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Negative Findings Report Cultural Resource Survey Comanche Trail Pipeline, LLC. San Elizario Crossing FERC Regulated Area El Paso County, Texas

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Negative Findings Report
Cultural Resource Survey

Comanche Trail Pipeline, LLC.

San Elizario Crossing
FERC Regulated Area
El Paso County, Texas

Report
prepared for

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ABSTRACT

During early May of 2015, TAS Inc. conducted a pedestrian survey and shovel testing of the Comanche Trail Pipeline, LLC (Comanche Trail) San Elizario Crossing in southeast El Paso County, Texas. The project will connect a natural gas pipeline in Texas with a natural gas pipeline in Mexico. Because of the international nature of the project, the survey fell under jurisdiction of the Federal Energy Regulatory Commission (FERC). The survey area was located south and west of Chicken Ranch Road, 1.8 miles south of San Elizario and was confined to FERC regulated areas northeast of the Rio Grande. The project encompasses a staked right-of-way (ROW), as well as a Horizontal Directional Drill (HDD) location and temporary work space to be used to pull the pipe under the Rio Grande. HDD construction will occupy an area approximately 200 by 220 ft, with an additional 2,000-ft-long by 115-ft-wide temporary work space for an area of effect (APE) of 4.2 acres. An additional 1,000 by 100 ft section of proposed centerline between the HDD location and the Rio Grande brings the total area surveyed to 5.5 acres. No evidence of prehistoric or significant historic occupation or use was found by survey and shovel testing within the APE or along the staked ROW. The Texas Historical Commission subsequently requested backhoe trenching to confirm the absence of buried cultural deposits. In July, two 15-m-long trenches were dug to depths of 2 m each. Both were culturally sterile indicating that pipeline installation should not affect significant archeological or historical remains.

A full description of the methods and results of trenching are reported in an addendum to the survey report.

TABLE OF CONTENTS

List of Figures

INTRODUCTION

In May of 2015, TAS Inc. surveyed the proposed Comanche Trail Pipeline Company, LLC (Comanche Trail) San Elizario Crossing of the Rio Grande. This assessment was sponsored by Gremminger and Associates, Inc., with field work conducted by Dr. Jeff Turpin, Billy Turner, and Jacob Combs, with Dr. Jeff Turpin acting as Principal Investigator. The purpose of this work was to determine if significant cultural resources would be affected by new construction of 1,800 feet of 42-inch diameter natural gas pipeline that will export or import natural gas to or from Mexico (Figure 1). As a proposed export and/or import facility that crosses an international border, authorization to install, operate, and maintain this pipeline is subject to regulation by the Federal Energy Regulatory Commission (FERC) under Section 3 of the Natural Gas Act and requires a Presidential Permit.

The permanent easement and temporary workspace on the United States side of the river will be used to construct and test the pipeline segment prior to pipe being pulled into place under the river. Surface disturbance will be entirely within active agricultural fields. The area affected by the proposed project totals 5.5 acres, which includes 4.2 acres of temporary workspace (TWS), and 1.3 acres of permanent easement. Access to the work space and HDD entry is provided by an existing county road that intersects the workspace.

The pipeline will connect to a natural gas pipeline in Chihuahua, Mexico. The area of potential effect (APE) consists of a Horizontal Directional Drill (HDD) location and temporary work space to be used to pull the pipe. HDD construction will occupy an area covering approximately 200 ft by 220 ft, with an additional 2,000 ft long by 115 ft wide temporary work space. An additional 1,000 by 100 ft section of proposed ROW between the HDD location and the Rio Grande was also examined (Figure 2). The context is level Rio Grande Valley farmland where surface visibility was excellent. Visual inspection of the area was augmented by the excavation of 32 shovel tests in areas that had the potential for buried artifacts. No evidence of prehistoric or significant historic occupation or use was found on the surface or in any shovel test, but the Texas Historical Commission mandated backhoe prospecting for possible buried cultural deposits (Addendum).

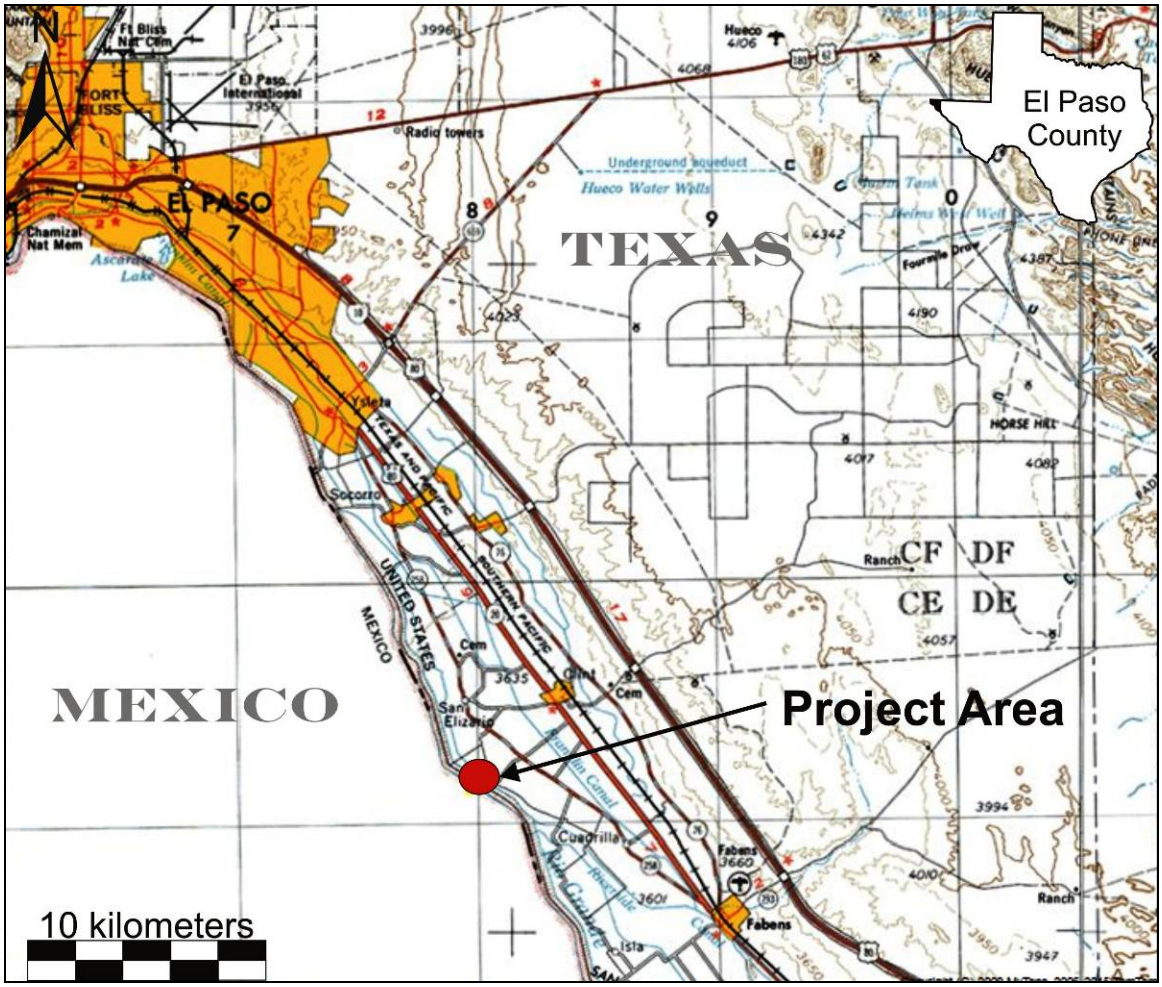


Figure 1. General location map of project area in El Paso County, TX (source: National Geographic Topo).

