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WPX Energy Production, LLC's Chaco Trunk 3 Extension 2 Project

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1. PURPOSE AND NEED FOR ACTION

1.1. Background

WPX Energy Production, LLC (WPX) has applied for a Right-of-Way (ROW) Grant with the Bureau of Land Management - Farmington Field Office (BLM-FFO) for the Chaco Trunk 3 Extension 2 project. The proposed project includes the Chaco Trunk 3 Extension 2 and Chaco Trunk 3 Extension 4 pipeline corridors. The proposed project is located entirely on public lands managed by the BLM-FFO. The proposed action is the approval of the ROW Grants by the BLM-FFO, located in Farmington, New Mexico.

The 40-foot-wide ROW Grant with the BLM-FFO includes the construction of both the Chaco Trunk 3 Extension 2 and Trunk 3 Extension 4 pipeline corridors. The Chaco Trunk 3 Extension 2 pipeline corridor would be approximately 11,090.97 feet in length and the Chaco Trunk 3 Extension 4 pipeline corridor would be approximately 2,155.79 feet in length, both on BLM-FFO surface. The corridors would contain one 8-inch steel gas/liquids pipeline, one 6-inch steel gas/liquids pipeline, two 4-inch poly gas/liquids pipelines, and one 4-inch poly water pipeline. The pipelines would be laid in two trenches approximately 5 feet apart.

WPX has also applied for five temporary use areas (TUAs) with the BLM-FFO for the construction of the proposed project, three TUA's within the Chaco Trunk 3 Extension 2 pipeline corridor and two within the Chaco Trunk 3 Extension 4 pipeline corridor. The TUAs would total approximately 1.63 acres on public lands managed by the BLM-FFO.

The proposed project area would encompass approximately 13.79 acres, total. Maps of the proposed project area are provided in Appendix A on USGS topographic quadrangle and aerial imagery base maps.

Oil and natural gas, vital components of the nation's energy supply, account for approximately 36 and 25 percent of total energy consumed in the U.S., respectively (U.S. Energy Information Administration 2012).

Natural gas is used in homes, commercially, in industry, and in the transportation sector. Common uses for natural gas include space heating, water heating, cooling, cooking, waste treatment and incineration, metals preheating, drying and humidification, glass melting, food processing, fueling industrial boilers, vehicle fueling, and electricity generation. Gases such as butane, ethane, and propane can be extracted from natural gas to be used for products such as fertilizers and pharmaceuticals. Natural gas can also be used to create methanol, which is utilized in the production of formaldehyde, acetic acid, fuel cell sources, and additives for cleaner burning gasoline (Natural Gas Supply Association 2010). Most oil goes into fuels, including gasoline, jet fuel, and home-heating oil. Additionally, non-fuel compounds extracted from oil are used to develop lubricants; asphalt for roads; tar for roofing; waxes for food wrapping; solvents for paints; cosmetics and dry-cleaning products; plastics; and foams (U.S. Energy Information Administration 2012).

Most of the oil and natural gas found in North America is concentrated in distinct basins. The BLM-FFO management area is within the San Juan Basin, one of the most prolific gas-producing basins in the country. Currently, the San Juan Basin produced small amounts of oil (BLM 2003a).

Taxes and royalties on oil, natural gas, and carbon dioxide production contribute approximately 25 percent of New Mexico's general fund, and the oil and gas industry is one of the largest private sector employers in the state (New Mexico Bureau of Geology and Mineral Resources 2012). Additionally, the federal government receives royalties, or a share of the production income, for extracted federal minerals. In 2011, federal natural gas royalties totaled over 2 billion dollars (Office of Natural Resources Revenue 2012).

1.2. Purpose and Need for Action

The purpose of the proposed action is to provide WPX access to public lands managed by the BLM to build a pipeline gathering system and related facilities.

The need for the proposed action is established by the BLM's responsibility under the Federal Land Policy and Management Act (FLPMA) of 1976 (43 USC 1701 et seq.) to respond to a request for ROW Grants over public lands.

1.3. Decision to be Made

Based on the information in this environmental assessment (EA), the BLM-FFO will decide whether or not to issue the ROW Grants, and if so, under what terms and conditions. Under the National Environmental Policy Act (NEPA) (Public Law [PL] 91-90, 42 USC 4321 et seq.}, the BLM-FFO must determine if there are any significant environmental impacts associated with the proposed action warranting further analysis in an Environmental Impact Statement (EIS). The BLM-FFO Field Manager is the responsible officer who will decide either:

- To approve the ROW Grants with design features as submitted;
- To approve the ROW Grants with additional mitigations;
- To analyze the effects of the proposal in an EIS; or
- To deny the ROW Grants.

1.4. Conformance with Applicable Land Use Plan(s)

Pursuant to 40 Code of Federal Regulations (CFR) 1508.28 and 1502.21, this site-specific EA tiers to and incorporates by reference the information and analysis contained in the Farmington Proposed Resource Management Plan/Final Environmental Impact Statement [(PRMP/FEIS) BLM 2003a). This EA is in conformance with the management goals set forth in the Resource Management Plan (RMP) for the Farmington Field Office (FFO) of the BLM, which was approved by the Record of Decision (ROD) signed September 29, 2003, and updated in December 2003 (BLM 2003b).

Specifically, the proposed action supports the following BLM policy:

> It is the policy of the BLM to make mineral resources available for disposal and to encourage development of mineral resources to meet national, regional, and local needs, consistent with national objectives of an adequate supply of minerals at reasonable market prices. At the same time, the BLM strives to ensure that mineral development is carried out in a manner that minimizes environmental damage and provides for the rehabilitation of affected lands (2003b, 2-2 – 2-3).

The PRMP/FEIS, RMP, and ROD are available for review at the BLM Farmington Field Office, 6251 College Blvd., Suite A, Farmington, NM, or electronically at: http://www.nm.blm.gov/ffo/ffo_home.html.

Development of energy-related ROWs, such as pipelines, is one of the primary activities of the BLM-FFO lands program. Such ROWs receive environmental review on a case-by-case basis (BLM 2003b). As required by NEPA, this EA addresses site-specific resources and effects of the proposed action that were not specifically covered within the PRMP/FEIS.

1.5. Relationship to Statutes, Regulations or Other Plans

1.5.1. Clean Water Act

Recognizing the potential for the continued or accelerated degradation of the Nation's waters, the U.S. Congress enacted the Clean Water Act (CWA), formerly known as the Federal Water Pollution Control Act (33 USC 1344). The objective of the CWA is to maintain and restore the chemical, physical, and biological integrity of the waters of the United States (U.S.). The proposed action is in conformance with the CWA (33 USC 1251 et seq.).

Under Section 401 of the CWA, an applicant for a federal license or permit to conduct an activity that may result in a discharge into a water of the U.S. must provide the federal agency with a Section 401 certification declaring that the discharge would comply with the CWA. The certification would be granted by the New Mexico Environment Department (NMED).

Under Section 402 of the CWA, the U.S. Environmental Protection Agency (EPA) regulates storm water discharges from industrial and construction activities under the National Pollution Discharge Elimination System (NPDES) program. Permits are required if discharge results in a reportable quantity for which notification is required (pursuant to 40 CFR 117.21, 40 CFR 302.6, or 40 CFR 110.6) or if the discharge contributes to a violation of a water quality standard.

Section 404 of the CWA authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredged or fill material into the waters of the U.S., including wetlands. The U.S. Army Corps of Engineers (USAGE) has jurisdiction over "waters of the U.S." These jurisdictional waters include those that have a "significant nexus" to traditional navigable waters. The BLM-FFO and USAGE Durango Regulatory Office have determined that jurisdictional waters may include USGS watercourses (i.e., "blue lines" on USGS 1:24,000 topographic maps). Seven intermittenUephemeral watercourses are located along the proposed pipeline corridor. Two of the seven watercourses have a defined stream channel (i.e., Ordinary High Water Mark) and would thereby likely be subject to regulatory jurisdiction under the USAGE. Assuming the watercourses are jurisdictional, the proposed actions would be authorized under Nationwide Permit No. 12 (Utility Line Activities). The proposed project would be designed to avoid discharge into other watercourses that are potentially USAGE jurisdictional and would not result in the loss of greater than %acre of waters of the U.S.

1.5.2. National Historic Preservation Act

Compliance with Section 106 responsibilities of the National Historic Preservation Act are adhered to by following the BLM – New Mexico SHPO protocol agreement, which is authorized by the *National Programmatic Agreement between the BLM*, the *Advisory Council on Historic Preservation*, and the *National Conference of State Historic Preservation Officers*, and other applicable BLM handbooks.

1.5.3. Clean Air Act

The Clean Air Act of 1972, as amended (CAA; 42 USC 7401 et seq.), establishes national ambient air quality standards (NAAQS) to control air pollution. In New Mexico, the NMED has adopted most of the CAA into the New Mexico Administrative Code (NMAC). The NMED issues construction and operating permits for air quality and enforces air quality regulations and permit conditions.

1.6. Scoping, Public Involvement, and Issues

1.6.1. Scoping and Public Involvement

The BLM-FFO publishes a NEPA log for public inspection. This log contains a list of proposed and approved actions within the BLM-FFO. The log is located on the BLM's New Mexico website (http://www.blm.gov/nm/sUen/prog/planning/nepa_logs.html).

An onsite meeting, attended by WPX, BLM-FFO representatives, and an environmental consultant (Adkins Consulting, Inc. [ACI]), was held for the proposed project on November 20, 2014. The local

chapter of the Navajo Nation was invited to the meeting by the BLM-FFO; no members of the Navajo Nation attended the meeting.

A public invitation to the on-site meetings was posted online (http://www.blm.gov/nm/stlen/fo/Farmington_Field_Office/ffo_oil_and_gas/ffo_onsites.html); no private citizens or groups attended the meetings.

A BLM-FFO Interdisciplinary Team meeting was held on December 8, 2014 to discuss the proposed action. At the aforementioned meetings, potential issues of concern were identified by the BLM-FFO and ACI.

Based on the size and scale, routine nature. and potential impacts associated with the proposed action, no additional external scoping was conducted. No public comments were received for the proposed action.

1.6.2. Issues

Issues Analyzed

The following issues were identified during internal scoping as potential issues of concern for the proposed action. These issues will be addressed in this EA.

- How would the proposed project impact air resources?
- How would surface-disturbing activities associated with construction of the proposed project impact cultural resources?
- How would vegetation-clearing, proposed project activities, and final reclamation associated with the proposed project impact upland vegetation?
- How would vegetation-clearing, proposed project activities, and final reclamation associated with the proposed project impact wildlife, including migratory birds?
- How would vegetation-clearing, proposed project activities, and final reclamation associated with the proposed project impact the following BLM Special Status Species (SSS): Bendire's thrasher *(Toxostoma bendire1),* Brack's hardwall cactus *(Sc/erocactus c/overiae ssp. brackil),* ferruginous hawk *(Buteo regalis),* golden eagle *(Aquila chrysaetos),* pinon jay *(Gymnorhinus cyanocephalus),* and prairie falcon *(Falco mexicanus)?*
- What effects will the proposed action have on environmental justice?
- How would surface-disturbing activities associated with construction of the proposed project impact soils?
- What would be the impacts of the proposed project on noxious weeds and invasive species?

Issues Considered but not Analyzed

The following issues were identified during scoping as issues of concern that would not be impacted by the proposed action or that have been covered by prior environmental review. These issues will not be analyzed in this EA.

Endangered Species Act Species

The Endangered Species Act (ESA) of 1973 requires all federal departments and agencies to conserve threatened, endangered, and critical and sensitive species and the habitats on which they depend, and to consult with the U.S. Fish and Wildlife Service (USFWS) on all actions authorized, funded, or carried out

by the agency to ensure that the action will not likely jeopardize the continued existence of any threatened and endangered species or adversely modify critical habitat. Consultation with the USFWS, as required by Section 7 of the ESA, was conducted as part of the Farmington PRMP/FEIS (Consultation No. 2-22-01-1-389) to address cumulative effects of RMP implementation. The consultation is summarized in Appendix M of the PRMP/FEIS. No unaccounted-for water depletions within USFWS-listed fish habitat would occur as a result of the proposed project. Therefore, there is no need for additional Section 7 consultation.

Paleontology

The San Juan Basin in northwestern New Mexico is rich in paleontological resources. The BLM used the Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands (Instruction Manual 2008-009) to identify areas with a high potential to produce significant fossil resources (BLM 2008d). Under this system, all lands within the BLM-FFO management area were designated as Class 5 (Very High Potential) for paleontological resources.

Class 5 areas require an assessment of paleontological resources at the project level (BLM 2009). If a paleontological site is discovered during the construction phase of the proposed project, the site would be avoided by personnel, personal vehicles, and company equipment. Therefore, no impacts to paleontological resources are anticipated as a result of the proposed project.

2. PROPOSED ACTION AND ALTERNATIVE(S)

2.1. Proposed Action

The proposed action is the BLM-FFO approval of ROW Grants associated with WPX's Chaco Trunk 3 Extension 2 project. The proposed project would include the construction, operation, maintenance, and eventually, the final abandonment of two 40-foot-wide pipeline corridors. The proposed project would commence after the ROW Grants are issued.

WPX proposes to construct the 11,090.97 foot Chaco Trunk 3 Extension 2 pipeline corridor and the 2,155.79 foot Chaco Trunk 3 Extension 4 pipeline corridor both on BLM-FFO surface. Pipeline corridors would contain one 8-inch steel gas/liquids pipeline, one 6-inch steel gas/liquids pipeline, two 4-inch poly gas/liquids pipelines, and one 4-inch poly water pipeline. The pipelines would be laid in two trenches approximately 5 feet apart.

WPX has also applied for five TUAs with the BLM-FFO for the construction of the proposed project. The TUAs are of various sizes and would total approximately 1.63 acres on public lands managed by the BLM-FFO.

2.1.1. Location of Proposed Project area

Maps of the proposed project area are provided in Appendix A on USGS topographic quadrangle and aerial imagery base maps.

