding crew. This determination will be made by the Forest Service representative.

8. No hydrostatic test waters will be discharged into streams, drainages, and/or riparian areas.

9. Sedimentation controls will be implemented as needed by employment of straw bales, fabric netting/filters, or equivalent products.

10. Sanitation controls: The ROW will be maintained in sanitary condition at all times. All waste material will be promptly disposed at an approved State disposal site.

11. The pipeline must be buried to a depth of 52 inches; with a minimum cover of 36 inches.

PIPELINE REHABILTATION

1. The segregated topsoil and subsurface soils will be returned to the trench with subsurface soil material replaced first and topsoil material placed on top of subsurface soils. The low organic matter content of subsurface soils restricts moisture and nutrient retention. Dormant seed is also available in the surface (topsoil) that will aid vegetation. In the backfilling process, it is critical to not disturb the vegetated plant root zone.

2. Coarse fragments (rocks, boulders) that are excavated and moved to the surface during construction will be buried to represent preconstruction conditions. In areas where coarse fragments occur on the surface or areas of exposed bedrock, the coarse material may remain on the surface so that it represents preconstruction conditions. It is anticipated that most of the ROW will not contain coarse fragments, rocks, or boulders.

3. Generally, a narrow earthen berm/ridge ranging from 6–12 inches is left over a pipeline trench to accommodate settlement. The height of the pipeline berm on grassland surfaces will be restricted to 4–6 inches with the contour gently sloping from the middle of the ROW outward. Past experience has proven trench settlement is minimal and higher berms/ridges are difficult to vegetate due to wind erosion and livestock utilizing as a trail.

4. The following seed mixture is required on Forest Service lands. The seed must be certified. Proof of certification must be provided to Forest Service prior to seeding. **Landowners are not obligated to use the Forest Service's seeding requirements on the private lands analyzed within the boundaries of the EA.**

SPECIES	POUNDS/ACRE/PLS	PERCENT OF MIX
Western wheatgrass (*Pascopyrum smithii* v. *Arriba*)	4.50	47.9
Sideoats grama (*Bouteloua curtipendula* v. *Vaughn*)	2.50	40.4
Blue grama (*Bouteloua gracilis* v. *Hachita*)	1.10	11.7
TOTALS	**9.40**	**100**

5. Seedbed preparation is critical to germination success. Clay/loam soils, if compacted, will be ripped prior to seeding.

6. Seeding is recommended from December 1 through April 1 with a grass drill. Drills should include packing wheels. Hand-broadcast seeding may be required on steep slopes or other areas inaccessible to drills. Steep slopes may require netting or other methods to maintain mulch and seed on soil surface. Slopes greater than 2 % will need evaluation for use of surface control measures.

7. On slopes greater than 4 %, water bars or other erosion-control structures will be constructed on the contour at 75-foot intervals beginning at the top of the slope. They should be at least 1 foot deep with approximately 2 feet drop per 100 feet, with the berm on the downhill side.

8. All disturbed areas will be mulched at a rate of 20 tons of manure/acre or 2 tons/acre of noxious weed-free native grass hay/straw. Weed-free certification must be submitted to Forest Service. The mulch (hay/straw) must be crimped into the surface.

9. Seeding failures will require repeated seeding until acceptable vegetative establishment occurs. Seeding success will be determined through periodic monitoring.

10. Successful germination can be evaluated by visual estimation. The guideline of 80% of original vegetative cover or four plants per square foot will be used to determine minimum germination and plant establishment.

11. Control of undesirable species (noxious weeds) within ROW will be required. The Forest Service will make a determination through periodic monitoring of the ROW. Mowing and/or herbicides may be utilized. All herbicides must be approved by the Forest Service (Comanche National Grassland) and applied by a certified herbicide applicator.

GENERAL OPERATIONAL REGUIREMENTS

1. Pipeline ROW will be maintained to correct settlement and erosion.

2. Above-ground pipeline facilities (i.e., block valves), will be painted with a semigloss paint in *Carlsbad Canyon* color. All facilities must be painted within 6 months of installation.

3. The pipeline must be signed on both sides of any road crossing. At a minimum; the sign must identify the company's name, product type (i.e., natural gas liquids), and the company's emergency phone number.

APPENDIX C: CONSULTATION LETTERS

TEXAS HISTORICAL COMMISSION
real places telling real stories

January 25, 2013

Dale Norton
Atkins North America, Inc.
1250 Wood Branch Park Drive, Ste 300
Houston, TX 77079

Re: Draft report review: *A Phase I Cultural Resources Survey for the Proposed Front Range Natural Gas Pipeline Project, Spread 3 in the Oklahoma and Texas Panhandles, Revised Draft* (USACE; Track #201303414)

Dear Mr. Norton:

Thank you for allowing us to review the report referenced above. This letter serves as comment from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission.

The review staff, led by Tiffany Osburn, has completed its review of the Revised Draft Report. We concur that sites 41HC243, 41HC244 are ineligible for inclusion on the National Register of Historic Places. We also concur that the portions of 41HC44 and 41HC70 within the ROW do not contribute to the overall eligibility of these sites. However, the remaining portions of these site remains undetermined and must be avoided by construction activities. No further archeological work is recommended if the undetermined portions of 41HC44 and 41HC70 are strictly avoided. Please have your client with Front Range Pipeline LLC., send us a letter detailing the way 41HC70 will be avoided during construction.