This cultural resource assessment consisted of an archival search, an intensive pedestrian survey augmented by shovel testing, supplementary backhoe trenching and preparation of a report suitable for review in accordance with the Texas Historical Commission's Archeological Survey Standards for Texas. The investigations were performed in compliance with the National Historic Preservation Act of 1966 (NHPA), as amended (16 U.S.C. 470 et seq., P.L. 89-665, 80 Stat. 915), and the implementing regulations 36CFR800. They were also intended to provide information on cultural resources for an environmental impact statement, as required by the National Environmental Policy Act (NEPA) of 1969; the National Environmental Policy Act of 1974 (PL 81-190, 83 Stat. 915, 41 USC 4321, 1970); the Archaeological and Historic Preservation Act of 1974 (PL 93-291); the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 Fed. Reg. 44716-

42, Sept. 29, 1983); the National Register Bulletin Series of the National Park Service; and the Archaeological Resources Protection Act of 1979; as well as Section 54 U.S.C. 306108 (commonly known as Section 106 of the National Historic Preservation Act)

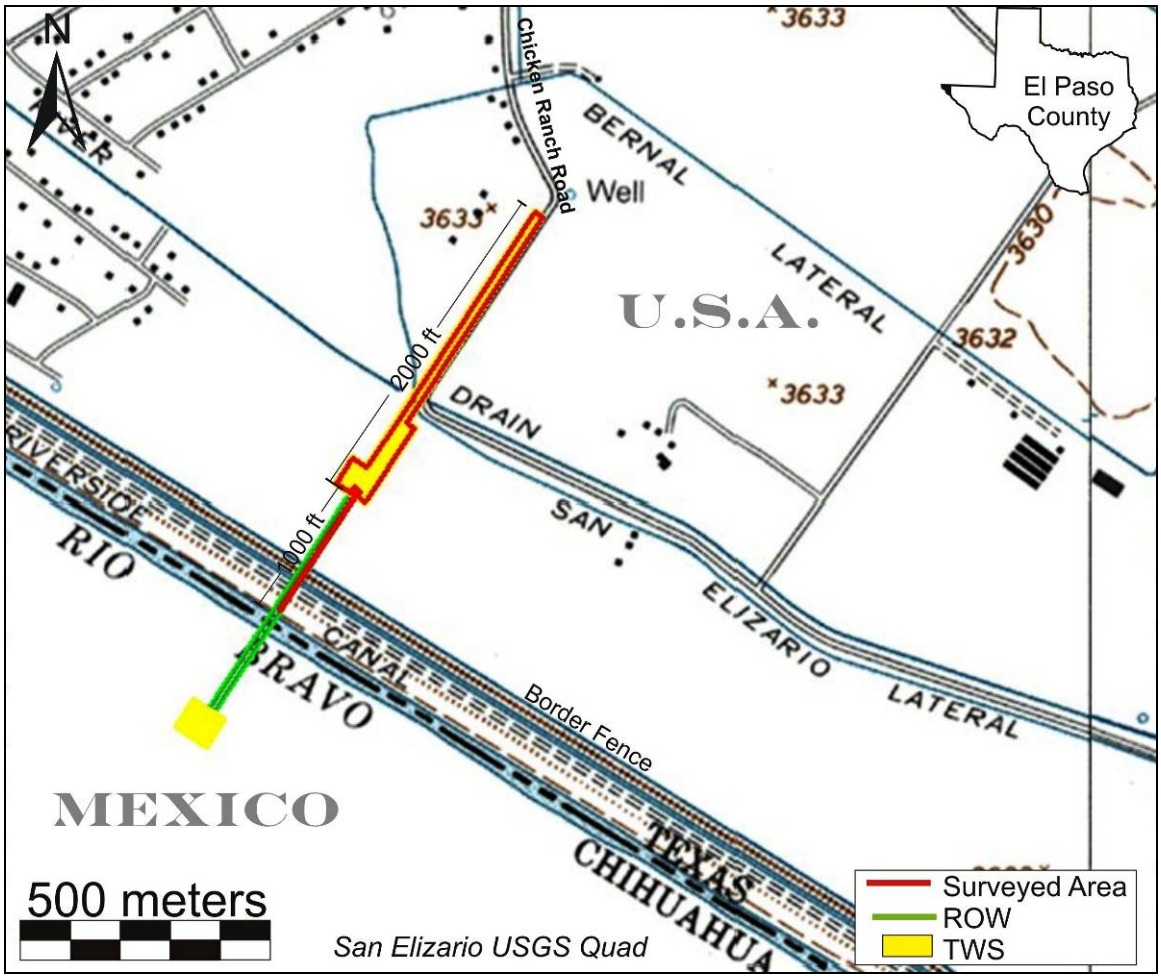


Figure 2. Project location map with survey distances, APE, and temporary work space (TWS) (source: Terrain Navigator).

ENVIRONMENTAL CONTEXT

This project is located in the Trans Pecos Natural Region and the Chihuahuan Biotic Province (Figure 3). The Trans Pecos is one of the most complex of the natural regions in Texas. It occupies the western part of the state extending from the Pecos River to El Paso and New Mexico to the Rio Grande. This is a region of diverse habitats and vegetation, varying from the desert valleys and plateaus to wooded mountain slopes. Elevations range from 2,500 feet near the Rio Grande in the south to more than 8,749 feet at Guadalupe Peak

in the north. The vast mountain ranges, formed from volcanic rock and limestone, support a wide variety of plant and animal communities (TPWD).

Most of El Paso County is underlain by intermontane sediments known locally as bolson deposits. These sediments were transported from the nearby mountains. They filled the basin that was formed during the uplift of the mountains and the faulting that occurred in the Tertiary Period, and continued into the Quaternary Period. The basin in El Paso County, called the Hueco Bolson, was enclosed at first but was drained later when the Rio Grande forged its present course. Soils on the flood plain of the Rio Grande formed in alluvium laid down by the river. The alluvium came from many kinds of rocks and soils in the Rio Grande watershed from El Paso to southern Colorado. These floodplain soils include the Anapra, Glendale, Gila, Harkey, Saneli, and Vinton series (USDA/NRCS).

The immediate area around the APE is made up of deep, nearly level, calcareous soils of the Rio Grande flood plain. The surface layer is underlain by stratified layers of silt loam, loamy very fine sand, very fine sandy loam, and silty clay loam. It consists of light-brownish gray/brown soils that developed in stratified material deposited on the flood plain of the Rio Grande. The material is made up of friable, loamy sediments with high lime content.

A number of soils are mapped across the project area (Figure 4). The dominant types are silty clay loams and loams, including Saneli silty clay and Gila loam. Shovel tests revealed very dry 10YR 6/2 light brownish gray silty clay loam over 10YR 4/3 brown clay (Appendix 1). The soil was very dry, becoming increasingly hard and blocky with depth. While depths to clay varied, ranging from 20-50 centimeters below surface (cmbs), the soil matrix remained fundamentally the same across the survey area with mixed, homogeneous silty clay loam over clay.

Due to the diversity of soils and elevations, many vegetation types exist in the Trans Pecos region. The primary plant communities are creosote-tarbush desert scrub, desert grassland, yucca and juniper savannahs, and montane forests of piñon pine and oak. The various subregions reflect this diversity. The Sand Hills is characterized by shin oak and mesquite on wind-blown dunes. Flat-

topped mesas and plateaus of the Stockton Plateau are intersected by steep-walled canyons and dry washes. Soils with high salt content and gypsum dunes are typical of the Salt Basin area in the northern extent of the region. The Desert Scrub subregion is an area of low rainfall and rapid drainage. Creosote bush flats with yucca, lechuguilla, and various small-leafed plants are common. The Desert Grassland area occurs in the central part of the region and is characterized by deeper soils with high clay content. Finally, the Mountain Ranges have higher rainfall and woody vegetation such as junipers, oaks, piñon pine, ponderosa pine, and Douglas fir (TPWD). The proposed pipeline crosses the Rio Grande Valley in the Desert Scrub subregion with creosote, lechuguilla and mesquite the predominant native plants, which have been removed in favor of planted agricultural crops. This is highly evident in the vicinity of the drill sites which are in extremely flat agricultural land north of the Rio Grande that has been highly modified through decades of farming (Figures 5 and 6). The southern section had recently been plowed and row planted, providing 100% surface visibility. The northern section was fallow cropland covered in clover with 60-80% surface visibility.

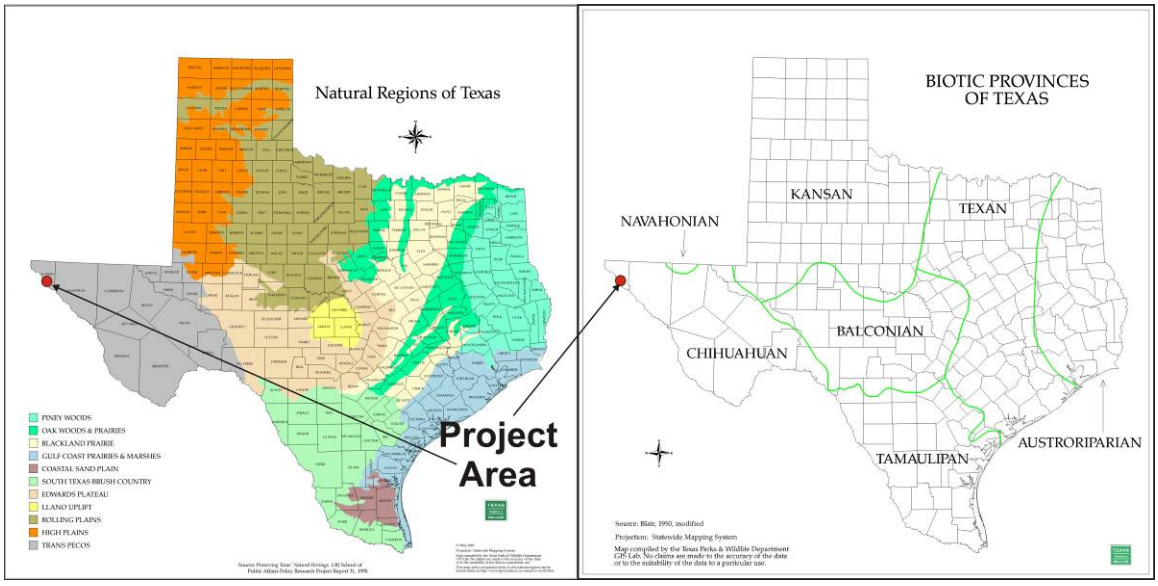


Figure 3. Natural Regions and Biotic Provinces of Texas (source: Texas Parks and Wildlife; Blair 1950).

