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Lueders Water System Improvements Jones County, Texas

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ARCHAEOLOGICAL SURVEY OF THE PROPOSED

LUEDERS WATER SYSTEM IMPROVEMENTS

JONES COUNTY, TEXAS

Texas Antiquities Permit Number 8066

Cody S. Davis, MA
Principal Investigator

Submitted to:

JACOB & MARTIN
3465 Curry Lane
Abilene, Texas 79606

Submitted by:

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Cultural Resources Report 2017-53
August 22, 2017

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ABSTRACT

The City of Lueders, TX is proposing to make improvements to its water system in Jones County, TX. The project includes construction of an approximately 900 m long waterline south of town running from Cox Street to CR207/204. The pipeline bores under the Clear Fork of the Brazos River 450 m upstream from the Lake Penick dam. Jacob & Martin, LTD, which is designing the pipeline route, contracted with AR Consultants, Inc. to conduct a pedestrian survey of the route. The purpose of this investigation was to determine if significant cultural resources were present in the proposed project area. Site 41JS136 (formerly 41JS75), is a surficial scatter of prehistoric artifacts eroding out of the terrace overlooking the Clear Fork and site 41JS135 is the remains of a historic lake and associated features. Neither site is receiving a formal recommendation for NRHP or SAL. No evidence of the prehistoric site was found in the proposed route, and one of the levees for the historic lake will be avoided by directionally drilling under it. The portion of the route through 41JS136 (formerly 41JS75) is considered ineligible. No other cultural resources were identified during the survey of the remainder of pipeline route. Based on the results of the survey, AR Consultants, Inc. concludes that further cultural resource investigations for this project area are unwarranted, and requests that the THC concur with this recommendation. No artifacts were collected during the survey, and all paperwork will be curated with the Center for Archaeological Studies at Texas State University. However, if buried cultural materials are discovered during construction or the route changes, the Archeology Division of the THC and the Fort Worth District of the USACE should be notified.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

The City of Lueders is improving its water system in Jones County, Texas. The project includes construction of approximately 900 meters (m) of underground waterline from Cox Street south to County Road (CR) 207/204 (Figure 1). The name of the road changes at the county line, and CR207 is on the Jones County side. The 4-inch water line will be open cut along the centerline and once installed have 36 inches of ground cover. Maximum depth of impact is approximately 5 feet. The water line will be directionally drilled under the Clear Fork of the Brazos River. This portion of the Clear Fork was modified and dammed around 1919 to create Lake Penick. This lake provided water to Lueders, Avoca, and Stamford, Texas.

Water related infrastructure and features are still shown on modern aerials. These include the dam/spillway, pumphouse, settling basin with associated levees, an intake/filtration structure, and associated small structures. Most of these features are well outside the proposed route, but one of the levees is crossed. Furthermore, on the south side of the river, the Texas Archeological Sites Atlas ([TASA] 2017) shows a previously recorded prehistoric archaeological site, 41JS75. The site is described as a small hearth eroding out of the top 6 to 8 inches of soil by E.B. Sayles in 1928. However, a larger area than what was documented by Sayles was defined as the site by Darrell Creel in 1983. According to the site form, Creel describes the area of occupation as scattered through 2 acres approximately 22 miles northeast of Abilene, Texas near the confluence of Chimney Creek and the Clear Fork of the Brazos. This would place the site, approximately 3 miles south of its current location on TASA (2017). However, the UTM on the site form, when used with a NAD27 datum, puts the location in its current location on TASA (2017). To further add to the confusion, the area shown on TASA (2017) as the site boundaries is approximately 31 acres. Given the conflicting information on the site form, the survey of this proposed water line would hopefully shed some light on the location of this site.

The City of Lueders contracted with Jacob & Martin to handle permitting and design of the proposed water system improvements. Jacob & Martin contracted with AR Consultants, Inc. (ARC) to conduct a cultural resource survey of the proposed route. Given that the City of Lueders is seeking a Texas Water Development Board (TWDB) grant, as well as a Nationwide Permit 12 from the Fort Worth District of the U.S. Army Corps of Engineers (USACE), an archaeological survey was required. This report was prepared to be reviewed by the USACE and the Texas Historical Commission (THC). Relevant federal legislation includes the National Historic Preservation Act of 1966, as amended (PL-96-515), the National Environmental Policy Act of 1969 (PL-90-190), the Clean Water Act, as amended (PL-92-500), the Rivers and Harbors Act of 1899, the Archeological and Historical Preservation Act of 1974, as amended (PL-93-291), Executive Order No. 11593 "Protection and Enhancement of the Cultural Environment," and Protection of Historic Properties (36 CFR 800). Additionally, since Lueders is a political entity of the State of Texas, the Texas Antiquities Code also applies to the investigation, and Texas Antiquities Permit (TAP) Number 8066 was issued for the archaeological survey.

Given the sensitive nature of the potential archeological sites crossed by the short pipeline route, the scope of pedestrian survey was coordinated with the USACE and THC prior to obtaining the TAP. As a result of that coordination, the larger Lake Penick area would be recorded as an archaeological site, but the pipeline will be installed by directionally drilling under the levee crossed by the route and no formal National Register of Historic Places (NRHP) or State

Antiquities Landmark (SAL) recommendations would be made on the site's eligibility given the avoidance strategy. For site 41JS75, shovel tests and backhoe trenches were to be excavated along the route to try and locate any potential site deposit. If possible, the floodplain sediments on the north portion of the route were to be shovel tested and trenched. The area is on the south side of the Lake Penick levees is an established wetland, with standing water all year long.

This report is written in accordance with report guidelines used by the Archeology Division of the THC (Council of Texas Archeologists n.d.). The following report presents a brief description of the natural setting of the project area, followed by a discussion of the culture history and previous investigations within the study area. A chapter on the research design and methodology employed in the investigation is then followed by the results of the field investigation. The report concludes with recommendations followed by the references cited.

Administrative Information:

Sponsor:	City of Lueders with Jacob & Martin managing the permitting and design
Review Agency:	Fort Worth District of the U.S. Army Corps of Engineers and the Archeology Division of the Texas Historical Commission.
Principal Investigator:	Cody S. Davis, MA
Field Dates:	July 5 to 7, 2017
Field Crew:	Cody S. Davis
Acres Surveyed:	approximately 3.5 acres
Sites Investigated:	
Prehistoric:	41JS136 (Formerly 41JS75 as a revisit)
Historic:	41JS135 (Newly Recorded)
Curation:	Center for Archaeological Studies, Texas State University, San Marcos

Image Intentionally Omitted by Author

Figure 1. The proposed Lueders Water System Improvements water line route shown on a portion of the 1965 Lueders East, TX 7.5’ USGS topographic map.

NATURAL ENVIRONMENT

The natural environment of the project area is situated in the Red Prairie ecoregion of Texas, a subdivision of the Central Great Plains region (Griffith et al. 2007:v-iv). This ecoregion consists of lower-lying, rolling plains broken by streams and rivers (Griffith et al. 2007:32-34). Erosion from the larger rivers, including the Brazos and Colorado rivers, has eroded the limestone caprock that once existed, revealing Permian-aged sedimentary rock. These rocks are primarily shale, over which Pleistocene and Holocene residuum and alluvium lie. The red color of the Permian rock gives the region its name.

Vegetation is typically short to midgrass prairie with tree growth along streams. Küchler defines the location of the project area as within the Mesquite-Buffalo Grass vegetative zone (Küchler 1964). This zone is characterized by short grass with scattered broadleaf deciduous trees and shrubs. Buffalo grass and mesquite are the dominant plant varieties. Blair (1950) classifies this area as belonging to the Kansan biotic zone, while Brown et al. (1998) place it within the Semidesert (Chihuahuan) Grassland biotic community.

