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Cultural Resources Surveys Conducted During February 2015 South Eagle Ford Zone Atascosa, La Salle, and McMullen Counties

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CULTURAL RESOURCES SURVEYS CONDUCTED DURING FEBRUARY 2015
SOUTH EAGLE FORD ZONE
ATASCOSA, LA SALLE, AND MCMULLEN COUNTIES

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MANAGEMENT SUMMARY

During the month of February 2015, Goshawk Environmental Consulting, Inc. (Goshawk) conducted three cultural resources surveys within the Eagle Ford Play, South Eagle Ford Zone, at the request of EOG Resources, Inc. (EOG). The three project areas subjected to cultural resources investigations included the proposed Stephen Y Bar South Oil Gathering Pipeline, Stephen Y Bar South Gas Gathering Pipeline, and Orion Unit #1H and #2H Flowlines. Except where noted, each Area of Potential Effect (APE) was a 75-foot (23-meter [m]) wide Right-of-Way (ROW) consisting of a 50-foot (15-m) wide permanent easement and a 25-foot (8-m) wide temporary construction easement. Investigations were conducted by Goshawk archeologists Scott Justen and Erin Keenan with assistance from Bear Aspra and Mitch Juenke. Scott Justen served as primary author and Reign Clark and Ron Ralph served as contributing authors for this report of investigations.

The cultural resources surveys were performed according to Council of Texas Archeologists survey standards, in compliance with the Texas Historical Commission's (THC) Rules of Practice and Procedure, Chapter 26, Section 27, and under the general guidelines of the Register of Professional Archaeologists. Site files on the THC's Archeological Sites Atlas (Atlas) website database were consulted prior to the commencement of the field effort for previously recorded site locations, references to previous archeological surveys undertaken, and place names of interest in the vicinity of the proposed projects.

Streams potentially under United States Corps of Engineers (USACE) jurisdiction which cross the APEs were assessed by an ecologist via desktop and field reviews prior to commencement of the cultural resources survey. As per the established procedure of due diligence, any segment of an APE that falls within an area potentially under federal jurisdiction or any portion of an APE that falls within a 328-foot (100-m) radius of a known cultural site would be subjected to a cultural resources survey. Any segment of an APE to be surveyed under this protocol was labeled as a "review area" and was subjected to cultural resources survey.

During the survey of each project, shovel tests were placed within each review area. Shovel testing and surface inspection resulted in no significant cultural deposits documented within the survey areas. Based on these results, it is Goshawk's opinion that no significant cultural resources will be impacted by construction within the surveyed ROWs. Goshawk recommends that the projects be allowed to proceed as planned with the caveat that construction be limited to the surveyed ROWs. In the unlikely event that cultural resources (including human remains) are discovered, all construction or maintenance activities should be immediately halted and both the USACE and an archeologist should be notified.

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1.0 INTRODUCTION

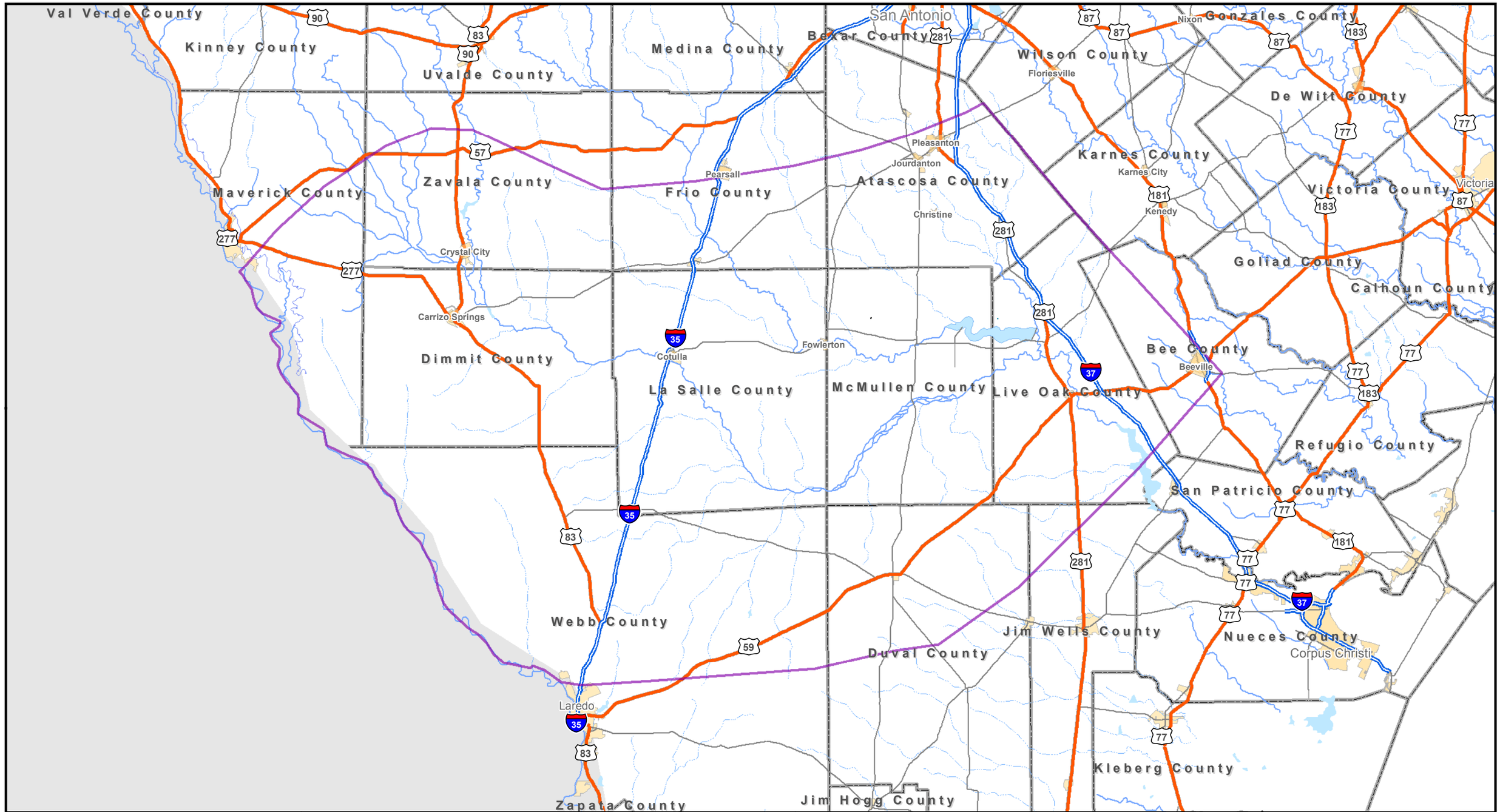
During the month of February 2015, Goshawk Environmental Consulting, Inc. (Goshawk) conducted three cultural resources surveys within the Eagle Ford Play, South Eagle Ford Zone, at the request of EOG Resources, Inc. (EOG). The South Eagle Ford Zone includes portions of La Salle, McMullen, Live Oak, Frio, Webb, and Atascosa Counties (Figure 1-1). The three project areas subjected to cultural resources investigations included the proposed Stephen Y Bar South Oil Gathering Pipeline, Stephen Y Bar South Gas Gathering Pipeline, and Orion Unit #1H and #2H Flowlines (Figure 1-2). Except where otherwise noted, each Area of Potential Effect (APE) was a 75-foot (23-meter [m]) wide Right-of-Way (ROW) consisting of a 50-foot (15-m) wide permanent easement and a 25-foot (8-m) wide temporary construction easement. The results from the survey of each project are presented below.

2.0 ENVIRONMENTAL CONTEXT OF THE SOUTH EAGLE FORD ZONE

The Eagle Ford Shale Region covers a large portion of south and southeast Texas totaling approximately 22,000 square miles. This region of Texas can be broken down into zones reflecting biologic, geologic, physiographic, and cultural diversity within the Eagle Ford Shale. The South Eagle Ford Zone is an area characteristic of the Tamaulipan Biotic Province (Blair 1950). The area is semi-arid brush land, extending north from Laredo, Texas into Zavala County, eastward across La Salle, McMullen, and Live Oak Counties, and continuing to the northeast to the central portion of Atascosa County (Figure 1-1). The area is a series of level to gently rolling uplands supporting mixed thorny trees, shrubs, cacti, and grasses. Streams within the South Eagle Ford Zone drain generally southwest toward the Rio Grande River or to the east and northeast toward the Frio and Nueces Rivers. The northern boundary of the South Eagle Ford Zone corresponds with Blair's division between the Tamaulipan and Texas Biotic Provinces. Coincidentally, the division falls directly along where Atascosa County meets Wilson and Karnes Counties.