Thank you for your cooperation in this review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If we may be of further assistance, please call Tiffany Osburn of our staff at 512/463-8883.**

Sincerely,

for
Mark Wolfe
Executive Director

MW/to

P.O. BOX 12276 • AUSTIN, TEXAS • 78711-2276 • P 512.463.6100 • F 512.475.4872 • TDD 1.800.735.2989 • www.thc.state.tx.us

United States Department of Agriculture
Forest Service
Pike and San Isabel National Forests Cimarron and Comanche National Grasslands
Comanche Ranger District
P. O. Box 127
27204 Highway 287
Springfield, CO 81073
(719) 523-6591
www.fs.usda.gov/psicc

File Code: 2670
Date: March 19, 2013

Susan Linner
Colorado Field Supervisor
U.S. Fish and Wildlife Service
Ecological Services
Colorado Field Office
P.O. Box 25486, DFC (65412)
Denver, CO 80225-0486

Dear Ms. Linner:

We are requesting concurrence from the U.S. Fish and Wildlife Service that the proposed Front Range Pipeline Project is *not likely to adversely affect* the Lesser Prairie-chicken (*Tympanuchus pallidicinctus*), which is a species that has been proposed for listing as threatened. The proposed project is a 33.3 mile pipeline segment that crosses the administrative boundary of the Comanche National Grassland (CNG) in Baca County, Colorado. The project will include the installation of a 16 inch pipeline parallel to existing rights-of-way for the entire 33.3 miles. The pipeline will be installed within an 80 foot wide construction right-of-way, which includes a 30 foot permanent easement and a 50 foot temporary workspace. The pipeline will be constructed using open trench installation methods. Upon completion of construction, the trench will be backfilled and the construction right-of-way will be returned to pre-construction contours and allowed to revert to its original land use. Construction of the project is proposed to begin May 1, 2013, and potentially last through November 2013. The CNG will issue a Special Use Permit for the project.

Specifically, the proposed pipeline segment is to be installed in flat to rolling terrain of the Carrizo Unit on the CNG. According to the Colorado Natural Heritage Program's (CNHP) Ecological Systems of Colorado, two ecological systems occur within the CNG survey corridor: Western Great Plains Sandhill Shrubland and Western Great Plains Shortgrass Prairie. Within these ecological systems are two habitat types. The first habitat type is described as sand sagebrush shrubland and is characterized by a sparse to moderately dense woody layer dominated by sand sagebrush (*Artemisia filifolia*) with short and mid-sized grasses covering the intervening ground. The second habitat type is described as a shortgrass prairie, which typically consists of native rangelands on flat to rolling terrain. Common vegetation associated with the shortgrass prairie within the project corridor includes blue grama (*Bouteloua gracilis*), hairy grama (*Bouteloua hirsute*), and sideoats grama (*Bouteloua curtipendula*) to name a few.

Generally, equipment used for construction of the pipeline will include bulldozers, trenching machines, track hoes, water trucks, fire water tanks, pickup trucks, utility vehicles, welding trucks, welding machines, hammer-hoes, pipe bending machines, side boom tractors, farm tractors, and farm

implements such as discs, seeders, etc. Equipment access to the project corridor will be via county roads and existing right-of-way. Three pipe storage yards will be located at County Road Y in Crowley County, State Road 109 at La Junta Airport, and County Road KK in Baca County, Colorado. With few exceptions, servicing and fueling of equipment would occur in upland areas. The approach to construction of the pipeline is depicted in the attachment.

According to the U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (IPaC) web site, no federally listed species occur within the project corridor. However, the Lesser Prairie-Chicken, a species that has been proposed for listing as threatened, may occur within the project corridor. According to Colorado Parks and Wildlife (CPW) two leks are located in close proximity to the proposed project. The first lek (BA-68; NW ¼, T34S, R47W) is located approximately 1 mile east of the existing pipeline right-of-way and last held prairie-chickens in 2005. The second lek (BA-17; SW ¼, T34S, R46W) last held birds in 2006 and is located approximately 2.2 miles east of the pipeline right-of-way. Given the presence of leks within 2.2 miles of the proposed project corridor, we conclude that the Lesser Prairie-Chicken may potentially occur in the vicinity of the proposed project.

Although the two known lek locations will not be directly impacted or otherwise altered by construction activities, they could be exposed to increased noise disturbance as a result of operating construction equipment. However, since construction activities in the vicinity of the two known leks will not occur from March 1 to June 15 and the leks have not been active since 2005 and 2006, it is not likely that Lesser Prairie-Chickens will be adversely affected by the proposed project.

Sincerely,

JEFF STONEY
District Ranger

From: Sean_Edwards@fws.gov
Sent: Monday, September 17, 2012 4:00 PM
To: Gillaspie, David L
Subject: Proposed Front Range Pipeline project, Spread 3

Mr. Gillaspie,

We have received and reviewed Enterprise Products May 29, 2012 letter regarding the proposed Front Range Pipeline project, Spread 3 planned for Dallam, Sherman, Moore, Hutchinson, and Carson Counties, Texas. Upon review of your materials and our information, we believe that adverse impacts to federally listed species resulting from the proposed actions would be highly unlikely. This is due to the fact that the project would take place within existing utility right-of-way, in areas which do not appear to contain suitable habitat for the federally listed species known to occur in the aforementioned counties. Therefore, we have no comments or recommendations to offer. Please contact me if I may be of further assistance.