The geology of the project area around Lueders, TX is Permian-age sediments attributed to the Clear Fork Group and the Leuder Formation (Bureau of Economic Geology 1972). Much of the study area's geology consists of the Permian-aged Clear Fork Group of mudstone, siltstone, sandstone, dolomite, limestone, and gypsum. The rest of the project area is mapped on the Lueders Formation limestone and shale, while Quaternary deposits including Holocene-aged windblown sand deposits as well as alluvium deposits are associated along the Clear Fork of the Brazos River and its tributaries (Bureau of Economic Geology 1972).

There are several soil types that define the proposed water improvement project area along the floodplain. These are the Spur series loams with 0-5 percent slopes, Miles loamy fine sand with 0-3 percent slopes, Valera silty clay with 1-3 percent slopes, and Sagerton clay loam with 0-3 percent slopes., The Spur series loams consists of a 15 in A-horizon of brown clay loam underlain by 45 in of brown clay loam B-horizon soils (Rogers et al. 1972:16). Miles loamy fine sand is also present, consisting of 10 in thick A-horizon of brown fine sandy loam underlain by 45 in of yellowish red sandy clay loam B-horizon soils (Rogers et al. 1972:10). The A-horizon of the dark grayish to dark brown Valera silty clay is up to 44 in thick which overlays a brown B-Horizon (Rogers et al. 1972:18-19). Sagerton clay loams (OtB) have a shallow 7 to 9-in thick reddish brown A-horizon which rests on top of a banded B-horizons of red or reddish brown clay (Rogers et al. 1972:12-13).

Just downstream from the proposed pipeline route, a reconnaissance level geomorphic and archaeological potential study was done for the proposed Cedar Ridge Reservoir in Shackelford and Throckmorton counties (Tinsley et al. 2011). The investigations looked at the Clear Fork of the Brazos River from the Jones/Shackelford county line north-northeast to the Shackelford/Throckmorton county line. The results of the reconnaissance and GIS modeling demonstrated that high-probability areas along the Clear Fork are the upland Pleistocene alluvial and colluvial deposits as well as the Holocene deposits close to the river channel (Tinsley et al. 2011: 84).

CULTURAL HISTORY

A well-defined cultural chronology for Jones County has not been developed, as relatively few archaeological investigations have been conducted in this area. As the study area is situated in the northwestern portion of the Central Texas archaeological region, as defined by Perttula (2004:9), a brief chronology of Central Texas is included here in Table 1. The cultural history of this region is generally divided into four major periods: Paleoindian, Archaic, Late Prehistoric, and Historic (Collins 2004).

Table 1. Cultural Chronology.

Period	Dates
Historic	A.D. 1600
Late Prehistoric	A.D. 700 to 1600
Transitional Archaic	300 B.C. to A.D. 700
Late Archaic	1,000 to 300 B.C.
Middle Archaic	2,500 to 1,000 B.C.
Early Archaic	6,000 to 2,500 B.C.
Paleoindian	10,000 to 6,000 B.C.

Paleoindian Period

The Paleoindian period is characterized as having small, nomadic bands of hunter-gathers whose primary emphasis was the exploitation of now-extinct, Late-Pleistocene megafauna, such as mammoth, and still-extant big game, such as bison (Collins 2004:116). However, it is believed that smaller game hunting and plant gathering supplemented the Paleoindian diet (Bever and Meltzer 2007:). According to Bousman (2004) the period has been subdivided into the Early Paleoindian and the Late Paleoindian. The two subdivisions are most easily identified by differences in projectile points. Early Paleoindian (ca. 9200-8000 B.C.) is defined by the presence of Clovis and Folsom projectile points. Late Paleoindian period (8000-6000 B.C.) projectile points include the Angostura, Golondrina, and Scottsbuff. Sites dating to the Paleoindian period typically consist only of surficial deposits or isolated projectile points (Lintz et al. 1993:51); intact cultural deposits dating to the late Pleistocene/early Holocene are fairly rare on the landscape (Holliday 1997:159). However, buried Paleoindian sites have been found, and examples include the McLean site near Abilene (Bryan and Ray 1938:267), and the Adair-Steadman site on the Clear Fork of the Brazos (Tunnell 1977).

Archaic Period

This period, which is the longest in Texas prehistory, lasting approximately 7,500 years, is divided into four stages: Early, Middle, Late, and Transitional. In the Early Archaic (ca. 6000-2500 B.C.), population densities were relatively low and widely distributed. Despite the continued use of Paleoindian lithic technology, the emergence of a broadly-based hunting and gathering adaptation, especially an increase in evidence of gathering, marks the advent of the Archaic (Lintz et al. 1993:52). The appearance of grinding stones in period assemblages suggests that intensive processing of plant resources began to play a part, and the appearance of stone-lined hearths suggests a general refinement in food processing. The appearance of burned-rock middens marks the end of this cultural milieu. Burned rock middens are the dominate feature of sites from the Middle Archaic (ca.2500-1000 B.C.) and they suggest the increasing importance of food processing and possibly specialized food harvesting. Yucca and sotol, which would have been continually available in the cyclically xeric climatic conditions of the period, are present at several Middle Archaic sites (Johnson and Goode 1994:26). The Late Archaic (ca. 1000-300 B.C.) is distinguished by broad-body, expanding stem dart points such as Castroville, Marcos, and Montell. The period is marked by a general increase in populations, as evidenced by the density of Late Archaic deposits at stratified sites found in the region, which are disproportionately well-represented compared to earlier or succeeding periods (Prewitt 1985:217). The Transitional Archaic (ca. 300 B.C.-A.D. 700) is defined by distinctive projectile point types such as Ensor, Frio, Fairland, and Darl, which are smaller than those found in the preceding period.

<u>Late Prehistoric Period</u>

The introduction and spread of the bow and arrow mark the beginning of the Late Prehistoric Period. Two phases, the Austin and the Toyah, are recognized for this period. The Austin Phase (ca. A.D. 700-1300) is characterized by the presence of Scallorn and Edwards arrow points. The advent of the bow and arrow may be associated with violence, as many arrow points are found in context with burials thought to be the result of arrow wound fatalities (Prewitt 1974, 1981:83). The Toyah Phase (ca. A.D. 1300-1600) is associated with the resurgence of hunting as the dominant subsistence strategy, which constitutes the first significant shift in area subsistence patterns since the advent of the Archaic. Artifact assemblages reflect this shift, and include Perdiz arrow points, large and thin bifaces, end scrapers, and prismatic blades (Collins 2004:123). The presence of exotic or non-local ceramics and arrow points at area sites dating to the Late Prehistoric suggests an increase in long distance trading, particularly with the Caddo to the east (McWilliams et al. 2000:4).

<u>Historic Period</u>

Lipan Apache are the earliest indigenous group known in the historic record, and occupied the area in the sixteenth century at the time of European *entrada* (Shelton 2017). Comanche and Kiowa later arrived from the north, while Pawnee, Wichita, and Waco visited the area periodically to hunt along the upper Brazos. These groups forged a path, later known as the Old Indian Trail, which they used to migrate between the southern plains and Central Texas. Spanish Explorers were the first Europeans to enter the region in the mid-sixteenth century, and it is thought that the Coronado Expedition passed through the area, stopping in neighboring Taylor County in 1541 (Donoghue 2013; TASA 2017). Jose Mares crossed the area in 1788 while searching for a more direct route from Santa Fe to San Antonio. In 1847, Randolph B. Marcy utilized part of the Old Indian Trail as a route between Fort Smith and Santa Fe. In 1856, Robert E. Lee traversed the county on a punitive mission against the indigenous inhabitants of the area.

Jones County was first settled by white settlers in 1851 as a result of the construction of Fort Phantom Hill, one of a line of forts extending from the Red River to the Rio Grande. Fort Phantom Hill would eventually be abandoned in 1854 and repurposed as a mail route station in 1858. Jones County was established in February 1858 from Bexar and Bosque Counties. In 1881 Jones City was declared the county seat but the name was changed to Anson the following year. The population of Jones County saw an explosion between 1881 and 1890 from 546 to 3,797. Ranching and farming were the dominant force in the county's economy during this time which included cotton, oats, corn and wheat (Odintz 2017). With the construction of the Missouri, Kansas and Texas Railroad in 1900 the town of Lueders was born. At one point the train stopped twice daily in Lueders going each direction.