The proposed project area is located within Sections 5, 6, 7 and 8, Township 23 North, Range 6 West, New Mexico Principle Meridian (NMPM) in Rio Arriba County within the San Juan Basin of northwest New Mexico. The proposed project area is located approximately 40 miles southeast of Bloomfield, NM and 4 miles northwest of Counselor, NM.

The Chaco Trunk 3 Extension 2 pipeline corridor would begin at the WPX Chaco Trunk 3-2 Central Delivery Point (COP) site in the northwest quarter of the southwest quarter of Section 8 and travel northwesterly, across the eastern edge of Section 7 and then diagonally across Section 6 to the northwest quarter where the pipeline corridor would end in the northwest quarter of Section 6 terminating at the WPX Chaco 2306-060 #176/177H well connect. Three TUAs would be constructed for this pipeline

to expand the ROW area. Two TUA's would be constructed on either side of wash crossing in the northeast quarter of the southeast quarter of Section 7 and the northwest quarter of the southwest quarter of section 8. The third TUA would be constructed for a pipeline crossing at the northwest quarter of the southeast quarter of section 6.

The Chaco Trunk 3 Extension 4 pipeline corridor would begin in the northwest quarter of the southeast quarter of Section 6 then travel northeasterly, across the middle of Section 6 and end at the Chaco 2306-05E #253 well connect in the northwest quarter of the southwest quarter of Section 5. Two TUAs would be constructed for this pipeline to expand the ROW area on either side of the wash crossing in the northeast quarter of the southeast quarter of Section 6 and the northwest quarter of the southwest quarter of section 5.

Terrain along the proposed pipeline route includes gently sloping Sagebrush/Grass Community and previously disturbed areas. The proposed pipeline corridor is roughly situated along southern Escrito Canyon in the USGS-designated Largo watershed. Elevation within the proposed project area ranges from approximately 6,835 to 6,978 feet above mean sea level (AMSL).

The proposed project is in an area that is experiencing increased oil and gas development following advances in horizontal drilling techniques and development of Mancos Shale for liquid (oil) reserves. Several well pads, COP sites, and pipeline gathering systems have been constructed or proposed within and in the vicinity of the proposed project area. Existing and/or previously permitted disturbance overlapped by the proposed project is discussed further in Section 2.1.3 (Proposed Surface Disturbance}, below.

2.1.2. Description of Proposed Project

A detailed description of design features and construction practices associated with the proposed action can be found below. Plats associated with the proposed project are provided in Appendix B and provide additional details. Photographs of the proposed project area are provided in the Surface Reclamation Plan (Appendix D).

Design Features and Best Management Practices

WPX would adhere to the stipulations attached to the approved ROW Grants. The following general design features and best management practices (BMPs) would occur.

Control of Waste

Liquid and solid wastes would be disposed of at an appropriate waste-disposal site. The proposed project area would be maintained in a sanitary condition. Hazardous substances would be handled and disposed of according to federal law. Waste resulting from construction activities would be removed from the proposed project area and disposed of in an authorized area, such as an approved landfill.

Protection of Paleontological Resources

If a paleontological site is discovered, the BLM would be notified and the site would be avoided by personnel, personal vehicles, and company equipment. Workers would be informed that it is illegal to collect, damage, or disturb some such resources, and that such activities are punishable by criminal and/or administrative penalties.

Protection of Cultural Resources

All cultural resource stipulations would be followed as indicated in the Cultural Resource Records of Review, attached to the stipulations in an approved ROW Grant. These stipulations could include, but would not be limited to, temporary or permanent fencing or other physical barriers, monitoring of earth disturbing construction, reduction of the proposed project areas and/or establishment of specific construction avoidance zones, and employee education.

Employees, contractors, and sub-contractors associated with the proposed project would be informed by WPX that cultural sites are to be avoided by personnel, personal vehicles, and company equipment. These individuals would be informed that it is illegal to collect, damage, or disturb cultural resources, and that such activities are punishable by criminal and/or administrative penalties under the provisions of ARPA.

In the event of a cultural discovery during construction, WPX would immediately stop all construction activities in the immediate vicinity of the discovery and immediately notify the archaeological monitor, if present, or the BLM. The BLM would then evaluate or cause the site to be evaluated. Should a discovery be evaluated as significant (e.g., eligible for the National Register of Historic Places [NRHP] or protected under NAGPRA or ARPA), it would be protected in place until mitigating measures could be developed and implemented according to guidelines set by the BLM.

Protection of Flora and Fauna, including Special Status Species and Livestock

Under the Migratory Bird Treaty Act- BLM/FFO Interim Management Policy (IM No. NM-F00-2010-001), timing limitations on use authorizations will be enforced for projects during the nesting period of May 15 to July 31 to avoid or minimize the possibility of the unintentional take of migratory birds. These timing limitations will be enforced for projects during the nesting period of May 15 to July 31 under the following conditions:

- For proposed projects 4.0 acres or more of vegetative disturbance, no construction activities from May 15 to July 31 will be permitted without a migratory bird nest survey. These surveys will be conducted by a BLM/FFO approved biologist using a survey protocol provided by a BLM/FFO biologist. If any active nests are located within the proposed project area, projects activities will not be permitted until written approval by a BLM/FFO biologist. The BLM/FFO will monitor any active nests located from a nest survey.

- The use of prescribed fire and mechanical thinning equipment (i.e. hydromower and tree axe) during this period (5/15-7/31) will be avoided. Exceptions to this policy will be considered where repeated complications due to weather have prevented the attainment of resource objectives through the use of prescribed fire. In these situations a thorough environmental analysis will be prepared assessing the effects of conducting the burn during the restricted period. The decision to proceed or not will be based upon this analysis. It should be noted also that this policy does not apply to natural ignitions in areas that the District Fire Management Plan has designated as a "wildland fire use area" nor does it apply to treatments 4.0 acres or less in size. In addition, should state or national guidance be issued that differs from this policy; the FFO policy will be modified to conform to it.

- Should active nests be observed, the contractor has determined that project activities cannot be avoided until after the birds have fledged (left the nest), and if no practicable or reasonable avoidance alternatives are identified, then the contractor must contact the USFWS's Migratory Bird Permit Office in Albuquerque, NM at (505) 248-7882. The contractor may proceed with work on the affected project activities following receipt of the approved permit from the USFWS.

Should any active raptor nests be observed within one-third mile of the proposed project area or should any additional SSS (listed by the USFWS or BLM) be observed within the proposed project area prior to or during project implementation, construction would cease and the BLM-FFO would be immediately contacted. The BLM-FFO would then ensure evaluation of the resource. Should a discovery be evaluated as significant (protected under the ESA, etc.), it would be protected in place until mitigation could be developed and implemented according to guidelines set by the BLM.

WPX would notify the livestock grazing lease operator(s) at least 10 business days prior to beginning the construction phase of the proposed project in order to ensure that there would be no conflicts between construction activities and livestock grazing operations. The proposed project area is within the Rancho Largo Community Allotment Number 5119 managed by the BLM-FFO. WPX would not cease or delay

construction unless directed by the authorized BLM-FFO officer. If present, any range improvements (e.g., fences, pipelines, and ponds) disturbed by construction activities would be repaired to the condition they were in prior to disturbance. Repairs, if needed, would take place immediately following construction.

The following design features would apply to the proposed project:

- Three livestock ponds found within the PPA would be cleaned out and improved.
- AT-post and flagging will be placed around a survey marker located near the Chaco 2306-05E #253 well site to avoid collisions during construction.
- No more than a half mile of trench, or the amount of trench that could be worked in a day, would be opened at one time.
- Backfilling operations would be performed within a reasonable amount of time to ensure that the trench is not left open for more than 24 hours. If a trench is left open overnight, it will be fenced with a temporary fence or a night watchman will be utilized.
- The ends of the pipe trenches would be sloped (3-to-1) to allow animals to escape.
- The ends of the pipes would be plugged to prevent animals from crawling into the pipe.
- Escape ramps would be constructed every 1,320 feet within an open trench. In areas where livestock are actively grazing, escape ramps would be placed every 500 feet within the open trench. The escape ramps would have a minimum 3-to-1 slope to allow for wildlife and/or livestock to escape the trench.
- Established wildlife and/or livestock trails would be left in place as a crossover. Crossovers would be constructed every 1,320 feet above an open trench, would have a minimum 3-to-1 slope, would be a minimum of 10 feet wide, and would not be fenced.
- Before a trench is closed, the trench would be inspected for wildlife and/or livestock. Any trapped wildlife/livestock would be promptly removed and released at least 150 yards from the trench.
- Livestock fences cut for construction activities will be monitored during construction activities to ensure livestock do not cross boundaries. Temporary fencing will be used when construction crews are not in the immediate vicinity of the cut fence areas.

Protection of Water Resources

The proposed pipeline corridor would cross six ephemeral USGS watercourses in the lower Escrito Wash drainage. WPX would utilize a TUA on either side of the Chaco Trunk 3 Extension 2 pipeline corridor drainage crossing between 12+21.16 and 16+20.47 and on either side of the Chaco Trunk 3 Extension 4 pipeline corridor drainage crossing between 18+87.06 and 20+62.42 to minimize disturbance within the ordinary high water mark (OHWM) of the watercourse. The pipeline construction corridor would be re-contoured to original conditions, as near as possible, and the proposed pipelines would be trenched and buried approximately 6 feet beneath all drainage bottoms. The project would be covered under a U.S. Army Corps of Engineers Nationwide Permit #12 (utility line crossings).

Protection of Topsoil

Topsoil, which would be stripped from the surface of the proposed pipeline corridor during the construction phase of the proposed project, would be stored and protected until it is redistributed during reclamation. The topsoil would be stored separately from subsoil or other excavated material within the proposed project area. The topsoil would be free of brush and tree limbs, trunks, and roots. Vehicle/equipment traffic would not be allowed to cross topsoil stockpiles. The topsoil would be protected using wattles or other BMPs so that erosion is minimized. If topsoil is stored for a length of time such

that

nutrients are depleted from the topsoil, amendments would be added to the topsoil as advised by an appropriate environmental scientist or agent/contractor. Vegetation within the TUAs would be brush-hogged; however, no topsoil-stripping or contouring would take place.

Protection of the Public

The hauling of equipment and materials for the proposed project on public roads would comply with Department of Transportation regulations. No toxic substances would be stored or used within the proposed project area. WPX would have inspectors present during construction. Any accidents involving persons or property would immediately be reported to the BLM-FFO. WPX would notify the public of potential hazards by posting signage, as necessary.

Prevention and Control of Weeds

Prior to construction, equipment entering the proposed project area would be inspected for noxious weeds and cleaned.

It would be WPX's responsibility to monitor, control, and eradicate all invasive, non-native plant species within the proposed project area throughout the life of the project. WPX's weed-control contractor would contact the BLM-FFO regarding acceptable weed-control methods. If the contractor does not hold a current Pesticide Use Permit, a Pesticide Use Permit would be submitted prior to pesticide application. Only pesticides authorized for use on BLM lands would be used. The use of pesticides would comply with federal and state laws. Pesticides would be used only in accordance with their registered use and limitations. WPX's weed-control contractor would contact the BLM-FFO prior to using these chemicals.

Protection of Air Resources

BMPs for dust suppression would be utilized within the proposed project area to reduce fugitive dust during the construction phase of the proposed project. Water application, using a rear-spraying truck or other suitable means, would be the primary method of dust suppression within the proposed project area. Any additional dust-suppression practices would include the BLM-standard BMPs found in the Gold Book (BLM and USFS 2007) and the BMPs outlined in the stipulations attached to the approved ROW Grants.

Additional Design Features and BMPs

Vehicles would be restricted to proposed disturbance areas and existing areas of surface disturbance, such as existing roads and well pads.

Worker safety incidents would be reported to the BLM-FFO as required under Notice to Lessees (NTL) - 3A (USGS 1979). WPX would adhere to company safety policies, Occupational Safety and Health Administration regulations, and Department of Transportation regulations.

WPX would comply with Onshore Oil and Gas Order No. 2, issued under Onshore Oil and Gas Operations (43 CFR 3160).

Construction and maintenance activities would cease when soil or road surfaces become saturated to the extent that construction equipment is unable to stay within the proposed pipeline corridor and/or when activities would cause irreparable harm to roads, soils, or streams.

Erosion-control features, such as waterbars along the proposed pipeline corridor, would be applied as specified by the BLM-FFO Authorized Officer. If waterbars are constructed, the spacing requirements by hillslope grade are provided in Table 1, below. The waterbars would follow the horizontal contour of the hillslope on which they would be placed.

Table 1. Waterbar Spacing Requirements by Percent Grade of Hillslope

Hillslope Percent Grade (%)	Waterbar Spacing (feet)
Less than 1	400

1-5	300
5-15	300
15-25	100

Proposed Project Phases

Under the proposed action, the following phases would occur.

Construction and Installation of Pipelines

The BLM-FFO would be notified at least 48 hours prior to the start of construction. WPX is requesting 20-year terms for the proposed pipeline corridor ROW Grants. The proposed pipelines would be in operation year-round; however, the volume of commodity is not known at this time. Approximately four to six weeks of construction would be required to construct and install the proposed pipelines. Prior to construction commencement, WPX would notify the BLM-FFO of additional types of construction equipment to be used.

Within the proposed pipeline corridor, all vegetation would be cleared and the top 6 inches of topsoil would be salvaged and stockpiled. Vegetation removed during construction, including slash/brush and trees 3 inches and greater in diameter would be chipped or mulched and incorporated into the topsoil as additional organic matter.

WPX would install the proposed pipelines in two trenches approximately 5 feet apart within a granted 40-foot-wide pipeline corridor. Trenching activity would be conducted using a trencher or backhoe. Pipelines would be buried to a minimum depth of 3 feet; however, pipelines would be buried approximately 4 feet deep at road crossings and approximately 6 feet beneath drainage crossings. A trench would be 16 inches in width if a trencher is used or 24 inches in width if a backhoe is used. Soft plugs would be placed within the trench every quarter mile. When stringing pipe, one joint of pipe would be set back every quarter mile.

After a pipe has been welded and coated, a side-boom tractor would be used to place the pipe into a trench. After trenching and pipe placement in a trench, the soils excavated from the trench would be returned and compacted to prevent subsidence. The trenches would be compacted after approximately two feet of fill is placed within a trench and after the ground surface has been leveled.