Topography is level at 3,631 feet above mean sea level (amsl), only dipping at the Rio Grande channel, which has been straightened and modified. At the

proposed crossing, the Rio Grande is little more than a channelized drainage ditch. The river was dry and easily crossable (Figure 7).

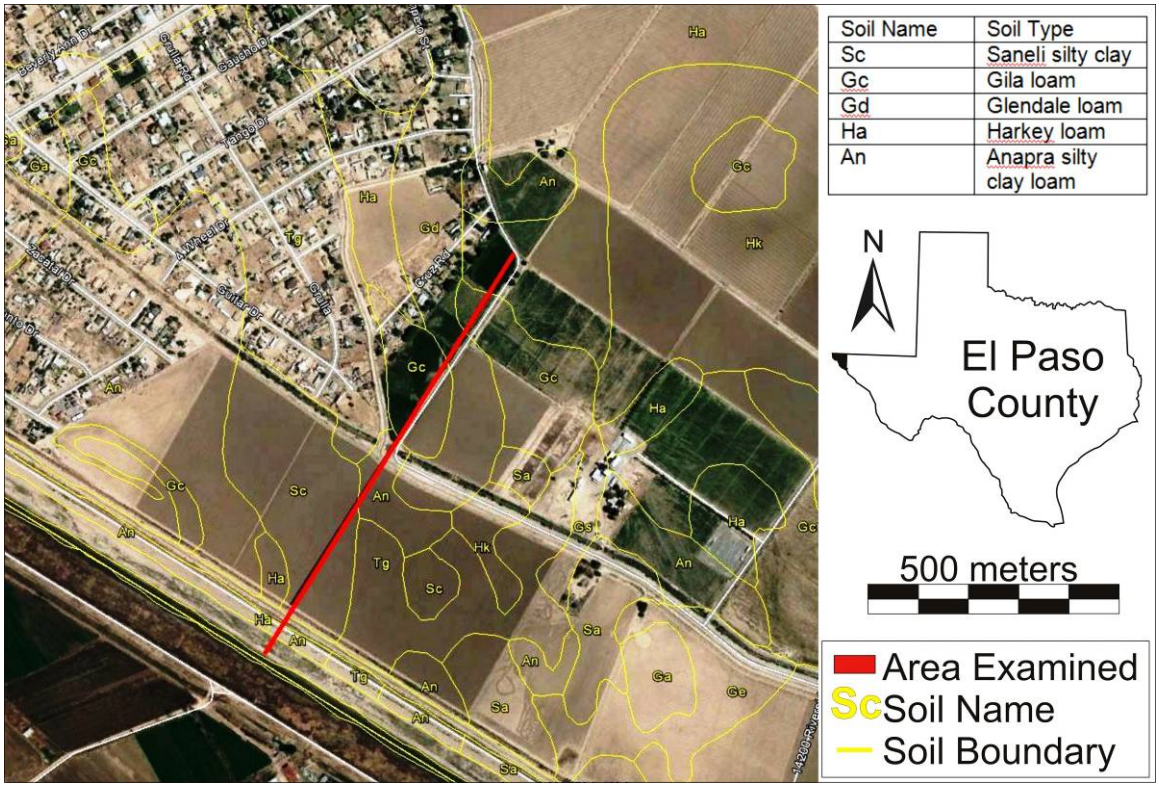


Figure 4. Mapped soils across survey area (source: USDA/NRCS).

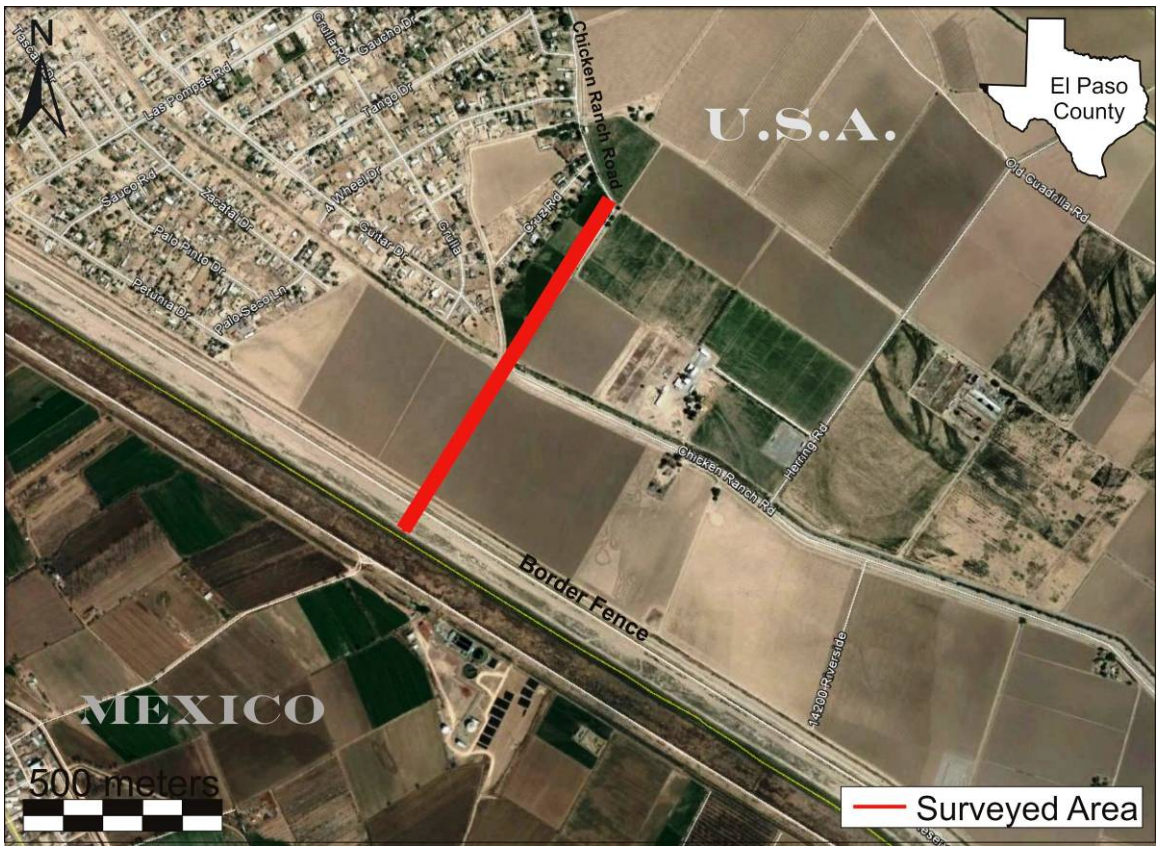


Figure 5. Aerial view of project area (source: Google Earth Image taken 2/14/2015).

Figure 6. General environment of the project area looking north.

Figure 7. Photo of Rio Grande from pipeline crossing looking northwest.

PREVIOUS INVESTIGATIONS

A search of the Texas Historic Sites Atlas (Atlas) revealed that El Paso County has almost 5,000 recorded archeological sites and over 300 associated abstracts, 42 State Antiquities Landmarks, and 54 National Register Properties. Much of the inventory can be attributed to work carried out on Fort Bliss; followed by research sponsored by various local governmental entities (Atlas). One National Register Property is the San Elizario Historic District, an intact community that evolved over the past 200 years from its early origins as a Spanish presidio located on a spur of the Camino Real. Two other NRHP missions – Ysleta and Socorro - are reminders of El Paso's key role in the far-flung Spanish network that reached out to Santa Fe, San Antonio and Chihuahua. The proposed project is in the El Paso County Water Improvement District (EPCWID), another National Register Property but the areas under study here are on private property. The EPCWID is a historic irrigation system, the basic configuration of which is almost unchanged since it was first constructed (Atlas).

There are five previously recorded archeological sites, all historic farmsteads, within 0.5 miles (800 m) of the proposed project ROW in El Paso County (Table 1). Three sites were recorded in 1993 by Kathryn Weedman of

ARI and Hicks and Company during the Socorro-San Elizario Project, funded by the El Paso Lower Valley Water District Authority. The remaining two sites were recorded by John Lindemuth of Gulf South Research Corporation in 2010, during the El Paso Crossings and Access Roads Project (Atlas).

41EP4666

41EP4666 is a historic farmstead located 964 ft (294 m) northeast of the project ROW, on the Rio Grande floodplain. The site was recorded in 1993 by Kathryn Weedman and consists of a late 19th to early 20th century Mexican-American Rural Vernacular adobe house. The site size was not listed on the site form. Weedman indicated that the property was divided into four parcels prior to 1927, owned by four different individuals, and that it was difficult to determine where the house sat in relation to the original division. The structure was in fair condition in 1993 but rooms had been added, which may have disturbed subsurface deposits. Weedman determined that the site wasn't culturally significant and recommended no further work. The site was deemed not eligible for the NRHP (Atlas).