In 1919, a dam and spillway were constructed along the Clear Fork of the Brazos River just south of Lueders to provide water for Lueders, Avoca, and Stamford. Lake Penick was formed by the construction of the dam and spillway. The construction of Lake Stamford in 1950s reversed the water flow in the pipeline and the Lake Penick dam waterworks were shutdown (Shelton 1978: 283; Latimer and Smyth 2005). According to an article in the April 1, 1919 Texas Trade Review and Industrial Record (TTRIR 1919a: 3), Stamford's Mayor Robert Lee Penick had been working on a resolution to build a system of dams and reservoirs to ensure the area had water after the drought of 1917 and 1918. The article states that Mayor Penick made observations that during the worst months of the 1918 drought, the Clear Fork only failed to flow 49 days of the 11-month period. It was during that time, that Mayor Penick and his engineers proposed building a dam near the Shackelford County line, which would impound 150,000,000 cubic feet of water (TTRIR 1919a: 3). The city investigated the proposition and voted to purchase $440,000 worth of bonds for the project as the rocky gorge was thought to be an ideal site for a reservoir. The article goes on to say that a large work force of men has been in the bottomland clearing the lake bed and as a byproduct now owns 1500 cords of wood along the Missouri, Kansas, and Texas Railway. This railroad crossed the river approximately 0.4 miles west of the proposed pipeline route. The lake was described as being 200 feet wide, 10 feet deep, and one mile long, roughly the dimension of the lake on USGS map. Given the sandy nature of the water, the project also called for settling basins and a 20-inch concrete pipeline for transporting the water to a high spot where it could be gravity fed to Stamford. According to the article, Mayor Penick was making a home on the proposed lake. Latimer and Smyth (2005) note that in 1932, flooding of the Clear Fork caused Mayor Penick and his daughter to be rescued from the west side of the lake. The May 1 issue of TTRIR (1919b: 30) had a small ad from Mayor Penick advertising, the city would be accepting bids for the construction of the dam, pipelines, and two earthen reservoirs until May 20th.

The record of this lake gets complicated after the 1919 TTRIR information, as articles published on March 1st of the 1920, suggests that Lake Penick is 17 miles east of Stamford on the Clear Fork near the Shakelford County line (TTRIR 1920a: 9). This description comes from an ad for a hotel and pavilion for Lake Penick. However, the description of this lake is half a mile wide and 20 feet deep (TTRIR 1920a: 9). Two pages later in this same issue, there is a discussion of a lake being built 17 miles east of Stamford on the Clear Fork, where the masonry dam will be 35 feet high with a spillway that is 1000 feet long, as well as a 1700-foot-long levee on the west side of the basin (TTRIR 1920b: 11). This issue is further complicated by an ad in the July 15, 1920 issue, which is calling for teams to rebuild Lake Penick, 15 miles southeast of Stamford, where one of the earth retaining walls had washed out on Stamford's 3,000,000,000-gallon lake (TTRIR 1920c: 29). Review of USGS maps along the Clear Fork, 17 miles east of Stamford do not show a dam or spillway on the river that matches either description, but the channel is mapped in this part as going from a channel to larger ponds in numerous locations where some small check dams had been built. One of these dams was documented during the Cedar Ridge study as being built in the 1930 (Tinsley et al. 2011: 49). So, it is unclear if there were two Lake Penicks or not, but it is clear that by 1953, Lake Stamford in Haskell County was built, and it became the main source of water for the area (Shelton 1978:283; Latimer and Smyth 2005).

In 1926, oil was discovered at the Noodle Creek oilfield southwest of Anson, though the oil industry was never a dominant force in the county's economy though it mitigated the effects of the Great Depression. By the 1970's manufacturing and agriculture became dominant and continue to be today (Odintz 2017).

Previous Investigations

The archaeology of Jones County is closely tied to the activities of Dr. Cyrus N. Ray (1929, 1931, 1933, 1935, 1937, 1945) who was a founder of the Texas Archeological Society (formerly the Texas Archaeological and Paleontological Society). Ray collaborated with E. B. Sayles (1929, 1935) of Gila Pueblo in Globe, Arizona (Ray and Sayles 1941) in the definition of a cultural and chronological framework for prehistoric Native American sites in the Abilene area. Ray's work has not been expanded upon, largely due to the fact that very few prehistoric site investigations have been conducted in the immediate area since World War II.

A review of the TASA was conducted prior to fieldwork. Within a two-mile radius of the project area three archaeological sites, two prehistoric and a single historic cemetery, were identified. The proposed pipeline passes through a single, previously recorded, archaeological site (41JS75) mapped on the southern bank of the Clear Fork. The site is reported as a possible Wichita campsite (TASA 2017). The site is described as a small hearth site documented in the top 6 to 8 inches by E.B. Sayles in 1928. However, a larger area than what was documented by Sayles was defined as the site by Darrell Creel in 1983. According to the site form, Creel describes the area of occupation as scattered through 2 acres approximately 22 miles northeast of Abilene, Texas near the confluence of Chimney Creek and the Clear Fork of the Brazos. This would place the site, approximately 3 miles south of its current location on TASA (2017). However, the UTM on the site form, when used with a NAD27 datum, puts the location in its current location on TASA (2017). To further add to the confusion, the area shown on TASA (2017) as the site boundaries are approximately 31 acres. A second archaeological site, 41SF20, is located about 0.85 miles east on Highway 6. The site was exposed while sand was removed for limestone quarrying. The site rests on land owned by Lueders Limestone quarry and has likely been destroyed. Burnt rock, chert flakes, a scraper, a preform, and a fluted fish-tail biface were recorded. Finally, the Lueders or Clear Fork Cemetery is located about 1.3 mi south of the project area. Land for the cemetery was donated by John M. Roberts, Clark Henry King, and Mrs. E.V. Risely in 1907 (TASA 2017). The cemetery is visible on the Lueders East 1965 7.5' topographic map and in aerial photographs from 1954.

The most recent study done in the area, is just downstream from the Lake Penick dam and spillway, which was done for the Cedar Ridge Reservoir (Tinsley et al. 2011). This reconnaissance level geomorphic and archaeological potential study looked at the Clear Fork of the Brazos River from the Jones/Shackelford county line north-northeast to the Shackelford/Throckmorton county line. The results of the reconnaissance and GIS modeling demonstrated that high-probability areas along the Clear Fork are the upland Pleistocene alluvial and colluvial deposits as well as the Holocene deposits close to the river channel (Tinsley et al. 2011: 84). During the reconnaissance, at least 12 locations that were scouted for geologic profiles contained archaeological deposits eroding out of the banks of the Clear Fork (Tinsley et al. 2011: Table 1). The report does not mention any knowledge of a previous reservoir being built 17 miles east of Stamford nor does it mention the one south of Lueders.

A search of historic aerial photographs, maps, and literature identified the Lake Penick dam as a historic resource located within the proposed project area. The dam was constructed in 1919 to provide water for the towns of Lueders, Avoca, and Stamford (Shelton 1978: 283; Latimer and Smyth 2005). While the survey corridor passes 0.25 mi west of the dam and spillway, pumphouse, and intake, it does cross a levee on the northern bank of the Clear Fork. The corridor also parallels the western levee of the Lake Penick settling pond, but is outside of the survey corridor.