Additional, related appurtenances, such as above ground valve assembly and above and below ground cathodic protection, would be installed within the proposed pipeline corridor as necessary.

Prior to the pipelines being placed in service, the pipes would be pressure tested.

Within 90 days of installation, any aboveground facilities not subject to safety requirements would be painted Juniper Green to blend with the surrounding landscape and reduce visual resource impacts.

Pipeline markers would be installed along the proposed pipeline corridor within the line of sight, without voiding safety measures. Pipeline markers would be standard yellow Carsonite.

Sediment- and/or erosion-control features would be installed, as necessary. Additional resource protection design features and mitigation associated with construction are listed above, in "Design Features and Best Management Practices".

Interim Reclamation

Following construction, interim reclamation would occur within all new disturbance areas associated with the proposed project. The BLM-FFO would be notified at least 48 hours prior to surface reclamation activities.

During this phase, a bulldozer and a tractor with seeding capabilities would be used for reclamation purposes. Approximately four personnel would be required to conduct interim reclamation.

The entire pipeline corridor would be reclaimed. Slopes would be re-contoured to pre-construction topographical contours, if possible. Additionally, stockpiled topsoil would be redistributed and the surface would be ripped and seeded.

During the November 20, 2014 pre-disturbance onsite meeting, it was determined that the proposed project area lies within BLM-designated Sagebrush/Grass Vegetation Community. Details of the interim reclamation process (including species included in the seed mixtures) are provided in the Surface Reclamation Plan (Appendix D). The BLM-FFO would monitor reclaimed surfaces to document successful interim reclamation; monitoring and reporting are discussed in the Surface Reclamation Plan.

Operation

During the operation phase of the proposed project, WPX personnel would perform routine or emergency maintenance on the proposed pipelines and associated facilities.

Final Reclamation and Abandonment

Once the pipelines are no longer necessary and would not be expected to be utilized in the foreseeable future, they would be abandoned. Relinquishment of the ROW Grants would be carried out under current BLM regulations.

Final reclamation would occur within any portion of the project area (such as locations of aboveground structures) that would be disturbed to bare soil during the abandonment phase of the proposed project, if these areas meet the acreage requirements for reclamation. These acreage requirements are summarized below:

- If final abandonment activities would disturb less than or equal to 0.1 acre to bare soil, the area(s) would be expected to revegetate naturally (no reclamation or monitoring activities will be required).
- If final abandonment activities would disturb more than 0.1 acre to bare soil, final abandonment reclamation activities would be the same as described for interim reclamation (discussed in the Surface Reclamation Plan).

2.1.3. Proposed Surface Disturbance

The proposed project area would encompass approximately 13.79 acres, total. Of this, approximately 9.37 acres would be considered new surface disturbance. This includes approximately 6.38 acres for the Chaco Trunk 3 Extension 2 pipeline system and 1.36 acres for the Chaco Trunk 3 Extension 4 pipeline system. Combined TUA disturbance would total approximately 1.63 acres.

All new surface disturbances associated with the pipeline corridors and TUAs would be reclaimed. Any additional disturbance associated with the final abandonment phase of the proposed project would be reclaimed during final reclamation, if these areas meet the acreage requirements for reclamation.

Surface disturbance associated with the proposed project is described in detail in Table 2, below. Depictions of the surface-disturbing activity locations are provided in Appendices A (Maps) and B (Plats).

Table 2. Proposed Project Surface Impacts

Surface Disturbance Description (Approximate Station in 2)	Existing/Previously Permitted Surface Disturbance	New Surface Disturbance
Chaco Trunk 3 Extension 2 Pipeline Corridor		
0+00 to 20+66.95 (parallels WFC Lateral T-4)	2067' long x 15' wide (0.71 I acre)	2067' long x 25" wide (1.186 acre)

20+66.95 to 21+08.76 (cross-country pipeline construction)	-	41.81' long x 40' wide (0.038 acre)
21+08.76 to 110+90.97 (parallels resource road)	8,982' long x 15' wide (3.093 acre)	8,982' long x 25' wide (5.155 acre)
Subtotal	3.803 acres	6.379 acres
Temporary Use Areas		
TUA#I	-	1.031
TUA #2	-	0.292
TUA #3	-	0.062
Subtotal	-	1.385
Chaco Trunk 3 Extension 4 Pipeline Corridor		
0+00 to 3+78.49 (cross-country pipeline construction)	-	378" long x 40" wide (0.347 acres)
3+78.49 to 21+49.66 (parallel resource road)	1771' long x 15' wide (0.610 acres)	1771' long x 25' wide (l.O16 acres)
21+49.66 to 21+55.79 (cross resource road)	6.13' long x 40' wide (0.006 acres)	-
Subtotal	0.616 acres	1.363 acres
TemJ>orary Use Areas		
TUA#I	-	0.139
TUA #2	-	0.108
Subtotal	-	0.247
Total Project Surface Disturbance	4.419 acres	9.374 acres

2.2. No Action

Under the No Action Alternative, the ROW Grants associated with the proposed Chaco Trunk 3 Extension 2 project would not be approved. The proposed pipelines would not be installed. Current land and resource uses would continue to occur in the proposed project area.

2.3. Alternatives Considered but Eliminated from Detailed Study

No reasonable alternatives to the proposed action have been developed that would result in significantly fewer impacts or any clear advantages over the proposed action. The proposed pipeline corridor follows the most economic and direct route based on the location of existing WPX infrastructure, existing disturbance, and surface resources.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the environment that would be affected by implementation of the alternatives described in Chapter 2. Aspects of the affected environment described in this chapter focus on the relevant major resources or issues. Certain critical environmental components require analysis under BLM policy. These items are included above in Section 1.6.2.

Under the No Action alternative, current land and resource issues within the proposed project area would continue; there would be no new impacts from oil and gas development. The No Action alternative will

serve as the baseline for comparing the environmental impacts of the analyzed alternatives, and will not be further evaluated in this EA (BLM 2008b).

3.1. Air Resources

3.1.1. Affected Environment

The proposed project is located in Rio Arriba County, New Mexico. Additional general information on air quality in the area is contained in Chapter 3 of the Farmington PRMP/FEIS. In addition, new information about greenhouse gases (GHGs), and their effects on national and global climate conditions has emerged since this document was prepared. On-going scientific research has identified the potential impacts of GHG emissions such as carbon dioxide (CO_2) methane (CH_4); nitrous oxide (N_2O); water vapor; and several trace gases on global climate. Through complex interactions on a global scale, GHG emissions may cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by the earth back into space. Although GHG levels have varied for millennia (along with corresponding variations in climatic conditions), industrialization and burning of fossil carbon sources have caused GHG concentrations to increase measurably, and may contribute to overall climatic changes, typically referred to as global warming.

Much of the information referenced in this section is incorporated from the Air Resources Technical Report for BLM Oil and Gas Development in New Mexico, Kansas, Oklahoma, and Texas (herein referred to as Air Resources Technical Report) (U.S. Department of Interior Bureau of Land Management, 2014). This document summarizes the technical information related to air resources and climate change associated with oil and gas development and the methodology and assumptions used for analysis.

The Environmental Protection Agency (EPA) has the primary responsibility for regulating air quality, including six nationally regulated ambient air pollutants (criteria pollutants). These criteria pollutants include carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), sulfur dioxide (SO_2) and lead (Pb). EPA has established National Ambient Air Quality Standards (NAAQS) for criteria air pollutants. The NAAQS are protective of human health and the environment. EPA has approved New Mexico's State Implementation Plan and the state enforces state and federal air quality regulations on all public and private lands within the state, except for tribal lands and within Bernalillo County. Air quality is determined by atmospheric pollutants and chemistry, dispersion meteorology and terrain, and also includes applications of noise, smoke management, and visibility. Climate is the composite of generally prevailing weather conditions of a particular region throughout the year, averaged over a series of years. EPA has proposed or completed actions recently to implement Clean Air Act requirements for greenhouse gas emissions. Climate has the potential to influence renewable and non- renewable resource management.

Air Quality

The Air Resources Technical Report describes the types of data used for description of the existing conditions of criteria pollutants, how the criteria pollutants are related to the activities involved in oil and gas development, and provides a table of current National and state standards. EPA's Green Book web page (U.S. Environmental Protection Agency, 2013) reports that all counties in the Farmington Field Office area are in attainment of all National Ambient Air Quality Standards (NAAQS) as defined by the Clean Air Act. The area is also in attainment of all state air quality standards (NMAAQS). The current status of criteria pollutant levels in the Farmington Field Office are described below. Total emissions of criteria pollutants from each source sector were calculated by adding together the emissions from the four counties that are located in FFO: San Juan, McKinley, Rio Arriba, and Sandoval.

"Design Concentrations" are the concentrations of air pollution at a specific monitoring site that can be compared to the NAAQS. The 2012 design concentrations of criteria pollutants are listed below in Table 3. There is no monitoring for CO and lead in San Juan County, but because the county is relatively rural, it is likely that these pollutants are not elevated. PM10 design concentrations are not available for San Juan County.

Table 3. Criteria Pollutant Monitored Values in San Juan County (U.S. Environmental Protection Agency, 2014)

Pollutant	2012 Design Concentration	Averaging Time	NAAQS	NMAAQS
O3	0.071 ppm	8-hour	0.075 ppm'	
N02	13 ppb	Annual	53 ppb	50 ppb
N02	38 ppb	!-hour	100 ppbj	
PM2s	4.7 Jlg/m▼	Annual	12 Jlg/m'·q	60 Jlg/m'·°
PM2s	14 Jlg/m▼	24 hour	35 l!g/m!▼	150 f.Lg/mJ.o
so2	19 ppb	!-hour	75 ppb)	

Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
[2] Not to be exceeded during the year
[3] 98th percentile, averaged over 3 years
[4] Annual mean, averaged 0\·er 3 years
[5] 99'h percen tile of !-hour daily maximum concentrations, averaged over 3 years
[6] The NMAAQS is for Total Suspended Particulate (TSP)

In 2005, the EPA estimates that there was less than 0.01 ton per square mile of lead emitted in FFO counties, which is less than 2 tons total (U.S. Environmental Protection Agency, 2012). Lead emissions are not an issue in this area, and will not be discussed further.

Air quality in a given region can be measured by its Air Quality Index value. The air quality index (AQI) is reported according to a 500-point scale for each of the major criteria air pollutants, with the worst denominator determining the ranking. For example, if an area has a CO value of 132 on a given day and all other pollutants are below 50, the AQI for that day would be 132. The AQI scale breaks down into six categories: good (AQI<SO), moderate (50-100), unhealthy for sensitive groups (100-150), unhealthy (>150), very unhealthy and hazardous. The AQI is a national index, the air quality rating and the associated level of health concern is the same everywhere in the country. The AQI is an important indicator for populations sensitive to air quality changes.

Mean AQI values for San Juan County were generally in the good range (AQI<SO) in 2013 with 80% of the days in that range. The median AQI in 2013 was 42, which indicates "good" air quality. The maximum AQI in 2013 was 156, which is "unhealthy".

Although the AQI in the region has reached the level considered unhealthy for sensitive groups on several days almost every year in the last decade, there are no patterns or trends to the occurrences (Table 4). On 8 days in the past decade, air quality has reached the level of "unhealthy" and on two days, air quality reached the level of "very unhealthy". In 2009 and 2012, there were no days that were "unhealthy for sensitive groups" or worse in air quality. In 2005 and 2013, there was one day that was "unhealthy" during each year. In 2010, there were five "unhealthy" days and two "very unhealthy days".

Table 4. Number of Days classified as "unhealthy for sensitive groups" (AQI 101-150) or worse (U.S. Environmental Protection Agency, 2013a)

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Days	3	6	9	18	1	0	12	9	0	1

Hazardous Air Pollutants

The Air Resources Technical Report discusses the relevance of hazardous air pollutants (HAPs) to oil and gas development and the particular HAPs that are regulated in relation to these activities (U.S. Department of Interior Bureau of Land Management, 2014). The EPA conducts a periodic National Air Taxies Assessment (NATA) that quantifies HAP emissions by county in the U.S. The purpose of the NATA is to identify areas where HAP emissions result in high health risks and further emissions reduction strategies are necessary. A review of the results of the 2005 NATA shows that cancer, neurological and respiratory risks in San Juan County are generally lower than statewide and national levels as well as

those for Bernalillo County where urban sources are concentrated in the Albuquerque area (U.S. Environmental Protection Agency, 2012).

Climate

The planning area is located in a semiarid climate regime typified by dry windy conditions and limited rainfall. Summer maximum temperatures are generally in the 80s or 90s (Fahrenheit) and winter minimum temperatures are generally in the teens to 20s. Temperatures occasionally reach above 100 °F in June and July and have dipped below zero in December and January. Precipitation is divided between summer thunderstorms associated with the Southwest Monsoon and winter snowfall as Pacific weather systems drop south into New Mexico.

Table 5. Climate Normals for the Farmington Area, 1981-2010

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Precip (inches)	0.68	0.63	0.62	0.63	0.48	0.51	1.37	1.36	1.15	0.81	0.71	0.67
Min. Temp. (F)	13.4	19.1	23.8	30.4	38.9	47.7	55.6	53.9	45.0	32.3	21.3	14.2
Avg. Temp. {F)	28.5	34.1	40.9	48.5	57.8	67.0	72.7	70.4	62.6	50.2	37.9	29.1
Mu. Temp. {F)	43.6	49.1	58.0	66.7	76.7	86.3	89.8	86.9	80.3	68.1	54.5	44.0

The Air Resources Technical Report summarizes information about greenhouse gas emissions from oil and gas development and their effects on national and global climate conditions. While it is difficult to determine the spatial and temporal variability and change of climatic conditions; what is known is that increasing concentrations of GHGs are likely to accelerate the rate of climate change.

3.1.2. Direct and Indirect Impacts

Air quality would temporary be directly impacted with pollution from exhaust emissions and dust. Air pollution from the motorized equipment and dust dissemination would discontinue at the completion of the project. Other factors that currently affect air quality in the area include dust from livestock herding activities, dust from recreational use, dust from use of roads for vehicular traffic, and emissions from oil and gas production activities. Impacts to air quality attributable to this project would be temporary and minor.