Kind Regards,

Sean Patrick Edwards
Program Coordinator, Conservation Planning
U.S. Fish & Wildlife Service
Ecological Services Field Office
2005 NE Green Oaks Blvd., Suite 140
Arlington, Texas 76006
817-277-1100
sean_edwards@fws.gov

Oklahoma Historical Society *Founded May 27, 1893*
State Historic Preservation Office
Oklahoma History Center • 800 Nazih Zuhdi Drive • Oklahoma City, OK 73105-7917
(405) 521-6249 • Fax (405) 522-0816 • www.okhistory.org/shpo/shpom.htm

March 20, 2013

Mr. Andrew Commer, Chief,
Regulatory Office
Tulsa District Corps of Engineers
1645 South 101st East Avenue
Tulsa, OK 74128

RE: File #0633-13; Front Range Natural Gas Pipeline Project Spread #3, Cimarron County, Oklahoma

Dear Mr. Commer:

We have received and reviewed the documentation concerning the referenced project in Cimarron County. Additionally, we have examined the information contained in the Oklahoma Landmarks Inventory (OLI) files and other materials on historic resources available in our office. We find that there are no historic properties affected by the referenced project.

However, as noted in your correspondence, the Corps of Engineers has established the area of potential effect and determined that no historic properties will be affected by the undertaking in accordance with Appendix C of its regulations. While it is our opinion that your process is not consistent with Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's regulations (36 CFR Part 800), we have commented on the undertaking based on the consideration of historic properties demonstrated through the report of the applicant's consulting firm and their efforts to address concerns of the public.

Specifically, the Multiple Property Documentation Form entitled Historic Resources of the Santa Fe Trail (2012 amendment, pending with the Keeper of the Register) identifies Upper (Flag) Spring as a "high potential" site for the Santa Fe Trail. The site is also identified in the 1990 *Santa Fe National Historic Trail Comprehensive Management Plan* as significant. When concerns were raised by representatives of the Santa Fe Trail Association and the National Park Service, Atkins North America, Inc., worked closely with those concerned and developed a Memorandum of Understanding that details how this significant resource will be treated during construction of the pipeline. It is our understanding that all parties are pleased with the results of the consultation, and we believe it is important to commend all parties for their efforts to protect this valuable resource.

We do call to your attention the fact that your correspondence and documentation on the referenced project was not submitted to the Oklahoma Archeological Survey. As you know, they work under a cooperative agreement with our office in the Section 106 review process. We have discussed this situation with their staff and determined that, due to timing for this project and our staff's opinion on the archeological survey report, we will not require you to consult directly with them on this particular undertaking. However, please ensure that future requests for our comments are also sent directly to Dr. Robert Brooks, State Archeologist, Oklahoma Archeological Survey, 111 East Chesapeake, Room 102, Norman, OK 73019.

RE: File #0633-13; Front Range Natural Gas Pipeline Project Spread #3, Cimarron County, Oklahoma

Thank you for the opportunity to comment on this project. We look forward to working with you in the future.

If you have any questions, please contact me at 405/522-4484.

Should further correspondence pertaining to this project be necessary, please reference the above underlined file number. Thank you.

Sincerely,

Melvena Heisch

Melvena Heisch
Deputy State Historic
Preservation Officer

MH:pm

cc: Dale Norton, Atkins North America, Inc., Houston, Texas
Robert Brooks, State Archeologist, OAS, Norman, Oklahoma

Enterprise Products

ENTERPRISE PRODUCTS PARTNERS L.P.
ENTERPRISE PRODUCTS HOLDINGS LLC
(General Partner)

ENTERPRISE PRODUCTS OPERATING LLC

March 6, 2013

Federal Express

Ms. Tiffany Osburn
Texas Historical Commission
El Rose Building
108 W 16th Street
Austin, Texas 78701

Re: Proposed Front Range Pipeline Spread 3
Project Avoidance Plans for Site 41HC70 in
Hutchinson County, Texas

Dear Ms. Osburn:

Thank you for your response regarding the proposed Front Range Natural Gas Pipeline Project Spread 3 in the Oklahoma and Texas Panhandles, Revised Draft Report. In your response you requested that Front Range Pipeline LLC (Front Range) provide detail regarding proposed avoidance plans associated with Site 41HC70. Front Range's proposed construction plans and site dimensions and features are depicted on enclosed site map. During routing of proposed pipeline, workspace was designed to ensure that construction activities will occur at least 50 feet from the potentially eligible portion of Site 41HC70, designated in red on enclosed map.

As requested in your letter of January 25, 2013, (enclosed) Front Range certifies that potentially NRHP-eligible portions of the site will be avoided during construction. Equipment and construction personnel will be restricted to construction right-of-way to ensure that no impacts to Site 41HC70 will occur as a result of construction.

We appreciate your continued assistance throughout this project. If you have any questions or require additional information, please feel to call me at (713) 381-1785.

Very truly yours,

James G. White
Sr. Environmental Scientist

c: Clive Reinhardt - Front Range
Dale Norton - Atkins
Nathan Olday - Atkins

P. O. BOX 4324
HOUSTON, TX 77210-4324
713.381.6500

1100 LOUISIANA STREET
HOUSTON, TX 77002-5227
www.enterpriseproducts.com

TEXAS HISTORICAL COMMISSION
real places telling real stories

January 25, 2013

Dale Norton
Atkins North America, Inc.
1250 Wood Branch Park Drive, Ste 300
Houston, TX 77079

Re: Draft report review: *A Phase I Cultural Resources Survey for the Proposed Front Range Natural Gas Pipeline Project, Spread 3 in the Oklahoma and Texas Panhandles, Revised Draft* (USACE; Track #201303414)

Dear Mr. Norton:

Thank you for allowing us to review the report referenced above. This letter serves as comment from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission.