A records search to identify historic structures reviewed early General Highway Maps (GHMs), USGS Topographic Maps, and historic aerial photographs. The earliest maps of the region are the 1891 and 1893 Anson 1:125,000 topographic maps. When these maps were produced the City of Lueders did not exist. However, the maps do show portions of what is today CR 600 which runs roughly north to south to the west of town. No structures are depicted on the maps. The first map to show structures is the 1936 GHM. Historic structures are shown near the route, but the scale at which the map was drawn makes it impossible to know how close they would have been. The more accurately drawn 1965 Lueders East 7.5’ USGS topographic map shows two structures near the proposed route. These structures are south of the intersection of Bridge and Cox streets. These structures were shown on the 1987 Lueders East 7.5’ USGS map. Both structures are visible on the 1954, 1964, and 1975 aerial photographs. A third structure is located at the northern corner of Lake Penick does not appear on any map or the 1964 aerial photograph but is visible in the 1975 aerial photograph and is still present on recent Google Earth aerials. The structure is outside the proposed survey corridor. Lake Penick and all the associated features and structures are mapped on the historic USGS maps and shown on all aerials since 1954.

RESEARCH DESIGN

Research Design

Based on the research conducted prior to survey, two hypotheses were developed. The first hypothesis addresses the potential for encountering prehistoric archaeological sites within the study area. It was hypothesized that prehistoric archaeological sites could be encountered, especially along the southern bank of the Clear Fork based on the mapped location of site 41JS75. Previous investigations demonstrated that high-probability areas along the Clear Fork are the upland Pleistocene alluvial and colluvial deposits as well as the Holocene deposits close to the river channel. The potential for finding prehistoric archaeological sites north of the Clear Fork is low based on the construction of the Lake Penick and associated features that the pipeline route follows as well as quarry activities.

The second hypothesis states that there was potential for encountering historic sites during the survey. At least four potential historic site locations were identified during the map review. The first, is the Lake Penick levee as well as three structures that appears on the historic maps and aerials. Two of these structures are no longer present on current aerials, and all three are shown outside of the 50 ft wide survey corridor. While the locations of these structures are outside of the survey corridor, it is possible that historic trash scatters and features such as foundations, cisterns, and or wells associated with the mapped structures may be present within the survey area.

Methodology

Survey was conducted in accordance with the standards set forth by the THC (n.d.). Field personnel walked a transect along the centerline of the 50 ft wide survey corridor. Shovel tests were placed where ground visibility was less than 30-percent and the ground surface was not heavily disturbed. In areas that were disturbed, or had existing features, shovel testing was not conducted. Shovel tests averaged 30 cm in diameter. Sandy loam from the shovel tests was screened through ¼-inch mesh hardware cloth. When clay fill was encountered, it was inspected visually and broken into smaller chunks in order to determine if cultural materials were present. Shovel test matrices were described on the basis of composition, texture, and color. Survey of the 300 m of pipeline on the south side of the river, will include the excavation of shovel tests across the mapped site area within the survey corridor at 50 m intervals, followed by the excavation of three backhoe trenches. If possible, a couple of trenches will be excavated on the north side of the river in the floodplain. On the north side of the river, the proposed route crosses through approximately 180 m of floodplain, while the south side is approximately 210 m, according to the mapped soils (Rogers et al. 1972).

A backhoe was used to excavate trenches in the floodplain along the proposed route. Trenches were stepped to OSHA standards. The clay fill was inspected visually and broken into smaller chunks to determine if cultural materials were present. Additionally, all walls, floors, benches, and back dirt was examined for cultural materials. Trench matrices were described based on composition, texture, and color (Vogel 2002). The Munsell Soil Color Chart (2010) was used to identify soil colors. The author made notes about the ground exposure, drainages, soil types, and disturbed areas where subsoil was exposed. Photographs were taken during the survey using a 16-megapixel, digital camera. Shovel test and project boundary locations were marked with a handheld Garmin GPS. Trenches were approximately 10 m long and 2 m deep, given the maximum depth of anticipated impacts are 5 feet. These survey methods comply with standards referenced in 13 Texas Antiquities Code (TAC) 26.20.

If archaeological artifacts had been encountered during the survey, they would have been documented to CTA (n.d.) standards with at least eight shovel tests radiating outward in the cardinal directions from the original positive shovel test. Site boundaries would have been defined by two consecutive negative shovel tests in each of the cardinal directions, where that was possible. Trenches on the south side of the river were excavated in the survey corridor to look for buried cultural features that could be associated with 41JS75. If a site deposit had been found in a trench, additional trenches would have been excavated to define its limits.

RESULTS

This chapter is divided into three sections. The first describes the project area's natural setting along with results of the pedestrian survey. Shovel test and trench profiles are described generally throughout the text, but are detailed in Table 2 and Table 3. Site descriptions and conclusions end the chapter.

Survey Results

Beginning at the southern end of the proposed water line, the route extends north from the terrace into the Clear Fork floodplain (Figure 2). Overall, 10 shovel tests (ST) and three backhoe trenches (BHT) were excavated along the 900-m route. The southernmost 140 m of the route is in a gently-sloping open-pasture that had been recently mowed providing 0 to 50 percent ground surface visibility (Figure 3). River rolled gravels between 1 and 65 mm in diameter were noted on the surface, most were in the pea size range (Figure 4). The pasture slopes down to the west and north and appears to have been cleared and farmed since the 1953 aerial was taken. As the route moves north, the next 50 m runs through an area that was previously cleared, but is now densely covered with young mesquite trees and tall grass (Figure 5). Before reaching the river, the route encounters two more settings, approximately 50 m of sparsely spread older mesquite trees (Figure 6), and then a final 50 m of wetland (Figure 7). Where these older mesquites and the wetland meet, there is at least a 2-foot elevation change, with the wetland below and containing a foot of standing water. North of ST4 and BHT2 the ground surface visibly was severely diminished. The NRCS soil data shows the terrace sediments meeting the floodplain between ST2 and ST3, however, profiles from the ST1-4 and BHT1 and BHT2 suggest this area is likely terrace. The contour shown on the USGS map near ST4 and BHT2 is likely where these soils transition. Based on the two profiles collected in BHT2, the vegetation change along that contour, likely represents this transition. In speaking with the landowner's daughter, Mrs. Young (personal communication, 2017), this area with the young mesquites is the highest she's ever seen the water reach. Her father, George Young bought the property in 2007, but the family is from Lueders, and Mrs. Young remembered visiting Lake Penick as a child. All the STs and BHTs were negative for cultural resources and none were observed on the surface of the proposed route. While scouting access for the backhoe through these wooded areas, artifacts were overserved on the surface, 30 m east of the proposed route along the mapped location of the USGS contour. This will be discussed further in the 41JS136 (formerly 41JS75) site description.

Continuing north, after crossing under the river, the route passes through a very low and inundated wetland on the south side of the Lake Penick levee. This area held at least a foot or more of water, and according to Cody Hubbard, with the City of Lueders, it never dries up. This was confirmed by the landowner, Marilou Rydl. She has owned the property containing all of the Lake Penick features since 2010 or so, as she could not remember the exact year. She went on to say, she bought the property back from the City of Stamford, as they had bought if from her uncle sometime around 1918 or 1919 (Rydl personal communication, 2017). The route then crosses under the Lake Penick levee and returns to mapped terrace deposits (Figure 9). This area appeared to have been quarried since the early 20th century. Surficial limestone bedrock was exposed on the surface in the northern 100 m of the route (Figure 10). No evidence of either structure shown on the USGS maps was observed in the field. Additionally, the third small structure observed on aerials outside of the survey corridor, turned out to be a cattle feeder likely dating to the 1970s. No cultural resources, other than the levees, were found on the north side of the river.

Figure 2. Shovel tests and backhoe trenches shown on the 1965 Lueders East, TX 7.5' USGS map. STs are labeled on topo, while BHTs are labeled on the aerial inset.

Figure 3. Looking north from ST1 down centerline of proposed route.

Figure 4. Ground surface visibility between ST2 and ST3. Note mostly pea size gravels were on the surface.

Figure 5. Looking north down centerline of route, where ST4 and BHT2 were excavated at the vegetation change.

