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## **An Intensive Cultural Resources Survey of the 13.0-Acre Manadas Wastewater Treatment Plant Project in Laredo, Webb County, Texas**

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## An Intensive Cultural Resources Survey of the 13.0-Acre Manadas Wastewater Treatment Plant Project in Laredo, Webb County, Texas

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# **An Intensive Cultural Resources Survey of the 13.0-Acre Manadas Wastewater Treatment Plant Project in Laredo, Webb County, Texas**

By:

**Briana N. Smith, Russell K. Brownlow, and Jeffrey D. Owens**



**Texas Antiquities Permit No. 8230  
HJN 170243 AR**

**Prepared for:**



**Zephyr Environmental Corporation  
Houston, Texas**

**Prepared by:**



**Horizon Environmental Services, Inc.  
Austin, Texas**

**March 2018**



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**Texas Antiquities Permit No. 8230**

**March 2019**



## **MANAGEMENT SUMMARY**

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On 29 November 2017, Horizon Environmental Services, Inc. (Horizon) conducted an intensive cultural resources survey of the City of Laredo's (City) proposed 13.0-acre Manadas Wastewater Treatment Plant Project in Laredo, Webb County, Texas (Project Area). To facilitate its construction, the City is pursuing federal funding through the Texas Water Development Board's (TWDB) Clean Water State Revolving Fund (CWSRF). As these funds are ultimately federal monies issued by the US Environmental Protection Agency (EPA), the undertaking falls under the regulations of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. Additionally, the Project Area will be located on property owned by the City of Laredo. Because the City is a political subdivision of the state, the Project Area also falls under the regulations of the Antiquities Code of Texas (ACT). At the request of Zephyr Environmental Corporation (Zephyr), Horizon conducted the cultural resources survey of the Project Area on behalf of the City in compliance with Section 106 of the NHPA and the ACT. The purpose of the survey was to determine if any archeological sites were located within the Project Area and, if any existed, to determine if the undertaking had the potential to have any adverse impacts on sites eligible for inclusion in the National Register of Historic Places (NRHP) or for formal designation as State Antiquities Landmarks (SALs). The investigations were conducted under Texas Antiquities Committee (TAC) permit number 8230.

The cultural resources survey of the Project Area resulted in the documentation of 1 newly recorded prehistoric archeological site. Site 41WB842 was recorded as a prehistoric open campsite covering the entirety of the 13.0-acre Project Area. Hundreds of chert flakes, fire-cracked rock (FCR) specimens, multiple bifaces, and 2 dart point fragments were observed on the site, suggesting that it may have served as a long-term campsite. Artifacts were observed scattered on the surface of the site, as well as subsurface in shovel tests to a depth of 31.4 inches (80.0 cm). The site was only recorded within the current Project Area, and undocumented portions of the site undoubtedly extend beyond the current Project Area. Considering the high artifact density on the site, along with the presence of temporally diagnostic tools and deeply buried deposits, it is Horizon's opinion that the portion of site 41WB842 within the current Project Area could be a contributing element to the overall NRHP/SAP eligibility of the site.

Based on the limited information about site 41WB842 gathered during the survey phase of activities, insufficient data are currently available to determine whether or not the site meets

the eligibility criteria for inclusion in the NRHP and/or for designation as an SAL. As such, the site is currently considered to be of undetermined NRHP and/or SAL eligibility. Horizon recommends avoidance of all ground-disturbing activities within the documented site boundaries in order to avoid any adverse effects to archeological deposits that may meet the criteria of significance. If avoidance is not feasible, then a supplemental phase of archeological significance testing investigations may be required to fully assess the eligibility of the site for inclusion in the NRHP and/or for designation as a SAL.