The review staff, led by Tiffany Osburn, has completed its review of the Revised Draft Report. We concur that sites 41HC243, 41HC244 are ineligible for inclusion on the National Register of Historic Places. We also concur that the portions of 41HC44 and 41HC70 within the ROW do not contribute to the overall eligibility of these sites. However, the remaining portions of these site remains undetermined and must be avoided by construction activities. No further archeological work is recommended if the undetermined portions of 41HC44 and 41HC70 are strictly avoided. Please have your client with Front Range Pipeline LLC., send us a letter detailing the way 41HC70 will be avoided during construction.

Thank you for your cooperation in this review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If we may be of further assistance, please call Tiffany Osburn of our staff at 512/463-8883.**

Sincerely,

for
Mark Wolfe
Executive Director

MW/to

From: (713) 381-6595
Shiver Nolan

P.o. Box 4324

Houston, TX 77210

Origin ID: EIXA

FedEx Express

J13101212190326

Ship Date: 06MAR13
ActWgt: 1.0 LB
CAD: 104498046/INET3370

Delivery Address Bar Code

SHIP TO: (512) 463-6096

BILL SENDER

Ref # 20333
Invoice #
PO #
Dept #

Texas Historical Commission
108 W 16th Street

AUSTIN, TX 78701

THU - 07 MAR 3:00P
STANDARD OVERNIGHT

TRK# 7949 0993 3251
0201

A8 AUSA

78701
TX-US
AUS

518G2/DCF8/93AB

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

TEXAS HISTORICAL COMMISSION
real places telling real stories

February 28, 2013

Dale Norton
Atkins North America
1250 Wood Branch Park Drive, Suite 300
Houston, TX 77079

Re: Project review under the Antiquities Code of Texas
Final Report: *A Phase I Cultural Resources Survey for a Portion of the Proposed Front Range Natural Gas Liquids Pipeline Project, Spread 3, Hutchinson County, Texas*
Texas Antiquities Permit **#6371**
COMPLETED PERMIT

Dear Colleague:

Thank you for your correspondence describing the above referenced project. This letter presents the comments of the Executive Director of the Texas Historical Commission, the state agency responsible for administering the Antiquities Code of Texas.

The Archeology Division is in receipt of the final report, a completed *Abstracts in Texas Contract Archeology* form, and tagged PDF CD for the above referenced permit. The submission of the final report, abstract form, and CD demonstrates completion of your permit requirements under Permit #6371.

Thank you for your cooperation in this state review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions concerning our review or if we can be of further assistance, please contact Lillie Thompson at 512/463-1858.**

Sincerely,

for
Mark Wolfe
Executive Director

MW/lft

Enterprise Products

ENTERPRISE PRODUCTS PARTNERS L.P.
ENTERPRISE PRODUCTS HOLDINGS LLC
(General Partner)

ENTERPRISE PRODUCTS OPERATING LLC

May 29, 2012

Federal Express

Mr. Tom Cloud
U.S. Fish & Wildlife Service
Arlington Ecological Services Field Office
2005 Northeast Green Oaks Blvd., Suite 140
Arlington, Texas 76006

Re: Proposed Front Range Pipeline Project, Spread 3
Cimarron County, Oklahoma
Dallam, Sherman, Moore, Hutchinson, and Carson Counties, Texas

Dear Mr. Cloud:

On behalf of Front Range Pipeline LLC (Front Range), Enterprise Products Operating LLC (Enterprise) is pursuing environmental clearances for Spread 3 of the proposed Front Range Pipeline Project. The proposed project would consist of approximately 137 miles of new 16-inch natural gas liquids pipeline in Cimarron County, Oklahoma; and Dallam, Sherman, Moore, Hutchinson, and Carson Counties, Texas. A consultation letter has also been sent to the U.S. Fish & Wildlife Service's (USFWS) Oklahoma Ecological Services field office for the portion of the proposed project that falls in that office's area of responsibility. Please refer to the enclosed map of the proposed route for your information and use.

In addition to literature reviews of records maintained by the USFWS online, Front Range has contracted Atkins to conduct environmental evaluations for the proposed project, including field assessments for threatened or endangered species or their preferred habitats, sensitive natural communities, and other features of concern known or suspected to occur in the proposed project area in Texas. To date, literature reviews have revealed two federally listed endangered species, the least tern (*Sterna antillarum*) and the whooping crane (*Grus americana*), that potentially occur in counties crossed by the proposed project. Additionally, one threatened species, the Arkansas River shiner (*Notropis girardi*), and one candidate for listing, the lesser prairie-chicken (*Tympanuchus pallidicinctus),* are listed as potentially occurring in counties crossed by the proposed project.

Environmental field investigations for the proposed project began in May 2012. The proposed pipeline alignment will parallel an existing pipeline right-of-way for approximately 100 percent of the route within Texas, thus minimizing the development of new utility corridors. Upon completion of field evaluations and final route selection, Front Range anticipates that the project segment within Texas would be constructed under Nationwide Permit 12 and would not require notification to the U.S. Army Corps of Engineers Tulsa District. Front Range plans to initiate construction April 1, 2013.

Enterprise is requesting a review of the proposed project within Dallam, Sherman, Moore, Hutchinson, and Carson Counties, and written documentation for any recommendations to comply with the Endangered Species Act of 1973 (16 USC 1531-1543). If you determine that the proposed project will cross habitat for federally listed threatened or endangered species or any other critical resources documented by the USFWS, please provide recommendations to address these potential concerns.