Cumulative Impacts

The FFO manages Federal hydrocarbon resources in San Juan, Sandoval, Rio Arriba, and McKinley Counties. There are approximately 21,150 wells in the San Juan Basin. About 14,843 of the wells in these counties are Federal wells. Analysis of cumulative impacts for reasonable development scenarios and RFDS of oil and gas wells on public lands in the FFO was presented in the 2003 RMP. This included modeling of impacts on air quality. A more detailed discussion of Cumulative Effects can be found in the Air Resources Technical Report (U.S. Department of Interior Bureau of Land Management, 2014).

The primary activities that contribute to levels of air pollutant and GHG emissions in the Four Corners area are electricity generation stations, fossil fuel industries, and vehicle travel. The Air Quality Technical Report includes a description of the varied sources of national and regional emissions that are incorporated here to represent the past, present, and reasonably foreseeable impacts to air resources (U.S. Department of Interior Bureau of Land Management, 2014). It includes a summary of emissions on the national and regional scale by industry source. Sources that are considered to have notable

contributions to air quality impacts and GHG emissions include electrical generating units, fossil fuel production (nationally and regionally), and transportation.

The proposed project could result in a very small direct and indirect increase in several criteria pollutants, HAPs, and GHGs as a result the short term construction activity. The very small increase in emissions from short term construction activity would not be expected to result in exceeding the NAAQS for any criteria pollutants in the analysis area.

The very small increase in GHG emissions that could result from implementing the proposed alternative would not produce climate change impacts that differ from the No Action Alternative. This is because climate change is a global process that is impacted by the sum total of GHGs in the Earth's atmosphere. The incremental contribution to global GHGs from the action alternatives cannot be translated into effects on climate change globally or in the area of this site-specific action. It is currently not feasible to predict with certainty the net impacts from the action alternatives on global or regional climate.

The Air Resources Technical Report (U.S. Department of Interior Bureau of Land Management, 2014) discusses the relationship of past, present, and future predicted emissions to climate change and the limitations in predicting local and regional impacts related to emissions. It is currently not feasible to know with certainty the net impacts from particular emissions associated with activities on public lands.

3.2. Cultural Resources

3.2.1. Affected Environment

The proposed project is located within the archaeologically rich San Juan Basin of northwest New Mexico. In general, the history of the San Juan Basin can be divided into five major periods: PaleoIndian (ca. 10000 B.C. to 5500 B.C.), Archaic (ca. 5500 B.C. to A.D. 400), Basketmaker 11-111 and Pueblo I-IV periods (aka Anasazi; A.D. 1-1540), and the historic (A.D. 1540 to present), which includes Native American as well as later Hispanic and Euro-American settlers. Detailed descriptions of these various periods are provided in the Bureau of Land Management Farmington Field Office Final Environmental Impact Statement (2003) and will not be reiterated here. Additional information can also be found in an associated documented, Cultural Resources Technical Report (CRTR; SAIC 2002).

Cultural sites vary considerably, and can include but are not limited to simple artifact scatters, domiciles of various types with a myriad of associated features, rock art and inscriptions, ceremonial/religious features, and roads and trails. Traditional Cultural Properties (TCPs; Parker and King 1998) are a separate class of cultural resources and are places that have cultural values that transcend, for instance, the values of scientific importance that are normally ascribed to cultural resources such as archaeological sites, and may or may not coincide with archaeological sites.

For the proposed action, identification efforts for Native American Religious Concerns were limited to a review of existing published and unpublished literature (e.g., Van Valkenburgh 1941, 1974; Brugge 1993; Kelly, et al. 2006), development of the site-specific Class III survey report prepared for the proposed action, and a review by the BLM's cultural resources program regarding the presence of Traditional Cultural Properties (TCPs) identified through ongoing BLM tribal consultation efforts.

The entire Area of Potential Effect (APE) for the Proposed Action was archaeologically surveyed by LAC at a BLM Class III (100-percent) level. The archaeological report, LAC Report 2014-6o (Fuller, Sesler and Hovezak 2014), was prepared and submitted to the BLM in accordance with the *Procedures for Performing Cultural Resources Fieldwork on Public Lands in the Area of New Mexico BLM Responsibilities* (BLM 2005).

During the Class III survey, a total of five new archaeological sites were found and recorded and one previously recorded site was updated within the APE (LAC Report 2014-6o (Fuller, Sesler and Hovezak 2014]); BLM Report 2014(111) 044.1F). Two isolated occurrences were also documented during the

survey. Of these five sites, one is recommended as eligible for the NRHP and four are recommended as eligible for NRHP based on further data potential.

3.2.2. Impacts from the Proposed Action

Direct and Indirect Impacts

Direct impacts normally include alterations to the physical integrity of a cultural site. If a cultural site is significant for other than its scientific information, direct impacts may also include the introduction of audible, atmospheric, or visual elements that are out of character for the cultural site. A potential indirect impact from the proposed action is the increase in human activity or access to the area with the increased potential of unauthorized removal or other alteration to cultural sites in the area.

Significant cultural sites (e.g. NRHP eligible/listed) are being avoided with the implementation of design features such as but not limited to reduction of construction areas, temporary barriers, and site monitoring. These design features would be detailed in a Cultural Resource Record of Review, attached to the COAs in an approved ROW Grant. The proposed action is not known to physically threaten any TCPs, prevent access to sacred sites, prevent the possession of sacred objects, or interfere or otherwise hinder the performance of traditional ceremonies/rituals. The proposed action will have no direct or indirect impact on significant cultural sites (no historic properties affected).

Cumulative Impacts

There will be no negative cumulative impact on cultural resources as significant cultural sites are being avoided. A positive cumulative effect is the additional scientific information yielded by the archaeological survey.

3.3. Upland Vegetat on

3.3.1. Affected Environment

The analysis area is located within the United States Environmental Protection Agency (USEPA) designated Arizona/New Mexico Plateau Level III ecoregion. The Arizona/New Mexico Plateau occurs primarily in Arizona, Colorado, and New Mexico, with a small portion in Nevada. This ecoregion is approximately 45,870,500 acres (185,632 square kilometers [km^2]), and the elevation ranges from 2,165 to 11,949 feet (660 to 3,642 meters) AMSL. The ecoregion's landscapes include low mountains, hills, mesas, foothills, irregular plains, alkaline basins, some sand dunes, and wetlands. This ecoregion is a large transitional region between the semiarid grasslands to the east, the drier shrublands and woodlands to the north, and the lower, hotter, less vegetated areas to the west and south. Vegetation communities include shrublands with big sagebrush, rabbitbrush, winterfat, shadscale saltbush, and greasewood; and grasslands of blue grama, western wheatgrass, green needlegrass, and needle-and-thread grass. Higher elevations may support pinon pine and juniper woodlands. The ecoregion includes the urban areas of Santa Fe and Albuquerque. Important land uses include irrigated farming, recreation, rangeland, wildlife habitat, and oil and natural gas production.

The general region surrounding the proposed project area is characterized by minimally to moderately vegetated sagebrush shrubland valleys, and wooded mesas. The proposed project including the majority of Chaco Trunk 3 Extension 2 and all of Chaco Trunk 3 Extension 4 and associated TUAs lie within Sagebrush/Grass Community and previously disturbed areas. The analysis area consists of minimally to relatively dense cover of big sagebrush *(Seriphidium tridentatum)*, blue grama *(Bouteloua gracilis)*, galleta *(Pieuraphis jamesit)*, Indian ricegrass *(Achnatherum* hymenoides), rabbitbrush *(Chrysothamnus* sp.), and to a lesser degree alkali sacaton *(Sporobolus airoides)*, broom snakeweed *(Gutierrezia sarothrae)*, greasewood *(Sarcobatus vermiculatus)*, New Mexican prickly pear cactus *(Opuntia phaeacantha)* and yucca *(Yucca angustissima)*.

A small portion of Chaco Trunk 3 Extension 2 lies within Pinon / Juniper Community with dense cover of Utah Juniper *(Sabina osteosperma)*, blue gramma galleta, Indian ricegrass and to a lesser degree New Mexican prickly pear cactus, pinon pine *(Pinus edulis)*, and yucca *(Yucca angustissima)*.

3.3.2. Impacts from the Proposed Action

Direct and Indirect Impacts

Within the proposed pipeline corridors and TUAs, all vegetation would be cleared. The proposed project would result in the direct removal of approximately 9.25 acres of Sagebrush/Grass Community and 0.12 acres of Pinon-Juniper Community. Vegetation removed during construction, including slash/brush and trees 3 inches and greater in diameter, would be chipped or mulched and incorporated into the topsoil as additional organic matter.

During interim reclamation, the appropriate BLM-approved seed mixtures would be utilized. The species included in these mixtures are listed in the Surface Reclamation Plan (Appendix D). Reestablished vegetation would consist of native grass, forb, and shrub species included in the seed mixtures, as well as native species that are not deliberately planted. It is also possible that invasive, nonnative species could become established within the proposed project area, as such species could be transported by project equipment and tend to thrive in disturbed areas. Following the interim reclamation process, the resulting vegetation communities could differ from the native plant communities surrounding the proposed project area. Within reclaimed areas, it is not expected that the vegetation communities would return to native conditions within 20 years (BLM 2003a, 4-18).

During final reclamation, WPX would fully reclaim any portions of the proposed project that would be disturbed to bare soil as a result of final abandonment earthwork activities (if such areas total greater than 0.1 acre).

The deposition of fugitive dust generated during vegetation-clearing activities and during wind events could reduce photosynthesis and productivity of the surrounding vegetation (Thompson, et al. 1984; Hirano, et al. 1995), increase water loss in plants near the proposed project area (Eveling and Bataille 1984), and result in injury to leaves of surrounding vegetation.

Cumulative Impacts

The spatial analysis area is the proposed project area and immediately adjacent lands. Within the spatial analysis area, the following vegetative disturbances have occurred or are anticipated to occur in the reasonably foreseeable future:

- WPX Chaco Trunk 3-2 COP facility
- WFC Lateral T-4 Pipeline
- WPX Chaco 2306-060 No. 176/177H well site
- WPX Chaco 2306-05E #253H
- Elm Ridge Marcus A-1 well site
- Elm Ridge Marcus #2 well site
- Beeline Pipeline
- Exposed surface PVC pipeline
- Maintained resource road

- Active wildlife and livestock grazing occurs in the area. The proposed action is located within the Rancho Largo Allotment Number 5119.

Indirectly, fugitive dust or deposition associated with existing roads, well pads, utility corridors, and public use in the immediate area could impact the vegetation within the analysis area, and could continue to do so throughout the life of the proposed project. Aside from those discussed above, no additional impacts to vegetation are expected within the analysis area for the reasonably foreseeable future.

The proposed project would contribute to direct and indirect vegetation disturbance and fugitive dust and/or deposition within the spatial analysis area.

3.4. Wildlife

3.4.1. Affected Environment

Migratory Birds

Executive Order 13186 dated January 17, 2001 calls for increased efforts to more fully implement the Migratory Bird treaty Act of 1918. In keeping with this mandate, the BLM/FFO has issued an interim policy to minimize unintentional take as defined by the EO 13186 and to better optimize migratory bird efforts related to BLM/FFO activities (BLM 2010). In keeping with this policy, a list of priority birds of conservation concern which occur in similar eco-regions as the proposed action area was compiled through a review of existing bird conservation plans including:

- Fish and Wildlife Service (USFWS) Birds of Conservation Concern (BCC)
- New Mexico Partners in Flight (NMPIF) New Mexico Bird Conservation Plan
- Comprehensive Wildlife Conservation Strategy for New Mexico (CWCS)
- Gray Vireo Recovery Plan
- The North American Waterbird Conservation Plan
- Recovery plans and conservation plans/strategies prepared for federally-listed candidate species.

General Wildlife

The analysis area is located within the Sagebrush/Grass Community. Terrestrial wildlife encountered within these habitat types may include American badger *(Taxidea taxus),* black-tailed jackrabbit *(Lepus califomicus),* common gray fox *(Urocyon cinereoargenteus),* cottontail rabbit *(Sylvilagus* sp.}, coyote *(Canis latrans},* deer mouse *(Peromyscus maniculatus),* kit fox *(Vulpes velox},* mule deer *(Odocoileus hemionus},* Rocky Mountain elk *(Cervus elaphus),* and various squirrels *(Spermophilus* sp.) and reptiles (snakes and lizards). Terrestrial wildlife or signs observed in the analysis area included cottontail rabbit, and mule deer.

Prior to the November 20th, 2014 biological survey of the proposed project area, no prairie dog colonies had been recorded within the proposed project area (BLM 2012b).

3.4.2. Impacts from the Proposed Action

Direct and Indirect Impacts

The proposed project would result in the direct removal of approximately 9.25 acres of Sagebrush/Grass Community and 0.12 acres of Pinon-Juniper Community. All new surface disturbance within the proposed pipeline corridor would be reclaimed. The proposed project area would be converted to a reseed

community following interim reclamation. The impacts to the vegetation communities are described in detail in Section 3.3 (Upland Vegetation).

There is available, similar habitat in the surrounding area that avian and terrestrial wildlife could utilize. However, the clearing of vegetation and ground disturbing activities would remove potential habitat. The transformation of the proposed project area to a reseed community could remove potential habitat for numerous wildlife species.

If interim reclamation is successful the Sagebrush/Grass Community would become re-established within the proposed project area. However, as discussed in Section 3.3 (Upland Vegetation), there-establishment of a mature, native plant community could require decades, and it is possible that the plant community could never fully recover from disturbance (BLM 2003a, 4-18).

Audial and visual disturbances associated with the proposed project could temporarily deter wildlife (including migratory birds) from utilizing the proposed project area and immediately adjacent lands.

Migratory Birds

As discussed in Section 2.1.2 (Description of Proposed Project- Protection of Flora and Fauna, Including SSS and Livestock), under the Migratory Bird Treaty Act- BLM/FFO Interim Management Policy (IM No. NM-F00-2010-001), timing limitations on use authorizations will be enforced for projects during the nesting period of May 15 to July 31 to avoid or minimize the possibility of the unintentional take of migratory birds. If proposed project activities would occur during the migratory bird breeding season, birds nesting outside of but near the proposed project area could abandon existing nests as a result of visual and audial disturbances.

