

ENVIRONMENTAL ASSESSMENT REPORT

For the Proposed
West Texas Loop Expansion Project
30-inch Natural Gas Pipeline



Located in
Eddy and Lea Counties, New Mexico

Prepared for:



ENERGY TRANSFER
Transwestern Pipeline Company

Transwestern Pipeline Company
711 Louisiana Street, Suite 900
Houston, Texas 77002

Prepared by:



BIO-WEST, Inc.
1018 Frost Street
Rosenberg, Texas 77471

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Element Checklist – Affected Environment and Basis for Determination No Further Analysis

Resources	Not Present on Site	No Impacts	May Be Impacts	Mitigation Included	BLM Reviewer	Date
CRITICAL ELEMENTS OF THE HUMAN ENVIRONMENT						
Air Quality		X				
Areas of Critical Environmental Concern	X	X				
Cultural Resources	X	X				
Native American Religious Concerns	X	X				
Environmental Justice	X	X				
Farmlands, Prime or Unique	X	X				
Floodplains	X	X				
Invasive, Non-native Species	X	X				
Threatened or Endangered Species	X	X				
Wastes, Hazardous or Solid	X	X				
Water Quality - Surface/Ground	X	X				
Wetlands/Riparian Zones	X	X				
Wild and Scenic Rivers	X	X				
Wilderness	X	X				
NON-CRITICAL ELEMENTS						
General Topography/Surface Geology		X				
Climate		X				
Mineral Resources		X				
Cave/ Karst Resources	X	X				
Paleontology	X	X				
Soils			X	X		
Watershed/Hydrology			X	X		
Vegetation, Forestry			X	X		
Livestock Grazing		X				
Special Status Species			X	X		
Wildlife		X				
Wild Horse and Burros	X	X				
Recreation	X	X				
Visual Resources		X				
Public Health and Safety		X				

BUREAU OF LAND MANAGEMENT - CARLSBAD FIELD OFFICE

**ENVIRONMENTAL ASSESSMENT (EA)
DOI BLM NM**

**FOR THE PROPOSED WEST TEXAS LOOP EXPANSION PROJECT 30-INCH
NATURAL GAS PIPELINE IN EDDY AND LEA COUNTIES, NEW MEXICO**

1.0 INTRODUCTION

This Environmental Assessment (EA) has been prepared to analyze Transwestern Pipeline Company's (Transwestern) proposal to construct the West Texas Loop Expansion Project (Project), which consists of installing approximately 12 miles of a 30-inch natural gas pipeline loop located in Eddy and Lea counties, New Mexico. This proposed pipeline expansion originates approximately 28 miles northeast of Carlsbad on the north side of State Highway 62 at the Transwestern WT-1 Compressor Station and traverses southeast. The northern segment of the pipeline (approximately 5 miles in length) will traverse around an existing commercial mining facility before the route continues south, paralleling the existing right-of-way (ROW). Maps of the Project location are provided in Appendix A.

1.1 Purpose and Need

Transwestern is requesting ROW for one buried 30-inch natural gas pipeline approximately 12 miles in length. This Project is part of an upgrade to the existing natural gas pipeline system and compressor station in an effort to meet the demands of the consumer. The existing natural gas pipeline was installed prior to 1970 and demand has exceeded potential capacity. The Project will allow for an increase in this capacity to and from the existing compressor station, and will provide adequate product to the consumers for current and future demands.

1.2 Conformance with Applicable Land Use Plan and Other Environmental Assessments

Adjacent landowners were contacted for future plans around the proposed Project area. Through these efforts, it was identified that the existing pot ash mine facility was proposing to purchase additional property adjacent to the mine. In anticipation of that, the proposed pipeline route was chosen to avoid these identified expansion areas. The remaining property landowner (Bureau of Land Management [BLM]) was also contacted and land use within the Project area is expected to remain in its native condition (R. Gomez, *pers. comm.*, 10/15/09).

1.3 Federal, State or Local Permits, Licenses or Other Consultation Requirements

Activities will take place under current Federal Energy Regulatory Commission (FERC) regulations. In addition, concurrence from the U.S. Fish and Wildlife Department (USFWS) and State Historic Preservation Office (SHPO) will be obtained for all activities. Field investigations have been performed for all natural and cultural resources that may potentially be impacted by the Project. Surveys were also conducted for jurisdictional waters of the U.S. "Waters of the

U.S.” are regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899.

Under Section 402 of the Clean Water Act, the U.S. Environmental Protection Agency (EPA) developed a phased approach to storm water discharges under the National Discharge Elimination System (NPDES) program. The EPA issued a Final Rule (implemented on June 12, 2006) that oil and gas construction activities are exempt from the NPDES except for certain circumstances. This rule applies to the construction of drilling sites, waste management pits, and access roads, as well as the construction of transportation and treatment infrastructure, such as pipelines, natural gas treatment plants, natural gas pipeline compressor stations, and crude oil pumping stations. However, construction activities that result in a discharge of a reportable quantity release or that contribute pollutants (other than non-contaminated sediments) to a violation of a water quality standard are still subject to permit coverage. Although the construction activities are exempt from the NPDES program, it is still necessary to implement best management practices (BMPs) during the construction of the Project.

Compliance with Section 106 of the National Historic Preservation Act has been documented. Cultural Resource Studies are required for federal undertakings (projects with federal involvement, funding, permitting, or approval) in order for the proposed undertaking to comply with a number of federal and state laws, regulations, and guidelines. Therefore a Class III intensive pedestrian inventory of the pipeline route’s Area of Potential Effect (APE) was conducted. Results were negative and no impacts to any cultural resources are expected.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 Alternative A – No Action

As described in the BLM NEPA Handbook H-1790-1, under the No Action Alternative, the proposed construction and installation of natural gas pipeline would not take place.

2.2 Alternative B – Proposed Action

The Proposed Action is to construct and install approximately 12 miles of a 30-inch natural gas pipeline loop in Eddy (T21S R31E) and Lea (T20S R32E) counties, New Mexico. This pipeline will connect a natural gas supplier to an existing natural gas compressor station and allow for greater capacity to meet current and future consumer needs. This proposed pipeline expansion originates approximately 28 miles northeast of Carlsbad on the north side of State Highway 62 at the Transwestern WT-1 Compressor Station and traverses southeast to a tie-in location.

2.3 Alternatives Considered but not Analyzed in Detail

Originally, it was Transwestern's intent to construct the pipeline loop expansion project parallel to the existing ROW. However, as a result of continued pot ash mining at a facility adjacent to the ROW, excessive mine tailings have been deposited as overburden (estimated at heights of up to 60 feet or more) on top of the existing pipeline. Therefore, as a result of this above-grade deposition of potentially unstable material, constructing within the existing ROW is not considered a feasible option near the mining operation. Therefore, a route west of the mine site was considered in order to avoid the overburden since it would be the shortest route. However, once investigated, it was identified that the culturally-sensitive Maroon Cliffs Special Management Area (T21S R31E Sections 5, 6, 8, 17, 20, 21, and 28) occurs along this proposed route. Therefore, the currently proposed route to the east was chosen.

3.0 DESCRIPTION OF AFFECTED ENVIRONMENT

The Element Checklist provided at the beginning of this document lists the major, relevant environmental resources considered for this EA. All of the resources listed below were considered; however, construction of the proposed pipeline will not result in impacts to many of them.

The following resources are not present or are not considered to be affected by the Project; Areas of Critical Environmental Concern, Prime or Unique Farmlands, Wild and Scenic Rivers, Wilderness or Wilderness Study Areas, Cultural Resources, Cave/ Karst Resources, Floodplains, Wild Horses and Burros, Native American Religious Concerns, Recreation, Environmental Justice, Paleontological Resources, and Wetlands/ Riparian Zones. The environmental resources further considered for potential impacts are described below.

3.1 General Topography/Surface Geology

The proposed pipeline ROW is located in the Pecos Valley Great Plains physiographic province of North America (U.S. Geological Survey–USGS). The specific geologic formations found in the area are Quaternary (Holocene and upper Pleistocene) alluvium and Paleozoic (Artesia Group). The surficial and bedrock geology of the Project area is composed of Quaternary colluvium, alluvium, and eolian deposits (Griffith et al. 2006). The Project area ranges in elevation from 3,495 to 3,651 feet above mean sea level (MSL). The Project area does not contain any limestone outcrops.

3.2 Climate

Since the Project location is somewhat remote without any published weather data, data was collected for Carlsbad, New Mexico approximately 28 miles southwest of the Project area. At Carlsbad, the average annual maximum temperature is 78.6 degrees Fahrenheit (°F) with a minimum average annual temperature of 47.2 °F. The annual precipitation is 12.84 inches with the wettest month occurring in September at 2.12 inches (Western Regional Climate Center - WRCC 2009).

3.3 Floodplains

Background information was collected from USGS and Natural Resources Conservation Service (NRCS), including:

- 2004 aerial photography – USGS 1 Meter Digital Ortho Quarter Quad (DOQQ) – Livingston Ridge, The Divide, and Williams Sink,
- Topographic map – USGS 7.5 Minute Digital Raster Graphic (DRG) – Livingston Ridge, The Divide, and Williams Sink, and
- Web-based soil survey information from the NRCS.