Figure 6. Looking north at second vegetation change near ST5 and BHT3.

Figure 7. Looking north along route towards wetland south of the Clear Fork channel near ST6. Light green vegetation in background represents elevated two-track road shown on aerials.

Figure 8. Established wetland just south of the Lake Penick levee. View is to the southwest.

Figure 9. Looking north along centerline from ST7. Note dense vegetation on right hand side, represents a fence line, and on the other side of the fence is the levee for the square settling basin.

Figure 10. Looking south at the northern 100 m of route with limestone bedrock on surface. Note upper right background shows large limestone shelf, which extends 2 to 3 feet higher into the vegetation, demonstrating the area has been quarried into the limestone.

As previously mentioned, ST1-4 on the south side of the river, appear to closely match the Miles series soil descriptions for terrace deposits, although the description has no mention of gravels in these sediments (Table 3). This general profile was the same for BHT1 (Figure 11). This trench was roughly oriented north/south as was a little over 12 m long and nearly 2 m deep (Figure 12). While gravels were found throughout the trench, the size of the gravels increased with depth.

Figure 11. BHT1 profile on west wall.

Figure 12. Overview of BHT1 looking north.

BHT2 was excavated at the vegetation change marked by the USGS contour. The trench was approximately 10 m long and 2 m deep (Figure 13A). The water table was encountered around 150 cm below the surface (cmbs), and the bottom quickly filled with water. The trench was started in the north and extended south towards the open pasture, once the open field was encountered in the trench, the sediments in the last meter (Profile 2), looked similar to BHT1, while Profile 1 appeared to be closer to the floodplain description of the Spur Series (Figure 13B). As with the STs and BHT2 gravels were noted throughout the trench.

Figure 13. A. Overview of BHT2 looking south, with both profile locations noted. B. View of Profile 1 in BHT2 on west wall.

BHT3 was excavated near ST5 at the transition from the young mesquites to the older and more sparsely spread mesquites (Figure 14). The profile throughout this trench was consistent throughout this 10 m long, 2 m deep trench. Between 60-70 cmbs a sandy flood event was noted in the profile (Figure 15). Additionally, the water table was encountered between 100 and 140 cmbs, the wet sandy clays in the bottom did not have much structure or strength and the trench began to collapse. No cultural materials were noted in any of the trenches, walls, floors, or back fill.

Figure 14. Overview of BHT3 looking north towards wetland. Note water filling in trench.

Figure 15. BHT3 profile in west wall.

Table 2. Shovel Test Descriptions from Pipeline Route.

ST Number	Depth (cmbs)	Description	Comment/Artifacts
1	0-30 30-50 50-170 170-180	Yellowish red (5YR5/6) sandy loam with 5% gravels Reddish brown (5YR4/4) sandy clay Yellowish red (5YR5/8) sandy clay Grayish brown (10YR5/2) mottled with 40% yellowish red (5YR5/6) sandy clay	Gravel size is between 5 and 65 mm None
2	0-20 20-60 60-80 80-100	Dark reddish brown (5YR3/2) clay loam with 5% gravel Dark reddish gray (5YR4/2) sandy clay Red (2.5YR5/8) mottled with 50% reddish brown (5YR4/4) sandy clay with 10% gravel Red (2.5YR5/8) mottled with 40% yellowish red (5YR5/6) sandy clay with 15% gravel and 5% $CaCO_3$	Gravel size is between 5 and 65 mm None
3	0-20 20-80 80-110 110-130	Dark reddish brown (5YR3/2) sandy clay loam Dark reddish gray (5YR4/2) sandy clay Red (2.5YR5/8) sandy clay with 10% gravel Red (2.5/YR5/8) sandy clay with 50% gravel	Gravel size is between 5 and 65 mm and increased in size with depth None
4	0-20 20-100 100-160	Dark reddish brown (5YR3/2) sandy clay loam Dark reddish gray (5YR4/2) sandy clay Red (2.5YR4/8) sandy clay with 30% gravel	Gravel size is between 5 and 65 mm None
5	0-20 20-90 90-150	Dark reddish brown (5YR3/2) sandy clay loam Dark reddish gray (5YR4/2) sandy clay Red (2.5YR4/8) sandy clay with 30% gravel	Gravel size is between 5 and 65 mm None
6	0-20 20-60 60-90 90-110	Dark reddish brown (5YR3/2) clay loam Dark reddish gray (5YR4/2) sandy clay with 5% gravel Reddish brown (2.5YR4/3) sandy clay with 5% $CaCO_3$ Dark reddish brown (2.5YR2.5/4) sandy clay-water table	Gravel size is between 5 and 65 mm None
7	0-20 20-50 50-110 110-130	Reddish brown (5YR4/4) clay loam Dark reddish brown (5YR3/2) sandy clay Yellowish red (5YR5/6) sandy clay Dark reddish gray (5YR4/2) mottled 50% with yellowish red (5YR5/8) sandy clay	None
8	0-30 30-80 80-140 140-150	Reddish brown (5YR4/4) clay loam Reddish brown (5YR4/3) sandy clay Yellowish red (5YR5/8) sandy clay with 5% gravel Yellowish red (5YR5/6) sandy clay with 15% gravel	Gravel size is between 5 and 65 mm and increased in size with depth None
9	0-20 20-70 70-80	Yellowish red (5YR5/6) clay loam with 5% gravel Yellowish red (5YR5/8) sandy clay with 15% gravel Dark reddish brown (5YR3/3) sandy clay	Gravel size is between 5 and 65 mm None
10	0-5 5+	Reddish brown (5YR4/3) clay loam Limestone bedrock	None

Table 3. Trench Descriptions from Pipeline Route.

Trench	Zone	Depth (cmbs)	Description	Comments
1	1	0-21	Dark reddish brown (5YR3/4) sandy loam; 5% pea size gravel; abundant roots/rootlets; no redox; weak, soft, and friable; blocky, subangular blocky structure; common biopores; gradual smooth boundary, plow zone	No cultural materials
	2	21-50	Reddish brown (5YR4/4) sandy clay loam, 10% pea size gravels; common roots/rootlets; no redox; some clay films; moderate strength; subangular blocky structure; some biopores; gradual smooth boundary	No cultural materials
	3	50-82	Yellowish red (5YR5/6) sandy clay; ribbons; 5% $CaCO_3$; no roots/rootlets; 15% gravel pea to golfball size; subangular blocky structure; weak to moderate strength; clay films; no biopores; gradual smooth boundary	No cultural materials