2.1 LAND USE

At current, the most common uses for land falling within the South Eagle Ford Zone includes cattle ranching, oil and gas development, lease hunting, and limited agriculture. Many of the common land uses result in the clearing of the omnipresent invasive thorn brush so that development can proceed. The persistent problem of invading brush and cacti is often addressed by "chaining," whereby a heavy chain is dragged across the landscape by bulldozers, uprooting unwanted brush. Additionally, large senderos are often cut through the vegetation to facilitate wildlife management and seismic surveys. Root plowing, using a large tracked bulldozer and a dragging blade is also used to clear brush. All clearing methods are disruptive to archeological sites. Poor soil conservation practices have resulted in the depletion of top soil, exposing clay pans across much of the area. Many of the soils originally mapped by the Natural Resources Conservation Service (NRCS) had pronounced A-horizons over distinct clays. It is thus particularly noteworthy that A-horizons across much of the survey areas are virtually non-existent, indicating disturbances and erosion of topsoil. Thin gravel outcrops with sand over clay are common across the uplands while



Source: ESRI, Maps & Data 10.2, 2013, EIA, 2011
Projection: NAD 1983 UTM 14N

0 5 10 20 30 40 50 Kilometers

0 2.5 5 10 15 20 25 30 Miles

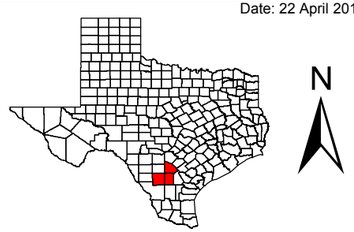
GOSHAWK ENVIRONMENTAL CONSULTING, INC.

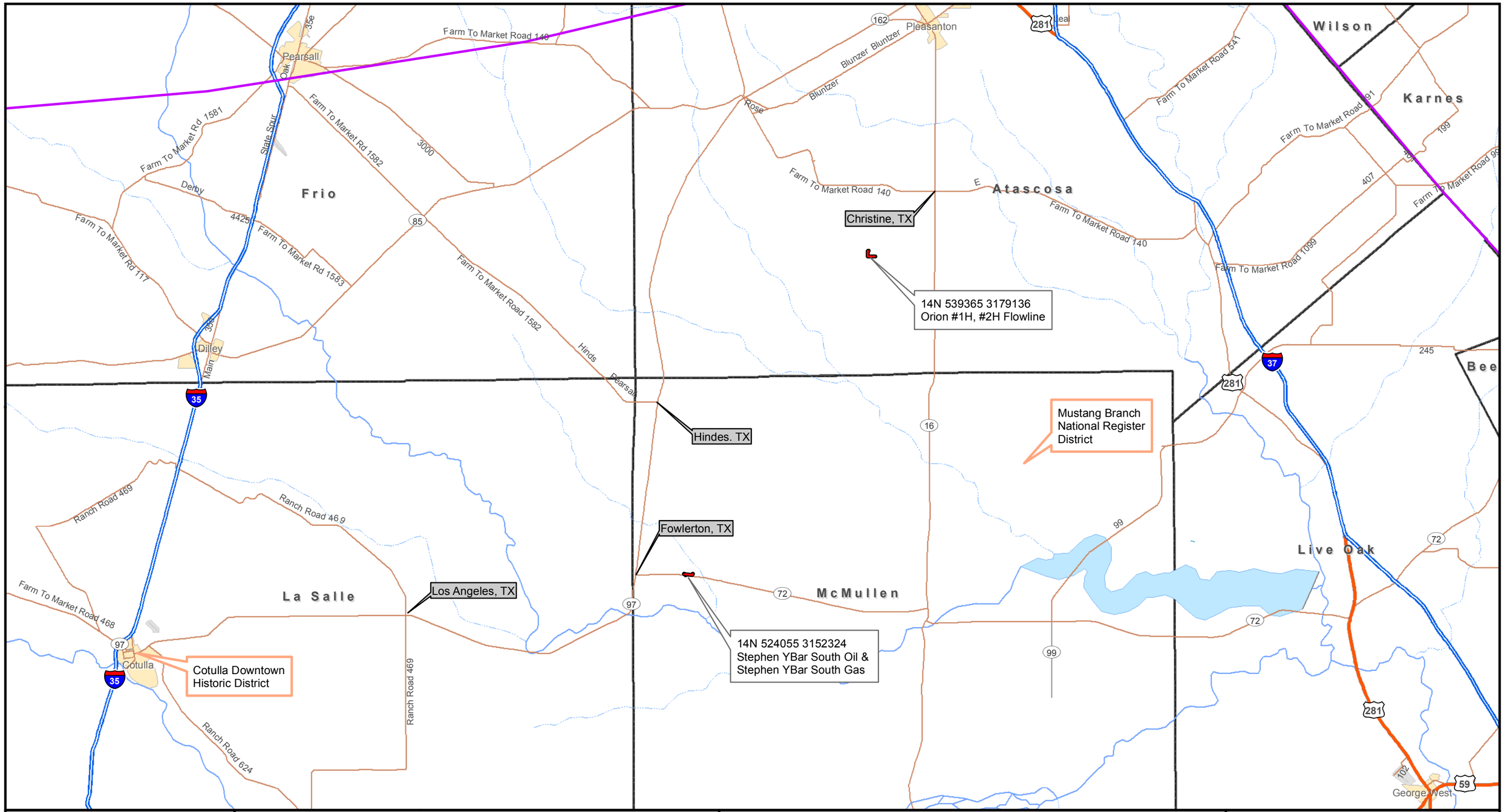
Figure 1-1
Vicinity Map

South Eagle Ford Zone

South Eagle Ford Zone Perimeter

Date: 22 April 2015





Source: ESRI, Maps & Data 10.2, 2013
Projection: NAD 1983 UTM 14N

0 2 4 8 Kilometers

0 1.25 2.5 5 Miles

GOSHAWK ENVIRONMENTAL CONSULTING, INC.

Figure 1-2
Project Locations
Atascosa and McMullen Counties, Texas

South Eagle Ford Zone

Boundary of South Eagle Ford Zone

Proposed Pipeline Alignment

Date: 22 April 2015

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shallow alluvial clay and clay loams blanket most areas along the creeks. The areas most likely to contain intact, stratified soil deposits and significant archeological sites are located along the rivers and larger creeks including Cibolo and Esperanza Creeks, the Frio River, and the Dull Flats Stream Complex.

2.2 GEOLOGY AND PHYSIOGRAPHY

Geology within the South Eagle Ford Zone encompasses the recent alluvium and fluviatile terrace deposits overlying older Eocene Yegua Formations (Barnes 1976). Alluvium or floodplain deposits consist of gravels, sand, clay, silt, and organic materials along with a variety of igneous and sedimentary rock washed down from the Rocky Mountains to the northwest and deposited as lag gravels on low terraces. Recent alluviums were deposited during the Pleistocene flanking streams. The surrounding fluviatile terrace deposits consist of the same clay and clay loam soils, but often contain discontinuous sheets or pavements of let-down gravels. These concentrations of stone have been of great interest to prehistoric populations as source material for tools.

Other major geological formations underlying the South Eagle Ford Zone are Quaternary alluvium and the undivided Manning/Wellborn Sandstone/Caddell Formations of the Jackson Group. These formations are composed of sandstones, clay, tuff, and siltstone; some fossiliferous and one with fossil wood. To the southeast of the project area laid remnants of Uvalde Gravels, a source of lithic material much prized by prehistoric peoples (Barnes 1976, Harshbarger, et al 2010). Uvalde Gravel occurs as deposits up to 30 feet (9 m) thick or as lag gravels on rounded hills. Within the South Eagle Ford Zone, much of the Holocene age alluvial deposits have eroded away due to land clearing and maintenance practices.

2.3 PROJECT AREA SOILS

The Web Soil Survey of the Natural Resources Conservation Service (NRCS 2014), the Atascosa County Soil Survey (Dittmar, et al., 1980), the La Salle County Soil Survey (Gabriel, et al., 1994), and the McMullen County Soils Survey (Harshbarger, et al., 2010) were consulted for each project within the South Eagle Ford Zone. Generally, soils encountered consist of clay, clay loam, and sandy loam along benches and terraces adjacent to smaller streams. In situ clay soils are commonly found on the wider floodplains of named creeks. Occasionally, expansive outcrops of chert gravels and cobbles are found on eroded uplands and shoulder slopes which prehistoric native groups used as raw material quarries for tool making.

2.4 FLORA AND FAUNA

Within the South Eagle Ford Zone, native tree species include mesquite, huisache, pecan, live oak, Texas wild olive, and Texas persimmon. Common shrubs and succulents in the region include prickly pear, fiddlewood, desert yaupon, agave, yucca, and autumn sage. Native grass species include sideoats grama, slender grama, buffalograss, inland sea-oats, plains lovegrass, and little bluestem (Gould 1978; TPWD 2014a). The Tamaulipan Biotic Province is characterized by semi-arid, megathermal conditions. Although moisture levels are low, temperatures allow for certain plant growth to occur year-round (Blair 1950).