The review of the maps and photographs showed little topographic relief; however, two small upland drainages were observed within the survey corridor. Neither drainage possessed a discernable ordinary high water mark (OHWM) and drained into open areas off the ROW and then terminated. These drainages only convey water during rainfall events and were not identified as “Waters of the U.S.” according to the USACE. No other drainages, playa lakes, or other potential jurisdictional waters were observed within the survey area. There is no floodplain designation assigned to any portion of the survey corridor. Therefore the Project would impact these resources.

Water anticipated for hydrostatic testing will be trucked in from an available source. All hydrostatic testing will be in compliance with guidelines outlined in the hydrostatic test permit conditions.

3.4 Watershed – Hydrology

The Project location occurs within the Pecos River Basin Watershed (NRCS 2009). No perennial surface waters occur within the proposed pipeline ROW. The review of the maps provided in Section 3.3 Floodplains showed little topographic relief and that no potential drainages or other waters exist in the survey area.

As a result of construction activities, local rain events may result in an increase of surface water runoff in areas void of vegetation. This phenomenon is expected to be temporary in nature and once the area is revegetated, increased surface water runoff will be negligible. Based on the field survey and a review of available maps, downstream areas were not identified as “Waters of the U.S.”

3.5 Water Quality – Surface/Ground

No perennial surface waters occur within the proposed pipeline ROW. The review of the maps provided in Section 3.3 Floodplains showed little topographic relief. Two upland drainages were located within the Project area. These drainages are not considered surface waters as they only convey water during rainfall events and each drain into upland areas. The nearest surface water is an ephemeral livestock tank that occurs outside the existing ROW. “Map Showing the General Depth to Ground Water in New Mexico” provided by NRCS (2009) shows that ground water depth in the Project area is less than 100 feet below land surface.

Maps provided by the NRCS were reviewed to determine aquifer vulnerability. The 1990 New Mexico Water Quality Control Commission’s Aquifer Vulnerability in New Mexico map (NRCS 2009) indicated the Project location to occur in an area designated as low vulnerability. No impacts are anticipated.

Neither surface water nor groundwater quality is expected to be directly impacted from the Project. Localized erosion from decreased surface vegetation could increase sedimentation within the Project area.

3.6 Mineral Resources

The proposed pipeline will be buried to a minimum depth of three feet below the current natural grade to the top of the pipe. These depths are not expected to disturb any unique mineral resources. The areas adjacent to the Project site are actively mined for pot ash. No impacts are anticipated as a result of this Project.

3.7 Air Quality

The Project area occurs within the Pecos River Airshed, as defined by the NRCS and New Mexico Environment Department Air Quality Bureau (NMENV-AQB–NRCS 2009). Currently (October 16, 2009), the air quality index (AQI) level in Carlsbad is 25 “Good” (monitoring station 5ZR Carlsbad) (NMED 2009). The AQI is an index that ranges from 0 to 500. The higher the AQI value, the greater the level of air pollution and therefore, the greater the health concern to the public. For example, an AQI value of 50 represents good air quality with little potential to affect public health, while an AQI value over 300 represents hazardous air quality (AIRNow 2009)

Areas that do not meet one or more of the National Ambient Air Quality Standards (NAAQS) for the criteria pollutants defined in the Clean Air Act are designated as non-attainment areas. The City of Anthony in Doña Ana County, New Mexico is the only city in New Mexico designated as a non-attainment area. The Project area in Eddy and Lea counties is approximately 141 miles east-northeast of Anthony and occurs approximately two airsheds away. According to 10 years (1992-2002) of hourly weather data from the Western Regional Climate Center (WRCC) station in Carlsbad, New Mexico, annual prevailing wind direction is from the south (WRCC 2009). With these documented southerly prevailing winds, emissions from this Project are not expected to exacerbate the only non-attainment area in New Mexico nor would this non-attainment area influence the Project vicinity.

Within the Project area, emissions are expected to occur from vehicles and heavy machinery used to construct and install the 12 miles of natural gas pipeline within the Project area. As a result of a sparsely populated area with little to no geographic formations to contain local air quality, emissions from vehicular traffic and heavy machinery are not expected to significantly impact air quality. BMPs will be implemented by Transwestern in order to minimize unnecessary vehicular traffic to and from the site and ensure the maintenance of all green house gas (GHG) emitting equipment.

3.8 Soils

The surficial and bedrock geology of the Project area is composed of Quaternary colluvium, alluvium, and eolian deposits (Griffith et al. 2006). Soils mapped within the proposed Project area were obtained from the NRCS Web Soils Survey (WSS) for Eddy and Lea counties including the soil erodibility factor (K factor) - whole soil. K factor describes the inherent erodibility of a particular soil, measuring the susceptibility of soil particles to detach and be transported by rainfall and runoff. Whole soils estimates include the presence of rock fragments, as well as the percentage of silt, sand, and organic matter. K factor values range from 0.02 to

0.69, where higher K factor values describe a greater susceptibility of the soil to sheet and rill erosion by water (USDA 2009). The soils and associated K factor are listed below:

1. Simona fine sandy loam, 0-3% slopes – shallow and very shallow, well drained soils that formed in calcareous sandy sediments over fractured indurated caliche. Simona soils are on upland plains, mesa tops, and low ridges. Simona fine sandy loam has a K factor of 0.28.
2. Simona gravelly fine sandy loam, 0-3% slopes – shallow and very shallow, well drained soils that formed in calcareous sandy sediments over fractured indurated caliche. Simona soils are on upland plains, mesa tops, and low ridges. Simona gravelly fine sandy loam has a K factor of 0.15.
3. Rock land – bedrock.
4. Pajarito-Dune land complex, 0-3% slopes – very deep, and well drained soils that formed in sandy to moderately sandy mixed sediments from mixed sources. These soils are typically on plains, bajadas, and alluvial fans. Pajarito-Dune land complex has a K factor of 0.24.
5. Berino complex, 0-3% slopes, eroded – very deep, well drained soils that formed in mixed alluvium, the surface of which has frequently been reworked by wind. Berino soils are on sandy plains, fan piedmonts, piedmont slopes, and valley floors. Berino complex has a K factor of 0.17.
6. Kermit-Berino fine sands, 0-3% slopes – Kermit soils are very deep, excessively drained soils formed in eolian sands on sandy plains. Berino soils are very deep, well drained soils that formed in mixed alluvium, the surface of which has frequently been reworked by wind. They are on sandy plains, fan piedmonts, piedmont slopes, and valley floors. Kermit-Berino fine sands has a K factor of 0.17.
7. Potter-Simona complex, 5-25% slopes – Potter soils are very deep, well drained, moderately slowly permeable soils that formed in calcareous sediments of fractured and highly weathered calcrete derived mainly from the Ogallala Formation of Miocene-Pliocene age. They are on very gently sloping to steep draws, scarps, or valley sides. Simona soils are shallow and very shallow, well drained soils that formed in calcareous sandy sediments over fractured indurated caliche. They are on upland plains, mesa tops, and low ridges. Potter-Simona complex has a K factor of 0.15.

3.9 Vegetation and Noxious Weeds

The U.S. Environmental Protection Agency's (EPA) Level III ecoregions identify local biotic and abiotic characteristics and composition for the purposes of "research, assessment, management, and monitoring of ecosystems and ecosystem components" (EPA 2009). The state of New Mexico is divided into eight distinct level III ecoregions: Colorado Plateaus, Southern Rockies, Arizona/New Mexico Plateau, Arizona/New Mexico Mountains, Chihuahuan Deserts, High Plains, Southwestern Tablelands, and Madrean Archipelago (Griffith et al. 2006).

According to these distinctions, the proposed pipeline right-of-way (ROW) in Eddy and Lea counties is located in the Chihuahuan Desert ecoregion, specifically in the Chihuahuan Desert Grasslands.

Four vegetative community types were observed within the proposed Project area: mesquite-shin oak shrubland, mesquite-creosote bush shrubland, mesquite grassland, and creosote bush flatland. The dominant vegetation in the mesquite-shin oak shrubland community type includes: mesquite (*Prosopis* sp.), shin oak (*Quercus havardii*), thread-leaf sagewort (*Artemisia filifolia*), soapweed yucca (*Yucca angustifolia*), purple threeawn (*Aristida purpurea*), and sand dropseed (*Sporobolus cryptandrus*). The dominant vegetation in the mesquite-creosote bush shrubland community type includes: mesquite, creosote bush (*Larrea tridentata*), and soapweed yucca. The dominant vegetation in the mesquite grassland community type includes: mesquite, thread-leaf sagewort, mesa dropseed (*Sporobolus flexuosus*), purple threeawn, and sand dropseed. The dominant vegetation in the creosote bush flatland community type included creosote bush and buffalograss (*Buchloe dactyloides*).

Direct impacts to the vegetation present within the proposed ROW include the clearing of approximately 72 to 75 acres. The shrubs within the area of impact will take longer to reestablish than the grasses and forbs, which are expected to revegetate quickly following construction.

Noxious plants are defined as exotic or alien plants that interfere with the management objectives for a given area of land at a give point in time (Carlsbad Soil and Water Conservation District - SWCD 2009). The New Mexico Department of Agriculture (NMDA) considers 32 species of plants to be noxious and the U.S. Department of Agriculture (USDA) considers 21 species of plants to be noxious in the State of New Mexico. Of the plant species listed by the NMDA and USDA, known noxious weed species occurring in Eddy County include, but are not limited to: African rue (*Peganum harmala*), non-native bull thistle and Canada thistle (*Cirsium* spp.), leafy spurge (*Euphorbia esula*), goldenrod (*Solidago*), Malta starthistle (*Centaurea melitensis*), Russian knapweed (*Rhaponticum repens*), tamarix (*Tamarix ramosissima*) and Scotch thistle (*Onopordum acanthium*) (Carlsbad SWCD 2009). These species are included on a Prioritized List of Weeds Species for Eddy County, according to the Eddy County Coordinated Weed Management Group's (ECCWMG) *Integrated Weed Management Plan*. Currently no weed management group on weed management plan exists for Lea County.