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## **ACKNOWLEDGEMENTS**

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Horizon Environmental Services, Inc. (Horizon) conducted the intensive cultural resources survey of the proposed Manadas Wastewater Treatment Plant Project reported herein in compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the Antiquities Code of Texas (ACT). Russell Brownlow served as the principal investigator for the project, and Briana Smith served as the lead author on this report. Jared Wiersema and Benjamin Johnson conducted the field investigations. Jared Wiersema and Briana Smith were also responsible for drafting the figures and the preparation of the relevant site forms.



## **1.0 INTRODUCTION**

---

This document reports the results of an intensive cultural resources survey of the proposed 13.0-acre Manadas Wastewater Treatment Plant Project in Laredo, Webb County, Texas (Project Area; Figures 1-1 and 1-2). The Project Area is located on an undeveloped tract of land in northwestern Laredo between Interstate Highway (IH) 35 and Farm-to-Market Road (FM) 1472. This area is heavily developed with industrial parks and housing subdivisions. The Rio Grande River is located approximately 1.4 miles (2.3 kilometers [km]) to the west of the Project Area.

The City of Laredo (City) is proposing the construction of the plant in order to intercept and treat flow from the Manadas Creek sewershed. To facilitate its construction, the City is pursuing federal funding through the Texas Water Development Board's (TWDB) Clean Water State Revolving Fund (CWSRF). As these funds are ultimately federal monies issued by the US Environmental Protection Agency (EPA), the undertaking falls under the regulations of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. Additionally, the Project Area will be located on property owned by the City. Because the City is a political subdivision of the state, the Project Area also falls under the regulations of the Antiquities Code of Texas (ACT). At the request of Zephyr Environmental Corporation (Zephyr), Horizon conducted cultural resources survey of the Project Area on behalf of the City in compliance with Section 106 of the NHPA and the ACT. The purpose of the survey was to determine if any archeological sites were located within the Project Area and, if any existed, to determine if the undertaking had the potential to have any adverse impacts on sites eligible for inclusion in the National Register of Historic Places (NRHP) or for formal designation as State Antiquities Landmarks (SALs). The investigations were conducted under Texas Antiquities Committee (TAC) number 8230.

The cultural resources investigations consisted of: 1) archival research; 2) an intensive cultural resources survey of the proposed Project Area; and 3) the production of a report suitable for review by the State Historic Preservation Officer (SHPO) in accordance with the Texas Historical Commission's (THC) Rules of Practice and Procedure, Chapter 26, Section 27, and the Council of Texas Archeologists (CTA) Guidelines for Cultural Resources Management Reports. Russell Brownlow (Horizon's cultural resources director) served as the project's principal investigator, while Jared Wiersema and Benjamin Johnson conducted the field investigations.