General Wildlife

It is possible that burrowing animals could be killed or injured during the construction phase of the proposed project, as equipment digs into the earth and rolls over the surface of the ground. During the construction phase of the proposed project, terrestrial wildlife could fall into an open pipeline trench and be injured, stressed, or killed. The presence of an open trench could also disrupt normal wildlife movements to and from water and/or food sources. Wildlife could have to skirt the open-trench portions of the proposed pipeline corridor to access water and/or food; this disruption could stress wildlife and result in the loss of valuable energy resources. As discussed in Section 2.1.2 (Description of Proposed Project- Protection of Flora and Fauna, Including SSS and Livestock), design features and BMPs would be implemented during the construction phase of the proposed project to assist in the prevention of injury, stress, or death of wildlife.

Cumulative Impacts

The proposed project is within the southern end of Escrito Canyon, which is located with the Largo watershed. Reasonably foreseeable development within the Largo sub-watershed may include an estimated additional 1,811 oil and gas wells and related facilities, and 147 miles of new roads. Surface-disturbing activities that would be associated with these actions may affect an estimated 6,756 acres (USDIIBLM 2003a, page 4-7 and 4-8). Other reasonably foreseeable actions such as continued livestock grazing, vegetation treatments, and community development would cumulatively impact wildlife, including migratory birds, through direct and effective habitat loss. The proposed action would contribute to the direct loss of approximately 9.37 acres of potential wildlife habitat. The intensity of indirect effects would be dependent upon the species, its life history, time of year and/or day and the type and level of human and vehicular activity occurring.

3.5. Special Status Species

3.5.1. Affected Environment

The BLM manages certain species which are not federally listed as threatened or endangered in order to prevent or reduce the need to list them as threatened or endangered in the future. BLM SSS include BLM Sensitive Species and BLM-FFO Special Management Species (SMS).

New Mexico BLM State Directors have developed a list of BLM Sensitive Species for the State of New Mexico (BLM 2011a, BLM 2011b, BLM 2011c, BLM 2012a).In accordance with BLM Manual6840, the BLM-FFO has prepared a list of BLM-FFO SMS to focus species management efforts toward maintaining habitats under a multiple-use mandate (BLM 2008a, BLM 2008c). BLM-FFO SMS include some BLM Sensitive Species and other species for which the BLM-FFO has determined special management is appropriate (BLM 2008c). The authority for this policy and guidance is established by the ESA; Title II of the Sikes Act, as amended (16 USC 670a-670o, 74 Stat. 1052); FLPMA; and Department of Interior Manuai235.1.1A.

It was determined that the following BLM-FFO Sensitive Species and SMS species have the potential to occur or are known to occur within the proposed project area:

- **Bendire's thrasher**: Potential habitat is available within the proposed project area. The proposed project area contains approximately 9.25 acres of Sagebrush Community.
- **Ferruginous hawk:** Potential foraging and nesting habitat is available within the proposed project area.
- **Golden eagle**: Potential foraging and nesting habitat is available within the proposed project area.
- **Piflon Jay**: Potential habitat is available within the proposed project area. The proposed project area contains approximately 0.12 acres of Pinon-Juniper Community.
- **Prairie falcon**: Potential foraging and nesting habitat is available within the proposed project area.

3.5.2. Impacts from the Proposed Action

Direct and Indirect Impacts

The proposed project would result in the direct removal of approximately 9.37 acres of Sagebrush/Grass Community and 0.12 acres of Pinon-Juniper Community.

The proposed project area would be converted to a reseed community following interim reclamation. The impacts to the vegetation communities are described in detail in Section 3.3 (Upland Vegetation).

Discussed in Section 2.1.2 (Description of Proposed Project- Protection of Flora and Fauna, Including SSS and Livestock), under the Migratory Bird Treaty Act- BLM/FFO Interim Management Policy (IM No. NM-F00-2010-001), timing limitations on use authorizations will be enforced for projects during the nesting period of May 15 to July 31 to avoid or minimize the possibility of the unintentional take of migratory birds.

There is available, similar habitat in the surrounding area that special status wildlife species could utilize. However, the clearing of vegetation and ground disturbing activities would remove potential habitat. The transformation of the proposed project area to reseed communities would remove potential habitat for Bendire's thrasher, ferruginous hawk, golden eagle, pinon jay, and prairie falcon.

If interim reclamation is successful, native vegetation communities would become re-established within the proposed project area. However, as discussed in Section 3.3 (Upland Vegetation), the re-

establishment of a mature, native plant community could require decades, and it is possible that the plant community could never fully recover from disturbance (BLM 2003a, 4-18).

Audial and visual disturbances associated with the proposed project could temporarily deter SSS from utilizing the proposed project area and immediately adjacent lands.

Cumulative Impacts

The FFO would continue to manage non-federally listed species according to BLM policies and guidelines, with the goal of contributing to the conservation of these species to reduce the potential for being listed under the ESA of 1973, as amended (USDI/BLM 2003a, 4-111). For reasonably foreseeable actions on federal lands, direct impacts to SSS would be avoided through the BLM's siting criteria. Development on federal and private land would result in the removal or modification of potential SSS habitat. These effects would be related to availability of undisturbed habitat in the area and the amount of disturbance that would occur within the area. The PRMP/FEIS determined that cumulatively up to 5.5 percent (128,000 acres) of vegetation in the planning area could be impacted by oil and gas development (USDI/BLM 2003a, page 4-125). Other reasonably foreseeable actions within the planning area that could impact SSS would include livestock grazing, agriculture, commercial and residential development, mining, wildfire, and vegetation management.

3.6. Environmental Justice

3.6.1. Affected Environment

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations, requires that federal agencies identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations.

Environmental justice refers to the fair treatment and meaningful involvement of people of all races, cultures, and incomes with respect to the development, implementation, and enforcement of environmental laws, regulations, programs, and policies. It focuses on environmental hazards and human health to avoid disproportionately high and adverse human health or environmental effects on minority and low-income populations.

Guidance on environmental justice terminology developed by the President's Council on Environmental Quality (CEQ 1997) is discussed below.

- Low-income population. A low-income population is determined based on annual statistical poverty thresholds developed by the US Census Bureau. In 2012, poverty level is based on total income of $11,720 for an individual and $23,283 for a family of four (US Census Bureau 2012d). A low-income community may include either a group of individuals living in geographic proximity to one another or dispersed individuals, such as migrant workers or Native Americans.
- Minority. Minorities are individuals who are members of the following population groups: American Indian, Alaskan Native, Asian, Pacific Islander, Black, or Hispanic.
- Minority population area. A minority population area is so defined if either the aggregate population of all minority groups combined exceeds 50 percent of the total population in the area or if the percentage of the population in the area comprising all minority groups is meaningfully greater than the minority population percentage in the broader region. Like a low-income population, a minority population may include either individuals living in geographic proximity to one another or dispersed individuals.
- Comparison population. For the purpose of identifying a minority population or a low-income population concentration, the comparison population used in this study is the state of New Mexico as a whole

Low-income Populations

Income and poverty data estimates for study area counties from the US Census Small Area Poverty Estimates model indicate that the percent of the population living below the poverty level in the socioeconomic study area as a whole is slightly above that of the state (21.3 percent and 20.6 percent), but it is much higher than the national average of 12.1 percent (Table 6). Poverty levels ranged from 37.7 percent in McKinley County to 13.7 percent in San Juan County. Only that of Sandoval County was below the state average.

Table 6. Study Area County Population in Poverty (2002-2012)

	McKinley County	Rio Arriba County	Sandoval County	San Juan County	Study Area Total	New Mexico	United States
Percent of Population in Poverty 2002	21,766	7,165	19,934	22,152	71,017	421,123	34.569,951
	30.2%	17.7%	11.1%	18.2%	21.3%	20.6%	12.1%
Percent of Population in Poverty 2012	27,296	8,806	18,502	25,802	80,406	327,444	48,760,123
	37.7%	22.0%	13.7%	20.3%	21.5%	17.7%	15.9%
Median Household Income 2002	$25,197	$30,557	$45,213	$34.329	N/A	$34,827	$45.409
Median Household Income 2012	$29,821	$36,900	$57,376	$45,901	N/A	$42,828	$51,371
Classified as Low Income Population in 2012 based on CEQ guidelines?	No	No	No	No	No	NA	NA

Source: US Census Bureau 2013b

Similarly, estimates from 2012 indicate that Sandoval and San Juan Counties had household median incomes ($57,376 and $45,901) that were above the state level of $42,828. McKinley County ($29,821) and Rio Arriba County ($36,900) were below that of the state in 2012 (Table 6). While no area communities meet the CEQ definition of a low-income population area (50 percent or higher), the highest poverty rates were seen in Bloomfield (29 percent), Espanola (26.3 percent), and Bernalillo (24.1 percent).

Table 7 Study Area Key Community Race/Ethnicity and Poverty Data

Community	% Population Racial or Ethnic Minority	Classified as Minority Population based on CEQ?	% of Individuals Below Poverty	Classified as Low-income Population based on CEQ?
Aztec	36.4%	No	14.4%	No
Bernalillo	78.8%	Yes	24.1%	No
Bloomfield	55.8%	Yes	29.0%	No
Espanola	91.6%	Yes	26.3%	No
Farmington	48.8%	No	15.5%	No
Gallup	76.9%	Yes	20.9%	No
Rio Rancho	46.7%	No	9.8%	No

Source: US Census Bureau 2012b
Note: American Community Survey estimates are based on data collected over a 5-year time period. The estimates represent the average characteristics of populations between January 2008 and December 2012 and do not represent a single point in time.

Census Tracts are geographic regions within the United States that are defined by the US Census Bureau in order to track changes in a population over time. Census Tracts are based on population sizes and not geographic areas. The average population of a Census Tracts is about 4,000 people, so rural areas that are sparsely populated may have very large Census Tracts while densely populated urban areas may have very small Census Tracts.

When broken down by Census Tract, 3 out of 87 tracts in the socioeconomic study area have greater than 50 percent of individuals living below the poverty line: Census Track 9440 in eastern McKinley County had an individual poverty rate of 54.6 percent; Census Tract 9405 in southwestern McKinley County had an individual poverty rate of 59.4 percent; and Census Tract 9409 in northwestern Sandoval County had an individual poverty rate of 51.9 percent (US Census Bureau 2012b). These 3 Census Tracts are all relatively large, indicating a sparsely populated, rural area.

Minority Populations

Based on 2008-2012 data, minorities made up 59.5 percent of the population in New Mexico, compared to 36.3 percent in the United States as a whole (Table 8). The proportion of minorities in the socioeconomic study area (65.3 percent) substantially exceeded the United States and is slightly higher than the state average. At the county level, the population ranged from 89.7 percent minority in McKinley County to 52.8 percent in Sandoval County. Within relevant tribal nations, Native Americans represented the vast majority of the population. The largest minority groups were Hispanics/Latinos in Rio Arriba and Sandoval Counties and Native Americans in McKinley and San Juan Counties.

Table 8. Study Area County Po :mlation b' Race/Etbnicity |2008-2012)

Population	McKinley County	Rio Arriba County	Sandoval	San Juan	Study Area	New Mexico	United States	Jicarilla Apache Nation	Navaho Nation	Ute Mountain Nation
Hispanic or Latino ethnicity of any race	9,744	28,714	46.334	24,496	109.288	952,569	50,545,275	382	2,958	99
	13.6%	71 .4%	35.3%	19%	29%	46.3%	16.4%	11.6%	1.7%	6.0%
White alone	7,413	5,370	61,977	54,218	128,978	831,543	196,903,968	74	3,762	47
	10.3%	28.6%	47.2%	42.2%	34.67%	40.5%	63.7%	2.3%	2.2%	2.9%
Black or African American alone	353	149	2.704	794	4000	35,586	37,786,591	0	250	5
	0.5%	0.4%	2.1%	0.6%	1.08%	1.7%	12.2%	0%	0.1%	0.3%
American Indian or Alaskan Native alone	52,358	5,629	15,964	46,676	120,627	176,766	2,050,766	2,692	162,920	1,429
	72.8%	14.0%	12.2%	36.3%	32.43%	8.6%	0.7%	82.0%	94.3%	87.0%
Asian alone	506	173	1,685	464	2828	25,411	14,692,794	73	834	14
	0.7%	0.4%	1.3%	0.4%	0.76%	1.2%	4.8%	2.2%	0.5%	0.9%
Native Hawaiian and Other Pacific Islander alone	38	7	100	72	217	989	480,063	0	209	0
	0.1%	0%	0.1%	0.1%	0.06%	<.01%	0.2%	0%	0.1%	0%
Some Other Race	7	22	437	84	550	3,623	616,191	0	102	0
	<.01%	0.1%	0.3%	0.1%	0.15%	0.2%	0.2%	0%	0.1%	0%
Two or more Races	1,469	137	2,101	1,796	5,503	28,800	6,063,063	62	1,660	49
	2.0%	0.3%	1.6%	1.4%	1.48%	1.4%	2.0%	1.9%	1.0%	3.0%
Classified as Minority Population based on CEQ guidelines?	Yes	Yes	Yes	Yes		Yes	NA	Yes	Yes	Yes

Table 8. Study Area County Po mlation b | Race/Etbnicity | 2008-2012)

Population	McKinley County	Rio Arriba County	Sandoval	San Juan	Study Area	New Mexico	United States	JicariUa Apache Nation	Navaho Nation	Ute Mountain Nation
Source: US Census Bureau 2012b Note: American Community Survey estimates are based on data collected over a 5-year time period. The estimates represent the a\'erage characteristics of populations between January 2008 and December 2012 and do not represent a single point in time										

Based on the CEQ definition of a minority population area (minority residents exceed 50 percent of all residents), Bernalillo, Bloomfield, Espanola, and Gallup all are considered minority communities. (See Table 16: Study Area Key Community Race/Ethnicity and Poverty Data)

When examined at the Census Tract level, there are 24 out of 87 tracts that have a minority population greater than 50 percent. These range from Census Tract 6.1 located just north of the city of Aztec with a minority population of 80.5 percent to Census Tract 107.17 located north of the city of Rio Rancho with a minority population of 50.2 percent (US Census Bureau 2012b). These Census Tracts are relatively small and are based around the city of Rio Rancho and the Aztec/Farmington/Bloomfield area.