An indirect impact of removing the vegetative cover is the altering of vegetation succession. The period when no vegetation is present provides an opportunity for quick-responding vegetation species to propagate until other more established species take root. Ecological impacts are considered temporary in nature and may ultimately offer preferred foraging habitat by some wildlife for grazing as a result of altering vegetation succession and promoting new growth. Some of these early successional species may include aggressive, non-native species. However, no non-native species were observed to be dominant within the Project area.

3.10 Wildlife

New Mexico Game and Fish's Biota Information System of New Mexico (BISON-M) reports 800 species occurring in Eddy County, including: 14 species of amphibians, 63 species of

reptiles, 320 species of birds, 79 species of mammals, and hundreds of invertebrate species. BIOSN-M reports 357 species occurring in Lea County, including: 9 species of amphibians, 34 species of reptiles, 146 species of birds, 41 species of mammals, and over a hundred invertebrate species (BISON-M 2009).

Common bird species in the Project area include, but are not limited to: the greater roadrunner (*Geococcyx californianus*), curve-billed thrasher (*Toxostoma curvirostra*), scaled quail (*Callipepla squamata*), black-throated sparrow (*Amphispiza bilineata*), phainopepla (*Phainopepla nitens*), cactus wren (*Campylorhynchus brunneicapillus*), great-horned owl (*Bubo virginianus*), burrowing owl (*Athene cuniculara*), Aplomado falcon (*Falco columbarius*), and red-tailed hawk (*Buteo jamaicensis*) (Griffith et al. 2006, BISON-M 2009).

The Chihuahuan Desert supports a strongly associated community of herpetofauna including, but not limited to: Texas horned lizard (*Phrynosoma cornutum*), greater earless lizard (*Cophosaurus texanus scitulus*), lesser earless lizard (*Holbrookia maculata approximans*), spiny lizards (*Sceloporus* spp.), western whiptail (*Aspidocelis tigris septentrionalis*), blackhead snakes (*Tantilla* spp.), and whipsnakes (*Masticophis* spp.) (Griffith et al. 2006, BISON-M 2009).

The Chihuahuan Desert supports a number of wide-ranging mammals within the Project area (Eddy and Lea counties) include, but is not limited to: pronghorn (*Antilocarpa americana americana*), mule deer (*Odocoileus hemionus*), grey fox (*Urocyon cinereoargenteus scottii*), collared peccary or javelina (*Pecari tajacu*), desert cottontail (*Sylvilagus audubonii*), black-tailed jack rabbit (*Lepus californicus*), kangaroo rat (*Dipodomys* spp.), ground squirrel (*Spermophilus* spp.), woodrats (*Neotoma* spp.), and deer mice (*Peromyscus* spp.) (Griffith et al. 2006, BISON-M 2009).

3.11 Threatened and Endangered Species

Species listed as threatened or endangered by U.S. Fish and Wildlife Service (USFWS) are protected by the Endangered Species Act of 1973, as amended (ESA). Section 9 of the ESA prohibits the "take" of threatened and endangered species. A "take" is defined as, to "harass, harm, pursue, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Generally, the USFWS considers modification of regularly occupied endangered species habitat to constitute "harm" and, therefore, a violation of the ESA (USFWS 2009a).

Federally threatened (T) and endangered (E) species listed by the USFWS as having the potential to occur within the Project area are listed below by county (USFWS 2009c–Table 3.11.1). Also included in this table are species identified by the New Mexico Department of Game and Fisheries (NMDGF) as threatened and/or endangered (BISON-M 2009). A brief description of each species and its habitat requirements is provided below.

Table 3.1 Threatened and Endangered Species of Eddy and Lea Counties, New Mexico (USFWS 2009c; BISON-M 2009)

County	Species Group	Common Name (<i>Scientific name</i>)	FWS	State
Eddy County	Plants	Kuenzler hedgehog cactus (<i>Echinocereus fendleri</i> var. <i>kuenzleri</i>)	E	-

ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED WEST TEXAS LOOP EXPANSION PROJECT 30-INCH
NATURAL GAS PIPELINE IN EDDY AND LEA COUNTIES, NEW MEXICO

County	Species Group	Common Name (<i>Scientific name</i>)	FWS	State
		Sneed pincushion cactus (<i>Coryphantha sneedii</i> var. <i>sneedii</i>)	E	-
		Gypsum wild buckwheat (<i>Eriogonum gypsophilum</i>)	T	-
		Lee pincushion cactus (<i>Coryphantha sneedii</i> var. <i>leei</i>)	T	-
	Fishes	Pecos gambusia (<i>Gambusia nobilis</i>)	E	E
		Pecos bluntnose shiner (<i>Notropis simus pecosensis</i>)	T	E
	Birds	Least tern (<i>Sterna antillarum</i>)	E	E
		Northern Aplomado falcon (<i>Falco femoralis septentrionalis</i>)	E	E
		Mexican spotted owl (<i>Strix occidentalis lucida</i>)	T	-
		Southwestern willow flycatcher (<i>Empidonax trailliiextimus</i>)	E	E
	Mammals	Black-footed ferret (<i>Mustela nigripes</i>)	E	-
Lea County	Birds	Northern Aplomado falcon (<i>Falco femoralis septentrionalis</i>)	E	E
	Mammals	Black-footed ferret (<i>Mustela nigripes</i>)	E	-

Kuenzler Hedgehog Cactus (*Echinocereus fendleri* var. *kuenzleri*)

The Kuenzler hedgehog cactus has short, cone-shaped, dark green stems that average approximately 6 inches long and 4 inches wide. The plant may be single-stemmed or branched with typically fewer than four branches. Stems typically have 9 to 12 ribs with 2 to 6 radial, recurved, 1-inch spines originating from prominent tubercles. Flowers are an average of 4 inches long and magenta, and bloom in late May. Fruits are spiny, cylindrical, and bright red and ripen in July. Kuenzler hedgehog cacti are primarily found in the lower edges of pinyon-juniper woodlands on gentle slopes in cracks of limestone outcrops or in shallow soils of flat steps of hillsides, specifically with step and riser configurations. This cactus typically prefers a substrate of limestone parent material, an elevation of 5,800 to 6,300 feet, and a southern exposure. The dominant overstory is typically one-seeded juniper (*Juniperus monosperma*). Additional species typically associated with the Kuenzler hedgehog cactus include, but are not limited to: Yerba-de-pasmo (*Baccharis pternoides*), blue grama (*Bouteloua gracilis*), plains lovegrass (*Eragrostis intermedia*), buckwheat (*Eriogonum havardii*), and Goldman's silktassel (*Garrya ovata*) (USFWS 1985).

Sneed Pincushion Cactus (*Coryphantha sneedii* var. *sneedii*) and Lee Pincushion Cactus (*Coryphantha sneedii* var. *leei*)

The Sneed pincushion cactus and Lee pincushion cactus are two varieties of the same species that grow in similar habitat and have similar features. Both cacti are many branched with up to 100 or more stems that are cylindrical or spherical and are 1 to 3 inches long and 0.4 to 1.2 inches wide with tubercles. Central spines are white with brown and pink tips and 1.2 to 5.5 inches long in clusters of 6 to 17. Radial spines are white and 0.2 to 0.47 inch long in clusters of 35 to 90. The flowers are approximately 0.5 inch tall and brownish pink to pale rose with pink filaments and orange anthers and bloom from March to April. The fruits are grayish-green, up to 0.6 inch long, and up to 0.24 inch wide and ripen from August to November. The seeds are reddish brown. The Sneed variety has spines that spread parallel to the stem surface. Flowers are

pale or magenta and the seeds are smaller, averaging 0.027 to 0.039 inch long and 0.049 to 0.059 inch wide. The Lee variety has spines that slant from the top of the tubercle toward the main body of the stem. Flowers are a dull, brownish-pink and the seeds are larger, averaging 0.039 inch long and 0.059 inch wide (USFWS 1986).

The Sneed and Lee pincushion cacti are limited to semi-desert grassland communities of the Chihuahuan Desert in west Texas and south New Mexico. Both varieties are limited to hard, stable, limestone substrate that supports sparse, low shrubs, perennials, and cacti. Additional species typically associated with the Sneed and Lee pincushion cacti include, but are not limited to: lechuquilla (*Agave lechuquilla*), sideoats grama (*Bouteloua curtipendula*), common stool (*Dasyilirion wheeleri*), strawberry hedgehog cactus (*Echinocereus stramineus*), Apache plume (*Fallugia paradoxa*), Pinchot's juniper (*Juniperus pinchotii*), false buffalo grass (*Munroa squarrosa*), tulip pricklypear (*Opuntia phaeacantha*), twistspine pricklypear (*Opuntia microrhiza*), and oak (*Quercus* spp.) (USFWS 1986).

The Sneed variety prefers limestone cracks on vertical cliffs and ledges. It grows at an elevation of 3,900 to 7,700 feet. The Lee variety prefers the Tansill Limestone Formation and north-facing ledges. It grows at an elevation of 3,900 to 4,900 feet (USFWS 1986).