Trench	Zone	Depth (cmbs)	Description	Comments
	4	82-180	Red (2.5YR5/6) sandy clay; 20% $CaCO_3$; no roots/rootlets; subangular blocky structure; moderate strength; no ped linings; no biopores; 40% gravel between pea and baseball size	No cultural materials
2 Profile 1	1	0-42	Reddish brown (5YR4/4) clay loam; 5 to 10% pea size gravel; abundant roots/rootlets; common biopores; no redox; subangular blocky structure; weak structure; clear smooth boundary	No cultural materials
	2	42-87	Yellowish red (5YR4/6) sand clay loam; 5% $CaCO_3$; no gravels; few roots/rootlets; few biopores; no redox; subangular blocky structure; moderate; clay films; gradual smooth boundary	No cultural materials
	3	87-170	Reddish yellow (5YR6/8) clay loam; no roots/rootlets; no biopores; 5% $CaCO_3$; blocky, subangular structure; weak to moderate; friable; few clay films; clear smooth boundary; wet, water seepage	No cultural materials
	4	170-205	Reddish yellow (5YR6/8) mottled with yellowish red (5YR4/6) sandy clay; 10-15% $CaCO_3$; no roots/rootlets; no biopores; subangular blocky structure; moderate; very wet; water table	No cultural materials
2 Profile 2	1	0-30	Reddish brown (5YR4/3) clay loam; 5-10% pea to golfball size gravel; abundant roots/rootlets; abundant biopores; subangular blocky structure; weak; no ped linings; gradual smooth boundary, plow zone	No cultural materials
	2	30-100	Yellowish red (5YR4/6) clay loam; few roots/rootlets; 10-15% $CaCO_3$; 10% pea to golfball size gravel; subangular blocky structure; weak to moderate; some biopores; no redox; no ped linings; clear smooth boundary	No cultural materials
	3	100-140	Red (2.5YR4/6) sandy clay; ribbons; moderate; 10% $CaCO_3$; no roots/rootlets; no biopores; subangular blocky structure; no ped linings; 5% $CaCO_3$; gradual smooth boundary	No cultural materials
	4	140-200	Yellowish red (5YR5/8) mottled with 40% pink (7.5YR7/3) sandy clay; no roots/rootlets; no biopores; blocky, subangular structure; strong; no ped linings; 5% $CaCO_3$, Water table	No cultural materials
3	1	0-30	Dark reddish brown (5YR3/2) clay loam; abundant roots/rootlets; weak, soft, and friable; subangular blocky structure; common biopores; gradual smooth boundary	No cultural materials
	2	30-60	Reddish brown (5YR4/4) sandy clay loam, 5% pea size gravels; 5% $CaCO_3$; common roots/rootlets; weak to moderate strength; subangular blocky structure; some biopores; clear smooth boundary	No cultural materials
	3	60-70	Yellowish red (5YR4/6) fine to coarse sand; weak; no structure; no roots/rootlets; no biopores; clear smooth boundary	No cultural materials
	4	70-140	reddish brown (5YR4/4) clay loam; 5% $CaCO_3$; no roots/rootlets; subangular blocky structure; weak; no ped linings; no biopores; gradual smooth boundary	No cultural materials
	5	140-200	yellowish red (5YR5/8) mottled with pink (5YR7/3) sandy clay; 5% $CaCO_3$; wet; water table; degraded sandstone; 5% pea to golfball size gravels; no roots; no biopores	No cultural materials

<u>41JS136 (Formerly 41JS75)</u>

As previously described there is some confusion over the location and size of site 41JS75 (now 41JS136). On TASA (2017) the site is mapped on the south bank of the Clear Fork. The site was reported as a possible Wichita campsite (TASA 2017), but described by E. B. Sayles as a small hearth site eroding out of the top 6 to 8 inches of soil in 1928. Given this description, he was likely noting artifacts eroding out of the terrace. It is unclear if Sayles documented the size of the site, but a larger area than what he mentioned was defined as the site by Darrell Creel in 1983. The Texas Archeological Research Laboratory (TARL), where these records are held, contain some conflicting information about the site. According to the site form, Creel described the area of occupation as scattered through 2 acres approximately 22 miles northeast of Abilene near the confluence of Chimney Creek and the Clear Fork of the Brazos. The site form does show a “?” after Chimney Creek, so it is possible that Chimney Creek could be Cottonwood Creek, which is 700 m east of the proposed route. If Chimney Creek is correct, this would place the site approximately 3 miles south of its location on TASA (2017). However, the UTM on the site form, when used with a NAD27 datum, puts the site centroid in its current location on TASA (2017) as shown on Figure 16. It is unclear from discussions with TARL (2017), where these coordinates originate from. To further add to the confusion, the site area shown on TASA (2017) is approximately 31 acres. Discussions with TARL, made it clear, they know the areas are enlarged and tentative, given that the information from Sayles is not very clear on the site location. However, during the course of the review, additional research by TARL and by James Barrera of the Fort Worth District of the USACE, it was decided to move the Sayles site, 41JS75/Anson:2:1 to the south side of Chimney Creek and another Sayles site 41JS52. Barrera was able to confirm the site location from public roads. Therefore, the site in the study area will now be known as 41JS136.

Image Intentionally Omitted by Author

Figure 16. Plan map showing the survey area, previous and updated site boundaries for 41JS136 shown on a portion of a recent aerial photograph.

While no artifacts were found within the survey corridor, there were some surficial artifacts noted approximately 30 m east of the proposed route. While scouting access into the wooded area for the backhoe, the author noted a couple of interior flakes on the surface in an area right near the terrace edge. Inspection of the area did not locate any other artifacts, but made it clear that there was potential for prehistoric occupation in the area. Additionally, discussions with the landowner, revealed that there is a possible historic burial just northwest of the structures shown on historic maps and aerials. This location was noted by the author but not verified in the field. The landowner says they have fenced the area off and the wooden marker just read "Mommy." This information was given to TARL. Whether or not this is the site Sayles documented, the area should remain classified as a site. The site boundaries were adjusted, so that it and the newly recorded site 41JS135, Lake Penick, did not overlap. The eastern portion of 41JS136 was cut out from where previous quarry activities have likely removed any evidence of prehistoric occupation. While no evidence was found of the site in the survey corridor, any changes to the route or future work in the area should consider the area high potential for prehistoric and historic archaeology. Given the negative results, the portion of the survey corridor within the site is not eligible for listing on the NRHP or as an SAL. Additional testing is needed to determine the true extent of the site boundaries as well as make a formal recommendation of eligibility for the NRHP or as an SAL for the portion of site 41JS136 outside of the survey corridor.

<u>41JS135</u>

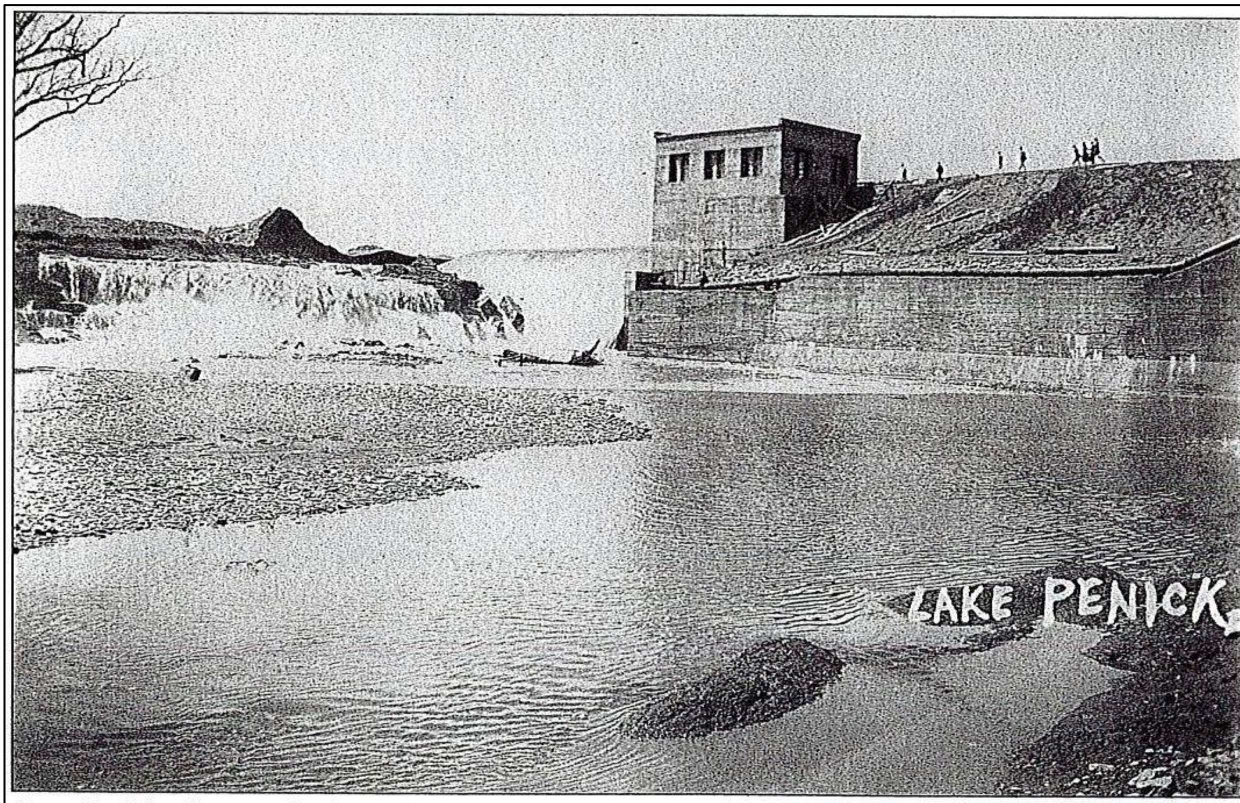
Lake Penick and its associated features were recorded as site 41JS135. The site boundaries were determined using the extent of the levees mapped on the USGS and the features visible on the 1964 USGS aerial (Figure 17). Only the western extent of the levee is crossed by the proposed pipeline route, and the water line will be directionally drilled under the levee. The project will not impact the site, therefore no formal NRHP or SAL recommendation is given. The site requires additional research, testing, and detailed mapping in order to make a final recommendation. The following discussion summarizes what is known about the lake from archival resources and oral history interviews.