Native American Populations

Data in Table 8 account for a substantial portion of the study area population in some areas, notably McKinley and San Juan Counties, where the population is 72.8 and 36.3 percent American Indian respectively. Three tribal governments have reservations within the planning area: the Jicarilla Apache Nation, the Navajo Nation, and the Ute Mountain Nation (Table 9). The Southern Ute Nation has lands just north of the planning area in the state of Colorado, but none within the planning area. Almost one half of the planning area is tribal lands. Each tribe maintains a general concern for protection of and access to areas of traditional and religious importance, and the welfare of plants, animals, air, landforms, and water on reservation and public lands. Policies established in 2006 by the BLM and US Forest Service, in coordination with federal tribes, ensure access by traditionalnative practitioners to area plants. The policy also ensures that management of these plants promotes ecosystem health for public lands. The BLM is encouraged to support and incorporate into their planning traditional native and native practitioner plant-gathering for traditional use (Boshell 2010).

Table 9 Tn'bal Nat10ns n the Planm Area

Tribe	Acres in Planning Area	General Location
Jicarilla Apache Nation	739,600	The majority of the Jicarilla Apache Nation is located in western Rio Arriba County, but within the eastern_I>Qrtion of the planning area
Navajo Nation	860.900	A portion of the Navaho Nation extends into western San Juan County and into the western portion of the planning area
Ute Mountain Nation	103,500	A portion of the Ute Mountain Nation extends into the northern portion of San Juan County, just east of the Navajo Nation, and into the northern portion of the planning area
Unknown	196.300	Lands located in the southern portion of the planning area [Note to BLM: this is due to inconsistencies between US Census Bureau tribal areas dataset and BLM land status dataset.]
Source: BLM GIS 2014, US Census Bureau 2014		

3.6.2. Impacts from the Proposed Action

Direct and Indirect Impacts

While no area communities meet the CEQ definition of a low-income population area, Rio Arriba County would be considered a minority community. The proposed action would be in compliance with Executive

Order (EO) #12898. No disproportionate adverse impacts to the environmental conditions and overall quality of life of minority and low-income communities is anticipated as a result of the proposed action. One potential positive impact would be a short term increase in business to local service industry due to the presence of work crews.

Cumulative Impacts

Because there would be no change from socioeconomic baseline conditions and no foreseeable environmental hazards, there would be no disproportionate impacts to low income or minority Populations.

3.7. Soils

3.7.1. Affected Environment

The San Juan Basin is bordered by the Defiance Uplift and Chuska Mountains to the west, San Juan Dome to the north, Chaco Slope and Zuni Uplift to the south and the Nacimiento Uplift to the east. In total, the San Juan Basin covers a surface of approximately 4,600 square miles. The soils in the San Juan Basin were formed primarily from two kinds of parent material: alluvial sediment and sedimentary rock. The alluvial sediment is material that was deposited in river valleys and on mesas, plateaus, and abandoned river terraces. The material has been mixed and sorted in transport and has a wide range of mineralogy and particle size. Sedimentary parent material consists mainly of sandstone and shale bedrock. These shale and resistant sandstone beds form prominent structural benches, buttes, and mesas bounded by cliffs.

According to the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) Web Soil Survey, soils found within the analysis area are comprised of Pinavetes-Fiorita complex, 2 to 10 percent slopes, Sparank-San Mateo silt loams, saline, sodic, 0 to 3 percent slopes and Vessilla-Menefee-Orlie complex, 1 to 30 percent slopes.

3.7.2. Impacts from the Proposed Action

Direct and Indirect Impacts

The proposed action would result in the removal of established vegetation in Sagebrush/Grass Community. Construction of the proposed project would reduce approximately 9.37 acres to bare mineral soils. As discussed in Section 2.1.2 (Description of Proposed Project - Protection of Air Resources), BMPs for dust suppression would be utilized within the proposed project area to reduce fugitive dust during the construction phase of the proposed project. In addition, topsoil, which would be stripped from the surface of the proposed pipeline corridor during the construction phase of the proposed project, would be stored and protected until it is redistributed during reclamation. The topsoil would be protected using wattles or other BMPs so that erosion is minimized. Vegetation would be brush-hogged within the TUAs; however, no topsoil-stripping or contouring would take place.

Cumulative Impacts

The primary cumulative impacts on soils would result from an increase in the amount of surface disturbance due to increased oil and gas development activity and other earthmoving activities in the Largo sub-watersheds of the planning area. Other vegetation damaging practices, such as OHV use, livestock grazing, and vegetation management on non-public lands, could contribute to increased soil erosion.

3.8. Noxious Weeds and Invasive Species

3.8.1. Affected Environment

Management of invasive and non-native plant species is mandated under several pieces of legislation, including the Lacey Act, as amended (16 USC 3371-3378); the Federal Noxious Weed Act of 1974, as amended (7 USC 2801 et seq.); the New Mexico Noxious Weed Management Act of 1998; and EO 13112 regarding Invasive Species. Under EO 13112, Federal agencies are ordered not to authorize or carry out actions that would cause or promote the introduction of invasive species.

In the San Juan Basin, invasive plants are frequently found in areas that have been disturbed by surface activities. A mission of the BLM-FFO is to detect new invasive plant species populations, prevent the spread of these new populations, manage existing populations, and eradicate invasive populations. This is to be accomplished in a timely manner, using the safest environmental methods available. For all actions on BLM-FFO lands that involve surface disturbance or reclamation, reasonable steps are required to prevent the introduction or spread of invasive plants (BLM 2003a, 3-34).

The U.S. Department of Agriculture (USDA) has designated certain plants as federally listed noxious weeds (NRCS 2010). The New Mexico Department of Agriculture (NMDA) has designated certain plants as state-listed noxious weeds (NMDA 2010). A total of 212 invasive and poisonous weed species have been identified on BLM-FFO lands. The PRMP/FEIS lists the invasive, non-native plant species of concern in the BLM-FFO area (BLM 2003a, 3-34- 3-35). A noxious weed plan for monitoring and treatment of any new infestations will be established for the length of this project.

During the November 20th, 2014 onsite field inspection of the proposed project area, no USDA-listed noxious weeds (NRCS 2010), NMDA-listed noxious weeds (NMDA 2010), or BLM-FFO invasive or poisonous weed species (BLM 2003a, 3-34- 3-35) were identified within the proposed project area. Russian thistle *(Sa/sola australis)* was documented throughout disturbed sites of the proposed project area. Russian thistle not included on the USDA, NMDA, or BLM noxious weed lists; however, it is an invasive introduced/not native weed that can out-compete desirable, native vegetation (Whitson, et al. 1992).

3.8.2. Impacts from the Proposed Action

Direct and Indirect Impacts

Noxious weeds and invasive species are generally tolerant of disturbed conditions, and disturbed soils at project sites could provide an opportunity for the introduction and establishment of noxious weeds and invasive species. Seeds or other propagules of noxious/invasive species could be transported to a project site from infested areas by heavy equipment or other vehicles that are used at the site. Noxious weeds and invasive species could also spread from established populations near a project site and colonize soils disturbed by project activities. In arid regions, such as the area in which the proposed project area is located, longer time periods are required for the re-establishment of plant communities; this could create an increased potential for the establishment and spread of noxious/invasive species. Noxious weeds and invasive species typically develop high population densities and tend to exclude most other plant species, thereby reducing species diversity and potentially resulting in long-term effects. The establishment of noxious/invasive species could greatly reduce the success of native plant community restoration efforts in project areas and create a source of future colonization and degradation of adjacent undisturbed areas.

The establishment of invasive species, particularly annual grasses, such as cheatgrass, which produce large amounts of easily ignitable fuel over large contiguous areas, could also alter fire regimes. This situation could result in an increase in the frequency and intensity of wildfires, and in some areas, such as in some desert-scrub communities, a fire regime could be created where none was present before. In plant communities that are not adapted to frequent or intense fires, native species, particularly shrubs and trees, could be adversely affected, and their populations could be greatly reduced, creating opportunities for greater increases in noxious/invasive species populations (Brooks and Pyke 2001). Increases in fire frequency or severity could thus result in a reduction of biodiversity and could promote the conversion of

some habitats (such as forest, shrubland, or shrub-steppe) to other types, prolonging or preventing the development of mature native habitats (BLM and U.S. Department of Energy 2010).

Cumulative Impacts

The spatial analysis area is the proposed project area and immediately adjacent lands. Within the spatial analysis area, a large amount of ground-disturbing activities have or are anticipated to occur in the reasonably foreseeable future; these disturbances are described in Section 3.3 (Upland Vegetation). These ground disturbances could encourage the establishment of noxious weeds. In addition, ongoing activities, such as vehicles driving and livestock grazing, have contributed to the potential for weeds to be introduced to the spatial analysis area from other locations. The disturbances and activities have contributed to the establishment of Russian thistle (tumbleweed), and could contribute to the establishment and spread of other noxious weeds or invasive species. The proposed project would contribute to surface disturbance and ongoing activity, and thus contribute to the potential for the establishment and spread of noxious weeds or invasive plant species within the spatial analysis area.

4. SUPPORTING INFORMATION

4.1. Tribes, Individuals, Organizations, or Agencies Consulted

- Navajo Nation, Counselor Chapter House

4.2. List of Preparers

- Jim Copeland, Archaeologist- BLM-FFO
- Ty Swirin, Noxious Weed Coordinator- BLM-FFO
- Scott Hall, Realty Specialist - BLM-FFO
- John Kendall, Wildlife Management Biologist- BLM-FFO
- Marcella Martinez, Planning and Environmental Specialist- BLM-FFO
- Sarah McCloskey, Environmental Specialist- Adkins Consulting, Inc.
- Sarah Scott, Natural Resource Specialist- BLM-FFO
- Jeff Tafoya, Rangeland Management Specialist- BLM-FFO
- Craig Willems, Environmental Protection Specialist – BLM-FFO
- Sheila Williams, District Botanist- BLM-FFO

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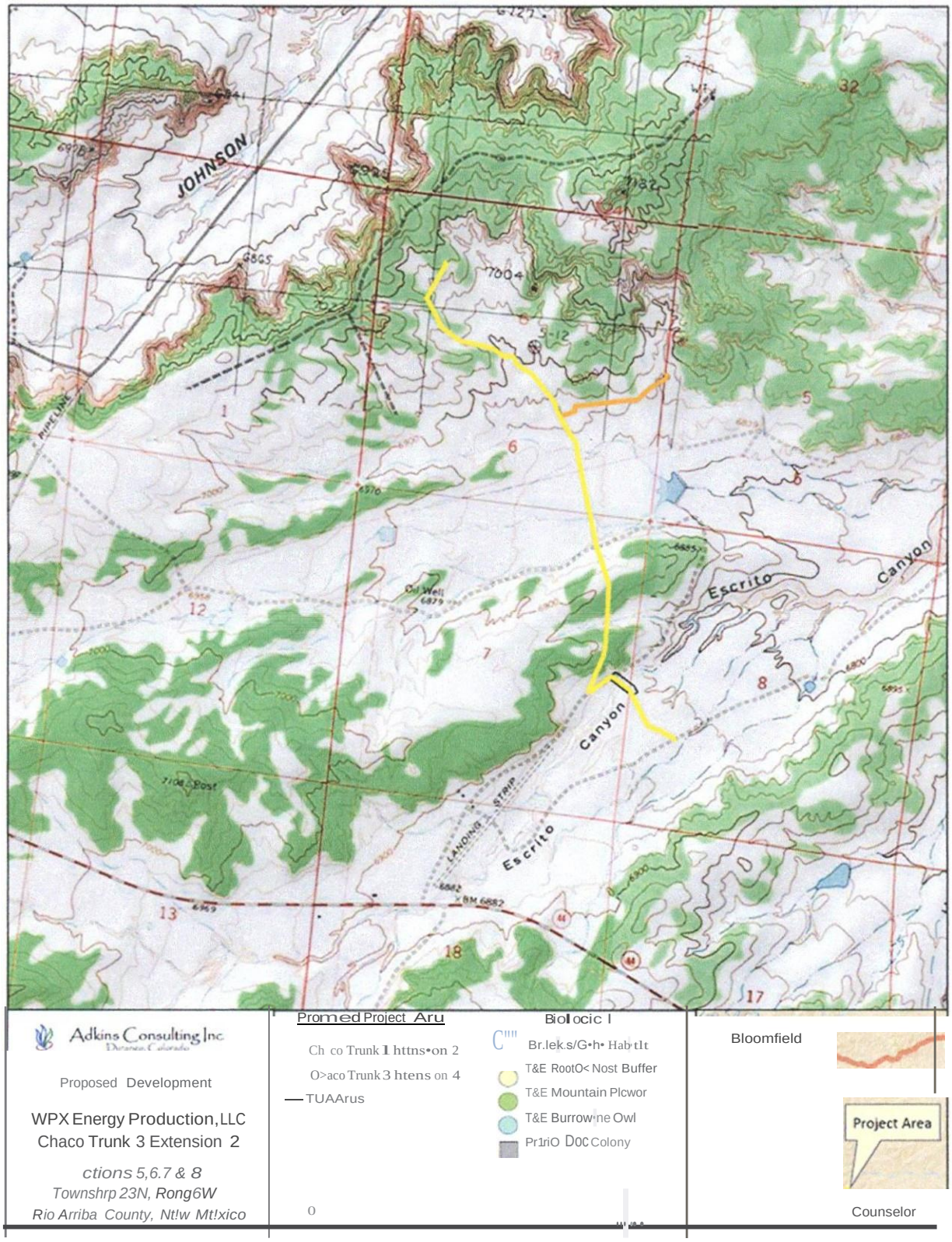
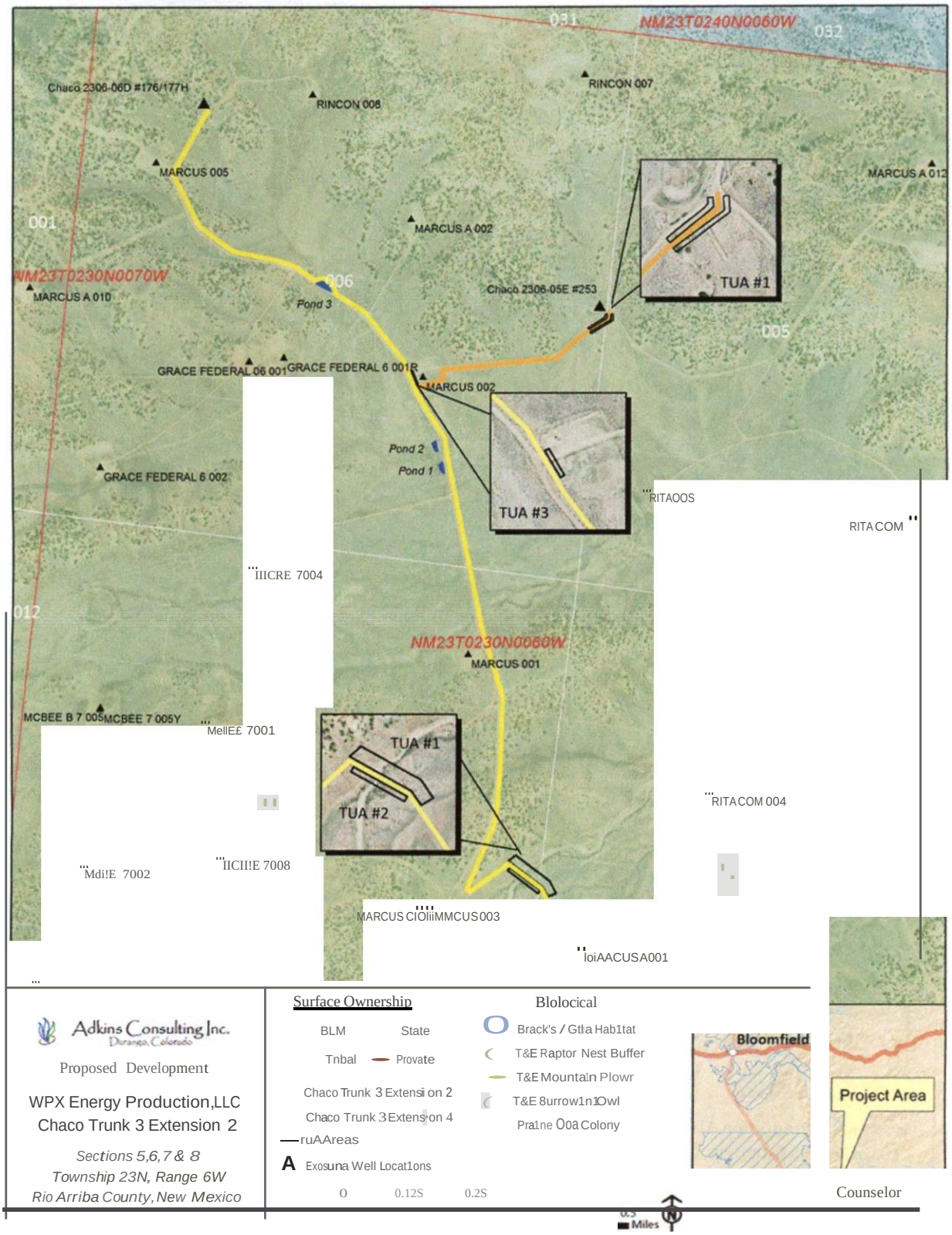
APPENDIX A. MAPS