P. O. BOX 4324
HOUSTON, TX 77210-4324
713.381.6500

1100 LOUISIANA STREET
HOUSTON, TX 77002-5227
www.epplp.com

We appreciate your assistance with this project. Please contact me at (713) 381-1785 if you have questions or require additional information.

Very truly yours,

James G. White
Senior Environmental Scientist

/sjn

c: Clive Reinhardt – Front Range

From: (713) 381-8270
Brenda Mendez

P. O. Box 4324

Houton, TX 77210

Origin ID: EIXA

J12101112190225

Ship Date: 29MAY12
ActWgt: 1.0 LB
CAD: 103501316/INET3250

Delivery Address Bar Code

Ref # 10053
Invoice #
PO #
Dept #

SHIP TO: (817) 277-1100 BILL SENDER

Mr. Tom Cloud
USFWS Arlington
2005 NE GREEN OAKS BLVD STE 140

ARLINGTON, TX 76006

WED - 30 MAY A1
STANDARD OVERNIGHT

TRK# 0201 7984 4724 9390

AD FWHA

76006
TX-US
DFW

512G3/61A4/A278

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

COLORADO PARKS & WILDLIFE

2500 S. Main St. Lamar, Colorado 81052
Phone (719)-336-6600 • FAX (719)-336-6623
wildlife.state.co.us • parks.state.co.us

January 10th, 2013
Mr. Jeff Stoney
District Ranger (Comanche National Grassland)
27204 HWY. 287
P.O. Box 127
Springfield, CO 81073

Re:

Dear Mr. Stoney:

Thank you for providing us the opportunity to comment on the proposed sixteen (16) inch diameter natural gas liquids pipeline that will traverse approximately 11.7 miles of federal land specifically designated as the Comanche National Grassland. The proposed pipeline parallels three existing pipelines within a utility corridor in addition to crossing the following portions of Forest Service land: Section 16, T.35S. R46W., Section 2, T.35S. R.47 W., Sections 16, 21, 27, 35, T.34S. R.47W., Section 31, T.33S. R.47W., Sections 9, 15, 22, 23, 26, 25, T.33S. R.48W., Sections 2,17,18,20, T.31S. R.49W., and Section 12 T.31S. R.50W., in Baca County, Colorado.

As requested, we have reviewed the sections of this proposed natural gas pipeline development that occur on the Comanche National Grasslands and have determined that impacts from the pipeline, as proposed and properly mitigated may be characterized as minimal with no significant impacts unless otherwise noted. Primarily, the greatest concerns regarding the construction of the proposed natural gas pipeline project involve lesser prairie chicken leks and production areas as well as raptor nests which may be somewhat undefined throughout the 11.7 miles of the pipeline as it traverses the Comanche National Grassland. In addressing these concerns CPW recommends several stipulations in the form of lesser prairie chicken lek avoidance in addition to recommendations on timing of construction or seasonal avoidance. The recommendations provided will help to prevent any issues of potential nest destruction and or further habitat loss.

Greater details are provided below for each defined attribute/species along with stipulations that correspond with either the avoidance of lesser prairie chickens and or the minimization of habitat disruption. Unless otherwise noted, it's generally recommended that construction be avoided from March 15th through June 30th. This timeline ultimately allows protection from numerous nesting birds and mammals alike.

Lesser Prairie Chicken

Status: State Threatened

In 1995, the U.S. Fish and Wildlife Service (USFWS) were petitioned to list the lesser prairie chicken as threatened under provisions of the Endangered Species Act. The Service's finding was that the listing was "warranted but precluded". Since that determination, the lesser prairie chicken has subsequently been considered a "candidate" species, effectively elevating the species

status. In 2010 the listing priority number was elevated from 8 to 2. Recently USFWS indicated that a listing decision will be made in 2013, possibly elevating the status of the lesser prairie chicken. **The estimated 2012 population of LEPC's is 100 +/- birds across their range in southeast Colorado.** Lesser prairie chickens are highly habituated and dependent on breeding leks and production areas, and CPW does not believe there are appropriate mitigation measures to replace them if lost.

CPW has determined that the proposed pipeline is within close proximity of two active lesser prairie chicken leks that have held birds within the past ten years. Specifically, the nearest active lek (BA-68) NW ¼, T34S, R47W, located approximately 1 mile east of the existing pipeline ROW last held (4) birds in 2005. BA-17 (SW 1/4, T34S, R46W last held birds in 2006 and is located approximately 2.2 miles east of the pipeline ROW.

CPW recommends the following stipulations: a) No new surface structure within 0.6 mile of any known lesser prairie-chicken lek, b) a timing stipulation of no human encroachment (including construction) within 2.2 miles of lek sites of March 15 – June 15, c) relocation of compressors to more than 2.2 miles from lek, and d) limiting noise to not exceed 49 db measured 30-feet from the source where the source is a distance of 0.6 mile or more from the lek.

Raptors

Within areas of short-grass prairie, the majority of the few trees will contain raptor nests and CPW recommends nest surveys prior to construction.

Tolerance limits to disturbance vary among as well as within raptor species. As a general rule, individuals within a species may habituate and tolerate human activity at a proximity that would cause the majority of the group to abandon their nests. Other individuals become sensitized to repeated encroachment and react at greater distances. Responses will also vary depending upon the reproductive stage. Although the level of stress is the same, the pair may be more secretive during egg laying and incubation and more demonstrative when the chicks hatch.