Based on the previous discussion in the Cultural History section of this report, the construction of the dam and spillway likely began around 1918, but the project was not likely completed until 1920. Articles in the TTRIR (1919a: 3) state that Stamford's Mayor Penick was working on building a reservoir to ensure the area had water after the severe drought of 1917 and 1918. The article states that Mayor Penick noted that during the worst months of the 1918 drought, the Clear Fork only failed to flow 49 days. It was during that time, that he and his engineers proposed building a dam near the Shackelford County line, which would impound 150,000,000 cubic feet of water (TTRIR 1919a: 3). The city investigated the proposition and voted to use $440,000 worth of bonds for the project as the rocky gorge was thought to be an ideal site for a reservoir. The article goes on to say that a large work force of men had been in the bottomland clearing the lake bed and as a byproduct now owns 1500 cords of wood between Missouri, Kansas, and Texas Railway and the dam and spillway. This railroad crossed the river approximately 600 m west of the study area. The lake was described as 200 feet wide, 10 feet deep, and one mile long, roughly the dimension of the lake on USGS map. Given the sandy nature of the water, the project also called for two settling basins between Lueders and Stamford as well as a 20-inch concrete pipeline for transporting the water to a high spot where it could be gravity fed to the cities. The May 1 issue of TTRIR (1919b: 30) had a small ad from Mayor Penick advertising, the city would be accepting bids for the construction of the dam, pipelines, and two earthen reservoirs until May 20th. None of the information in the 1919 volumes explicitly state where the lake is located, other than several miles from Stamford.

Image Intentionally Omitted by Author

Figure 17. Plan map showing the boundary of 41JS135 on a portion of a 1964 USGS aerial. Top inset shows the site area on 2014 70 cm resolution LiDAR from FEMA (TNRIS 2017), while bottom inset shows 5 ft contours derived from the LiDAR.

Articles published in the 1920 TTRIR volumes, state that Lake Penick is 17 miles east of Stamford on the Clear Fork near the Shackelford County line (TTRIR 1920a: 9). This description comes from an ad for a hotel and pavilion on Lake Penick. However, the description of this lake is half a mile wide and 20 feet deep (TTRIR 1920a: 9). Two pages later in this same issue, there is another discussion of a lake being built 17 miles east of Stamford on the Clear Fork, where the masonry dam would be 35 feet high with a spillway that is 1000 feet long, as well as a 1700-foot-long levee on the west side of the basin (TTRIR 1920b: 11). This description roughly matches the features at site 41JS135, expect the visible spillway on the 1964 aerial appears to be approximately 800 feet long. While levee running parallel to the lake/river channel is approximately 1700 feet long, it is on the north side not the west side of the lake. To further complicate the situation, the July 15, 1920 issue has an ad looking for teams to rebuild Lake Penick, 15 miles southeast of Stamford, where one of the earth retaining walls had washed out on Stamford’s 3,000,000,000-gallon lake (TTRIR 1920c: 29). Review of USGS maps along the Clear Fork, 17 miles east of Stamford do not show a dam or spillway on the river that matches either description, but the channel is mapped in this part as going from a channel to larger ponds in numerous locations where some small check dams had been built. One of these dams was documented during the Cedar Ridge study as being built in the 1930s (Tinsley et al. 2011: 49). The author reached out to Charles Frederick and Tanya McDougall, who are co-authors on the Cedar Ridge report, and neither of them had come across any information suggesting a dam similar to the previous descriptions was ever built in that part of the Clear Fork. During discussions with them, it was noted that Ann Keen of HDR, Inc., had taken over the historic research for that project, and she was contacted as well. She had no information that suggested any other lake, besides the one recorded as 41JS135, was ever built on the Clear Fork. This information matched what several informants from Lueders knew about the lake. It appears that the information mention in the various TTRIR articles were all referring to Lake Penick south of Lueders, and the description of it being east of Stamford, really meant southeast. This becomes most apparent when, looking at the article in 1920 (TTRIR 1920a: 9) that gives a description of where Mayor Penick was planning on building the hotel and pavilion. The property is described as being five miles above the dam and will be 18 miles from Stamford, 22 miles from Abilene, 16 miles from Anson, and 18 miles from Albany. When using these descriptions, the property would likely be located near the confluence of Chimney Creek and the Clear Fork, some 3 miles south of the proposed route. Nonetheless, the consensus is that the lake was completed around 1919 and was the fourth largest artificial body of water in Texas at the time (Collet 2013: 76).



Stamford leaders worked quickly to avoid another embarrassing water shortage. This dam was constructed on the Clear Fork of the Brazos River, 16 miles southeast of Stamford, using rock from the nearby Leuders quarries. Completed in 1919 at a cost of $575,000, the new Lake Penick was the fourth-largest artificial body of water in Texas at the time.

Figure 18. Early photograph of Lake Penick dam, spillway, and pumphouse (courtesy of Collet 2013:76).

During the field investigation, the author contacted the 82-year-old landowner, Marilou Rydl and asked what all she knew about the site. She felt like she did not really know anything about the site, but suggested talking to Edith Hamm (83 years old), who probably knew more. Rydl has owned the property since approximately 2010, she thinks, and that she bought it back from the City of Stamford, which bought the property from her uncle around 1918. Rydl encouraged the author to go and photograph the site, as she felt it was important to the history of Lueders. Edith Hamm was contacted, but ultimately had nothing to add, other than referring the author to Stephen Vinson (69 years old), another resident of Lueders, whose family had been part of building the lake. Both Hamm and Vinson were able to confirm that the earthen levees were built using sediment from the river channel and floodplain area. Vinson was able to supply photographs and a little history from what his parents and grandparents told him about the project.

According to Vinson, and verified through photos he provided, just on the west side of the dam and spillway, prior to construction, was an old wagon bridge across the Clear Fork (Figure 19). Vinson said that people would come out and watch the dam construction from the bridge (Figure 20). However, this did not last long as the bridge was destroyed by using dynamite on each abutment (Figure 21), which sank it to the bottom of Lake Penick (Figure 22) after two people were accidently killed while watching construction. These photos demonstrate how much of the area was disturbed by the lake construction. Figure 19 shows the bridge from the river channel, and it is clear that both sides of the river were densely wooded. Figure 20 and Figure 21 show how much of the area was cleared and likely modified during construction. This is likely the work previously mentioned where teams were clearing the lake bottom in 1918 and 1919 (TTRIR 1919a: 3). This clearing likely extended from the dam west all the way to the railroad tracks. The level of disturbance was further described in 1920, when it was stated that a large Bucyrus steamshovel was being used to remove two cubic yards of sediment each dip (TTRIR 1920b: 11). This work with the steamshovel is likely how the channel, as shown on the aerials and USGS maps, got its shape.

Figure 19. Wagon bridge over Clear Fork, circa 1909. Courtesy of Stephen Vinson.