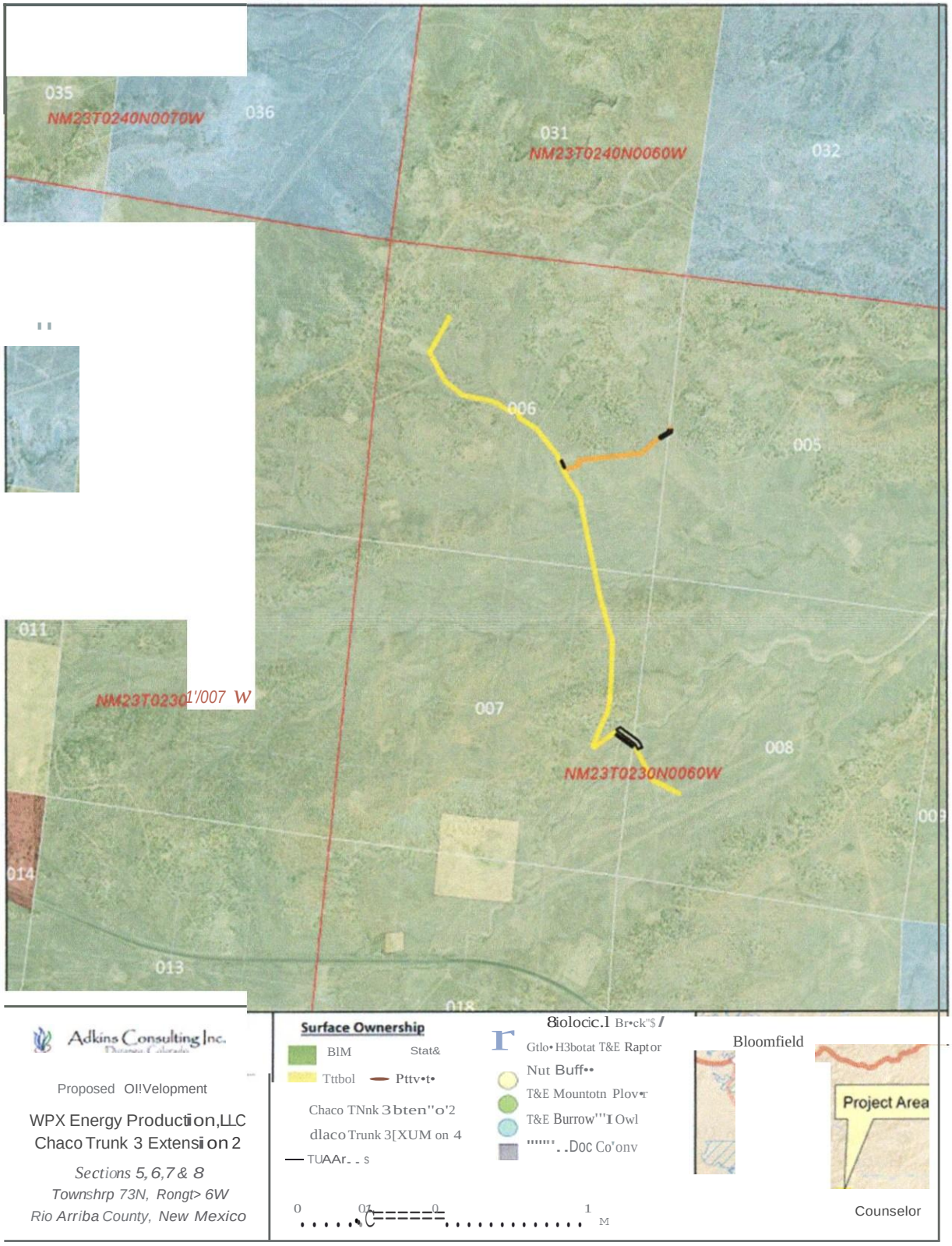
A.1. Proposed Project Area (Topographic Base Map)



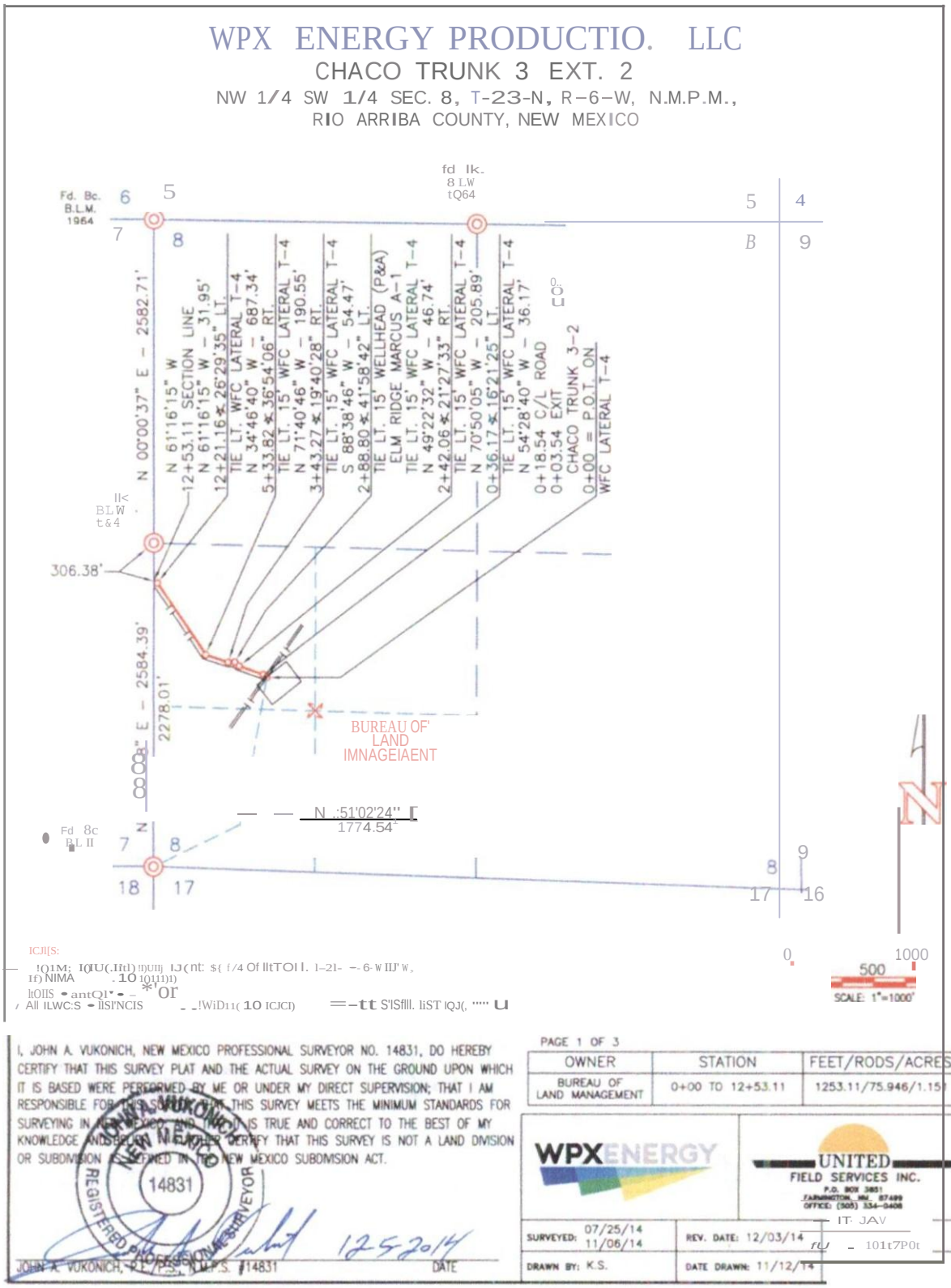
A.2. Proposed Project Area (Aerial Imagery Base Map)



A.3. Proposed Project Area (Aerial Imagery Base Map)



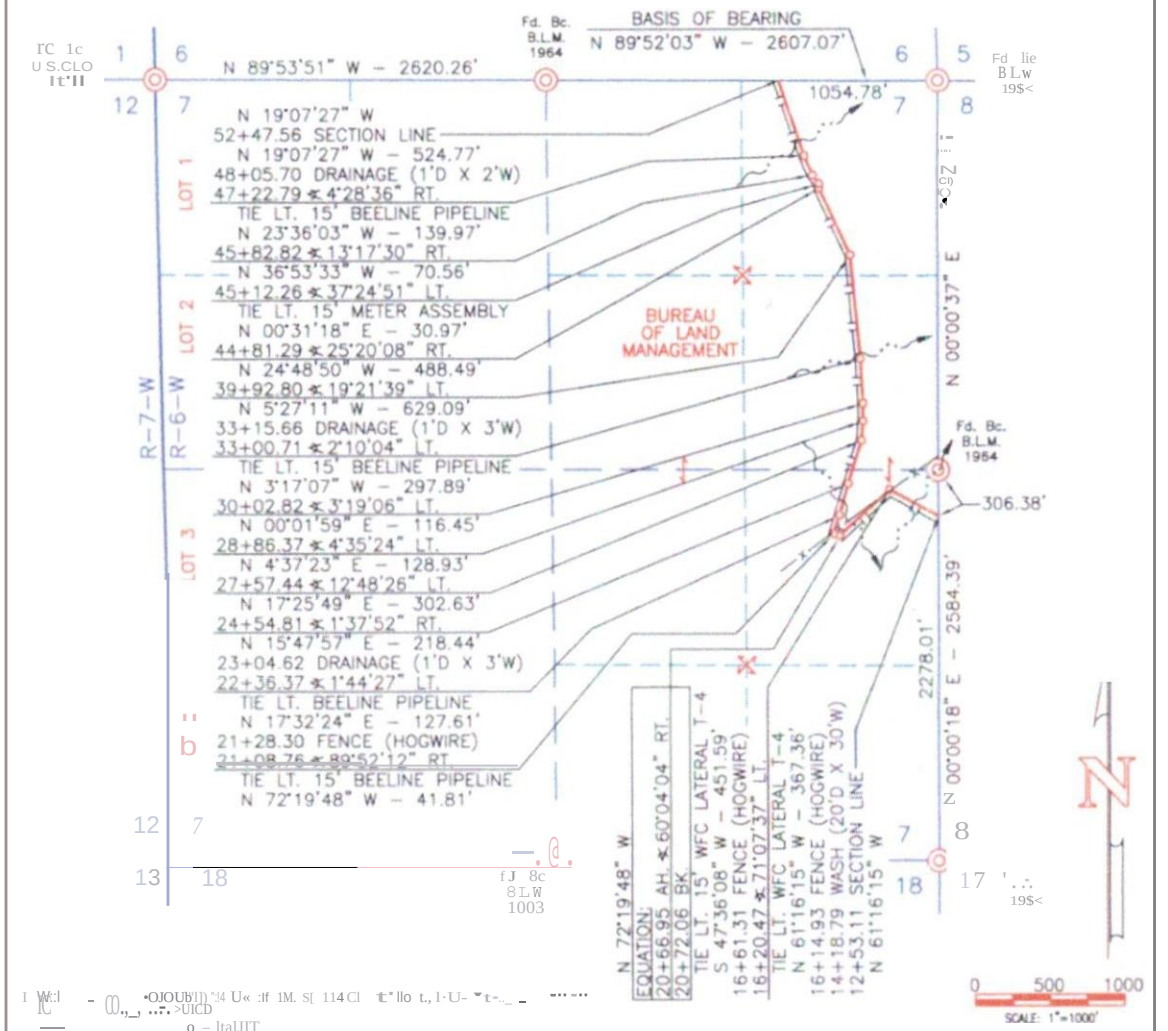
APPENDIX B. PLATS



\\PX E ERGY PRODCC'TIO. LLC

CHACO TRUNK 3 EXT. 2

NE 1/ SE 1/4 &: THE E 1/2 NE 1/4 OF SEC 7, T-23-N, R-6-W, N.M.P.M.,
RIO ARRIBA COUNTY, NEW MEXICO



I, JOHN A. VUKONICH, NEW MEXICO PROFESSIONAL SURVEYOR NO. 14831, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I FURTHER CERTIFY THAT THIS SURVEY IS NOT A LAND DIVISION OR SUBDIVISION AS DEFINED IN THE NEW MEXICO SUBDIVISION ACT.