There are at least 61 mammal species, 57 reptile species, and 22 amphibian species within the South Eagle Ford Zone (Schmidly 2004). Common small mammals in the region include several species of rats, mice, and bats; the Texas pocket gopher; the eastern mole; the eastern cottontail rabbit; and the Mexican ground squirrel (Blair 1950). Medium to large mammals include white-tailed deer, American hog-nosed skunk, and armadillo. Another of the mammalian species located in the ecoregion is the Mexican opossum, also the only marsupial in the ecoregion. Rare or extinct mammalian species in the area include ocelot, jaguar, javelina, bison, and jaguarondi (TPWD 2014b). Reptile species within the region include the western box turtle, Texas banded gecko, Texas spiny lizard, red racer, western diamondback rattlesnake, and diamond-backed water snake (Blair 1950, TPWD 2014a). Rare reptilian species include the Texas tortoise, indigo snake, and Texas horned lizard (TPWD 2014b). Despite the drier climate within the Tamaulipan Biotic Province, the region is host to several water-loving urodeles (salamanders and newts) and anurans (frogs and toads) (Blair 1950; Davis 1978). There are three species of urodeles and 18 species of anurans. Raptors, songbirds, doves, gulls, and terns are the dominant birds near the APE (Bryan, et al. 2006). The rare Cactus Ferruginous pygmy-owl is also occasionally found within the ecoregion (TPWD 2014a, TPWD 2014b).

2.5 CLIMATE

The South Eagle Ford Zone exhibits a tropical, sub-humid climate with average high temperatures of 98 degrees Fahrenheit in July and an average yearly high of 83 degrees. The average low of 42 degrees occurs in January with an average yearly low of 60 degrees. The yearly average rainfall is 22 inches (56 centimeters [cm]). Rainfall is bimodal with early summer and late summer accounting for 65 percent of the yearly average. The growing season averages over 250 days with only one year in two having a yearly low below 28 degrees (Gabrial, et al., 1994).

3.0 CULTURAL CONTEXT OF THE SOUTH EAGLE FORD ZONE

The South Eagle Ford Zone is located in the South Texas Archeological Region where nomadic hunter-gatherer groups migrated seasonally, following resources and sharing cultural traits with other groups. This is evidenced in the dispersal of point types and ceramic styles across the region (Prewitt 1995). Open camps are the most common type of archeological site found in the South Texas Archeological Region. Open camps can be shallow or deeply buried and are often adjacent to streams and usually contain clustered archeological material such as burned rocks, lithic debris, hearths, or middens. Bone and shell are less common in the assemblages, as organics rarely survive due to the alkaline nature of the soils.

Notable work in South Texas archeological research has been conducted by Fox et al. (1974), Mallouf et al. (1977), Mercado et al. (1996), Hall et al. (1986), Black (1989), and Hester (1980). However, the lack of intensive investigations, high rate of looting, and levels of erosion that occur throughout South Texas have left barriers to fully understanding and dating the periods of occupation in the area (Perttula 2004).

The following cultural background is divided into several periods in this portion of the state: Paleoindian (9,500 to 6,000 B.C.), Early Archaic (6,000 to 2,500 B.C.), Middle Archaic (2,500 B.C. to A.D. 400), Late Archaic (A.D. 400 to 700), Late Prehistoric (A.D. 700 to 1750), and Historic (A.D.

1750 to present) (Aten 1983; Perttula 2004; Turner and Hester 1999). Some scholars include another period, the Protohistoric, but it will not be included here due to the lack of a useful definition and contextual information available in this region.

3.1 PREHISTORY

3.1.1 Paleoindian Period (ca. 9,500 to 6,000 B.C.)

Recent archeological evidence indicates prehistoric people may have occupied this area prior to the Paleoindian Period. However, the controversial sites that show evidence of an earlier period of habitation have not yet been widely accepted by the archeological community. For this reason, the prehistoric period will begin with Paleoindians.

Beginning around 9,500 B.C., the Paleoindian is the earliest identified cultural period in the vicinity of the South Eagle Ford Zone. It spans over 3,000 years to about 6,000 B.C. (Ensor and Ricklis 1998). According to some authors, the Paleoindian period begins approximately 1,200 years earlier (11,500 B.C.) further to the south in the South Texas region. It has been postulated that this is most likely due to the earlier habitation of the Paleoindian Clovis peoples coming north from central Mexico (Perttula 2004).

Coinciding with the decline of the Wisconsin glaciation, the Paleoindian period is characterized by a relatively cool, moist climate that encouraged the development of now-extinct species of Pleistocene megafauna, such as bison. This period is sometimes called the Big Game Hunting tradition (Willey 1966), due to a presumed heavy reliance by Paleoindian peoples on megafauna as a food source during the earlier portion of the period. Environmental changes that brought about the extinction or dislocation of megafauna precipitated a shift toward smaller game, creating the transition into the Archaic (Aten 1983:146-148; Willey and Phillips 1958:107).

Temporally diagnostic tool types attributed to this period include a variety of finely chipped, sometimes fluted, lanceolate projectile point styles, such as Clovis, Folsom, Plainview, and Scottsbluff (Meltzer and Bever 1995; Prikryl 1990; Willey 1966). The Paleoindian projectile point types show a transitional change between the earlier Paleoindian points and the Early Archaic. By the late Paleoindian period, unfluted lanceolate projectile points such as Plainview, Golondrina, and Angostura were more common (Story, et al. 1990).

3.1.2 Archaic Period (6,000 B.C. to A.D. 400)

Following the close of the Pleistocene, the South Texas region experienced a trend toward a warmer and drier climate. It has been postulated that this climate shift was at least partially responsible for the extinction of megafaunal species. The archeological record of this period exhibits evidence of a gradual diversification in subsistence patterns. This is the beginning of the Archaic, which lasts from about 6,000 B.C. to A.D. 400 (Aten 1983:152-157). The Archaic period is divided into three time periods: the Early Archaic (6,050 to 2,500 B.C.), the Middle Archaic (2,500 B.C. to 1,000 B.C.), and the Late Archaic (1,000 B.C. to A.D. 400) (Perttula 2004; Turner and Hester 1999). Few Archaic sites are recorded on the Upper Texas Coast (Aten 1983:153; Story 1985:28-29). Story (1985:31–34) suggests site density was low on the coastal plain during this period. Archaic sites tested or excavated near the modern shoreline generally consist of shell-

bearing sites with varying degrees of lithic tools and debitage, shell or bone tools, and the bones of fish, mammals, and reptiles (Ambler 1967, 1970, 1973; Aten 1979, 1983; Ensor 1998; Howard et al. 1991). Inland sites tend to contain more lithic artifacts and debitage with terrestrial mammal bones comprising the bulk of the inland faunal assemblages. Archaic patterns in tool-making for the South Texas region are centered on corner-notching technology and triangular points, moving away from the basal-notching technology.

3.1.2.1 Early Archaic Period (6,000 to 2,500 B.C.)

Late Paleoindian unfluted lanceolate projectile points such as Plainview, Golondrina, and Angostura were replaced by un-stemmed triangular points and basal or corner notched points in the Early Archaic. The Early Archaic in the South Texas region is significantly shorter than in other regions due to the onset of specific regional cultural patterns occurring around 2,500 B.C., which emphasized un-stemmed dart points and smaller bifacial and unifacial beveled tools (Perttula 2004). In addition to these cultural patterns, the archeological record shows the diet of the people in this area consisted of turtles, snails, and freshwater mussels. Land snails (*Rabdotus* sp.) are often present at prehistoric sites, but there is debate regarding whether the prehistoric peoples were consuming them or if the snails were merely "cleaning up" after the group moved out of the area.

3.1.2.2 Middle Archaic Period (2,500 to 1,000 B.C.)

For the South Texas region, the Middle Archaic is more thoroughly represented in the archeological record than the Early Archaic. It is during this time period that the triangular Tortugas and Abasolo points were developed. In addition, the archeological record shows the development of smaller, unifacial, distally beveled tools that show a high amount of reworking and resharpening. Evidence supports that these common tools were used in wood-working (Perttula 2004). During this period, most open campsites were placed in flood-prone zones along low terraces, and while information concerning their diet is scant, numerous types of fuel materials have been identified including mesquite, acacia, oak, and hackberry (Perttula 2004). There is also significant data concerning treatment of the dead in this area and time frame (Patterson et al. 1998). Especially later in the period, cemeteries were commonly used, most of which contained grave goods such as points, flakes, cores, and sandstone pieces (Perttula 2004; Hall et al. 1986). One such cemetery, Loma Sandia, is dated to the late Middle Archaic and is located in Live Oak County (Taylor and Highley 1995). With its hundreds of burials and thousands of artifacts, it remains one of the most studied archeological sites in South Texas.

3.1.2.3 Late Archaic Period (1,000 B.C. to A.D. 400)

In general, Late Archaic sites in the South Texas Region show a marked increase in site utilization and heavy dependence on seasonal base camps, where various maintenance, extractive, and processing tasks were used in exploiting local resources. Assemblages characterizing these technological activities include a variety of dart point styles, a suite of ground and polished stone tools, and the beginning use of ceramics.

3.1.3 Late Prehistoric Period (A.D. 400 to 1750)

The Late Prehistoric period in the South Texas Region saw a continuation of many of the same cultural and subsistence patterns in place during the Late Archaic (e.g. cemeteries and burned rock features) with two very significant technological adaptations: a heavier reliance on ceramics by certain groups and the introduction of the bow and arrow (Ensor 1998).