Although there are exceptions, the buffer areas and seasonal restrictions suggested here reflect an informed opinion that if implemented, should assure that the majority of individuals within a species will continue to occupy the area. **CPW recommends raptor nest surveys and implementing appropriate timing restrictions prior to construction:**

1. **Golden Eagle - Nest Site:** A seasonal restriction to human encroachment within ½ mile radius of active nests from December 15 through July 15.

2. **Ferruginous Hawk - Nest Site:** A seasonal restriction to human encroachment within ½ mile radius of active nests from February 1 - July 15.

   This species is especially prone to nest abandonment during incubation if disturbed.

3. **Red-Tailed Hawk - Nest Site:** A seasonal restriction to human encroachment within 1/3 mile radius of active nests from February 15 - July 15.

   Some members of this species have adapted to urbanization and may tolerate human habitation to within 200 yards of their nest. Development that encroaches on rural sites is likely to cause abandonment.

4. **Swainson's hawk – Nest Site:** A seasonal restriction to human encroachment within ¼ mile radius of active nests from April 1 through July 15.

5. **Prairie Falcon - Nest Site:** A seasonal restriction to human encroachment within ½ mile radius of active nests from March 15 through July 15.

6. **Burrowing Owl - Nest Site:** If nesting burrowing owls are present, no human encroachment or surface disturbance should occur within 150 ft. of nesting burrows from March 1- August 15. If burrowing owls merely occupy the site, it is recommended that earthmoving and other disturbance activities be delayed until late fall after they have migrated.

   If development in prairie dog towns occurs during the late winter through early fall months (Feb 1- Oct 31), the presence of burrowing owls (a state threatened bird) and whether they are actively nesting should first be determined. Although Burrowing Owls may not be actively nesting during this entire period, they may be present at burrows up to a month before egg-laying and several months after young have fledged. Therefore it is recommended that efforts to eradicate prairie dogs or destroy abandoned towns not occur between March 15 and October 31 when owls may be present. Because nesting Burrowing Owls may not be easily visible, it is recommended that targeted surveys be implemented to determine if burrows are occupied.

   More detailed recommendations are available in a document entitled "Recommended Survey Protocol and Actions to Protect Nesting Burrowing Owls" which is available from Colorado Parks and Wildlife.

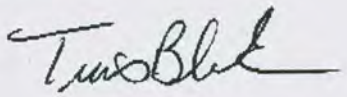
Reclamation

CPW recommends that non-crop areas be reclaimed with a native forb/grass mixture. Seed mixes can be specified by CPW or the Natural Resources Conservation Service (USDA). Any trees removed should be reclaimed by replacement near the location of removal. During the reclamation process, an effort should be made to treat for any noxious weeds that may invade the disturbed site.

We appreciate your consideration of our comments for the proposed natural gas pipeline project. We have also included a copy of the letter sent last September in response to the pipeline project in its entirety. If you have any questions regarding either of these letters, please feel free to

contact the Lamar Service Center (719-336-6600), Area 12 Wildlife Manager, Travis Black or District Wildlife Manager, Michael Brown (719-980-0025).

Sincerely,



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

February 25, 2013

Regulatory Office

Dr. Bob Blackburn
State Historic Preservation Officer
Oklahoma Historical Society
Oklahoma History Center
800 Nazih Zuhdi Drive
Oklahoma City, OK 73105

Dear Dr. Blackburn:

This letter addresses cultural resource issues under Section 404 of the Clean Water Act associated with a proposal submitted by Atkins North America, Inc., as contractor to Front Range Pipeline, LLC; to construct the proposed Front Range Natural Gas Pipeline Project Spread 3. The proposed project is a 16-inch natural gas pipeline that will run 40 miles through Cimarron County, Oklahoma and another 97 miles through Dallam, Sherman, Moore, Hutchinson, and Carson Counties, Texas. The entire project lies within the boundaries of the U.S. Army Corps of Engineers, Tulsa District. This project has been assigned Identification Number SWT-2012-0916. Please include this number in all future correspondence concerning this project.

We have reviewed the cultural resources survey report (enclosed) for the project submitted by Atkins, "A Phase I Cultural Resources Survey for the Proposed Front Range Natural Gas Pipeline Project Spread 3 in the Oklahoma and Texas Panhandles", by C. Russ Shortes, et al, September 2012.

After review of the reports and documents, the Corps has concluded that neither the previously recorded site (34CI235) nor any of the four newly recorded sites (34CI453, 34CI454, 34CI455, and 34CI456) are within the Corps jurisdictional permit areas as defined under 33 CFR Part 325, Appendix C, Section 1(g)(1) and 33 CFR Part 325, Appendix B, Section 7(b); which effectively defines the Corps area of potential effects based on impacts to waters of the United States. Additionally, as presented in the survey report, sites 34CI235 and 41HC244 have been evaluated with the determination made that they are not eligible for listing in the National Register of Historic Places.

Please direct any questions you may have about this determination to Mr. Timothy Hartsfield at 918-669-7237. We ask that you please contact us by March 27, 2013, as we will assume that you have no comment if we do not receive a response by that date.