Vinson went on to say, that not everyone in Lueders was happy about the dam being built, as it was a place that people would come to enjoy the river because of the its beauty (Figure 23). He said people thought of it as a park, and would regularly hold events in the area. The bedrock was exposed in this area of the channel is likely where the rocky gorge reference comes from in the TTRIR articles. The bedrock formation shown in Figure 23 is likely the same area shown in Figure 18, except covered by flood waters. This formation is more visible in Figure 24. Vinson also stated that during construction, sometime around 1919, a flood threatened to destroy the construction. This was likely the same event that caused the earthen levee to wash out and for Major Penick to solicit additional workers to fix the levee. The final bit of information Vinson provided was that the Works Progress Administration (WPA) had come out to Lake Penick in 1938 and 1939 to resurface the dam and spillway, where they left a plague in the dam wall (Figure 26). He thought they also dredged the lake at the time, because it was so prone to silt in. Vinson was also not sure, but he thought that the square settling basin at the lake might have been built by the WPA, since the small intake structure just northwest of the dam and pumphouse was not sufficient to clear all the sediment out of the water. He said his parents remember how mucky the water was out of the faucet.

Figure 20. Wagon bridge overlooking construction of the dam and spillway. Date unknown. Courtesy of Stephen Vinson.

Figure 21. Blowing up southern abutment of the bridge. Date unknown. Courtesy of Stephen Vinson.

Figure 22. View of the bridge laying in the river channel. Date unknown. Courtesy of Stephen Vinson.

Figure 23. People enjoying the river on the east side of the dam location where bedrock was exposed in the river channel, circa 1909. Courtesy of Stephen Vinson.

Figure 24. View looking upstream (west) towards exposed bedrock which stair steps into small waterfalls. These could be the same rocks shown in Figure 23.

Figure 25. Flood waters damaging construction, circa 1919. Courtesy of Stephen Vinson.

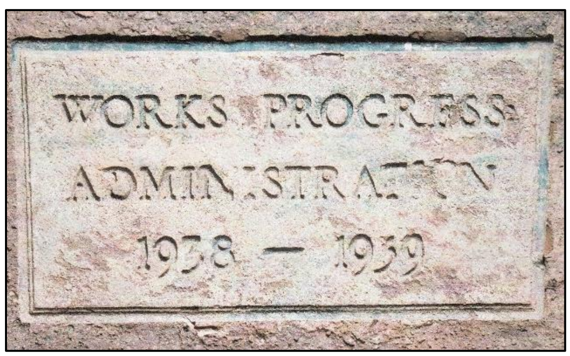


Figure 26. WPA plague on dam, placed during their work refurbishing the dam and spillway. Courtesy of Stephen Vinson.

Overall, the majority of the lake and its associated structures and features are intact as shown on recent Bing Bird's Eye Imagery (Figure 27). While these features are outside the proposed pipeline route, the landowner allowed the author to photograph the site. Figure 28 through Figure 37 are a few of the photos the author was able to obtain while on site. The dam and pumphouse adjoin the earthen levee that runs along the north side of the lake. While the motors and most of the equipment are gone, the pipes on the interior remain (Figure 29). The spillway is concrete and at the time of the survey was flowing (Figure 30). Below the spillway is the exposed bedrock where the stair step waterfalls occur (Figure 31). On top of the dam wall, extending north from the pumphouse, rests a cast-iron pipe that transported the water to the intake structure shown in Figure 32. Here a broken piece of concrete exposed two types of rebar (Figure 33). One of which is Damascus Twist, a type of rebar that dates prior to 1920 (Friedman 1995; Trask and Skinner 2002). This type of rebar has a plain square shape that is then twisted and was originally patented by E.L. Ransome

(Friedman 1995:108). This rebar and the other, were both noted in as being used in the pumphouse and in the dam wall.

Image Intentionally Omitted by Author

Figure 27. Bing Bird's Eye Imagery of Lake Penick (41JS135). Features are labeled on the image and correspond to the following figures. Note north is to the right.

Figure 28. Overview of concrete dam where it adjoins the earthen levee, looking south out to lake and pumphouse.

Figure 29. Interior of pumphouse. View is to the southeast.

Figure 30. Overview of spillway and pumphouse from south side of river. View is to the north.

Figure 31. Overview of bedrock waterfalls on east side of spillway. View is to the southeast.

Figure 32. Overview of dam wall extending north from pumphouse. The pipeline from the pumphouse appears to be on top the dam and extends towards the intake structure.

Figure 33. View of broken concrete exposing pipe and two kinds of rebar. Damascus Twist Rebar is present in the structure.

North of the intake structure, is a small building that contained a motor mount (Figure 34). The building was very small, but visible on the aerials. The building was built of Lueders limestone and had a wooden roof (Figure 35). The intake structure was also made from Lueders limestone, but had a red tile roof (Figure 36). As a part of this structure there were six settling basins or tanks (Figure 37), according to Vinson, he thought this is where they originally tried to settle out all the sediment from the water, but it was not sufficient, and the large square basin was built afterwards by the WPA. No other informant or research could verify what all the WPA did at the site.

Figure 34. Small motor building northeast of intake structure. View is to the north.

Figure 35. Interior of the small motor structure.

Figure 36. Intake structure northwest of pumphouse. View is to the northwest.

Figure 37. Intake settling basins as part of the intake structure. View is to the southeast.

Conclusions

Overall, survey of the proposed pipeline route found no artifacts within the survey corridor. The route does pass through two archaeological sites. The first is a prehistoric site, 41JS136 (formerly 41JS75), originally recorded in 1928 by Sayles as a small hearth eroding out of terrace sediments. However, through the course of this investigation, it was determined that site 41JS75 should be located on the south side of 41JS52 and Chimney Creek. Therefore, the site mapped as 41JS75 on the south side of the Clear fork is now 41JS136. Six shovel tests and three backhoe trenches were excavated through the mapped site area along the proposed centerline. No artifacts were found; however, a couple of interior flakes were noted on the surface approximately 30 m east of the route at the terrace edge. While the real location of the site Sayles recorded is on the south side of Chimney Creek, it is clear that this area has potential for prehistoric occupation as noted by the surficial artifacts and the downstream geomorphic analysis of Cedar Ridge Reservoir. The second site is a 98-year-old dam and spillway built on the Clear Fork by the City of Stamford. Site 41JS135, known as Lake Penick, was built using bonds. Early photographs of the lake construction demonstrate that the river channel heavily impacted and was likely dug out with the previously mentioned steamshovels in the floodplain and the channel. At one time, the area was completely cleared of vegetation. Most of the historic site is well outside the proposed 900-m long pipeline route, however, one of the earthen levees is crossed by the route, but it will be avoided by directionally drilling under the feature. Lake Penick at the time was the fourth largest artificial body of water and had a key role in the development of Lueders, Stamford, and Jones County as a whole. No other cultural resources were found during the survey of the proposed route. Given that no prehistoric evidence was found in the survey corridor, the project should not adversely affect either of the recorded sites and should proceed as planned.

RECOMMENDATIONS

The purpose of this investigation was to determine if significant cultural resources were present in the proposed Lueders Water System Improvements project area in Jones County, TX. Site 41JS136 (formerly 41JS75) is likely a surficial scatter of prehistoric artifacts eroding out of the terrace overlooking the Clear Fork and site 41JS135 is the remains of a historic lake and associated features. Neither site is receiving a formal recommendation for NRHP or SAL, however, the portion of the survey corridor through site 41JS136 was determined ineligible. No evidence of the prehistoric site was found in the proposed route, and the historic site will be avoided by directionally drilling under it. No other cultural resources were identified during the survey of the remainder of pipeline route. Based on the results of the survey, ARC concludes that further cultural resource investigations for this project are unwarranted, and requests that the THC concur with this recommendation. However, if buried cultural materials are discovered during construction or the route changes, the Archeology Division of the THC and the Fort Worth District of the USACE should be notified.

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