41EP4667

41EP4667 is another historic farmstead located 675 ft (206 m) northwest of the current project. This site in the Rio Grande floodplain was also recorded by Weedman in 1993. The property owner reported that the site's original structures, which included two houses and a barn, had been torn down. Those original structures, covering an area of 400 ft by 300 ft (121 m by 91 m), were visible on early USDA aerial photographs up through 1942-1943. The only structure on the property in 1993 was the owner's residence, a house built in 1940. There was no current site size indicated on the site form. Weedman determined that construction in the immediate area might have disturbed subsurface deposits and no further investigations were recommended. The site was deemed not eligible for the NRHP (Atlas).

41EP4668

41EP4668 was also recorded by Weedman in 1993. It is a historic farmstead situated on the Rio Grande floodplain, 1,181 ft (360 m) northwest of

the proposed project ROW. A structure was visible in aerial photographs from 1936 and 1943, but not on the 1955-1967 USGS maps; the original occupation size of 100 ft by 200 ft (30 m by 60 m) was estimated from those photographs. No structural remains or cultural artifacts were identified during the 1993 survey. Weedman determined that all site integrity was lost and there was no future potential for data recovery. The site was deemed not eligible for the NRHP, likely because the historic structure no longer existed (Atlas).

41EP6623

41EP6623 is a 1,007 ft N/S by 45 ft E/W (307 m N/S by 14 m E/W) historic homestead recorded in 2010 by John Lindemuth, located 2,004 ft (611 m) east of the current project ROW. The site is confined to an unimproved dirt road, surrounded to the west and east by cotton fields in active cultivation and a private irrigation canal to the north. Cultural artifacts at the site consisted of a scatter of many colors of historic glass, historic ceramic fragments, metal fragments, and plastics, all confined to an unimproved road bed. Lindemuth determined that all integrity at the site had been lost and recommended no further work. As such, the site was deemed not eligible for the NRHP (Atlas).

41EP6624

Located 1,696 ft (517 m) east of the proposed project ROW on a heavily overgrown flat floodplain of the Rio Grande, 41EP6624 is a historic farmstead that was also recorded in 2010 by Lindemuth. The site was a collection of features representing foundations, outbuildings, and trash pits, measuring 393 ft NW/SE by 200 ft NE/SW (60 m NW/SE by 120 m NE/SW); site size was estimated from features on aerial photographs. Observed artifacts were predominantly modern and consisted of clear & amber glass, metal cans, and plastic. The site was unused in 2010 and surrounded by active agricultural fields. The site was outside the reporting project's APE and minimal work was done to record it; recording of features was limited to those immediately adjacent to the road. Lindemuth recommended more detailed mapping of existing features in the southwest portion of the site, subsurface testing, detailed artifact inventories, and historic archival research to determine site eligibility for the NRHP. The site was ultimately deemed not eligible for the NRHP (Atlas).

Table 1. Archeological Sites within 0.5 mi (800 m) of project ROW.

SITE TRINOMIAL	DISTANCE FROM ROW	SITE SIZE	COMMENTS	ELIGIBILITY
41EP4666	294 m NE	Not indicated on site form	Historic farmstead	Ineligible
41EP4667	206 m NW	Not indicated on site form	Historic farmstead	Ineligible
41EP4668	360 m NW	0 m	Historic farmstead	Ineligible
41EP6623	611 m E	307 m N/S by 14 m E/W	Historic farmstead	Ineligible
41EP6624	517 m E	59.3 m NW/SE by 117.6 m NE/SW	Historic farmstead	Ineligible

METHODS

As the project crosses international boundaries, it is governed by the Federal Energy Regulatory Commission (FERC). A small area north of the Rio Grande will be disturbed by the excavation of a pit for a Horizontal Directional Drill (HDD). An additional area will have surface impacts and includes a 4.2 acre area of potential effect (APE) northeast of the drill to be used to pull the pipe under the river (Figure 8). Shovel tests were excavated across the area of the proposed drill pit, the HDD temporary work space, and workspace for construction of the river crossing pipe segment. A total of 32 shovel tests were attempted across the areas examined. Tests were dug at approximate 100 ft (30 m) intervals along the marked centerline in parallel transects spaced 50 ft (15 m) apart. No artifacts were found in the tests or across the surface. Shovel tests, typically 11.8 inches (30 cm) in diameter, were excavated to a depth of 3.2 ft (1 meter) where testable soils were encountered, with most ending in the 11.8-19.6 inches below surface (30-50 cmbs) range. Dense alluvial clays or hard pan truncated shovel tests. Shovel probe matrix was sifted through ¼-inch wire mesh screen. Shovel test locations were recorded with hand-held GPS units and transferred to topographic maps (Appendix 2). After this first survey phase the THC requested backhoe-trenching in the floodplain. Two trenches were excavated, and they were culturally sterile (see Addendum).

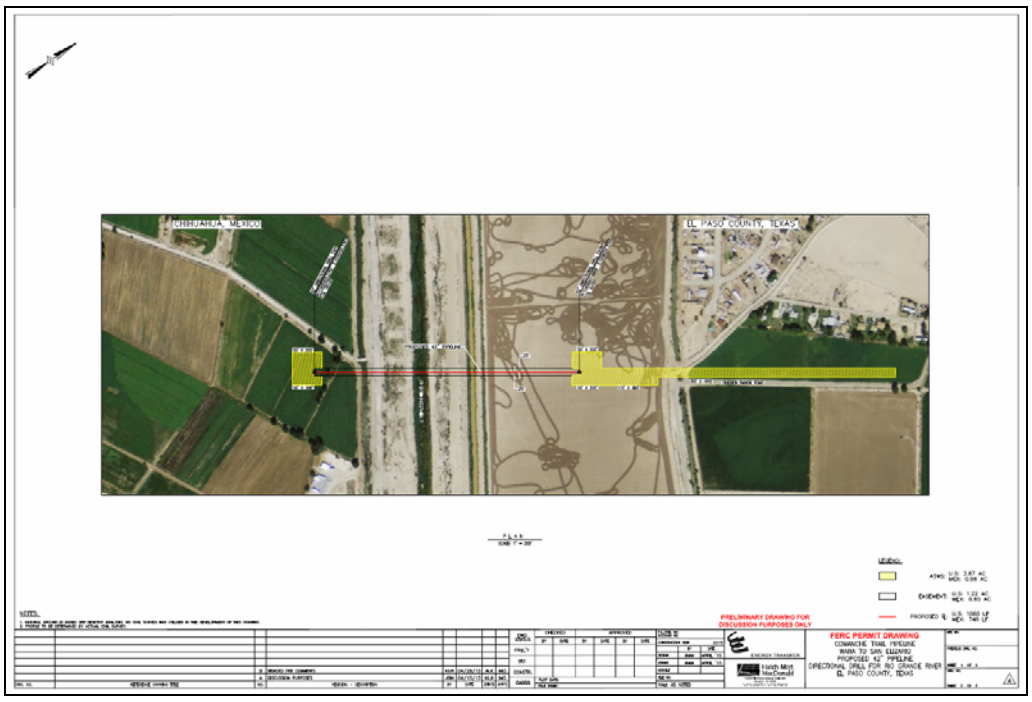


Figure 8. Survey plat of APE with easement boundaries.

SURVEY RESULTS

The San Elizario Border Crossing consists of an HDD pit and temporary work space in plowed agricultural fields northeast of the Rio Grande (see Figures 4, 5, and 8). Dominant local land use is crop cultivation. The recently row-planted fields provided 100% surface visibility in the south. Sparse vegetative growth in fallow agricultural fields provided for 60-80% surface visibility in the north.

A total of 32 shovel tests was attempted across the APE to determine the potential for buried deposits. The tests revealed homogeneous silty clay loam over clay. Tests were placed across the HDD temporary work space as well as along the potential ROW southwest of the area that will be directionally drilled. The HDD will be located approximately 1000 ft (305 m) northeast of the river. The entire area, including the segment between the HDD and the river, was intensively surveyed for any remnants of historic or prehistoric occupation. No prehistoric or historic remains were found. The area contained numerous pieces of modern trash including clothing, shoes, plastic bags and bottles, and broken glass.

Two backhoe trenches were dug in search of buried cultural deposits, in accordance with recommendations by the Texas Historical Commission. Both proved to be sterile; the details are reported in the Addendum.

The lack of cultural remains across the examined area is likely due in part to proximity to the Rio Grande, which would have scoured the area during intense flood events, re-depositing fine, water-borne sediment. No evidence of prehistoric or historic occupation or use was found during on the surface, in shovel tests or by backhoe prospecting. Therefore, the proposed pipeline installation will have no detrimental effect on significant cultural resources..