Gypsum Wild Buckwheat (*Eriogonum gypsophilum*)

Gypsum wild buckwheat is a woody perennial plant with dark green, ovate leaves averaging 0.059 inch long and 0.079 inch wide. The plant grows approximately 7.87 inches high on average and the leaves turn red in the fall. Flowers are yellow, 0.039 to 0.079 inch long in a dense cluster, and bloom from May to July. Reproduction is thought to be primarily vegetative (USFWS 1984).

The gypsum wild buckwheat is limited to a desert scrub plant community in the Seven River Hills region of New Mexico. It prefers semi-arid, gravelly gypsum outcrops on limestone-capped hills on north-facing slopes above an elevation of 3,281 feet. Additional species typically associated with the gypsum wild buckwheat include, but are not limited to tiqulia latior (*Coldenia hispidissima*), gypsum grama (*Bouteloua breviseta*), gypsum blazingstar (*Mentzelia humilis*), gypsum ringstem (*Anulocaulis gypsogenus*), littleleaf sumac (*Rhus microphylla*), sand fiddleleaf (*Nama carnosum*), gypsum phacelia (*Phacelia integrifolia*), White Sands fanmustard (*Nerisyrenia linearifolia*), barberry (*Berberis* spp.), yucca (*Yucca* spp.), featherplume (*Dalea formosa*), and candlewood (*Fouquieria splendens*) (USFWS 1984; NMRP 2009).

Pecos Gambusia (*Gambusia nobilis*)

The Pecos gambusia is a small, live-bearing fish. They are an average of 1.5 inches in length with a dark lateral stripe and are gray-blue in color. Pecos gambusia typically prefer spring-fed pools and runs or downstream areas with relatively constant temperatures, abundant overhead cover, sedge-covered marshes, and gypsum sinkholes. They are typically observed in depths up to 10 feet and at elevations ranging from 2,625 to 3,397 feet. Pecos gambusia are primarily carnivorous surface feeders. They feed on insects, small invertebrates, and filamentous algae (USFWS 1982; TPWD 2009a).

Pecos Bluntnose Shiner (*Notropis simus pecosensis*)

The Pecos bluntnose shiner is a small fish with a robust body, large mouth, and blunt, round snout. They are up to 3.5 inches in length. This shiner is gray to green-brown dorsally and white ventrally. They have a wide, silver lateral stripe and small, black flecks on the rays of the dorsal and pectoral fins.

Pecos bluntnose shiners typically inhabit the main channel of the Pecos River. They can also be found in backwaters, riffles, pools, and natural springs. These shiners typically prefer low-velocity water, shallow depths (average 1.3 feet), and sandy substrates. Little is known about the diet of Pecos bluntnose shiners. They have similar digestive anatomy to other shiners and are assumed to feed on small aquatic macroinvertebrates and algae. Spawning is thought to occur from spring to autumn (USFWS 1992).

Least Tern (*Sterna antillarum*)

Least terns are small birds, measuring about 8 to 9.4 inches long with a wingspread of 20 inches. Sexes appear similar; with a black-capped crown, white forehead, grayish back and dorsal wing surface, white undersurface, legs a variation of orange and yellow colors depending on the sex, and a black-tipped bill whose color also varies depending on sex. The interior least tern is piscivorous, feeding in shallow waters of rivers, streams and lakes. Least terns also feed on crustaceans, insects, mollusks and annelids. The terns usually feed close to their nesting sites. Fishing occurs close to the riverine colony. Terns nesting at sand and gravel pits and other artificial habitats may fly up to 2 miles to fish (USFWS 1990b).

Breeding colonies or terneries are usually small (up to 20 nests) with nests spaced far apart. Egg-laying and incubation occur from late May to early August, depending on the geographical location and availability of habitat. The interior least tern is migratory and breeds along the Mississippi, Red and Rio Grande River systems and rivers of central Texas. Distribution generally is restricted to less altered river segments. The riverine nesting areas of interior least terns are sparsely vegetated sand and gravel bars within a wide unobstructed river channel, or salt flats along lake shorelines. Nesting locations usually are at the higher elevations and away from the water's edge because nesting starts when the river flows are high and small amounts of sand are exposed. The size of nesting areas depends on water levels and the extent of associated sandbars (TPWD 2009b).

Northern Aplomado Falcon (*Falco femoralis septentrionalis*)

The Northern Aplomado falcon has a steel grey back, red breast, black "sash" on its belly, and striking black markings on the top of its head, around its eyes, and extending down its face. They have a long banded tail and are smaller than peregrine falcons and larger than kestrels. They average 15 to 18 inches in length with a 32- to 36-inch wingspan. Aplomados are most often seen in pairs, hunting together cooperatively.

Aplomado falcons do not build their own nests, but use stick nests built by other birds. Eggs are laid between March and June with both parents incubating the nest. These birds feed primarily on other birds, but also capture insects, rodents, and reptiles. Open grassland terrain with

scattered trees, relatively low ground cover, an abundance of small to medium-sized birds, and a supply of suitable nesting platforms, particularly yucca and mesquite (*Prosopis glandulosa*), comprise the preferred habitat of Northern Aplomado falcons. They use woody vegetation, fence posts, and telephone poles as perches and are typically found at elevations from 3,511 to 8,990 feet (USFWS 1990a).

Mexican Spotted Owl (*Strix occidentalis lucida*)

The Mexican spotted owl is a nocturnal carnivore and ranks among the largest owls in North America. These owls have dark eyes; white and brown spots on the abdomen, back, and head; and thin white bands on a brown tail. Overall, the Mexican spotted owl appears chestnut brown. They have an average height of 16 to 19 inches and wingspan of 42 to 45 inches (USFWS 1995; Defenders of Wildlife - DOW 2009b; TPWD 2009c).

Mexican spotted owls typically inhabit mature, old-growth forests of white pine (*Pinus strobus*), Douglas fir (*Pseudotsuga menziesii*), and ponderosa pine (*Pinus ponderosa*); steep slopes; and canyons with rocky cliffs (TPWD 2009c). They prefer high, closed canopies at an elevation of 4,987 to 6,988 feet. The understory often contains the above coniferous species as well as maple (*Acer* spp.), boxelder (*Acer negundo*), Gambel oak (*Quercus gambelii*), and New Mexico locust (*Robinia neomexicana*).

Nesting and roosting primarily occur in closed-canopy forests and rocky canyons. Mexican spotted owls will utilize caves, cliff edges, tree cavities, or stick nests built by other birds for nest sites. The Douglas fir is the most common nest tree. Mating season is from February to March. One to three eggs are laid per clutch during March or April. Owlets usually disperse by early October. Mexican spotted owls typically feed on small to medium sized rodents, bats, birds, reptiles, and arthropods (USFWS 1995).

Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

The Southwestern willow flycatcher is a subspecies of the willow flycatcher. It is an olive-gray bird about 5.75 inches long with a white throat and a yellow-gray rump. It is generally paler than other species of willow flycatchers. These birds feed on insects in multilayered riparian zones. They forage above and within the canopy, along the patch edge, in openings within the territory, above water, and glean from tall trees or herbaceous ground cover.

The Southwestern willow flycatcher breeds in late spring in Arizona, New Mexico, southern California, southern Nevada and Utah, and possibly western Texas. Three to four eggs are laid in late May or early June with the young fledging in early July. The birds winter in the rainforests of Mexico, Central America, and northern South America.

The flycatcher breeds in patchy to dense riparian areas along streams or other wetlands, close to surface water or underlain by saturated soil. They are primarily found in lower elevation riparian areas but can occur from near sea level to nearly 8,500 feet. Common vegetation in nesting habitat includes willow (*Salix* spp.), mulefat or seepwillow (*Baccharis* spp.), box elder (*Acer negundo*), stinging nettle (*Urtica* spp.), blackberry (*Rubus* spp.), cottonwood (*Populus* spp.), arrowweed (*Tessaria sericea*), tamarisk or saltcedar, and Russian olive (*Eleagnus angustifolia*).

Nesting habitat ranges from 26 to 98 feet in thickets of trees and shrubs. At higher elevations, lower stature thickets are preferred, while at lower and middle elevations tall stature habitats in riparian forests are preferred. Typical nest sites have dense foliage from the ground level up to approximately 13 feet above ground, although dense foliage may exist only at the shrub level, or as a low dense canopy. Typical nest sites have a dense canopy, but nests may also be found in a tree at the edge of a habitat patch, with sparse canopy cover (USFWS 2002; USFWS 2004).

Black-footed Ferret (*Mustela nigripes*)

Black-footed ferrets are small carnivores related to weasels, otters, and minks among other genera. These ferrets have a tan body, black stockings, a black-tipped tail, and a black mask. They are on average approximately 6 inches in height and 18 to 24 inches in length (including the tail).

Mating occurs between March and April. Kits are born between May and June. Black-footed ferrets live and nest in prairie dog burrows. Black-footed ferrets are nocturnal and are only found in close proximity to large prairie dog colonies. Ferrets will feed on mice, voles, squirrels, gophers, birds, and insects. However, prairie dogs are the ferret's primary food source.

The habitat of the prairie dog consists of short and medium grass prairies and plateaus in the western portion of North America. Black-footed ferrets take over the burrows of prairie dogs, which are approximately 3.3 to 9.8 feet deep and 9.8 feet long. Entrances to burrows are surrounded by a mound of dirt that prevents flooding (USFWS 1988; Defenders of Wildlife - DOW 2009a).