3.2 HISTORIC PERIOD (A.D. 1750 TO PRESENT)

3.2.1 Historic Native Groups in the Area

Early Spanish expeditions in Texas afford the primary evidence of the relevant historic Indian tribes in the South Texas Region during the late sixteenth through early eighteenth-centuries. Initial exploration of the Gulf of Mexico and the American Southwest was accomplished by Spanish explorers Alonso Alvarez Piñeda (1519) and Alvar Nunez Cabeza de Vaca (1528). Following Piñeda's initial maritime effort to map the Gulf Coast, the earliest exploration of the South Texas Region was accomplished by de Vaca, who shipwrecked in the Gulf of Mexico in 1528 along with other members of an expedition led by Pánfilo de Narváez (Weddle 1985).

De Vaca's account served as the basis upon which subsequent explorations of the region were conducted by Hernando de Soto (1539) and Luis de Moscoso (1542). By 1561, Spain was facing increasing difficulties in maintaining its few colonies in Florida. The relatively poor economic prospects for these colonies and increasing competition from other colonial powers quelled the Spanish Crown's interest in colonizing their Florida territories which included Texas. As a result, the Texas Gulf Coast remained relatively uninhabited by Europeans for the next two centuries until the threat of increased French exploration in the territory stimulated the Spanish government to establish more permanent settlements in the area (Weddle 1991). In 1685, René Robert Cavelier and Sieur de la Salle established Fort St. Louis along the Gulf Coast (Gilmore 1984, Tunnel and Ambler 1967). Plagued by disease, starvation, and Indian attacks, Fort St. Louis was no longer in use by late 1688 or early 1689 (Bruseth and Turner 2005).

Spanish expeditions to the South Texas Region include the 1689 expedition of Governor Alonso de León, the 1691 to 1692 expedition of Governor Domingo Terán de los Ríos, the Espinosa-Olivares-Aguirre expedition of 1709, Ramón's expedition of 1716, Alarcón's expedition of 1718, and Rivera's inspection tour of 1727 (Campbell 1983; Foster 1995). The Indians encountered during those journeys included indigenous Sanan speakers and displaced and migrating tribes from well outside the region such as the Jumano of west Texas, the Wichita-speaking Yojuane of north central Oklahoma, and the Simaomo and Tusonibi of northeastern Mexico (Campbell 1979). Many other tribes, not so fortunate, had been decimated by European disease in Coahuila and Nueva Leon according to Chapa, an early historian who documented over 160 groups annihilated during the 1600s (Foster 2008:108).

3.2.2 European Settlement (ca. 1750)

Although there were no permanent Spanish settlements established in the area now known as La Salle and McMullen Counties, Spaniards did traverse the area at various times. Alonso De León passed through the area in 1689 and 1690, as did Diego Ortiz Parrilla in 1766. In the early 1800s, the Old Laredo-San Antonio road passed to the east of the survey area. Even earlier, a large

waterhole on Esperanza Creek was the meeting place where presidio soldier escorts passed off their charges before returning to their posts in Laredo and San Antonio (Leffler 2014).

3.2.3 La Salle and McMullen Counties

After Mexican independence in 1810, the Mexican government issued land grants to citizens for settlement. In 1834, Jesús Cárdenas received 31,500 acres of land along the Nueces River, including about 10,000 acres in what became La Salle County. After the Texas revolution, La Salle County became disputed land lying between the Rio Grande and the Nueces River. Lacking an established government, it became a haven for outlaws (Leffler 2014). The Treaty of Guadalupe Hidalgo on 2 February, 1848 ended the Mexican War and recognized the 1845 annexation of Texas to the United States (Russell 2010:210).

The area now known as McMullen County was originally granted to Benjamin Drake Lovell and John G. Purnell by the Mexican state of Coahuila in 1825, but it was never developed. In 1828, the same land was assigned to John McMullen and James McGloin who intended to settle 200 families. None of the families ever occupied the area, and by the time of the Texas Revolution, the area was still inhabited predominantly by native people.

La Salle County was formed from the Bexar District in 1858, with early villages established along the San Antonio to Laredo road – the old El Camino Real. In the same year, McMullen County was officially established from parts of Bexar, Atascosa, and Live Oak counties. The United States Army established an outpost, Fort Ewell, in 1852 at the road crossing on the Nueces River, but abandoned it in 1854. Guajoco grew up near the outpost and grew larger when the army deserted the post. By 1871, Guajoco had a post office, a saloon, a general store, a stagecoach stop and roughly 60 inhabitants.

From cattle to cotton to oil and gas, the boom and bust cycle has repeated itself in south Texas. It has never been an easy place to live. During the early years, more than 25 ranches were established with the ranch headquarters often becoming a stopping point for cattle buyers, and then growing into small communities. One such was Waugh's Rancho established in 1861 and granted a post office in 1879. Another was Iuka, a small settlement just west of present day Cotulla, the county seat. The 1870 census showed 69 inhabitants in La Salle County, growing to 789 in 1880. La Salle County, named for René Robert Cavelier, Sieur de La Salle, now covers over 1,517 square miles of south Texas (Leffler 2014)

Formal organization of La Salle County occurred in 1880 with Stuart's Rancho, near Guajoco, designated its first seat of government. The last Indian raid occurred in 1878 as the railroad began building south to the winter garden on the Rio Grande. About the same time, James J. and Andrew J. Dull, two steel-magnet brothers from Harrisburg, Pennsylvania, purchased La Salle County land, including much of W. A. Waugh's property, to put together a vast ranch.

3.2.4 Fowlerton History

The history of eastern La Salle County and western McMullen County is steeped in actors and actions larger than life. At the turn of the 20th century, a couple of shrewd businessmen, the Fowler brothers, decided to form a land company and promote the dry cactus and mesquite covered

country along the Frio River in La Salle and McMullen Counties as the "Wintergarten." They attracted more than 2,000 buyers, many of whom migrated from the east coast for the chance to own a plot of fertile farmland for as little as $25 down and $10 a month. Many have called the brothers "swindlers," but some historians maintain that they did have a vision of the area as a farming utopia. The Fowler brothers happened to tour the county just prior to one of the "wet" cycles when almost any crop could grow (Troesser 2014).

Two other brothers with the name of Dull, who had made their fortunes in Pittsburg, Pennsylvania, once owned the vast 400,000-acre (161,874-ha) Dull Ranch. The Dull brothers later sold 240,000 acres (97,125 ha) to B. L. Naylor and Judge A. H. Jones. Naylor died in 1910 and Jones in 1912. Before Jones died, he had contracted with the Fowler brothers to develop 100,000 acres (40,469 ha) around what would eventually become the town of Fowlerton, Texas. After the railroad was constructed in 1912, growth of the town increased, supporting several lumber yards.

The Fowler brothers, in conjunction with the Naylor & Jones Land Co., laid out the town on a grid system and over 200 miles (322 km) of roads were built. Lots were divided up, some as small as 1/16 acre (0.4 Hectares [ha]) in the town site, as well as numerous farm plots of anywhere from 1 to 100 acres (1 to 40 ha) or more. When a 10 to 160-acre (4 to 65-ha) tract of farmland was purchased, the buyer automatically received a lot in Fowlerton. Between 1913 and 1915 a cotton gin, large rail depot, hotels, two banks, department stores, and schools were all built.

There was a seafood restaurant with fresh oysters and shrimp brought in from the coast. There were many free flowing artesian wells (some containing salt). The "Artesian Route" as described on the San Antonio Uvalde and Gulf Railroad (SAU&G Railroad) advertisements referred to the new farming center with crops of cotton and Egyptian wheat to faraway markets. At the height of the Fowlerton heyday, some 2,000 to 4,000 people called the vicinity home. Over the years a series of droughts, plus using saline artesian well water, forced all the farmers to leave the county (Troesser 2014).

3.3 CULTURAL RESOURCES OF THE SOUTH EAGLE FORD ZONE

Atascosa County lists more than 272 archeological sites, many of which are associated with the development of the San Miguel Mine in the 1980s. According to the Texas Historical Commission's (THC) Archeological Sites Atlas (Atlas), only one site has been designated as a State Antiquities Landmark (SAL) in Atascosa County, the Atascosa County Courthouse in Jourdanton, Texas. The county courthouse is also listed on the National Register of Historic Places (NRHP), along with the Korus Farmstead and the Frederick and Sallie Lyons House. The county courthouse was completed in 1912 and represents the Mission Revival style architecture. There are 80 recorded historic cemeteries and 49 historical markers in the county (THC 2014b).

La Salle County lists more than 285 recorded archeological sites. According to the Atlas, only one site has been designated as a SAL in La Salle County, the La Salle County Courthouse in Cotulla, Texas. The county courthouse is also listed on the NRHP, along with the Cotulla Downtown Historic District. There are 12 recorded historic cemeteries and 19 historical markers in the county (THC 2014b).

McMullen County lists over 640 recorded archeological sites, many of which are associated with work for the Choke Canyon Reservoir. According to the Atlas, no sites have been designated as a SAL. The Mustang Branch National Register District (NRD) site (41MC163) is the only listed prehistoric NRHP site in McMullen County, based mainly on an ephemeral Paleoindian component. Designated in 1978, the Mustang Branch Site NRD encompasses 24.7 square acres (10 sq. ha) of agricultural lands along the confluence of San Miguel Creek and Mustang Branch close to, and within, the Choke Canyon Reservoir in eastern McMullen County. The NRD includes campsites, chipping-quarrying areas, middens, and lithic scatters; all of which contributed to its NRD designation. There are 6 recorded historic cemeteries and 23 historical markers in the county (THC 2014b).