CONCLUSIONS

At the request of Gremminger and Associates, Inc, acting as agents for Comanche Trail, an approximately 3,000-ft-long (914 m) by 100-ft-wide (30 m) FERC-mandated survey corridor was examined for cultural resources. A total of 32 shovel probes was dug within the 4.2 acre HDD location and additional 1,000 ft (304 m) of proposed ROW between the drill and the river. Two backhoe trenches were dug in search of more deeply buried cultural deposits. Sterile, silty clay loam over clay with 60-100% surface visibility was observed in areas that have been altered by decades of crop cultivation. No archeological or historic features or artifacts were identified, suggesting that the construction of the Comanche Trail San Elizario Border Crossing will have no adverse effect on significant cultural resources. No further work is recommended.

REFERENCES CITED

Atlas
2015 Texas Archeological Sites Atlas. http:/www.nueces.thc.state.tx.us/. (accessed 04/28/15).

Atlas-County
2015 Texas Archeological Sites Atlas. "El Paso County" http://atlas.thc.state.tx.us/shell-county.htm/.(accessed 04/28/15).

Blair, W. Frank
1950 The Biotic Provinces of Texas. *Texas Journal of Science* 2(1):93–115.

Bomar, George W.
1983 *Texas Weather*. University of Texas Press, Austin.

California Soil Resource Lab
UC Davis Soil Resource Laboratory
http://casoilresource.lawr.ucdavis.edu/drupal/. (accessed 05/14/15).

Fenneman, N.M.
1938 *Physiography of Eastern United States.* McGraw-Hill, Inc., New York.

FWS (US Fish and Wildlife Service)
http://www.fws.gov/refuges/profiles/index.cfm?id=21552 (accessed 05/14/15).

Handbook of Texas Online.
http://www.tsha.utexas.edu/handbook/online/articles. (accessed 05/14/15).

Jones, Dixie L.
"Old Military Road." Handbook of Texas Online. (http://www.tshaonline.org/handbook/online/articles/exo02). (accessed 05/14/15). Published by the Texas State Historical Association.

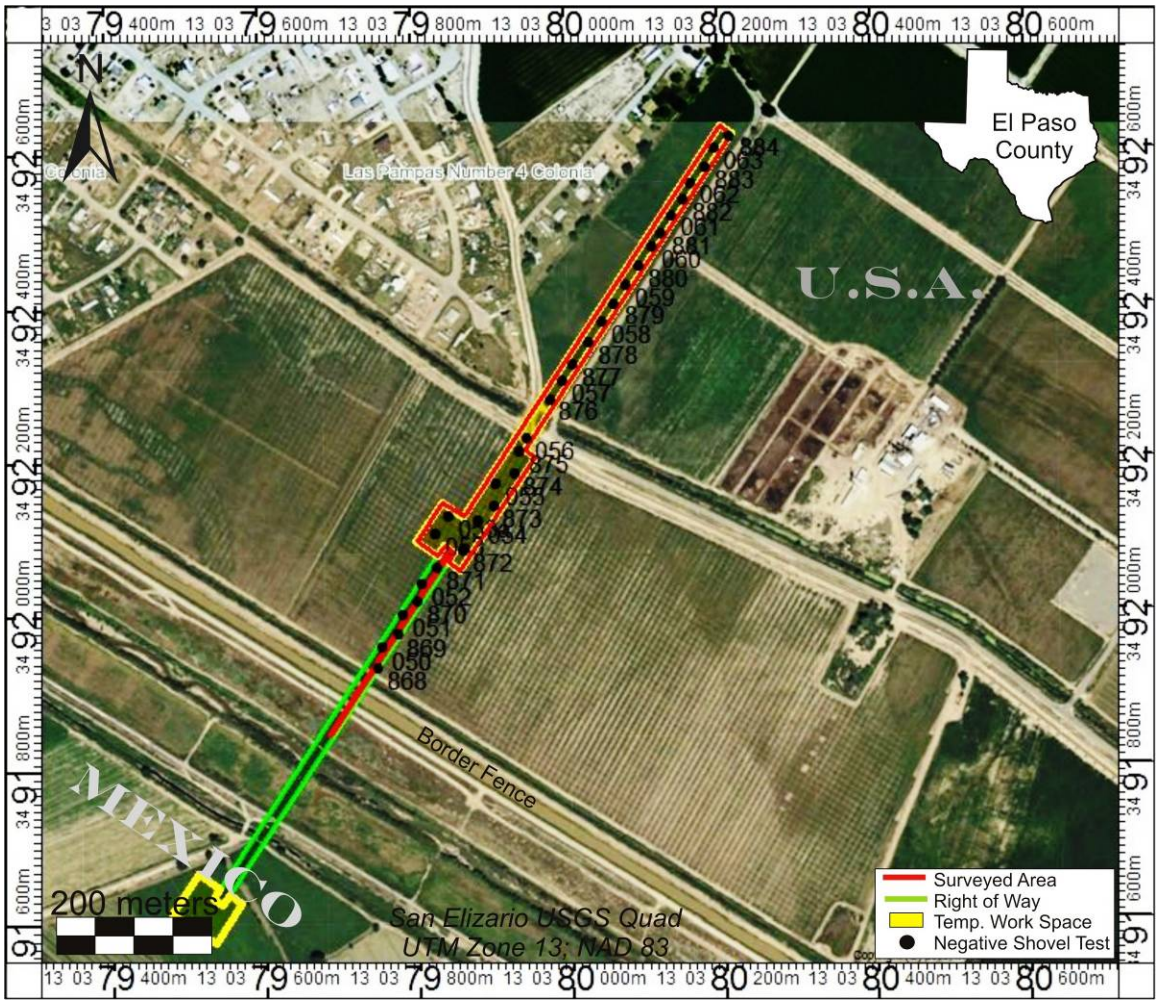
McNab, W.H., and P.E. Avers
1994 Ecological Subregions of the United States. Forest Service, U.S. Department of Agriculture http://www.fs.fed.us/land/pubs/ ecoregions (accessed 05/13/15).

USDA/NRCS (Natural Resources Conservation Service)
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx (accessed 05/13/15).

APPENDIX 1. SHOVEL TEST TABLE

Shovel Test #	Depth	Comments
50	0-50 cmbs- 10YR 6/2 lt brownish gray silty clay loam 50+ cmbs- 10YR 4/3 brown clay	Open, recently plowed field. furrows run N/S north of the Border Fence and irrigation canal. plow zone 0-40 cmbs. 100% surface visibility
51	10YR 6/2 silty clay over 10YR 4/3 clay	Open, recently row planted ag field
52	10YR 6/2 silty clay over 10YR 4/3 clay	Open, recently row planted ag field
53	10YR 6/2 silty clay over 10YR 4/3 clay	Open, recently row planted ag field
53a	10YR 6/2 silty clay over 10YR 4/3 clay	Open, recently row planted ag field
54	10YR 6/2 silty clay over 10YR 4/3 clay	Open, recently row planted ag field
55	10YR 6/2 silty clay over 10YR 4/3 clay	Open, recently row planted ag field
56	10YR 6/2 silty clay over 10YR 4/3 clay	Open, recently row planted ag field
57	0-50 cmbs- 10YR 6/2 lt brownish gray silty clay loam 50+ cmbs- 10YR 4/3 brown clay	Flat, fallow ag field, scattered ankle high clover. 60-80% surface visibility
58	10YR 6/2 silty clay over 10YR 4/3 clay	Flat, fallow ag field, scattered ankle high clover.
59	10YR 6/2 silty clay over 10YR 4/3 clay	Flat, fallow ag field, scattered ankle high clover.
60	10YR 6/2 silty clay over 10YR 4/3 clay	Flat, fallow ag field, scattered ankle high clover.
61	10YR 6/2 silty clay over 10YR 4/3 clay	Flat, fallow ag field, scattered ankle high clover.
62	10YR 6/2 silty clay over 10YR 4/3 clay	Flat, fallow ag field, scattered ankle high clover.
63	10YR 6/2 silty clay over 10YR 4/3 clay	Flat, fallow ag field, scattered ankle high clover.
64	Light grayish brown sandy loam	North edge of Rio Grande
868	0-30 lt. brownish gray silty clay loam over 30-50 similar color clay loam 30-50 over clay	Open, recently row planted ag field
869	10YR 6/2 silty clay over 10YR 4/3 clay	Open, recently row planted ag field
870	10YR 6/2 silty clay over 10YR 4/3 clay	Open, recently row planted ag field
871	10YR 6/2 silty clay over 10YR 4/3 clay	Open, recently row planted ag field
872	10YR 6/2 silty clay over 10YR 4/3 clay	Open, recently row planted ag field
873	10YR 6/2 silty clay over 10YR 4/3 clay	Open, recently row planted ag field
874	10YR 6/2 silty clay over 10YR 4/3 clay	Open, recently row planted ag field
875	10YR 6/2 silty clay over 10YR 4/3 clay	Open, recently row planted ag field
876	10YR 6/2 silty clay over 10YR 4/3 clay	Flat, fallow ag field, scattered ankle high clover.
877	10YR 6/2 silty clay over 10YR 4/3 clay	Fallow ag field, hard pan near surface
878	10YR 6/2 silty clay over 10YR 4/3 clay	Flat, fallow ag field, scattered ankle high clover.
879	10YR 6/2 silty clay over 10YR 4/3 clay	Flat, fallow ag field, scattered ankle high clover.
880	10YR 6/2 silty clay over 10YR 4/3 clay	Flat, fallow ag field, scattered ankle high clover.
881	10YR 6/2 silty clay over 10YR 4/3 clay	Flat, fallow ag field, scattered ankle high clover.
882	10YR 6/2 silty clay over 10YR 4/3 clay	Flat, fallow ag field, scattered ankle high clover.
883	10YR 6/2 silty clay over 10YR 4/3 clay	Flat, fallow ag field, scattered ankle high clover.
884	10YR 6/2 silty clay over 10YR 4/3 clay	Flat, fallow ag field, scattered ankle high clover.