Summary

Pedestrian surveys were conducted on June 2 and 3 and July 6, 2009 along the entire proposed route to determine if habitat within the Project area was likely associated with any of the ten threatened and endangered species (TES) considered by the USFWS as potentially occurring in Eddy and Lea Counties. Data were collected to describe resident vegetation communities and assess the potential for occurrence of TES within the Project area. The four plant community types (mesquite-shin oak shrubland, mesquite-creosote bush shrubland, mesquite grassland, and creosote bush flatland) observed, and described above in Section 3.9 Vegetation and Noxious Weeds, within the survey areas are not typically associated with the above-listed TES. Further, no TES were observed during the survey.

Of the species listed, most can be discounted based on habitat preferences. Three of the four plant species listed are cacti, which according to the literature, only occur at higher elevations in limestone outcrops ranging from 3,900 to 7,700 feet above mean sea level (MSL). The Project area does not contain any limestone outcrops and occurs at elevations around 3,500 feet above MSL. The Gypsum wild buckwheat occurs on limestone-capped hills in the Seven River Hills region of New Mexico. The Project area did not contain any limestone capped hills and occurs approximately 35 miles east of the Seven River Hills region of New Mexico. As a result of no surface water within or directly adjacent to the Project area, no fish will be impacted. With an absence of water, no impacts are expected to occur to the least tern. No habitat of mature old growth pine exists for the Mexican spotted owl. The northern Aplomado falcon could

potentially occur within the Project area, but none were observed, have been observed in the region in recent years, and no habitat types specific to this raptor were identified. According to the USFWS, the black-footed ferret is found in close proximity to prairie dog towns. No prairie dog towns or black-footed ferrets were observed within or adjacent to the Project area. The Proposed Action is not expected to have any direct adverse impacts to any threatened and/or endangered species.

3.12 Special Status Species

BLM Special Status Species are defined as: 1) “species listed or proposed for listing under the Endangered Species Act (ESA), and 2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as Bureau sensitive by the State Director(s)” (BLM 2009a). Special Status Species (BLM Sensitive: New Mexico State Office [NMSO]) recognized by BLM as having the potential to occur within the West Texas Loop Project area are listed below by county (BISON-M 2009–Table 3.12.1). The presence of Special Status Species in relation to the availability of habitat within the Project Area was evaluated. A brief description is provided below for: known and documented observations (K) within the Project Area; suitable habitat present and species suspected to occur within the Project Area (S); and suitable habitat present, but species is not suspected to occur within the Project Area (NS). Those species for which suitable habitat is not present and which are unlikely to occur (NP) in the Project area are not discussed further.

Table 3.12.1 BLM Special Status Species of and Potential to Occur in Eddy and Lea Counties, New Mexico (BISON-M 2009)

County	Species Group	Common Name (<i>Scientific name</i>)	Habitat	Presence
Eddy County	Invertebrates	Pecos springsnail (<i>Pyrgulopsis pecosensis</i>)	Aquatic, edges of water with rubble and pebble substrate	NP
	Fishes	Headwater catfish (<i>Ictalurus lupus</i>)	Temperate waters with moderate gradient	NP
		Rio Grande shiner (<i>Notropis jemezianus</i>)	Large open rivers with laminar flow, vegetation, gravel, sand or rubble	NP
		Blue sucker (<i>Cycleptus elongates</i>)	Deep river channels and lakes, pools with moderate currents	NP
	Reptiles	Texas horned lizard (<i>Phrynosoma cornutum</i>)	Chihuahuan Desert Scrub; Desert Grassland	S
		Sand dune lizard (<i>Sceloporus arenicolus</i>)	Sand dunes in Plains-Mesa Sand Scrub	S
	Birds	Baird’s sparrow (<i>Ammondramus bairdii</i>)	Desert Grassland	S
		Northern goshawk (<i>Accipiter gentilis</i>)	Closed canopied coniferous forests of mountains and high mesas	NP
		Ferruginous hawk (<i>Buteo regalis</i>)	Chihuahuan Desert Scrub; Desert Grassland	S
		White-faced ibis (<i>Plegadis chihi</i>)	Shoreline and marsh bordering open water	NP

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County	Species Group	Common Name (<i>Scientific name</i>)	Habitat	Presence
		Burrowing owl (<i>Athene cunicularia hypugaea</i>)	Chihuahuan Desert Scrub; Desert Grassland	K
		Lesser prairie-chicken (<i>Tympanuchus pallidicinctus</i>)	Plains-Mesa Sand Scrub; Chihuahuan Desert Scrub	S
		Loggerhead shrike (<i>Lanius ludovicianus</i>)	Chihuahuan Desert Scrub; Desert Grassland	S
		Black tern (<i>Chlidonias niger surinamensis</i>)	Riverine; Lacustrine; Chihuahuan Desert	NP
	Mammals	Pale Townsend's big-eared bat (<i>Corynorhinus townsendii pallenscens</i>)	Caves, mines, desert mountains and shrublands	NP
	Cave myotis (<i>Myotis velifer incautus</i>)	Caves, mines, building close to a water source	NP	
	Big free-tailed bat (<i>Nyctinomops macrotis</i>)	Mixed woodlands, caves	NP	
	Fringed myotis (<i>Myotis thysanodes thysanodes</i>)	Mid-elevation grasslands, deserts; montane areas	NP	
	Long-legged myotis (<i>Myotis volans interior</i>)	Mixed conifer habitats	NP	
	Western small-footed myotis (<i>Myotis ciliolabrum melanorhinus</i>)	Wooded montane areas; occasionally in grassland and desert scrub	NP	
	Yuma myotis (<i>Myotis yumanensis yumanensis</i>)	Desert; Grassland; Woodland, Riparian	NP	
	Gray-footed chipmunk (<i>Neotamias canipes canipes</i>)	Forested land; Chihuahuan Desert	NP	
	Black-tailed prairie dog (<i>Cynomys ludovicianus arizonensis</i>)	Chihuahuan Desert Scrub; Desert Grassland; tabosa swales	NS	
	Guadalupe pocket gopher (<i>Thomomys bottae guadalupensis</i>)	Chihuahuan desert; extremely xeric places	NS	
	Pecos River muskrat (<i>Ondatra zibethicus ripensis</i>)	Riparian habitat; Chihuahuan Desert	NP	
Lea County	Reptiles	Texas horned lizard (<i>Phrynosoma cornutum</i>)	Chihuahuan Desert Scrub; Desert Grassland	S
		Sand dune lizard (<i>Sceloporus arenicolus</i>)	Sand dunes in Plains-Mesa Sand Scrub	NP
	Birds	Baird's sparrow (<i>Ammodramus bairdii</i>)	Desert Grassland	S
		Ferruginous hawk (<i>Buteo regalis</i>)	Chihuahuan Desert Scrub; Desert Grassland	S
		Burrowing owl (<i>Athene cunicularia hypugaea</i>)	Chihuahuan Desert Scrub; Desert Grassland	K
		Lesser prairie-chicken	Plains-Mesa Sand Scrub;	NS

ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED WEST TEXAS LOOP EXPANSION PROJECT 30-INCH
NATURAL GAS PIPELINE IN EDDY AND LEA COUNTIES, NEW MEXICO

County	Species Group	Common Name (<i>Scientific name</i>)	Habitat	Presence
		<i>(Tympanuchus pallidicinctus)</i>	Chihuahuan Desert Scrub	
		Loggerhead shrike (<i>Lanius ludovicianus</i>)	Chihuahuan Desert Scrub; Desert Grassland	S
	Mammals	Cave myotis (<i>Myotis velifer incautus</i>)	Caves, mines, building close to a water source	NP

Texas Horned Lizard (*Phrynosoma cornutum*)

No live horned lizards were observed during the field survey; however, the head of a Texas horned lizard was identified near the entrance of a burrowing owls burrow. This discovery does not actually account for a species sighting within the Project area, only that they are likely present in the vicinity and thus preyed upon by some raptors. It is probable that the species can be found within the Project area, because horned lizards are found year-round in the Chihuahuan Desert, preferring flat, open, and generally dry habitats with minimal vegetation (BIOSN-M 2009). Additionally they are commonly found in loose sand or loamy soils (TPWD 2009d). Horned lizards are often associated with prairie dog towns. The population trend of the species is listed as “Declining” (BISON-M 2009).

Sand Dune Lizard (*Sceloporus arenicolus*)

Sand dune lizards are distinctive in their preference for sand dune habitat with shinnery oak, limited to four counties in New Mexico, including Eddy and Lea (BISON-M 2009). Dune-shinnery oak habitat complexes are present within the Project area and therefore provide potential habitat for sand dune lizards. No sand dune lizards were observed during field surveys.

Baird’s Sparrow (*Ammodramus bairdii*)

Baird’s sparrows prefer moist to moderately dry, short-grass prairie and lightly grazed pastureland. Vegetation common to the Chihuahuan Desert ecoregion are preferred for Baird’s sparrows breeding habitat (BISON-M 2009; National Audubon Society - NAS 2009). While suitable habitat exists for Baird’s sparrows within the Project area, the species has declined throughout its range, including within New Mexico and in recent years has been “very rarely reported” (BISON-M 2009). No individuals or their nests were observed or found within the Project area during the field survey.