12-5-2014

JOHN A. VUKONICH, P.E./P.S., N.M.P.S. #14831 DATE

OWNER	STATION	FEET/RODS/ACRES
BUREAU OF LAND MANAGEMENT	12+53.11 TO 52+47.56	3999.56/242.398/3.673

WPX ENERGY

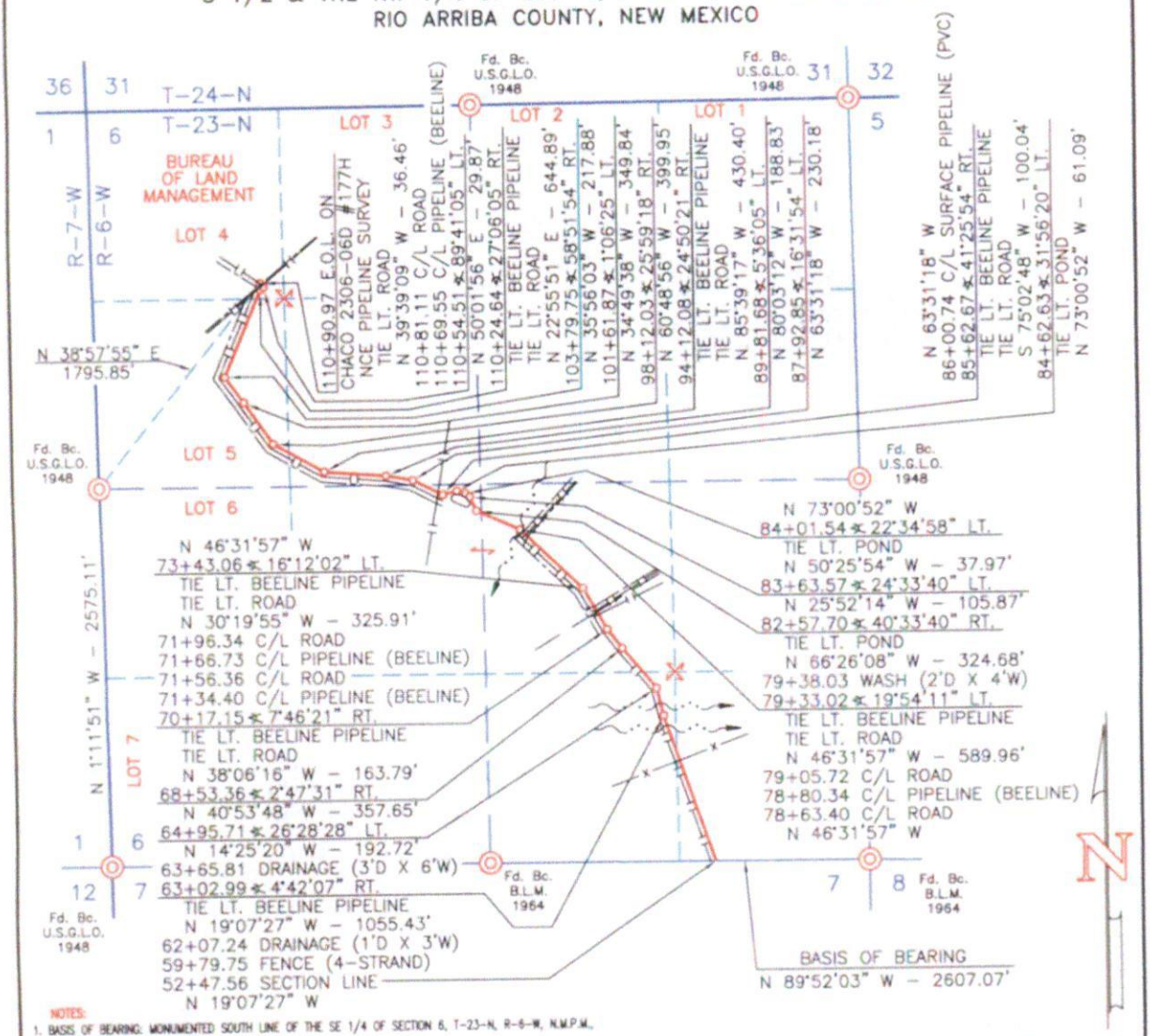
UNITED FIELD SERVICES INC.
P.O. BOX 3651
FARMINGTON, NM 87499
OFFICE: (505) 334-0408

SURVEYED: 07/25/14 11/06/14	REV. DATE: 12/03/14	APP. BY: J.A.V.
DRAWN BY: K.S.	DATE DRAWN: 11/12/14	FILE NAME: 10797P02

WPX ENERGY PRODUCTION, LLC

CHACO TRUNK 3 EXT. 2

S 1/2 & THE NW 1/4 OF SEC. 6, T-23-N, R-6-W, N.M.P.M.,
RIO ARRIBA COUNTY, NEW MEXICO



NOTES:

1. BASIS OF BEARING: MONUMENTED SOUTH LINE OF THE SE 1/4 OF SECTION 6, T-23-N, R-6-W, N.M.P.M., RIO ARRIBA COUNTY, NEW MEXICO.
   BEARS: N 89°52'03" W - 2607.07'
2. ALL BEARINGS & DISTANCES SHOWN ARE BASED UPON THE NEW MEXICO COORDINATE SYSTEM, WEST ZONE, NAD 83.

PAGE 3 OF 3

OWNER	STATION	FEET/RODS/ACRES
BUREAU OF LAND MANAGEMENT	52+47.56 TO 110+90.97	5843.41/354.146/5.366

I, JOHN A. VUKONICH, NEW MEXICO PROFESSIONAL SURVEYOR NO. 14831, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I FURTHER CERTIFY THAT THIS SURVEY IS NOT A LAND DIVISION OR SUBDIVISION AS DEFINED IN THE NEW MEXICO SUBDIVISION ACT.

NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR 14831

12-5-2014

JOHN A. VUKONICH, P.E./P.S., N.M.P.S. #14831 — DATE

WPX ENERGY

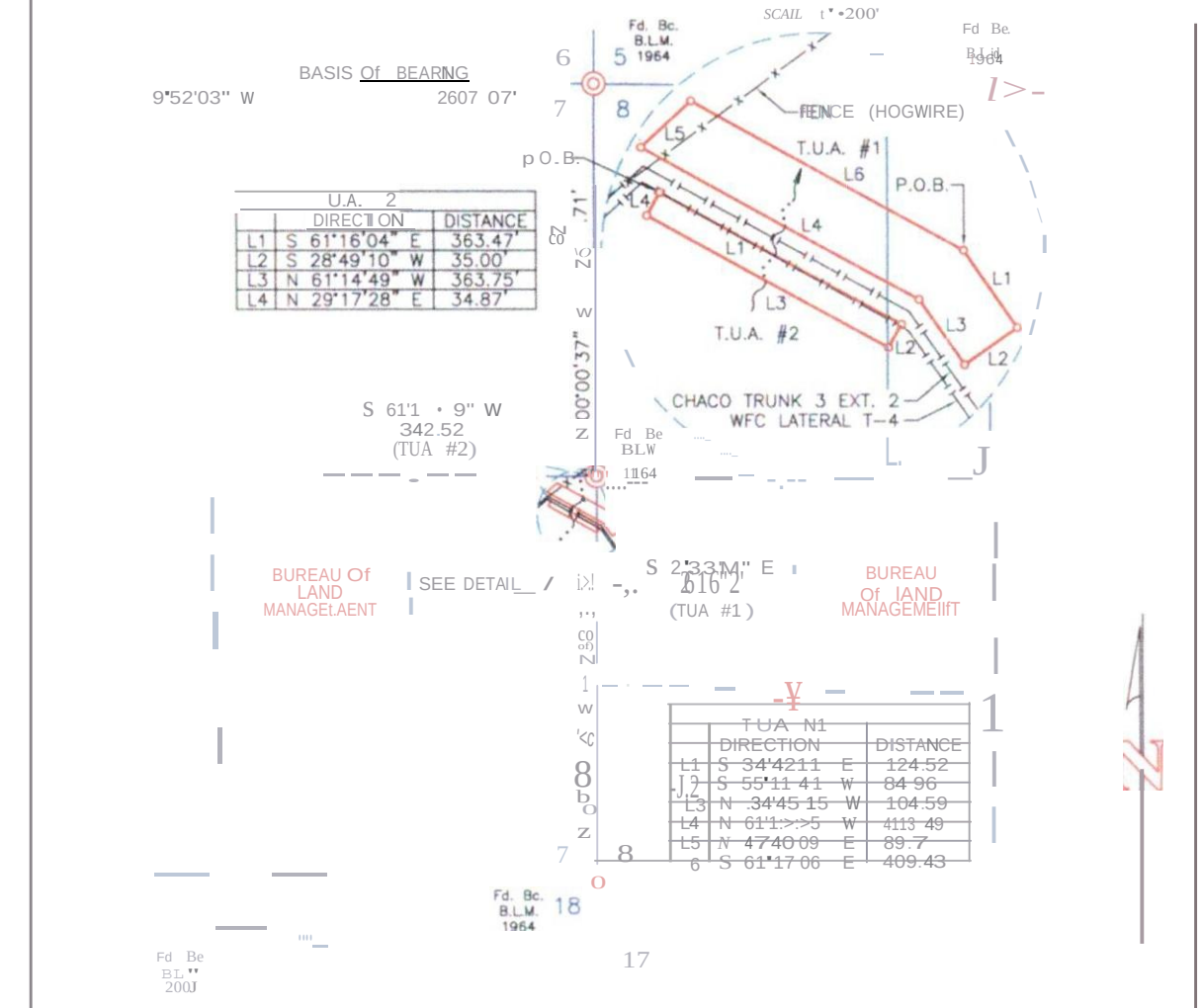
UNITED FIELD SERVICES INC.
P.O. BOX 3651
FARMINGTON, NM 87499
OFFICE: (505) 334-0408

SURVEYED: 07/25/14 11/06/14	REV. DATE: 12/03/14	APP. BY: J.A.V.
DRAWN BY: K.S.	DATE DRAWN: 11/12/14	FILE NAME: 10797P03

WPX ENERGY PRODUCTIOl\, LLC

CHACO TRUNK 3 EXT. 2 TUA #1 & #2

NE 1/4 SE 1/4 SEC. 7 &. NW 1/4 SW 1/4 SEC. 8, T-23-N, R-6-W, N.M.P.M.,
RIO ARRIBA COUNTY, NEW MEXICO



U.A. 2		
	DIRECTION	DISTANCE
L1	S 61°16'04" E	363.47'
L2	S 28°49'10" W	35.00'
L3	N 61°14'49" W	363.75'
L4	N 29°17'28" E	34.87'

TUA N1		
	DIRECTION	DISTANCE
L1	S 34°4211 E	124.52
L2	S 55°11 41 W	84 96
L3	N .34°45 15 W	104.59
L4	N 61°1:>:>5 W	4113 49
L5	N 4740 09 E	89.7
L6	S 61°17 06 E	409.43

	OWNER	SQUARE fEET	ACRES
T.UA #1	BLW	44,916	1031
TUA #2	B.LW	12.703	0292

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2. III.-....c;:s t OSNc:tS — 615(111H£ O 101:0 c;o()IIIHit: MI1ll. II{SI II)(. MD &1.

JOI1N A. 'N<O'ICH. HEW 1o1EX1C0 PRCIffSSIOIW. SURVriOR NO. 14831, OO HEREBI' COOJY JIoAT TitS SUIMY l'IAT Nm THE ACTI.II.L SUIM.Y ON THE GROUND UPON WI«H IT IS W[!) tR£ PERfOIMD fr1' 1.1(OR UNOO! III' CT SIJI'OlVISION.T I NA IIESI'OHISIH!-fOR-TitS -1 SUIM'IH:I O1 ICM.£I)C(ANO 80 IT OR SUIIOMSXJ/4 K'S HEETS Tlf: II IIUII STANOAROS FOR CORRECT TO Tlf: BESTOr III' SUIMY IS NOT A INIO OMSION ACT

14831 REGISTERED PROFESSIONAL SURVEYOR

JOHN A. VUKONICH, P.E./P.S., NM PE/PS 14831 — DATE 12-5-2014

WPX ENERGY

SURVEYED: 08/05/14, 11/21/14
DRAWN BY: K.S.

UNITED nn.0 SERVICES INC.

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