APPENDIX 2. SHOVEL TEST MAP



Map. Shovel test locations map (source: Terrain Navigator).

Trenching of the HDD Location at the San Elizario Crossing of the Rio Grande El Paso County, Texas

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ABSTRACT

On July 9, 2015 TAS Inc. performed a cultural resources assessment of two trenches at the proposed Horizontal Directional Drill (HDD) location of the Comanche Trail Pipeline San Elizario crossing of the Rio Grande. The project is part of the western section of the Comanche Trail Pipeline Company LLC. (Comanche Trail) Comanche Trail Pipeline located 2.1 miles southeast of San Elizario in southeast El Paso County, Texas (Fig. A-1). The pipeline will connect a natural gas pipeline in Texas with a processing facility in Mexico. Because of the international nature of the project, the survey fell under jurisdiction of the Federal Energy Regulatory Commission (FERC) who recommended trenching of the location. The trenches were confined to FERC regulated areas northeast of the Rio Grande. This portion of the project occurred at the HDD location in a planted agricultural field 140 m southwest of Chicken Ranch Road and approximately 350 m northeast of the Rio Grande and the International Border Fence (Fig. A-2). The project was sponsored by Gremminger and Associates Inc., acting as agents for Comanche Trail, and conducted in order to ascertain the potential for buried cultural resources across the Rio Grande flood plain in the vicinity of the HDD. Dr. Jeff Turpin served as the Principal Investigator and field work was conducted by Billy Turner and Carrie Davis with help from the land lessee and backhoe operator Danny Loya. The assessment included the excavation and examination of two trenches averaging 15 m in length by 2 m in depth. No evidence of prehistoric or historic occupation or use was found within the areas tested, suggesting that cultural resources pose no impediment to this portion of the proposed construction.

CONTENTS OF ADDENDUM

List of Figures

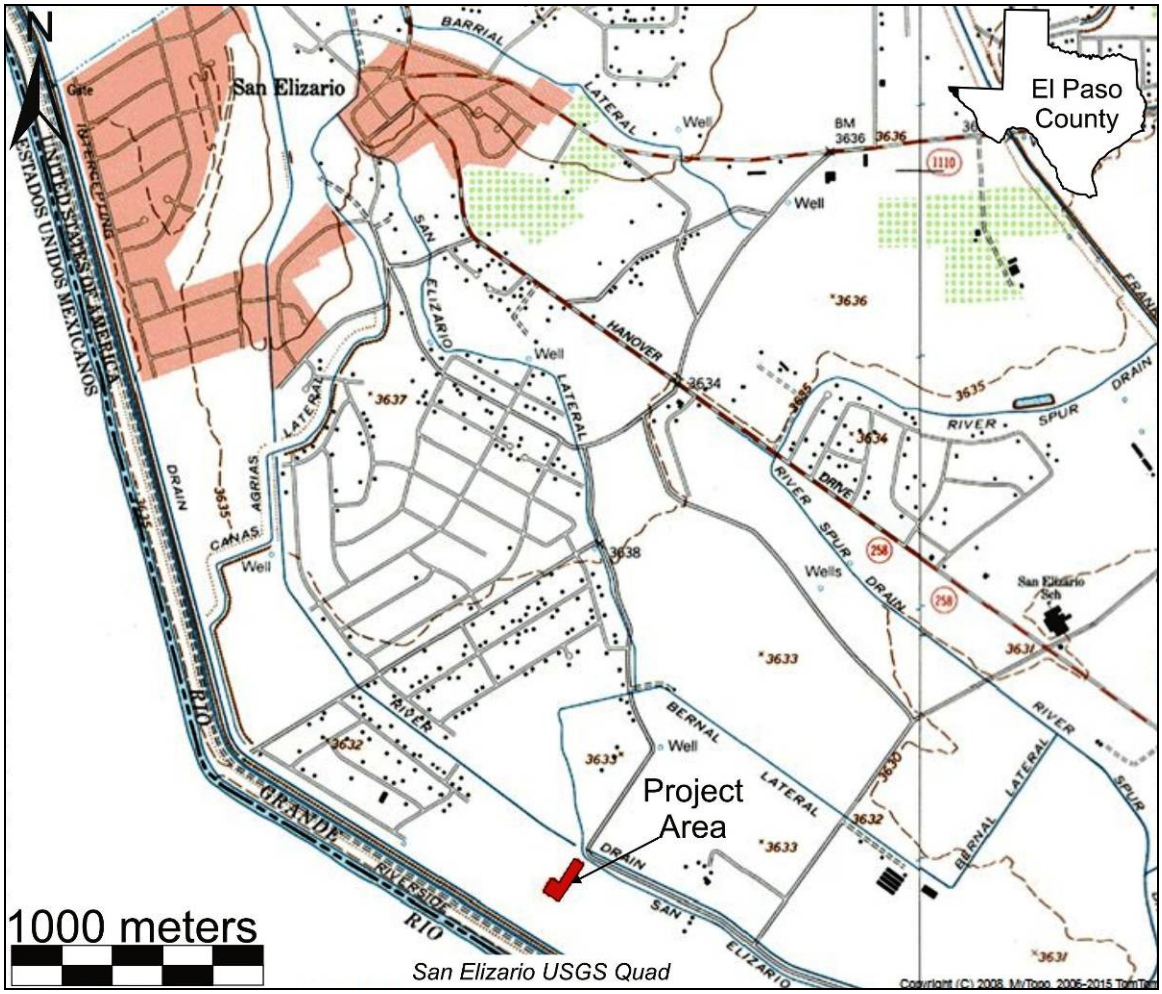

Figure A-4. Project overview map (source: Terrain Navigator).

METHODS

Two backhoe trenches were dug across the HDD location of the Comanche Trail Pipeline San Elizario crossing of the Rio Grande. Trenches were dug to a depth of approximately 2 meters where potential pit construction and temporary work space are planned. Trench walls were cleaned via trowel, knife, or shovel and inspected for archaeological material. A small prolife window was then cleaned with a trowel for description and soil profile. Sediment and deposits were then interpreted using previous descriptions of similar deposits (NRCS/USDA).

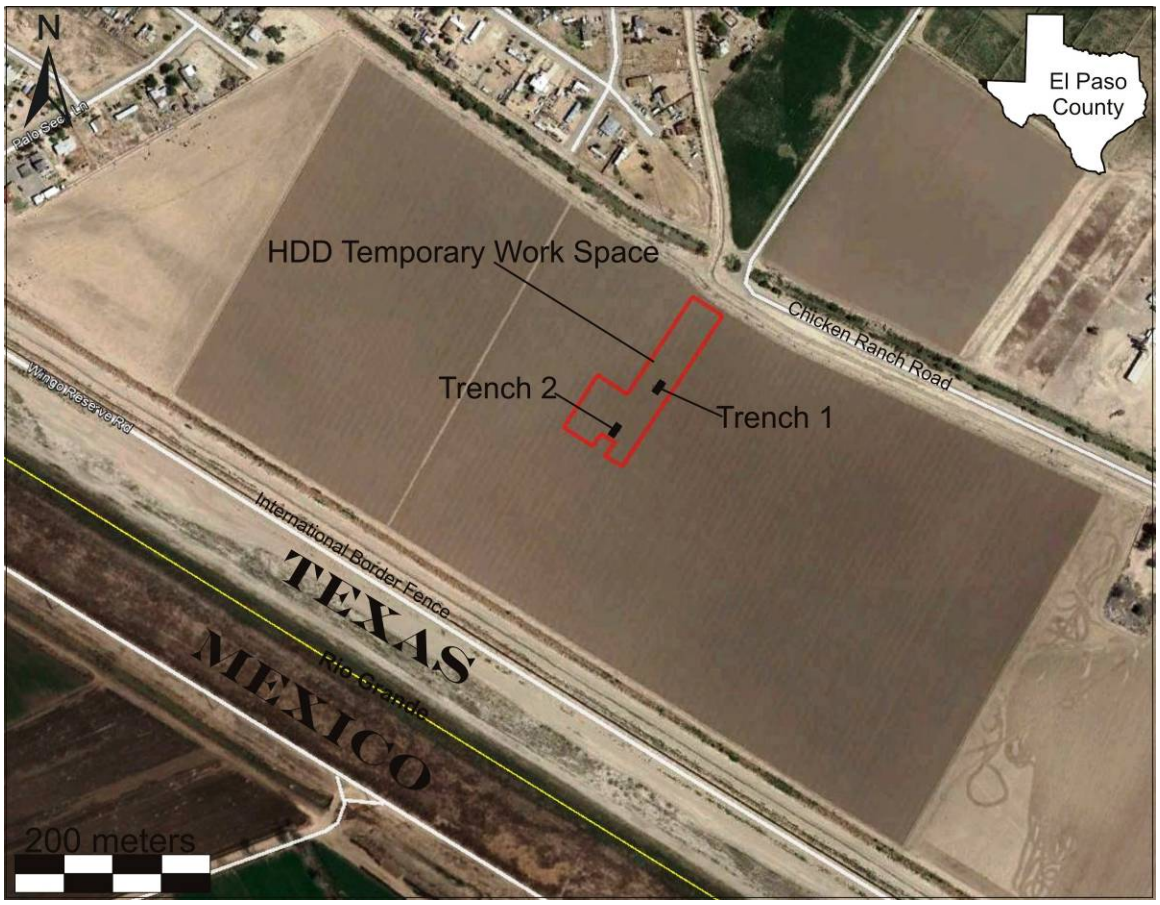

Figure A-5. Aerial showing location of trenches in plowed field (source: Google Earth image taken 5-2-14)