Ferruginous Hawk (*Buteo regalis*)

No ferruginous hawk individuals or nests were observed during field survey within the Project area. Ferruginous hawks can be found year-round in Eddy and Lea counties, although they appear to be uncommon. Ferruginous hawks are associated with semiarid regions and Chihuahuan Desert grasslands and are often associated with prairie dog towns (BISON-M 2009). Marginal nesting opportunities do exist within the general vicinity of the Project area within large shrubs which could support nests.

Burrowing Owl (*Athene cunicularia hypugaea*)

Burrowing owls nesting habitat includes areas with mammal burrows, native prairies, roads, ROWs, and urban habitats. They prefer arid to semiarid environments with well drained, level to gently sloping areas characterized by sparse vegetation and bare ground (Klute et al. 2003). Potential habitat occurs for burrowing owls within the Project area. One burrowing owl was observed during the field surveys.

Lesser Prairie-chicken (*Tympanuchus pallidicinctus*)

Lesser prairie-chickens prefer sand shinnery communities dominated by shin-oak, grama grasses, and dropseed grasses. Suitable habitat occurs within the Chihuahuan Desert ecoregion of Eddy and Lea counties, where one of the major vegetation types is the mesquite-shin oak shrubland. Lesser-prairie chickens additionally utilize these habitat types for nesting (New Mexico Avian Conservation Partners Website – NMACP 2009). Lesser prairie-chickens were once widespread in Lea County (BISON-M 2009); although they now occur only in sparse and scattered populations. No lesser prairie-chickens were observed during the field visit.

Loggerhead Shrike (*Lanius ludovicianus*)

Potential habitat for this species exists within the Project area. This species is commonly found year-round within the Chihuahuan Desert habitat type in both Eddy and Lea counties (BISON-M 2009). Although no individuals were observed during the field survey, it is likely they could use the habitat present within or near the Project area.

Black-tailed Prairie Dog (*Cynomys ludovicianus arizonensis*)

Black-tailed prairie dogs are native to short grass prairies or grazed land, avoiding tall grasses. Open, sparsely vegetated habitats and grazed land are common within the Project area, although no black-tailed prairie dogs or prairie dog towns were observed within the Project area during the field survey. However, the Project area is suitable and could be inhabited by black-tailed prairie dogs in the future. The federally endangered black-footed ferret depends on black-tailed prairie dogs for food and utilizes their burrows for shelter (USFWS 2009b).

Guadalupe Pocket Gopher (*Thomomys bottae guadalupensis*)

Though known to occur in Eddy County, the distribution of the Guadalupe pocket gopher is either restricted to or primarily occurs in the Guadalupe Mountains in New Mexico and Texas, Guadalupe Mountains National Park, and Carlsbad National Park. All of these geographic areas are outside of the Project area. BISON-M (2009) states that the “taxonomy of *Thomomys* pocket gophers is complex, confusing, and dynamic. Opinions differ greatly among experts, especially with respect to *T. bottae* and *T. umbrinus* in the Southwest. There is considerable geographical variation in these species.” Little data exists regarding the subspecies of *T. bottae*.

Summary

Pedestrian surveys were conducted on June 2 and 3 and July 6, 2009 along the entire proposed route to determine if habitat within the Project area was likely associated with any of the Special Status Species considered by the BLM as potentially occurring in Eddy and Lea Counties. Data

were collected to describe resident vegetation communities and assess the potential for occurrence of Special Status Species within the Project area. The four plant community types (mesquite-shin oak shrubland, mesquite-creosote bush shrubland, mesquite grassland, and creosote bush flatland) observed, and described above in Section 3.9 Vegetation and Noxious Weeds.

As a result of no permanent surface water within or directly adjacent to the Project area, no fish or aquatic invertebrates are likely to be impacted. With an absence of water, no impacts are expected to occur to the black tern, white ibis, or Pecos River muskrat.

Of the Special Status Species listed by the BLM only two are expected to occur within the Project area. These include the burrowing owl and Texas horned lizard. At the time of the field effort, one burrowing owl was identified flying from a burrow located adjacent to the existing pipeline ROW outside of the proposed construction workspace. No prairie dog towns were observed within or adjacent to the Project area.

3.13 Livestock Grazing

Livestock grazing is the primary surface use within the Project area. Forage conditions within the Project boundary are considered low to moderate. Table 3.13.1 provides the forage available based on soil type within the Project area during favorable and unfavorable conditions (USDA 2009).

Table 3.13.1 Forage Availability Based on Soil Type

Map Unit and Soil Name	Ecological Site	Annual Conditions (lb/ac)	
		Favorable	Unfavorable
Berino	Loamy Sand	1800	650
Kermit	Deep Sand	2000	600
Pajarito	Loamy Sand	1800	650
Simona	Shallow Sandy	900	200
Upton	Shallow	500	200
Simona	Shallow Sandy	775	150
Potter	Shallow	900	400

3.14 Cultural Resources

The cultural history of southwestern New Mexico is generally divided into five periods: Paleoindian (circa 12,500 – 8,000 BP), Archaic (8,000 – AD 500-1,000), Formative (circa AD 500 – 1,400), Proto/Ethnohistoric (circa AD 1,400 – 1,750), and Historic (circa 1700 – 1950's) (BIO-WEST 2009). A number of more detailed and regionally-specific examinations of cultural developments in the area may be found in the following publications: *Archaeological Overview of Southwestern New Mexico* (Katz and Katz 1993)

A cultural resources inventory was conducted because the route crosses public land managed by the Carlsbad Field Office (CFO) of the BLM. In an effort to determine whether cultural resources or historic properties were present along the proposed pipeline route, archaeologists

conducted field surveys the weeks of June 1, 2009 and June 9, 2009. Prior to field efforts, recorded archaeological sites in the vicinity of the Project were reviewed and identified.

3.15 Visual Resources

Visual Resource Management (VRM) on public lands is conducted in accordance with BLM Handbook 8410 and BLM Manual 8411. The VRM system involves the assessment of an area's scenic quality, sensitivity to visual change, and distance zones based on visibility of an area from observation points. The CFO-BLM geo-database files were reviewed to determine the VRM classification of the Project area. The VRM system categorizes an area's aesthetic value using classifications between Class I and Class IV, with Class I being the highest valued category for visual resources. It was determined that all BLM land in the proposed Project area has been mapped as VRM Class IV. "The objective of VRM Class IV is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic landscape elements of color, form, line and texture" (BLM 2009b).

The proposed ROW may be visible from Highway 62 following construction only by the temporary lack of vegetation. Since the ROW will be restored to preconstruction contours and allowed to revegetate naturally, little visual impact is expected to occur. The Proposed Action will meet the BLM Visual Resource Management Class IV guidelines.

3.16 Public Health and Safety

The installation of this pipeline will temporarily increase traffic during construction in the general Project area. The current landscape consists of open range that possesses a myriad of existing well pad sites and pipelines. The only residence within the vicinity of the Project area occurs on Transwestern property within the existing WT-1 Compressor Station facility.

No direct impacts to public health and safety would occur from the Proposed Action. Increased vehicular traffic would only occur during pipeline construction and would be temporary in nature. The natural gas product within the pipeline would be secure in a maintained system that would be kept to current standards with necessary precautions.

3.17 Wastes, Hazardous or Solid

Based on a pedestrian survey, there was no evidence of solid or hazardous waste within the Project area. Fossil fuels will be in use on the site during construction and natural gas will flow within the completed pipeline.

Transwestern will utilize its BMPs as well as its *Spill Prevention, Containment, and Countermeasures Plan* (SPCC Plan) that provides procedures for hazardous materials transportation, handling, storage, spill prevention, and spill response to minimize the possibility of any contamination of the Project area.

4.0 ENVIRONMENTAL CONSEQUENCES AND PROPOSED MITIGATION MEASURES

The discussion in this focuses on potential consequences to the environment, and proposed mitigation measures, associated with the installation of a 30-inch natural gas pipeline. The analysis incorporates the environmental investigations conducted in June and July 2009 for the proposed West Texas Loop Expansion Project, prepared for Transwestern in the document *Environmental Field Investigation Report for the West Texas Loop Expansion Project, 30-inch Natural Gas Pipeline* (BIO-WEST 2009).

Alternative A – No Action

Under the No Action Alternative, the natural gas pipeline would not be installed and therefore no new impacts would occur. Current natural resource uses in the Project area would continue as is under the No Action Alternative. In addition no impact to cultural resources would result under the No Action Alternative; however, the specific objectives of the Project would not be met.

Alternative B – Proposed Action

The natural gas pipeline will be installed as described in Section 2.2 Alternative B – Proposed Action, in order to minimize impacts to both natural and cultural resources.

Table 4.1 Summary of Disturbances

Facility	Acreage of Disturbance	Duration of Disturbance
Pipeline ROW	72 to 75 acres	Short-term

A total of 72 to 75 acres of land will be disturbed by the Proposed Action. Short-term impacts from surface disturbance are those which can be stabilized or mitigated rapidly (within five years). Long-term impacts are those that would substantially remain for more than five years. Revegetation of the pipeline ROW is expected to occur naturally following construction. Details of the Project area resources as they would be affected by the Proposed Action are provided below.

4.1 General Topography/Surface Geology

4.1.1 Direct and Indirect Impacts

The topography within the pipeline ROW will be temporarily disturbed during construction activities and will be restored to pre-construction contours following the installation of the pipeline.

4.1.2 Potential Mitigation

Transwestern will restore the Project area to preconstruction contours immediately following pipeline construction.