Sincerely,

Andrew R. Commer
Chief, Regulatory Office

Enclosures

Enterprise Products

ENTERPRISE PRODUCTS PARTNERS L.P.
ENTERPRISE PRODUCTS HOLDINGS LLC
(General Partner)

ENTERPRISE PRODUCTS OPERATING LLC

May 29, 2012

Federal Express

Dr. Dixie Bounds
U.S. Fish & Wildlife Service
Oklahoma Ecological Services Field Office
9014 E. 21st Street
Tulsa, Oklahoma 74129

Re: Proposed Front Range Pipeline Project, Spread 3 - Cimarron County, Oklahoma Dallam, Sherman, Moore, Hutchinson, and Carson Counties, Texas

Dear Dr. Bounds:

On behalf of Front Range Pipeline LLC (Front Range), Enterprise Products Operating LLC (Enterprise) is pursuing environmental clearances for Spread 3 of the proposed Front Range Pipeline Project. The proposed project would consist of approximately 137 miles of new 16-inch natural gas liquids pipeline in Cimarron County, Oklahoma; and Dallam, Sherman, Moore, Hutchinson, and Carson Counties, Texas. A consultation letter has also been sent to the U.S. Fish & Wildlife Service's (USFWS) Arlington Ecological Services field office for the portion of the proposed project that falls within that office's area of responsibility. Please refer to the enclosed map of the proposed route for your information and use.

In addition to literature reviews of records maintained by the USFWS online, Front Range has contracted Atkins to conduct environmental evaluations for the proposed project, including field assessments for threatened or endangered species or their preferred habitats, sensitive natural communities, and other features of concern known or suspected to occur in the proposed project area in Oklahoma. To date, literature reviews have revealed one federally listed endangered species, the least tern (*Sterna antillarum*), that potentially occurs in Cimarron County. Additionally, one threatened species, the piping plover (*Charadrius melodus*), and one candidate for listing, the lesser prairie-chicken (*Tympanuchus pallidicinctus*), are listed as potentially occurring in Cimarron County.

Environmental field investigations for the proposed project began in May 2012. The proposed pipeline alignment will parallel an existing pipeline right-of-way for approximately 100 percent of the route within Oklahoma, thus minimizing the development of new utility corridors. Upon completion of field investigations and final route selection, Front Range anticipates that the project segment within Oklahoma would be constructed under U.S. Army Corps of Engineers (USACE) Tulsa District General Permit No. OK00G30012 and would require notification to the USACE Tulsa District. Front Ranges plans to initiate construction April 1, 2013.

Enterprise is requesting a review of the proposed project within Cimarron County and written documentation for any recommendations to comply with the Endangered Species Act of 1973 (16 USC 1531-1543). If you determine that the proposed project will cross habitat for federally listed threatened or endangered species or any other critical resources documented by the USFWS, please provide recommendations to address these potential concerns.

P. O. BOX 4324
HOUSTON, TX 77210-4324
713.381.6500

1100 LOUISIANA STREET
HOUSTON, TX 77002-5227
www.epplp.com

We appreciate your assistance with this project. Please contact me at (713) 381-1785 if you have questions or require additional information.

Very truly yours,

James G. White
Senior Environmental Scientist

/sjn

c: Clive Reinhardt – Front Range

From: (713) 381-8270
Brenda Mendez

P. O. Box 4324

Houton, TX 77210

Origin ID: EIXA

J12101112190225

Ship Date: 29MAY12
ActWgt: 1.0 LB
CAD: 103501316/INET3250

Delivery Address Bar Code

Ref # 10053
Invoice #
PO #
Dept #

SHIP TO: (918) 581-7458 BILL SENDER

Dr. Dixie Bounds
USFWS Oklahoma
9014 E 21ST ST

TULSA, OK 74129

WED - 30 MAY A1
STANDARD OVERNIGHT

TRK# 0201 7936 1672 7615

XH RVSA

74129
OK-US
TUL

512G3/61A4/A278

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

ATKINS

Atkins North America, Inc.
1250 Wood Branch Park Drive, Suite 300
Houston, Texas 77079

Telephone: +1.281.493.5100
Fax: +1.281.493.1047

www.atkinsglobal.com/northamerica

February 6, 2013

Mr. Michael L. Elliott
Cultural Resources Specialist
National Trails Intermountain Region
National Park Service
P.O. Box 728
Santa Fe, New Mexico 87504-0728

PN 100027376

Dear Mr. Elliott:

Re: Cimarron Cutoff of the Santa Fe Trail Identification and Avoidance Plan
Front Range Pipeline Project, Spread 3
Cimarron County, Oklahoma

Front Range Pipeline LLC (Front Range) has contracted Atkins North America (Atkins) to provide professional cultural resources consulting services for the proposed Front Range Pipeline Project, Spread 3. This letter summarizes the results of field investigations conducted by Atkins, with assistance of representatives from the Santa Fe Trail Association (SFTA), to identify the location and extent of the Santa Fe Trail as it is crossed by the proposed project in Cimarron County, Oklahoma (see enclosed Vicinity Map). This letter also presents proposed measures to be taken during construction to ensure that adverse impacts to the Santa Fe Trail are avoided during construction.

The proposed pipeline route crosses what has been identified as the Cimarron Cutoff of the Santa Fe Trail in Cimarron County, Oklahoma. On behalf of Front Range, Atkins consulted with the National Park Service in Santa Fe, New Mexico, and the SFTA in order to identify and evaluate the trail as it exists at the proposed pipeline crossing.

The portion of the Cimarron Cutoff that intersects the proposed project was located during a field visit on January 23, 2013. The site was located using USGS maps and maps provided by the National Park Service. During this field investigation, the area of trail intersected by the project was surveyed at 5-meter (16.4-foot) intervals to determine what remnants of the trail were present and if any associated artifacts or features remained. While no artifacts were present, five swales were identified and the trail continues both east and west to the horizon.