4.0 METHODOLOGY

The cultural resources surveys 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. The surveys complied with 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 Archeological 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. The surveys conformed to standards of the United States Department of the Interior (1977) and the guidelines set forth by the Council of Texas Archeologists (1995) and the Register of Professional Archeologists (2014). Cultural resources investigations consisted of archival research, pedestrian survey, shovel testing, and preparation of a report suitable for review by the United States Army Corps of Engineers (USACE), the regulatory agency responsible for oversight in most situations.

Streams potentially under USACE jurisdiction which crossed project alignments were assessed by an ecologist via desktop and field reviews prior to commencement of the cultural resources survey. As per the established procedure of due diligence, any segment of an alignment that falls within an area potentially under federal jurisdiction or any portion of a project alignment that falls within a 328-foot (100-m) radius of a known cultural site would be subjected to a cultural resources survey. Any segment of a project alignment to be surveyed under this protocol would be labeled as a "review area" and subjected to cultural resources survey. Except where specified in descriptions below, project alignments consisted of a 75-foot (23-m) wide ROW. ROWs consisted of a 50-foot (15-m) wide permanent easement and a 25-foot temporary construction easement.

During each survey effort, the ground surface of the proposed project alignment was visually inspected on foot within the established review areas. Shovel tests were administered in the portions of the review areas which harbored the greatest potential for temporally stratified soil deposits. Shovel tests, typically 12-inches (30-cm) in diameter, were excavated to sterile substratum. The shovel probe matrix was sifted through ¼-inch (0.6-cm) hardware cloth. If soils of high clay constituency were encountered, the matrix was hand sorted. Shovel test locations were recorded with hand-held Global Positioning System (GPS) units and transferred to topographic

maps. If present, newly discovered or revisited sites were documented using standard State of Texas site recording forms and plotted by GPS coordinates for entry into the Atlas database. Shovel testing was conducted to ascertain the horizontal and vertical limits of any cultural manifestation discovered within the areas of review. Hand-drawn sketch maps were produced for each cultural site recorded or revisited. The field efforts reported herein were performed on private property and were funded by a private source. No artifacts were collected during the survey. If present, artifact assemblages were photographed in the field and left where found.

5.0 STEPHEN Y BAR SOUTH OIL PIPELINE

Goshawk conducted a cultural resources survey of the proposed ±926-foot (282-m) Stephen Y Bar South Oil Pipeline ROW in McMullen County, Texas. One review area was identified within the proposed ROW falling within the 328-foot (100 m) due diligence radius of a previously recorded archeological sites. The cultural resources survey, including shovel testing and surface inspection, was conducted within a single review areas totaling approximately 0.3 acre (0.1 ha). The review area was located within the due diligence radius of archeological site 41MC590. The field investigation was conducted by Goshawk archeologists Scott Justen and Erin Keenan on 19 February 2015.

The Stephen Y Bar South Oil Pipeline APE was located approximately 4.0 miles (6.4 km) northwest of Fowlerton, Texas and approximately 100 feet (30.5 m) north of State Highway (SH) 72. From the southern terminus, the APE traversed in a northerly direction crossing SH 72, before turning to the west. The APE continued in a westerly direction within the previously cleared pipeline corridor. The east-to-west oriented portion of the APE was located between two existing pipelines within in a cleared pipeline corridor. The southern terminus of the APE was located at a riser along the Gardendale Pipeline ROW. The row then traverses the due diligence radius of archeological site 41MC590. The APE reached its western terminus on a light rise west of an existing well pad. Vegetation within the ROW and just north of the proposed row consisted of mesquite, sage, cedar elm, clump grasses, various other grasses, various forbs, and cactus. The APE was located on the Fowlerton, United States Geological Survey (USGS) topographic quadrangle (Figure 5-1). The dominant local land use was for rangeland and oil and gas development.

5.1 ARCHIVAL RESEARCH

Archival research conducted using the Atlas online database identified 15 previously recorded archeological sites situated within a 1.2-mile (2.0-km) radius of the APE. These sites (41MC369, 41MC589, 41MC590, 41MC591, 41MC592, 41MC593, 41MC594, 41MC622, 41MC623, 41MC632, 41MC648, 41MC764, 41MC765, 41MC766, and 41MC767) were located mainly to the west of the proposed ROW. There are three sites in close proximity to the APE, one to the southwest (41MC590) and one to the east (41MC591) of the proposed ROW. These sites will be discussed in detail below.

The proposed ROW is situated 15.3 miles (24.5 km) south-southeast of the Mustang Branch NRD. Designated in 1978, the Mustang Branch Site NRD encompasses 24.7 square acres (10 square hectares) of agricultural lands along the right bank of Mustang Branch near its confluence with San Miguel Creek within the Choke Canyon Reservoir in eastern McMullen County. The NRD includes campsites, chipping-quarrying areas, middens, and lithic scatters; all of which contributed to its NRD designation. According to the Atlas, the nearest NRHP-listed property is the Atascosa County Courthouse, located within the Jourdanton, Texas approximately 12.8 miles (20.4 km) north-northeast of the APE (THC 2015b).

5.1.1 41MC590

Site 41MC590 was documented in 2011 as part of the Gardendale Pipeline Project. The site was recorded as a small, surficial, undated prehistoric lithic scatter. The site was located within dissected uplands northeast of Mossy slough. The site measured approximately 1 acre (0.4 ha) in size. The artifact assemblage observed included only three lithic reduction flakes (THC 2015b). The initial evaluation concluded that this site was not eligible for designation as a SAL or listing on the NRHP.

The site was revisited in 2013 by Goshawk archeologists as part of the River Lowe West Gathering Pipeline. No remnants of the site were observed or located within the proposed ROW. The site had been totally disturbed by construction of a previous pipeline within the originally mapped boundaries. The revisit of the site confirmed that the site was not eligible for designation as a SAL or listing on the NRHP.

5.1.2 41MC591

Site 41MC591 was documented in 2011, as part of the Gardendale Pipeline Project. The site was recorded as a small, surficial, undated prehistoric lithic scatter. The site was located on the dissected backslopes and ridges of an upland landform. The site measured 98 feet (30 m) north to south by 197 feet (60 m) east to west. The artifact assemblage observed included only three lithic reduction flakes (THC 2015b). The initial evaluation concluded that this site was not eligible for designation as a SAL or listing on the NRHP.

This site was also revisited in 2013 by Goshawk archeologists as part of the River Lowe West Gathering Pipeline. No remnants of the site were identified within the proposed ROW. This site had also been totally disturbed by construction of a previous pipeline within the originally mapped boundaries. The revisit confirmed that the site was not eligible for designation as a SAL or listing on the NRHP.

5.2 SURVEY RESULTS

One review area was established along the west end of the proposed Stephen Y Bar South Oil Pipeline ROW within the due diligence radius of previously recorded archaeological site 41MC590. No remnants of the site were located within the proposed pipeline ROW.

5.2.1 Review Area

The review area was located within a close 328-feet (100-m) radius of previously recorded archaeological site 41MC590. The APE was located within a previously cleared pipeline ROW (Photo 5-1). The ground surface visibility within the APE was considered good, ranging between 40 and 100 percent (Photo 5-2). Vegetation within and just north of the APE consisted of mesquite, sage, cedar elm, clump grasses, various other grasses, various forbs, and cactus. Soils mapped within the review area consisted entirely of Aguilares fine sandy loam. One shovel test was conducted in the only area which had escaped disturbance by previous pipeline or facility pad construction. The shovel test yielded shallow brown fine sandy loam overlying brown clays. The shovel test was terminated at approximately 8 inches (20 cm) below surface. No cultural materials were observed during surface inspection or shovel testing conducted within the review area.

5.3 RECOMMENDATIONS

Goshawk conducted a cultural resources survey consisting of an intensive surface inspection and one shovel test within the proposed Stephen Y Bar South Oil Pipeline ROW. Shovel testing and surface inspection conducted within the APE yielded entirely negative results. It is Goshawk's opinion that construction of the Stephen Y Bar South Oil Pipeline ROW, as proposed, will cause no impacts to significant cultural resources within the surveyed portion of the APE. Therefore, Goshawk recommends that construction be allowed to proceed, as planned. In the unlikely event that cultural resources (including human remains) are discovered, all construction or maintenance activities should be halted immediately and the USACE and an archeologist should be notified.