4.2 Climate

4.2.1 Direct and Indirect Impacts

No impacts to the local climate will occur from the Proposed Action.

4.2.2 Potential Mitigation

No mitigation measures are necessary.

4.3 Floodplains

4.3.1 Direct and Indirect Impacts

There is no floodplain designation assigned to any portion of the survey corridor. Therefore neither action would impact these resources.

Water anticipated for hydrostatic testing will be trucked in from an available source. All hydrostatic testing will be in compliance with guidelines outlined in the hydrostatic test permit conditions.

4.3.2 Potential Mitigation

No mitigation is necessary.

4.4 Watershed – Hydrology

4.4.1 Direct and Indirect Impacts

As a result of construction activities, local rain events may result in an increase of surface water runoff in areas void of vegetation. This phenomenon is expected to be temporary in nature and once the area is revegetated, increased surface water runoff will be negligible. Based on the field survey and a review of available maps identified in Section 4.3 Floodplains, downstream areas were not identified as “Waters of the U.S.”

4.4.2 Potential Mitigation

Transwestern will follow BMPs and NPDES permit requirements to avoid impacts to water quality.

4.5 Water Quality – Surface/Ground

4.5.1 Direct and Indirect Impacts

Neither surface water nor groundwater quality is expected to be directly impacted from the Project. Localized erosion from decreased surface vegetation could increase sedimentation within the Project area.

4.5.2 Potential Mitigation

Transwestern will obtain an NPDES Stormwater permit, which will outline plans that prevent sediment from washing beyond the Project boundary and reduce erosion overall during the construction period.

4.6 Mineral Resources

4.6.1 Direct and Indirect Impacts

The proposed pipeline will be buried to a minimum depth of three feet below the current natural grade to the top of the pipe. These depths are not expected to disturb any unique mineral resources. The areas adjacent to the Project site are actively mined for pot ash. No impacts are anticipated as a result of this Project.

4.6.2 Potential Mitigation

No mitigation is required.

4.7 Air Quality

4.7.1 Direct and Indirect Impacts

Emissions are expected to occur from vehicles and heavy machinery used to construct and install 12 miles of natural gas pipeline within the Project area. As a result of a sparsely populated area with little to no geographic formations to contain local air quality, emissions from vehicular traffic and heavy machinery is not expected to significantly impact air quality. Furthermore, with southerly prevailing winds, emissions from the Project are not expected to exacerbate the only non-attainment area in New Mexico nor would this non-attainment area influence the Project vicinity.

4.7.2 Potential Mitigation

BMPs will be implemented by Transwestern in order to minimize unnecessary vehicular traffic to and from the site and ensure the maintenance of all green GHG emitting equipment.

4.8 Soils

4.8.1 Direct and Indirect Impacts

An estimated 72 to 75 acres of soils will be impacted by the excavation of the proposed pipeline trench. Direct impacts could include soil compaction, wind erosion, soil erosion, and loss of topsoil.

4.8.2 Potential Mitigation

Transwestern will utilize BMPS and acquire an NPDES Stormwater permit prior to work. Erosion control structures will be installed to prevent the loss of material from water erosion. Following construction, all soils will be filled back into the pipeline trench and restored to preconstruction contours.

4.9 Vegetation and Noxious Weeds

4.9.1 Direct and Indirect Impacts

Direct impacts to the vegetation present within the proposed ROW include the clearing of approximately 72 to 75 acres. The shrubs within the area of impact will take longer to reestablish than the grasses and forbs, which are expected to revegetate quickly following construction.

An indirect impact of removing the vegetative cover is the altering of vegetation succession. The period when no vegetation is present provides an opportunity for quick-responding vegetation species to propagate until other more established species take root. Ecological impacts are considered temporary in nature and may ultimately offer preferred foraging habitat by some wildlife for grazing as a result of altering vegetation succession and promoting new growth. Some of these early successional species may include aggressive, non-native species. However, no non-native species were observed to be dominant within the Project area.

4.9.2 Potential Mitigation

Transwestern will monitor restoration after construction according to its BMPs and NPDES permit to promote revegetation and minimize the influx of invasive species.

4.10 Wildlife

4.10.1 Direct and Indirect Impacts

Wildlife species that occur within the proposed construction area may be temporarily displaced during construction. Some fossorial species (i.e. living underground) like the pocket gopher (*Geomys* spp.), some kangaroo rats (*Dipodomys* spp.), snakes and others that may utilize the ground for cover, may perish as a result of construction. However ecological impacts are considered to be temporary in nature and may ultimately offer preferred foraging habitat by some wildlife for grazing as a result of altering vegetation succession and promoting new growth.

4.10.2 Potential Mitigation

Caution will be taking during construction to avoid killing an wildlife that is visually identified.

4.11 Threatened and Endangered Species

4.11.1 Direct and Indirect Impacts

Pedestrian surveys were conducted on June 2 and 3 and July 6, 2009 along the entire proposed route to determine if habitat within the Project area was likely associated with any of the ten threatened and endangered species (TES) considered by the USFWS as potentially occurring in Eddy and Lea counties. Data were collected to describe resident vegetation communities and assess the potential for occurrence of TES within the Project area. The four plant community types (mesquite-shin oak shrubland, mesquite-creosote bush shrubland, mesquite grassland, and creosote bush flatland) observed, and described above in Section 3.9 Vegetation and Noxious Weeds, within the survey areas are not typically associated with the above-listed TES. Further, no TES were observed during the survey.

Of the species listed, most can be discounted based on habitat preferences. Three of the four plant species listed are cacti, which according to the literature, only occur at higher elevations in limestone outcrops ranging from 3,900 to 7,700 feet above mean sea level (MSL). The Project area does not contain any limestone outcrops and occurs at elevations around 3,500 feet above MSL. The Gypsum wild buckwheat occurs on limestone-capped hills in the Seven River Hills region of New Mexico. The Project area did not contain any limestone capped hills and occurs approximately 35 miles east of the Seven River Hills region of New Mexico. As a result of no surface water within or directly adjacent to the Project area, no fish will be impacted. With an absence of water, no impacts are expected to occur to the least tern. No habitat of mature old growth pine exists for the Mexican spotted owl. The northern Aplomado falcon could potentially occur within the Project area, but if so, this occurrence is only expected as a passing migrant. No Aplomado Falcons were observed during the field effort, none have been observed in the region in recent years, and no habitat types specific to this raptor were identified within the Project area. According to the USFWS, the black-footed ferret is found in close proximity to prairie dog towns. No prairie dog towns or black-footed ferrets were observed within or adjacent to the Project area. The Proposed Action is not expected to have any direct adverse impacts to any threatened and/or endangered species.

4.11.2 Potential Mitigation

No mitigation measures will be necessary.

4.12 Special Status Species

4.12.1 Direct and Indirect Impacts

Pedestrian surveys were conducted on June 2 and 3 and July 6, 2009 along the entire proposed route to determine if habitat within the Project area was likely associated with any of the Special Status Species considered by the BLM as potentially occurring in Eddy and Lea counties. Data were collected to describe resident vegetation communities and assess the potential for occurrence of Special Status Species within the Project area. The four plant community types (mesquite-shin oak shrubland, mesquite-creosote bush shrubland, mesquite grassland, and creosote bush flatland) observed, and described above in Section 3.9 Vegetation and Noxious Weeds.

As a result of no permanent surface water within or directly adjacent to the Project area, no fish or aquatic invertebrates are likely to be impacted. With an absence of water, no impacts are expected to occur to the black tern, white ibis, or Pecos River muskrat.

Of the Special Status Species listed by the BLM only two are expected to occur within the Project area. These include the burrowing owl and Texas horned lizard. At the time of the field effort, one burrowing owl was identified flying from a burrow located adjacent to the existing pipeline ROW outside of the proposed construction workspace. Upon further examination of this burrow, the head of a Texas horned lizard was identified near the entrance along with remnants of other reptile parts collected by the owl. No prairie dog towns were observed within or adjacent to the Project area.

4.12.2 Potential Mitigation

According to the U.S. Fish and Wildlife Service, the migratory bird breeding and nesting period occurs from March 1 to August 15. Further literature review indicates that burrowing owls nest from April to late July (Oberholser 1974). Prior to construction activities, a survey for nesting birds would occur within the construction ROW in order to identify and buffer any existing nests. No other mitigation measures would likely be necessary.

4.13 Livestock Grazing

4.13.1 Direct and Indirect Impacts

Impacts to livestock grazing from the proposed work will be minimal. The direct impacts will be the temporary loss of forage and temporary displacement of stock to other areas during the construction activities.

4.13.2 Potential Mitigation

Livestock will be fenced out of the construction workspace or will be moved to other grazing areas prior to construction.

4.14 Cultural Resources

4.14.1 Direct and Indirect Impacts

A Class III cultural resources inventory survey was conducted within the Project area in accordance with Section 106 of the National Historic Preservation Act. No artifacts were found from the Class III pedestrian survey of the Transwestern pipeline route. The Proposed Action would have no negative effects on cultural resources.

4.14.2 Potential Mitigation

No mitigation measures are proposed for the Project area; further investigations are unwarranted.

4.15 Visual Resources

4.15.1 Direct and Indirect Impacts

The Project area is located approximately 28 miles northeast of Carlsbad. The proposed ROW may be visible from Highway 62 following construction only by the temporary lack of vegetation. Since the ROW will be restored to preconstruction contours and allowed to revegetate naturally, little visual impact is expected to occur. The Proposed Action will meet the BLM Visual Resource Management Class IV guidelines.