It is recommended that this portion of the trail be a contributing element of the Cimarron Trail Cutoff of the Santa Fe Trail, a National Historic Trail, and that it be eligible for nomination to the National Register of Historic Places. It is recommended that the trail be eligible under Criteria A, C, and D.

In an effort to preserve what is left of the trail at this location Front Range proposes avoidance measures to ensure that the trail is not damaged during any proposed construction activities. Avoidance measures include the installation of the proposed pipeline at this location utilizing a conventional bore. The bore entry and exit points will be located approximately 15 feet from the northernmost swale and 15 feet from the southernmost swale, respectively. Clearing and/or grading of the right-of-way between the bore entry and exit points will be avoided to ensure that impacts to existing swales does not occur. Equipment mats (e.g., timber construction mats) would be utilized to establish a travel lane between bore entry and exit points. The travel lane will be established as close to the existing maintained and previously disturbed pipeline right-of-way as is practicable. Where swales are present along the travel lane, equipment bridges would be utilized to span swales without disturbing existing condition of the swale. A site-specific

construction detail showing the proposed bore entry/exit locations, matted travel lane, and equipment bridge installation detail is enclosed for your review.

To ensure that adverse impacts to portions of the trail will not occur as a result of the proposed project, construction ingress/egress to the trail crossing will be limited to the construction right-of-way. Access to the construction right-of-way will not be accessible via an existing private ranch road that follows the Santa Fe Trail east to SH 3.

In addition to the above-described avoidance measures, Front Range will have a qualified archaeological monitor on-site during construction of this crossing to verify that each swale is accurately identified and that avoidance measures are effectively implemented.

On behalf of Front Range, Atkins is requesting concurrence with these proposed avoidance measures. If you concur with these avoidance measures, please sign the concurrence portion of this letter and return. If you have any questions or need additional information, please contact me or Nathan Olday at (281) 493-5100.

Very truly yours,

Dale C. Norton
Group Manager

DCN:SC

c: Jimmy White – Front Range
Clive Reinhardt – Front Range
Faye Gaines – Santa Fe Trail Association
Nathan Olday – Atkins
Bob Rowe – Atkins

CONCURRENCE:

SANTA FE NATIONAL PARK SERVICE

Michael L Elliott - NATIONAL TRAILS INTERMOUNTAIN REGION
Authorized Signature

2-13-2013
Date

November 21, 2012

Dale Norton
Atkins North America, Inc.
1250 Wood Branch Park Drive, Ste 300
Houston, TX 77079

Re: Draft report review: *A Phase I Cultural Resources Survey for the Proposed Front Range Natural Gas Pipeline Project, Spread 3 in the Oklahoma and Texas Panhandles* (USACE; Track #201301705)

Dear Mr. Norton:

Thank you for allowing us to review the report referenced above. This letter serves as comment from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission.

The review staff, led by Tiffany Osburn, has completed its review of the Draft Report. Please submit a revised draft addressing the comments provided in the attachment.

Thank you for your cooperation in this review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If we may be of further assistance, please call Tiffany Osburn of our staff at 512/463-8883.**

Sincerely,

William A. Martin

for
Mark Wolfe
Executive Director

MW/to

Attachement: Comments

ATKINS

Atkins North America, Inc.
1250 Wood Branch Park Drive, Suite 300
Houston, Texas 77079

Telephone: +1.281.493.5100
Fax: +1.281.493.1047

www.atkinsglobal.com/northamerica

December 21, 2012

Mr. Mark Denton
Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711-2276

PN 100027376

Dear Mr. Denton:

Re: A Phase I Cultural Resources Survey for a Portion of the Proposed FRONT RANGE Natural Gas Liquids Pipeline Project, Spread 3; Hutchinson County, Texas
Texas Antiquities Permit #6371

Enclosed for your review is a draft copy of the results of a Phase I cultural resources survey of the proposed FRONT RANGE Natural Gas Liquids Pipeline Project, Spread 3, in Hutchinson County, Texas. Tract TX-HC_0016.0010 where previously-recorded Site 41HC67 is located was evaluated under Texas Antiquities Permit No. 6371. A total of 6.1 acres (2.5 hectares) were subjected to a systematic surface inspection to evaluate the impact of the proposed project on cultural resources.

Site 41HC67 was reevaluated to assess its potential for eligibility for listing in the National Register of Historic Places (NRHP). The site is part of the Chicago, Rock Island, and Pacific Railroad. The site consists of a dismantled historic railroad that warrants no additional work. Only a small segment of the rail line, which consists of a partial earthen berm and an abandoned bridge crossing, lies within the survey corridor. No artifacts were collected, and all project records and photographs will be curated at the Texas Archeological Research Laboratory at The University of Texas at Austin.

Based on the results of the cultural resources survey and the degraded nature of the site, Atkins recommends that the portion of Site 41HC67 within the survey corridor lacks the data resources necessary to warrant NRHP inclusion under any criteria and does not meet the criteria for nomination as a SAL. The site's current recordation likely exhausts any research potential for the site. No further cultural resources investigations are recommended for Tract TX-HC-0016.00100 and Site 41HC67.

If you have any questions or need any further information, please do not hesitate to contact me by phone at (281) 529-4258, or e-mail at dale.norton@atkinsglobal.com.

Very truly yours,

Dale C. Norton
Program Manager

DCN:SC

c: Nathan Olday – Atkins

CONCUR
by
for Mark Wolfe
State Historic Preservation Officer
Date 1/24/13
Track# 201303415