GENERAL SOIL TAXONOMY

The project area lies in the Harkey-Glendale Association which is a soil classification comprised of deep, nearly level soils along the Rio Grande floodplain that have silty clay loam covering very fine sand. The soils encountered in the area of the trenches were mapped as saneli silty clay formed from entisol parent material. Saneli series are typically deep, brown to pinkish-gray soils that formed in stratified material recently deposited on the Rio Grande flood plain. The soils consist of silty clay over sandy sediments. Entisols are soils of recent origin. The soils are developed in unconsolidated parent material with no genetic horizons except a minimal A horizon. These fluvent deposits are alluvial soils where stratified development is hampered by repeated deposition of sediment in periodic flood events. They are usually found in river valleys and deltas with high sediment loads (NRCS/USDA). In the 1971 soil

survey, the USGS mapped the soils in this region as having an Ap horizon ranging in texture from silty clay loams to silty clay. The texture of the C1 horizon was clay or silty clay and the C2 horizon was fine sand to loamy fine sand (NRCS/USDA).

The trenches were dug in an agricultural field that has been row planted for decades, mixing the upper 30 cmbs of soil into homogenous brown clay devoid of stratification (Fig. A-3). Current trenching found silty clay over fine sand indicating that the Ap horizon has been removed or altered in the last 45 years, leaving only the C1 and C2 horizons relatively intact.

Figure A-6. Overview of planted cotton field where trenches were dug, looking north from Trench 2. Note Trench 1 in the distance to the right.

RESULTS

A consistent profile was encountered within both trenches, revealing 10YR 3/3 dark brown clay over 10YR 6/3 pale brown silty sand with layers of lamellae. Clay lamellae are stratified clay features in sands. These thin, relatively clay-rich zones within a sandy parent material are thought to originate through pedogenesis, or soil development (Holliday and Rawling 2004). The pedogenic origin of lamellae involves clay movement (argilluviation), with clays bridging and coating sand grains, and the eventual formation of micro-laminae in response to varying wetting fronts or flood events. The deepest lamellae are commonly very

thin and parallel to each other, formed from sedimentary strata or bedding planes (Brockheim and Hartemink 2013). These thin, parallel deposits were observed in the lower zone of Trench I and II, suggesting the soil at depth is relatively old.

The profile had an upward fining sequence. In general, the profiles sloped up from south to north with the clay of the upper zone becoming deeper in the north, supporting evidence that this is a floodplain sequence with fluvial depositional processes.

Only minuscule amounts of small gravel (< 2 per 1 m^2) were found in the upper clay zone, with none found in the lower silty sand zone. No archeological material was identified in either of the trenches.

Trench 1

Trench 1 is the northernmost of the two trenches placed within the HDD temporary work space. The northern edge of the trench is located at UTM Zone 13 0379897E / 3492137N (NAD83), 110 m southwest of Chicken Ranch Road and 300 m northeast of the International Border Fence (see Fig. A-2).

Trench 1 was dug along a 200 degree (magnetic) trajectory following the planted cotton rows. The trench was 15.5 m in length by 2.4 m in depth by 65 cm wide, with a safety step along the west side (Fig. A-4). The trench revealed 10YR 3/3 dark brown clay ranging in depth from 55-110 cmbs over 10YR 6/3 pale brown silty sand with layers of lamellae dispersed throughout (Fig. A-5). The water table was encountered at the bottom of the trench at 240 cmbs (Fig. A-6). The upper stratification of soil was a homogenous layer of dense, blocky clay with very minute amounts of small gravel and roots. No other inclusions were identified. The sub-layer of silty sand was laid down in countless thin, stratified levels created from multiple floods of the Rio Grande. This section was devoid of gravel or roots. Several lenses of darker silty clay lamellae were scattered throughout this zone (see Fig. A-5 and Fig. A-9). No archeological material was identified.

Figure A-7. Trench 1 looking north.

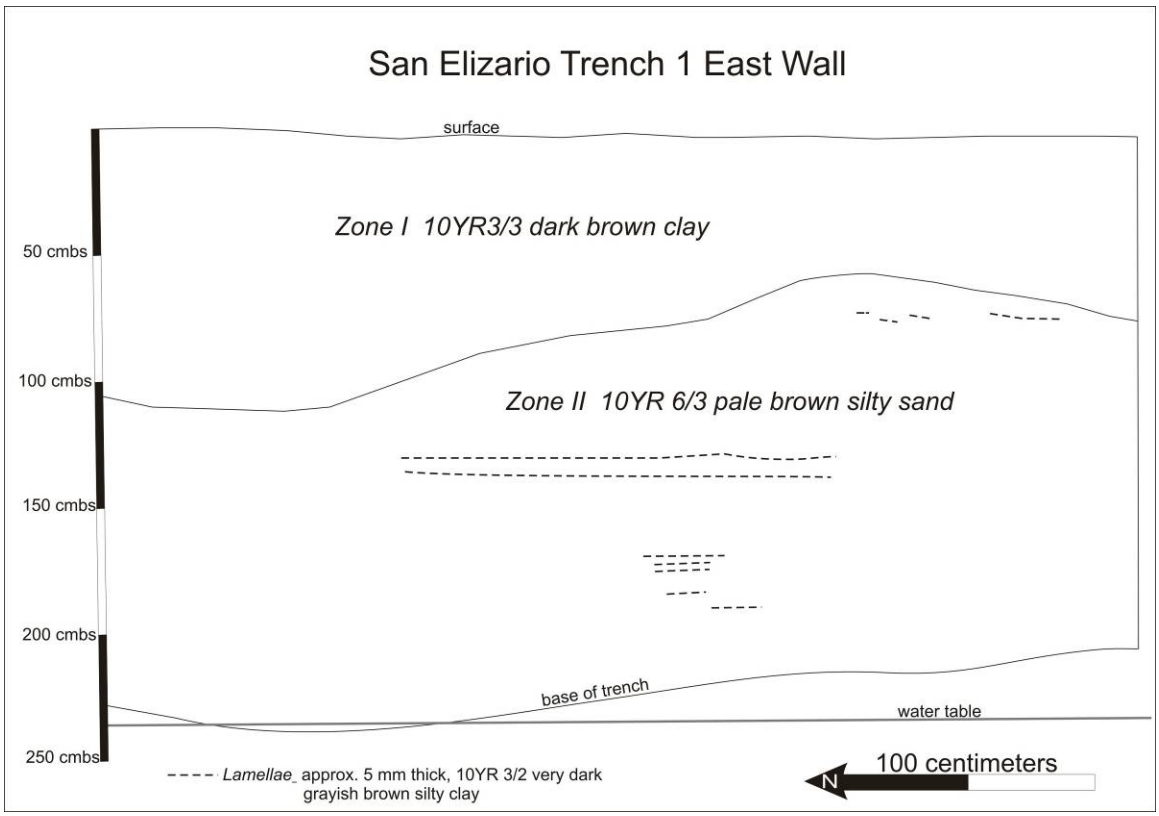

Figure A-8. Trench 1 East Wall profile.

Figure A-9. Water table at the bottom of Trench 1.

Trench 2

Trench 2 is located 50 m S/SE of Trench 1 in the same planted field. The trench was dug at the location of the HDD pit with the northern edge of the trench located at UTM Zone 13 0379853E / 3492095N (NAD83), 200 m southwest of Chicken Ranch Road and 240 m northeast of the International Border Fence (see Fig. A-2).

Trench 2 was also dug along a 200 degree (magnetic) trajectory following the planted cotton rows. The trench was 14 m in length by 2.1 m in depth by 70 cm wide with a safety step along the west side (Fig. A-7).