4.15.2 Potential Mitigation

No mitigation measures are proposed at this time.

4.16 Public Health and Safety

4.16.1 Direct and Indirect Impacts

No direct impacts to public health and safety would occur from the Proposed Action. Increased vehicular traffic would only occur during pipeline construction and would be temporary in nature. The natural gas product within the pipeline would be secure in a maintained system that would be kept to current standards with necessary precautions.

4.16.2 Potential Mitigation

No mitigation measures are proposed at this time.

4.17 Wastes, Hazardous or Solid

4.17.1 Direct and Indirect Impacts

Fuel spills could potentially occur during construction. Such occurrences could result in localized, direct impacts on vegetation and/or wildlife.

4.17.2 Potential Mitigation

Transwestern will utilize its BMPs as well as its *Spill Prevention, Containment, and Countermeasures Plan* (SPCC Plan) that provides procedures for hazardous materials transportation, handling, storage, spill prevention, and spill response to minimize the possibility of any contamination of the Project area.

4.18 Cumulative Impacts

Cumulative impact as defined by the Council on Environmental Quality (CEQ-40 CFR 1508.7) is the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. The installation of the proposed pipeline will result in temporary impacts to local natural resources as discussed in this document. Existing pipelines within the Project area provide good insight as to what will be expected from long-term cumulative impacts. As observed in the field, these existing pipeline corridors have for the most part returned to natural grade, have been reclaimed by native vegetation and support a diversity of wildlife. Obvious long term impacts have been the creation of off-road trails used by vehicles for pipeline inspection and maintenance. If such maintenance is required, it is

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anticipated that construction will be localized resulting in minimizing disturbance. Other potential impacts could result from the promulgation of additional exploration and/or extraction activities which would be transported within the proposed infrastructure. This, however, would be dependent upon consumer demand. Adverse impacts to the environment from this proposed Project are expected to be minimal and would not be considered ecologically detrimental to existing flora or fauna. Mitigation measures provided in this document will help to ensure minimal cumulative impacts over time.

5.0 CONSULTATION/COORDINATION

This section lists individual cultural and natural resource specialists contacted during the development of this document.

Table 5.1 Summary of Public Contacts Made During Preparation of Document and Interdisciplinary Team.

Contact	Title	Agency	Consultation Letter	
			Sent	Received
Dr. George MacDonell	Archaeologist	BLM	6/10/09	6/23/09
Ms. Michelle Ensey	New Mexico State Historic Preservation Officer	DCA	6/10/09	7/7/09
Mr. Robert Gomez	Realty Specialist	BLM	6/5/09	TBD
Ms. Terra Manasco	Assistant Chief of Technical Guidance	NMDGF	6/5/09	7/20/09
Mr. Eddie Tudor	District Forester	NMEM	7/8/09	TBD
Mr. Wally Murphy	Field Supervisor	USFWS	6/5/09	6/23/09

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7.0 APPENDICES

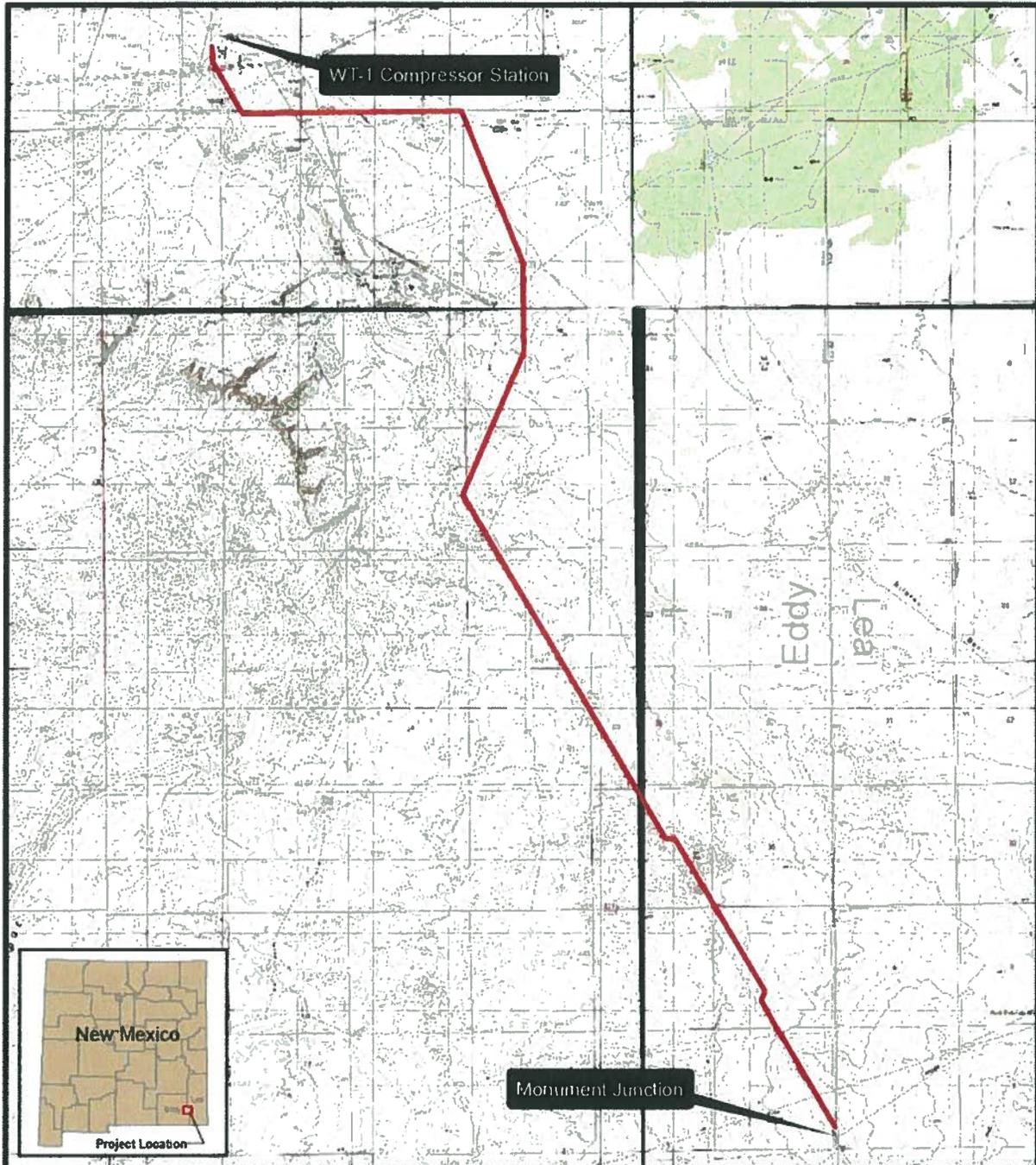
Appendix A. Maps

ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED WEST TEXAS LOOP EXPANSION PROJECT 30-INCH
 NATURAL GAS PIPELINE IN EDDY AND LEA COUNTIES, NEW MEXICO



<p>Prepared For:</p>  <p>Prepared By:</p> 	<p> Proposed Pipeline Route</p> <p>N</p> <p>0 1,000 2,000 Meters</p> <p>0 4,000 8,000 Feet</p>	<p align="center">Appendix A Project Location in Eddy and Lea Counties, New Mexico</p> <table border="1"> <tr> <td>Job: 1256.00</td> <td>Date: July 16, 2009</td> </tr> <tr> <td>Scale: 1 inch = 6,000 feet</td> <td>Drawn By: J. Enright</td> </tr> <tr> <td colspan="2">File: P:\Projects\Energy_Transfer\GIS\Fig_1.mxd</td> </tr> </table>	Job: 1256.00	Date: July 16, 2009	Scale: 1 inch = 6,000 feet	Drawn By: J. Enright	File: P:\Projects\Energy_Transfer\GIS\Fig_1.mxd	
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ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED WEST TEXAS LOOP EXPANSION PROJECT 30-INCH
 NATURAL GAS PIPELINE IN EDDY AND LEA COUNTIES, NEW MEXICO



<p>Prepared For:</p>  <p>Prepared By:</p> 	<p> Proposed Pipeline Route</p> <p>N</p> <p>0 1,000 2,000 Meters</p> <p>0 4,000 8,000 Feet</p>	<p>Appendix A Pipeline Alignment in Eddy and Lea Counties, New Mexico</p> <table border="1"> <tr> <td>Job: 1256.00</td> <td>Date: July 16, 2009</td> </tr> <tr> <td>Scale: 1 inch = 6,000 feet</td> <td>Drawn By: J. Enright</td> </tr> <tr> <td colspan="2">File: P:\Projects\Energy_Transfer\GIS\Fig_1.mxd</td> </tr> </table>	Job: 1256.00	Date: July 16, 2009	Scale: 1 inch = 6,000 feet	Drawn By: J. Enright	File: P:\Projects\Energy_Transfer\GIS\Fig_1.mxd	
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Appendix B. Photos

**WEST TEXAS LOOP EXPANSION PROJECT
PROJECT AREA PHOTOGRAPHS**



Mesquite-Shin Oak



Mesquite-Creosote Bush Shrubland

**WEST TEXAS LOOP EXPANSION PROJECT
PROJECT AREA PHOTOGRAPHS**



Mesquite Grassland



Creosote Bush Flatland