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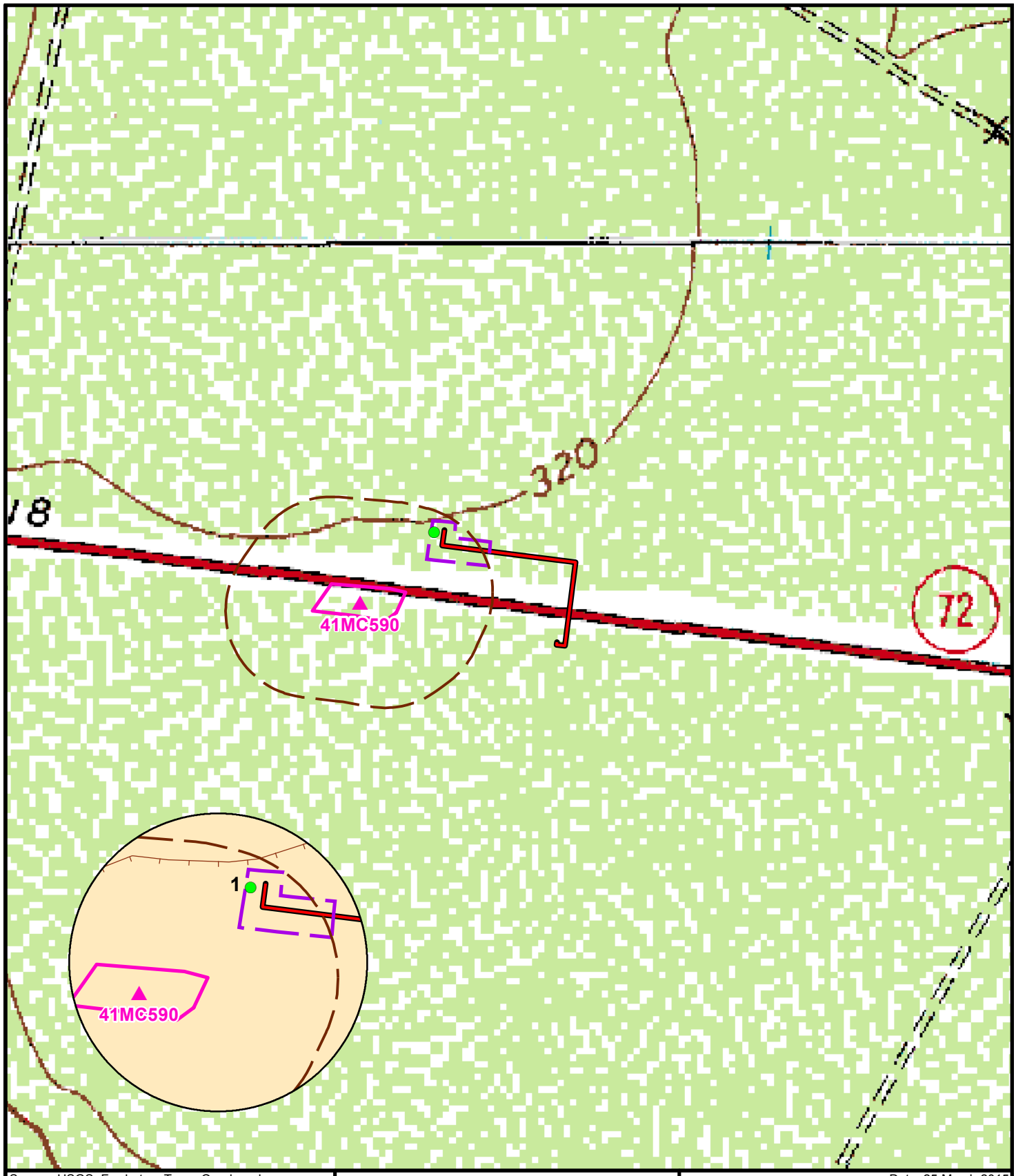


Source: USGS, Fowlerton, Texas Quadrangle.

Date: 25 March 2015

0 125 250 500 Feet

0 37.5 75 150 Meters

GOSHAWK ENVIRONMENTAL CONSULTING, INC.

Figure 5-1
Shovel Test Locations
McMullen County,Texas

Stephen YBar South Oil

LEGEND

- Pipeline
- Review Area
- Site Boundaries
- Due Diligence Radius
- Negative Shovel Test

N

Photo 5-1: Review Area Overview, Facing East

Photo 5-2: Typical Vegetation Located to the North of the APE

Stephen Y Bar South Oil (14 NAD 1983)										
Report ST#	ST#	WP#	Easting	Northing	Depth (cm)	Soil Color	Soil Composition	Artifacts	Review Area	Comments
1	EK1	45	523586	3152307	0-20	Brown	Fine sandy loam	None	1	
					20+	Brown	Clay	None		

6.0 STEPHEN Y BAR SOUTH GAS PIPELINE

Goshawk conducted a cultural resources survey of the proposed ±2,851-foot (869-m) Stephen Y Bar South Gas Pipeline ROW in McMullen County, Texas. Two review areas were identified within the proposed ROW, falling within the 328-foot (100 m) due diligence radius of two previously recorded archeological sites (41MC590 and 41MC591). The cultural resources survey, including shovel testing and surface inspection, was conducted within the two review areas totaling approximately 1.8 acres (0.7 ha). The field investigation was conducted by Goshawk archeologists Scott Justen and Erin Keenan on 19 February 2015.

The Stephen Y Bar South Gas Pipeline APE was located approximately 4.1 miles (6.6 km) to northeast of Fowlerton, Texas and approximately 100 feet (30.5 m) north of State Highway 72. The east-to-west oriented portion of the pipeline was located between two existing pipelines within in a cleared pipeline corridor. From the western terminus, the APE traversed in an easterly direction within the due diligence radius of archeological site 41MC590 (Review Area 1), then crossed nearly level upland terrain. The APE crossed within the due diligence portion of archaeological site 41MC591 (Review Area 2) then turned northward to parallel an existing access road and reaching its northeastern terminus. The vegetation within and just north of the proposed ROW consisted of mesquite, sage, cedar elm, clump grasses, various other grasses, various forbs, and cactus. The APE was located on the Fowlerton, United States Geological Survey (USGS) topographic quadrangle (Figure 6-1). The dominant local land use was for rangeland and oil and gas development.

6.1 ARCHIVAL RESEARCH

Archival research conducted using the Atlas online database identified 15 previously recorded archeological sites situated within a 1.2-mile (2.0-km) radius of the APE. These sites (41MC369, 41MC589, 41MC590, 41MC591, 41MC592, 41MC593, 41MC594, 41MC622, 41MC623, 41MC632, 41MC648, 41MC764, 41MC765, 41MC766, and 41MC767) were located mainly to the west of the proposed ROW. There are three sites in close proximity to the APE, one to the southwest (41MC590) and one to the east (41MC591) of the proposed ROW. These sites will be discussed in detail below.

The proposed ROW is situated 15.3 miles (24.5 km) south-southeast of the Mustang Branch. Designated in 1978, the Mustang Branch Site NRD encompasses 24.7 square acres (10 square hectares) of agricultural lands along the right bank of Mustang Branch near its confluence with San Miguel Creek within the Choke Canyon Reservoir in eastern McMullen County. The NRD includes campsites, chipping-quarrying areas, middens, and lithic scatters; all of which contributed to its NRD designation. According to the Atlas, the nearest NRHP-listed property is the Atascosa County Courthouse, located within the Jourdanton, Texas approximately 12.8 miles (20.4 km) north-northeast of the APE (THC 2015b).

6.1.1 41MC590

Site 41MC590 was documented in 2011 as part of the Gardendale Pipeline Project. The site was recorded as a small, surficial, undated prehistoric lithic scatter. The site was located within dissected uplands northeast of Mossy slough. The site measured approximately 1 acre (0.4 ha) in

size. The artifact assemblage observed included only three lithic reduction flakes (THC 2015b). The initial evaluation concluded that this site was not eligible for designation as a SAL or listing on the NRHP.

The site was revisited in 2013 by Goshawk archeologists as part of the River Lowe West Gathering Pipeline. No remnants of the site were observed within the proposed ROW. The site had been totally disturbed by construction of a previous pipeline within the originally mapped boundaries. The revisit of the site confirmed that the site was not eligible for designation as a SAL or listing on the NRHP.

6.1.2 41MC591

Site 41MC591 was documented in 2011, as part of the Gardendale Pipeline Project. The site was recorded as a small, surficial, undated prehistoric lithic scatter. The site was located on the dissected backslopes and ridges of an upland landform. The site measured 98 feet (30 m) north to south by 197 feet (60 m) east to west. The artifact assemblage observed included only three lithic reduction flakes (THC 2015b). The initial evaluation concluded that this site was not eligible for designation as a SAL or listing on the NRHP.

This site was also revisited in 2013 by Goshawk archeologists as part of the River Lowe West Gathering Pipeline. No remnants of the site were identified within the proposed ROW. This site had also been totally disturbed by construction of a previous pipeline within the originally mapped boundaries. The revisit confirmed that the site was not eligible for designation as a SAL or listing on the NRHP.

6.2 SURVEY RESULTS

Two review areas were identified within the proposed Stephen Y Bar South Gas Pipeline ROW, within the due diligence radius of previously recorded archaeological sites 41MC590 and 41MC591. Review Area 1 was surveyed during the Stephen Y Bar South Oil Pipeline. No remnants of these sites were located within the proposed pipeline ROW.

6.2.1 Review Area 1

Review Area 1 was subjected to cultural resources survey on 19 February 2015 during the Stephen Y Bar South Oil Pipeline Survey. No cultural materials were observed during surface inspection or shovel testing conducted within the review area.