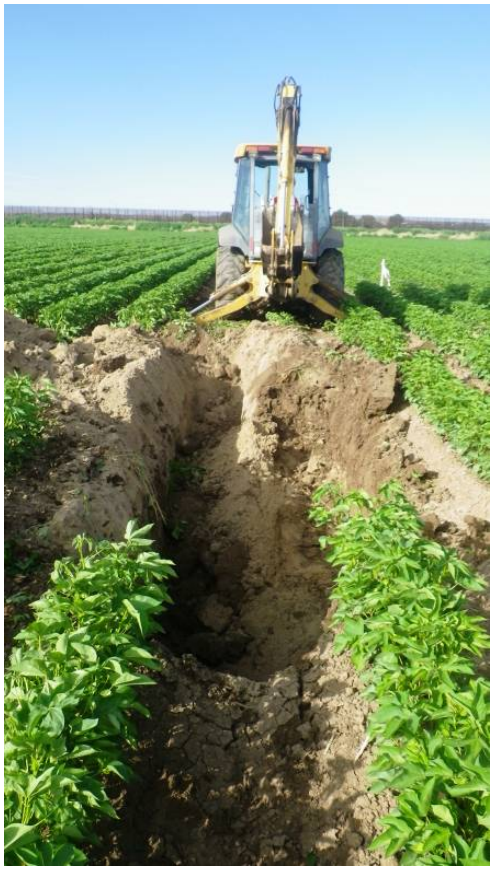

Figure A-10. Overview of Trench 2 looking south.

The trench revealed 10YR 3/3 dark brown clay ranging in depth from 45 - 70 cmbs over 10YR 6/3 pale brown silty sand with layers of lamellae dispersed throughout (Fig. A-8). This trench had substantially more visible lamellae (Fig. A-9). The upper stratification of soil was a homogenous layer of dense, blocky clay with roots and minimal gravel. No other inclusions were identified. The sub-layer of silty sand was laid down in innumerable thin, stratified layers created from

multiple floods of the Rio Grande. This section was devoid of gravel or roots. Several burrows were evident near the convergence of the two stratigraphic zones (Fig. A-10). No archeological material was identified.

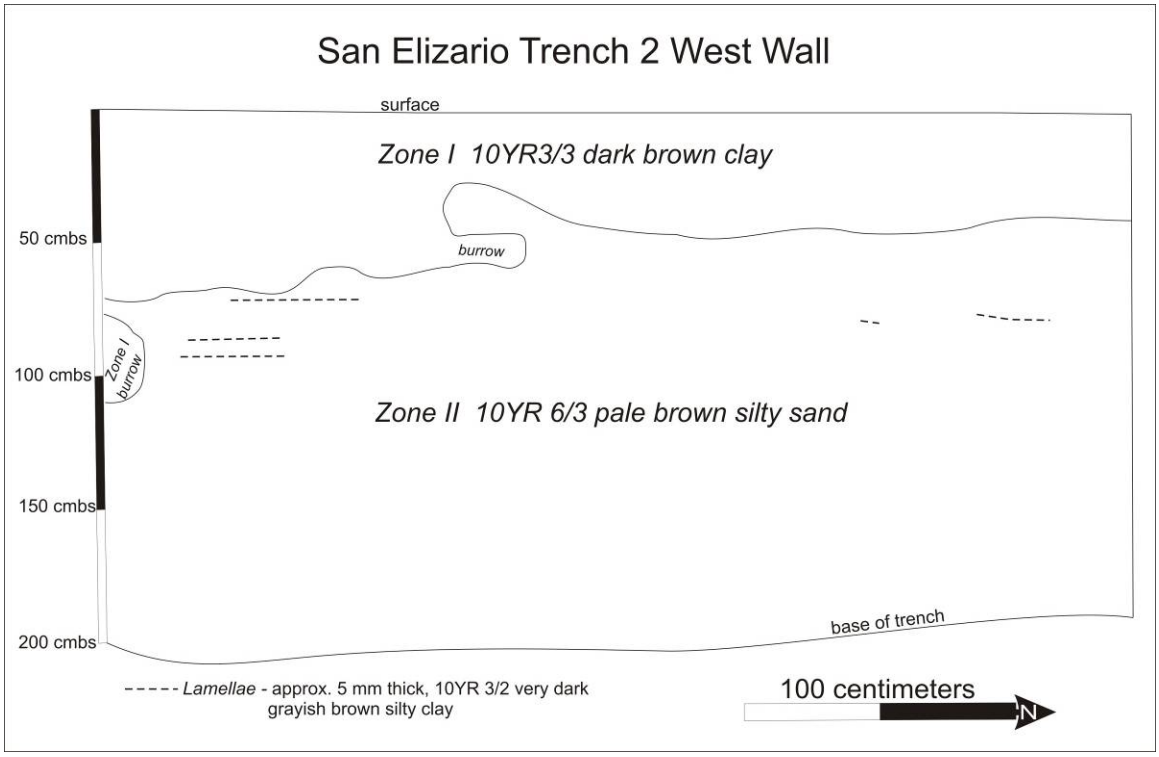

Figure A-11. *Trench 2 East Wall Profile.*

SUMMARY AND CONCLUSIONS

This report presents the results of a cultural resources survey and subsurface prospecting via two trenches at the HDD location of the Comanche Trail Pipeline San Elizario Crossing of the Rio Grande in El Paso County, Texas. The Lead Federal Agency for this project has been identified as the Federal Energy Regulatory Commission (FERC). All work was conducted following accepted standards set forth by the THC, the CTA, and the NHPA.

Two trenches were dug across the HDD location, and failed to display any evidence of historic or prehistoric occupation or use. The absence of any historic or prehistoric remnants implies that cultural resources should not be affected by the planned installation of the HDD boreholes. Based on the negative findings of surface survey, shovel testing and these backhoe trenches, TAS recommends no further work at the potential HDD location.

Figure A-12. Lamellae in Zone II of Trench 2, approximately 100 cmbs.

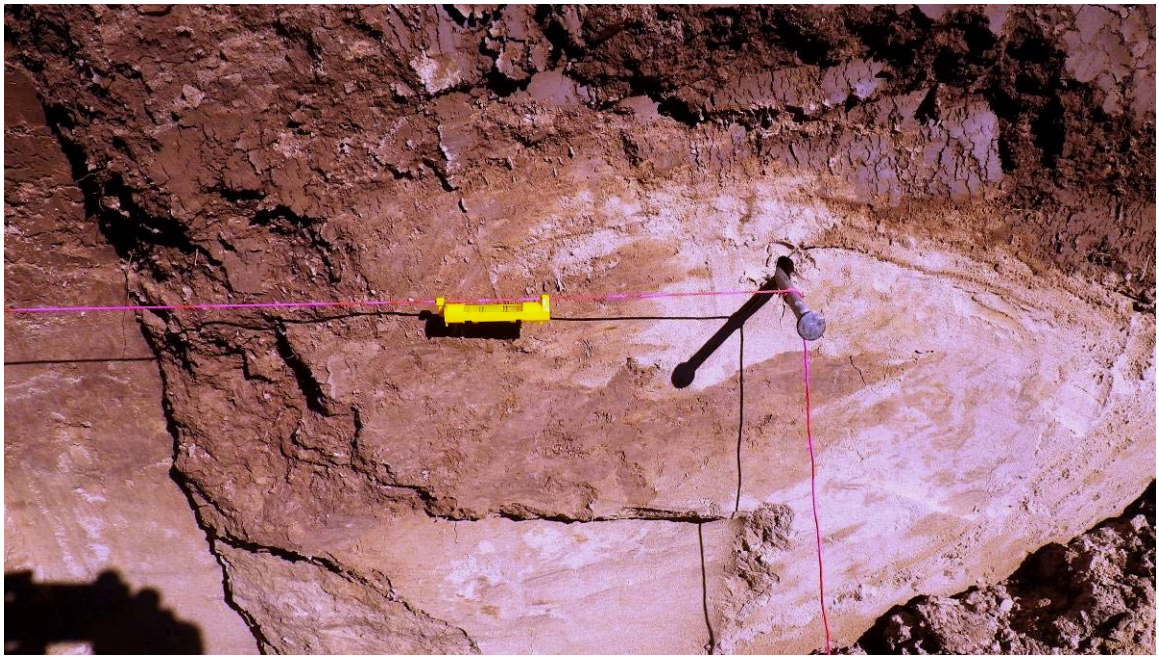

Figure A-13. Rodent burrow near intersection of Zones I and II, west wall Trench 2 - approximately 40 cmbs.

REFERENCES CITED

Brockheim, J.G. and A.E. Hartemink
2013 Classification and distribution of soils with lamellae in the USA. Department of Soil Science, University of Wisconsin, Madison, WI.

Holliday, Vance T. and J. Elmo Rawling III
2004 Soil-Geomorphic Relations of Lamellae in Eolian Sand on the High Plains of Texas and New Mexico. University of Arizona, Tucson, AZ

Munsell Soil Color Chart (Munsell)
2005 Revised Edition. Macbeth Division of Kollmorgan Instruments Corp.

Natural Resource Conservation Service
2014 Natural Resource Conservation Service. "Web Soil Survey" http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm. *(a*ccessed July 6, 2015).