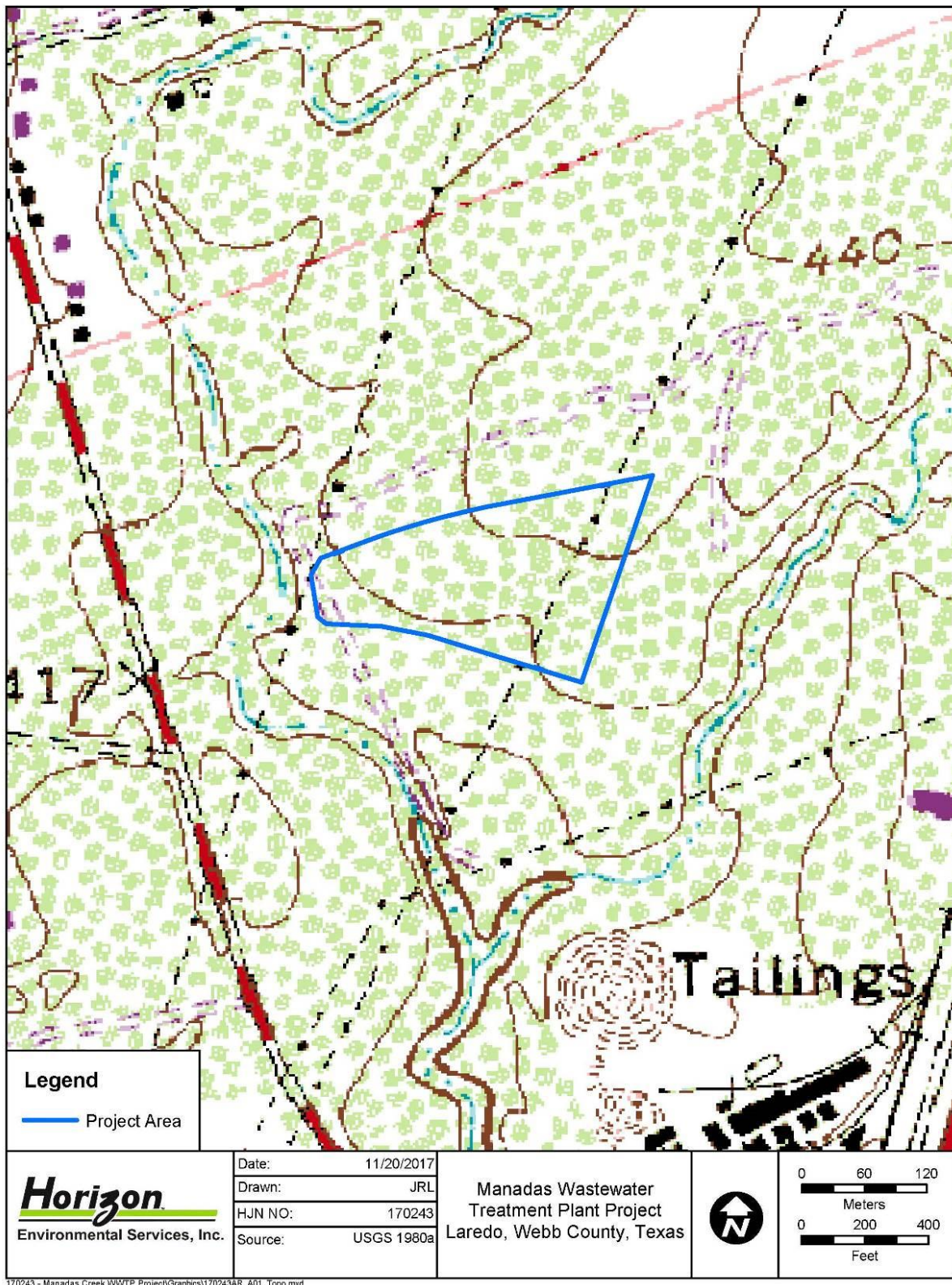


Figure 1-1. Topographic map depicting the location of the Project Area



Figure 1-2. Aerial photograph depicting the location of the Project Area

Horizon conducted the cultural resources survey on 29 November 2017. Horizon's archeologists traversed the Project Area on foot and thoroughly inspected the modern ground surface for aboriginal and historic-age cultural resources. In addition to pedestrian walkover, the Texas State Minimum Archeological Survey Standards (TSMASS) require a minimum of 1 shovel test per 2.0 acres for projects between 11.0 and 100.0 acres in size. As such, a minimum of 7 shovel tests were required within the 13.0-acre Project Area. Horizon excavated a total of 10 shovel tests, thereby exceeding the TSMASS for a Project Area of this size.

The cultural resources survey of the Project Area resulted in the documentation of 1 newly recorded prehistoric archeological site. Site 41WB842 was recorded as a prehistoric open campsite covering the entirety of the Project Area. Hundreds of chert flakes, fire-cracked rock (FCR) specimens, multiple bifaces, and 2 projectile point fragments were observed on the site, suggesting the site may have served as a long-term campsite. Based on the presence of the 2 potential dart point fragments observed on site 41WB842, the site was likely utilized during the general Archaic period. Artifacts were observed scattered on the surface of the site, as well as subsurface in shovel tests to a depth of 31.4 inches (80.0 cm) below surface. The site was only recorded within the current Project Area, and undocumented portions of the site undoubtedly extend beyond the current Project Area. Considering the high artifact density on the site, along with the presence of formal tool fragments and deeply buried deposits, it is Horizon's opinion that the portion of site 41WB842 within the current Project Area could be a contributing element to the overall NRHP/SAL eligibility of the site. Additional testing-level investigations would be necessary to formally determine the NRHP/SAL eligibility status of the site prior to any ground-disturbing activities.