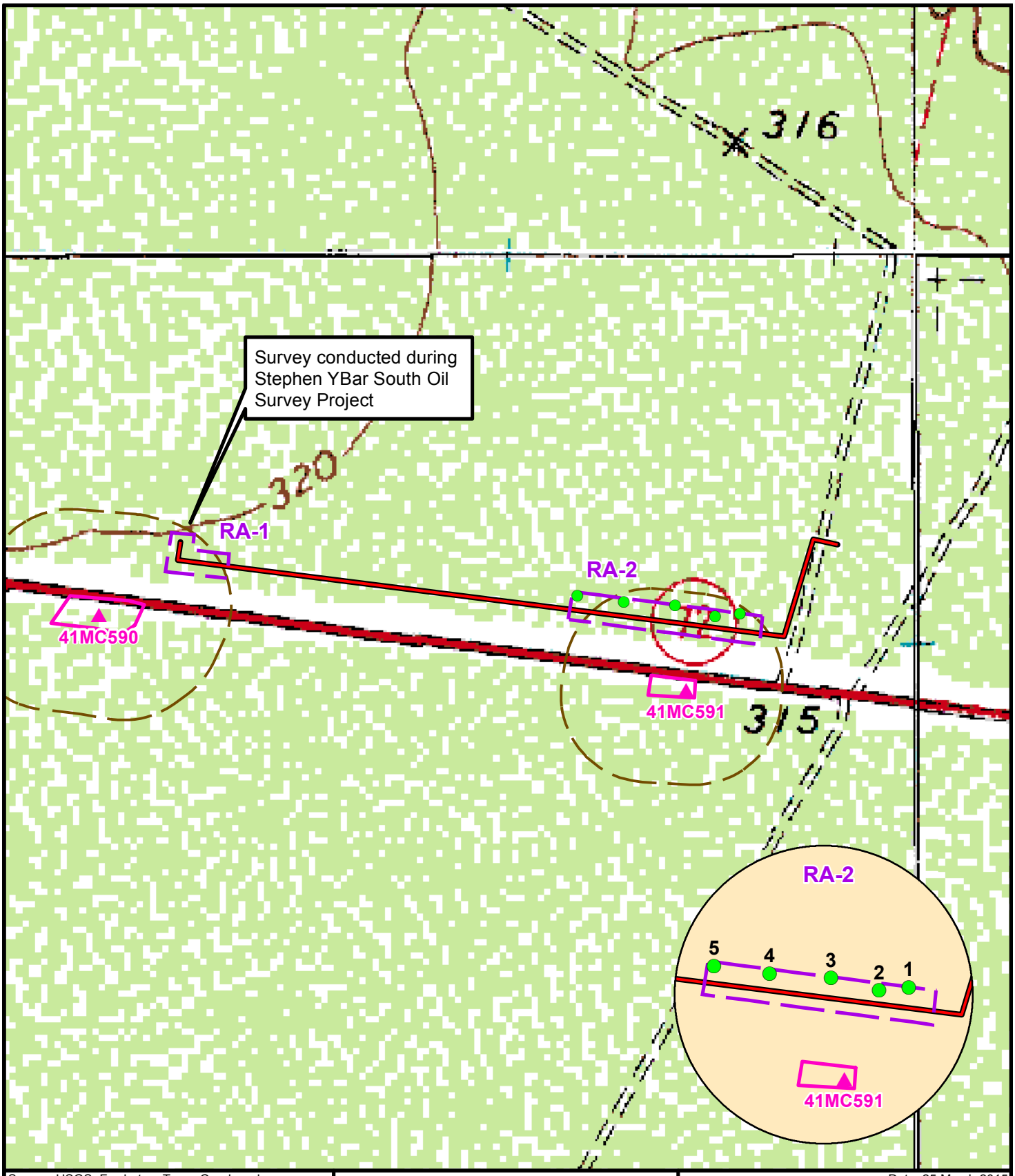
6.2.2 Review Area 2

Review Area 2 was located within a 328-foot (100 m) radius of previously recorded archeological site 41MC591. The APE was located within a previously cleared pipeline ROW (Photo 6-1). The ground surface visibility within the APE was considered good ranging between 40 and 100 percent (Photo 6-2). Vegetation within and just north of the APE consisted of mesquite, sage, cedar elm, clump grasses, various other grasses, various forbs, and cactus. Soils mapped within the review area consisted of Aguilares fine sandy loam and Caid sandy clay loam. Five shovel tests were conducted within the staked ROW in areas that showed the least amount of disturbance from previous pipeline construction. Most of the shovel tests yielded brown fine sandy loam overlying

brown or mottled brown and red clays. One shovel test yielded brown clay soils in a surface context. Shovel test were terminated between 8 and 14 inches (20 and 35 cm) below surface. No cultural materials were observed during surface inspection or shovel testing conducted within the review area.

6.3 RECOMMENDATIONS

Goshawk conducted a cultural resources survey consisting of an intensive surface inspection and five shovel tests within the proposed Stephen Y Bar South Gas Pipeline ROW. None of the shovel tests conducted within the APE yielded positive results. It is Goshawk's opinion that construction of the Stephen Y Bar South Gas Pipeline ROW, as proposed, will cause no impacts to significant cultural resources within the surveyed portion of the APE. Therefore, Goshawk recommends that construction be allowed to proceed, as planned. In the unlikely event that cultural resources (including human remains) are discovered, all construction or maintenance activities should be halted immediately and the USACE and an archeologist should be notified.



Source: USGS, Fowlerton, Texas Quadrangle.

Date: 25 March 2015

0 125 250 500 Feet

0 37.5 75 150 Meters

GOSHAWK ENVIRONMENTAL CONSULTING, INC.

Figure 6-1
Shovel Test Locations
McMullen County, Texas

Stephen YBar South Gas

LEGEND

- Pipeline
- Review Areas
- Site Boundaries
- Due Diligence Radius
- Negative Shovel Test

N

Photo 6-1: Review Area 2 Overview, Facing East

Photo 6-2: Ground Surface Visibility within the APE

Stephen Y Bar South Gas (14 NAD 1983)										
Report ST#	ST#	WP#	Easting	Northing	Depth (cm)	Soil Color	Soil Composition	Artifacts	Review Area	Comments
1	EK1	38	524238	3152228	0-35	Brown	Fine sandy loam	None	2	
					35+	Brown	Clay	None		
2	EK2	40	524210	3152225	0-35	Brown	Fine sandy loam	None	2	
					35+	Brown	Clay	None		
3	EK3	41	524163	3152237	0-30	Brown	Fine sandy loam	None	2	
					30+	Brown	Clay	None		
4	EK4	42	524105	3152241	0-35	Brown	Fine sandy loam	None	2	Disturbed
					35+	Red w/ brown	Clay	None		
5	EK5	43	524051	3152248	0-20	Brown	Clay	None	2	Disturbed

7.0 ORION UNIT #1H AND #2H FLOWLINES

Goshawk conducted a cultural resources survey of the proposed ±3,953-foot (1,205-m) Orion Unit #1H and #2H Flowlines ROW in Atascosa County, Texas. A single review area was identified within the proposed ROW, containing a single stream potentially under federal jurisdiction. The cultural resources survey, including shovel testing and surface inspection, was conducted within the review area totaling approximately one acre (0.4 ha). The review area encompassed a single segment of an unnamed, disjoined tributary. The field investigation was conducted by Goshawk archeologist Scott Justen and Erin Keenan on 19 February 2015.

The Orion Unit #1H and #2H Flowlines APE was located approximately 10.3 miles (15.9 km) to southeast of Charlotte, Texas and 0.6 mile (0.9 km) south of the intersection of County Road 442 and County Road 341. From the southern terminus the APE traversed westward crossing gently undulating upland terrain, before turning to the north. The APE then continued to the north traversing undulating terrain and the potentially jurisdictional stream, then reaching the northern terminus. The northern terminus is located on an upland landform adjacent to an existing access road. The moderately dense vegetation within the ROW consisted of mesquite, agarita, sage, cedar elm, clump grasses, various forbs, and cactus. The APE was located on the Cross NE, United States Geological Survey (USGS) topographic quadrangle (Figure 7-1). The dominant local land use was for rangeland, and oil and gas development.

7.1 ARCHIVAL RESEARCH

Archival research conducted using the Atlas online database failed to identify any previously recorded archeological sites situated within a 1.2-mile (2.0-km) radius of the APE. The nearest recorded archeological site (41AT249) was located 3.6 miles (5.8 km) southeast of the APE. Site 41AT249 will be discussed in detail below. The proposed ROW is situated 15.3 miles (24.5 km) south-southeast of the Mustang Branch NRD. Designated in 1978, the Mustang Branch Site NRD encompasses 24.7 square acres (10 square hectares) of agricultural lands along the right bank of Mustang Branch near its confluence with San Miguel Creek within the Choke Canyon Reservoir in eastern McMullen County. The NRD includes campsites, chipping-quarrying areas, middens, and lithic scatters; all of which contributed to its NRD designation. According to the Atlas, the nearest NRHP-listed property is the Atascosa County Courthouse, located within the Jourdanton, Texas approximately 12.8 miles (20.4 km) north-northwest of the APE (THC 2015b).

7.1.1 41AT249

Site 41AT249 was documented in November of 2011, as part of the Lyssy to Gardendale Pipeline project. The site was recorded as a small undated prehistoric surface lithic scatter. The site was located along a small rise on the eastern bank of Macho Creek. The site measured 108 feet (33 m) north-to-south by 92 feet (28 m) east-to-west. The artifact assemblage observed included four bidirectional cores, one core-chopper, two choppers, and six tested cobbles (THC 2015). The initial evaluation concluded that this site was not eligible for designation as a SAL or listing on the NRHP.

7.2 SURVEY RESULTS

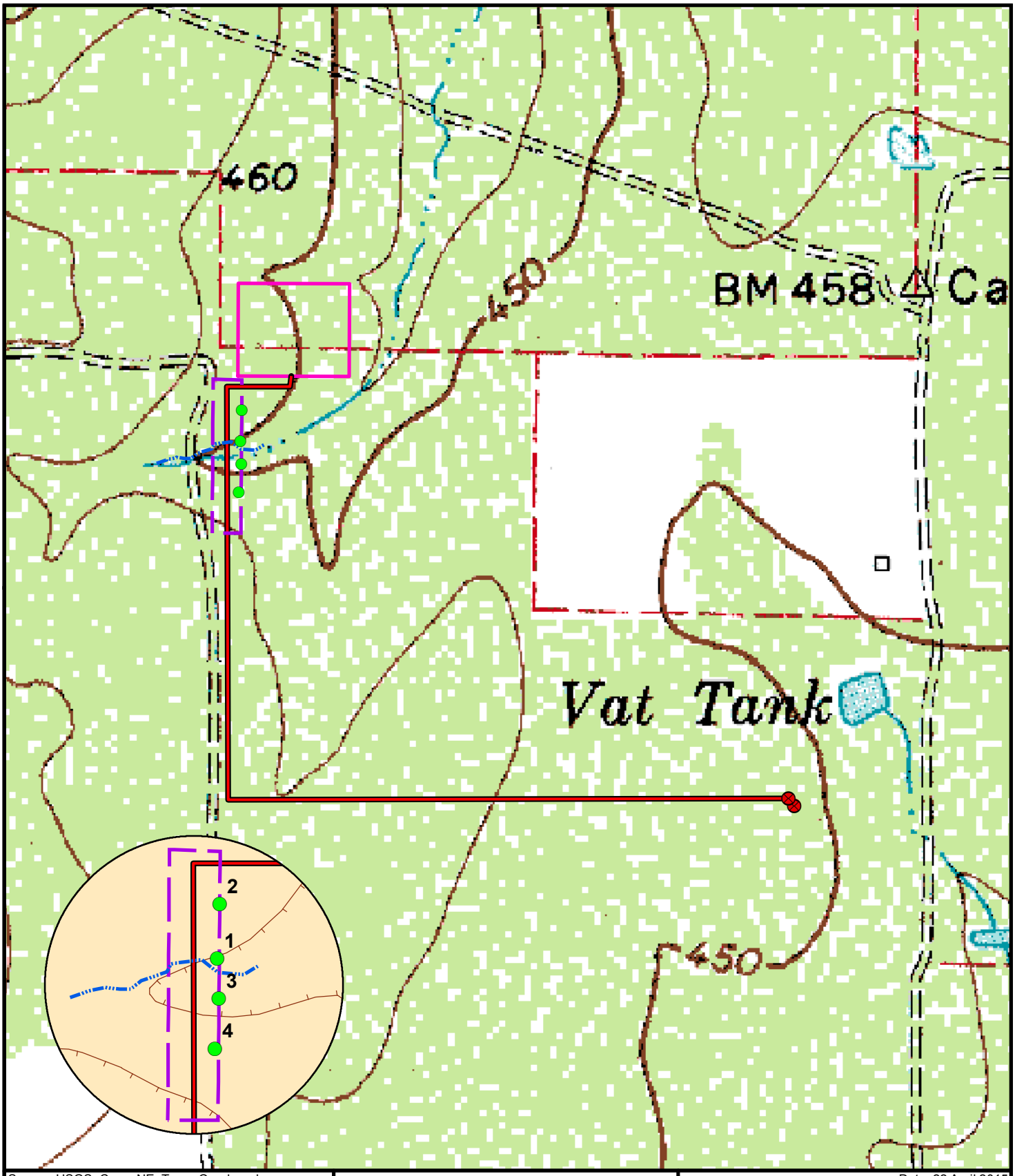
A single review area was identified within the proposed Orion Unit #1H and #2H Flowlines ROW, containing a segment of an unnamed disjoined tributary. The stream was identified as "Waters of the US" by desktop review and ecological field survey conducted prior to the commencement of the cultural resources survey. No other potentially jurisdictional streams were identified during the field effort.

7.2.1 Review Area

The review area traversed a segment of an unnamed disjoined tributary. The stream exhibited variable channelization ranging between marginally channelized to well-channelized within the APE (Photo 7-1). The stream had incised into the landscape between 1.3 and 1.6 feet (0.4 and 0.5 m) deep and between 3.3 and 6.6 feet (1 and 2 m) wide. Ground surface visibility within the APE was highly variable ranging between 20 and 50 percent due to leaf cover (Photo 7-2). Vegetation within the APE consisted of mesquite, agarita, sage, cedar elm, clump grasses, various forbs, and cactus. Soils mapped within the review area consisted of Amphion sandy clay loam and Hanis sandy clay loam. Four shovel tests were conducted in the vicinity of the potentially jurisdictional stream yielding reddish brown loamy clays overlying dark brown clays or light brown aeolian sands, overlying dark reddish brown clays. Shovel tests were terminated between 8 and 12 inches (20 and 30 cm) below surface. No cultural materials were observed during surface inspection or shovel testing conducted within the review area.

7.3 RECOMMENDATIONS

Goshawk conducted a cultural resources survey consisting of an intensive surface inspection and four shovel tests within the proposed Orion Unit #1H and #2H Flowlines ROW. None of the shovel tests conducted within the APE yielded positive results. It is Goshawk's opinion that construction of the Orion Unit #1H and #2H Flowlines, as proposed, will cause no impacts to significant cultural resources within the surveyed portion of the APE. Therefore, Goshawk recommends that construction be allowed to proceed, as planned. In the unlikely event that cultural resources (including human remains) are discovered, all construction or maintenance activities should be halted immediately and the USACE and an archeologist should be notified.



Source: USGS, Cross NE, Texas Quadrangle.

Date: 22 April 2015

0 125 250 500 Feet

0 37.5 75 150 Meters

GOSHAWK ENVIRONMENTAL CONSULTING, INC.

Figure 7-1
Shovel Test Locations
Atascosa County, Texas

Orion #1H
Orion #2H

LEGEND

- Flowline(s)
- Waters of the US
- Review Areas
- Production Facility
- Negative Shovel Test
- SHL(s)

N

Photo 7-1: Stream Overview within Review Area, Facing West

Photo 7-2: Typical Surface Visibility within Review Area

Orion Unit #1H and #2H Flowlines (14 NAD 1983)										
Report ST#	ST#	WP#	Easting	Northing	Depth (cm)	Soil Color	Soil Composition	Artifacts	Review Area	Comments
1	EK1	46	539193	3179638	0-30	Reddish brown	Loamy clay	None	1	
					30+	Dark brown	Clay	None		
2	EK2	47	539200	3179674	0-20	Red brown	Loamy clay	None	1	
					20+	Dark reddish brown	Clay	None		
3	EK3	48	539209	3179612	0<1	Light Brown	Sand	None	1	Aeolian sand
					1-20+	Dark Red	Clay	None		
4	EK4	50	539193	3179591	0-30	Brown	Sandy clay	None	1	Disturbed (Chipped in past)
					30+	Reddish brown	Clay	None		

8.0 DISCUSSION

The goal of the cultural resource surveys was not only to locate and record sites, but to provide conclusions and site recommendations, based on NRHP criteria of significance (36 CFR 60.4), and the requirements of Section 106 and 36 CFR 800. According to the NRHP "The quality of significance in American history, architecture, archeology, engineering, and culture is present in district, sites, materials, workmanship, feeling, and association that:

a. are associated with events that have made a significant contribution to the broad patterns of our history;
b. are associated with the lives of persons significant in our past;
c. embody distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
d. have yielded, or may be likely to yield, information important in prehistory or history."

9.0 CONCLUSIONS AND RECOMMENDATIONS

During the month of February 2015, Goshawk conducted three cultural resources surveys within the Eagle Ford Play, South Eagle Ford Zone. The three project areas subjected to cultural resources investigations included the proposed Stephen Y Bar South Oil Gathering Pipeline, Stephen Y Bar South Gas Gathering Pipeline, and Orion Unit #1H and #2H Flowlines. During the survey of each project, shovel tests were placed within each review area near the streams and upon the adjacent slopes or within the review radius of previously recorded archeological sites according to due diligence protocol. Shovel testing and surface survey resulted in the documentation of no significant cultural deposits within the survey areas.

Based on the results of investigations, it is Goshawk's opinion that no significant cultural resources will be impacted by construction within the surveyed portions of the proposed ROWs. Goshawk recommends that the projects be allowed to proceed as planned with the caveat that construction be limited to the surveyed ROWs. In the unlikely event cultural resources (including human remains) are discovered, all construction or maintenance activities should be immediately halted and both the USACE and an archeologist should be notified.

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