The primary focus of cultural resources surveys is to inventory cultural resources that may be impacted by a proposed undertaking. However, the limited data available at the survey level of investigation usually are not sufficiently in-depth to fully evaluate NRHP/SAL significance of many types of cultural resources, including archeological sites that are large in size, have deep or complex archeological deposits, or date to past time periods about which comparatively little is known. In the latter situation, a supplemental phase of investigation is typically required in order to fully evaluate the significance of the resource. This phase of work involves controlled excavations and in-depth technical studies that are designed to evaluate such things as the depth, stratigraphic structure of archeological deposits, the intactness of archeological deposits, the function (or functions) of the site, and the date (or dates) at which the site was occupied. These investigations are designed to provide sufficient data to determine whether or not the site has the potential to address research questions appropriate to the site based on its function, cultural association, and age.

Based on the limited information about site 41WB842 gathered during the survey phase of activities, insufficient data are currently available to determine whether or not the site meets the eligibility criteria for inclusion in the NRHP and/or for designation as an SAL (as appropriate to this project). As such, the site is currently considered to be of undetermined NRHP and SAL eligibility. Horizon recommends avoidance of all ground-disturbing activities within the documented site boundaries in order to avoid any adverse effects to archeological deposits that may meet the criteria of significance. If avoidance is not feasible, then a supplemental phase of



archeological significance testing investigations is recommended in order to fully assess the eligibility of the site for inclusion in the NRHP and for designation as an SAL.



## **2.0 ENVIRONMENTAL SETTING**

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### **2.1 PHYSIOGRAPHY AND HYDROLOGY**

The proposed 13.0-acre Manadas Wastewater Treatment Plant is located in northwestern Laredo in Webb County, Texas. The Project Area is set on a ridge bounded by Manadas Creek to the west and an unnamed tributary of Manadas Creek to the east. Vegetation consists of clump grasses along with scattered mesquite and prickly pear cacti. Elevations across the Project Area range between 420.0 and 435.0 feet (128.0 and 132.5 m). Ground visibility ranges from 0% in areas with dense vegetation to 100% in exposed areas and on 2-track roads within the Project Area. A transmission line corridor traverses the eastern end of the Project Area and a borrow pit is located at the far southeast corner of the Project Area. A large sand quarry is located immediately south of the Project Area (Figures 2-1 to 2-4).

Hydrologically, the Project Area is situated within the Rio Grande River drainage basin. It is drained to the south and southwest by Manadas Creek and its tributaries. Manadas Creek flows to the south before joining the Rio Grande River, which is located approximately 0.8 miles (1.2 km) to the southwest of the Project Area.

### **2.2 CLIMATE**

The climate in Webb County is generally mild in the winter, with an average temperature of 58.0 degrees Fahrenheit (°F). In the summer months, the average temperature is 85.0°F, with an average daily maximum temperature of 97.0°F. The average annual total precipitation is about 20.0 inches (50.8 centimeters [cm]; NRCS 1985).

### **2.3 FLORA AND FAUNA**

The Project Area is located in the Tamaulipan Biotic Province (WWF 2017) and the South Texas Plains vegetational region (Gould 1975). The upland areas support a rich tapestry of South Texas chaparral. The vegetation of the undeveloped and uncleared areas can be characterized as brush country, with variably dense scrub ranging in height from 4 to 10 feet. Mesquite and associated thorny shrubs, such as catclaw acacia, huisache, blackbrush, granjeno, whitebrush, prickly pear, and Spanish dagger are common locally. Understory vegetation is characteristically sparse. Along major drainages, live oak, Texas sugarberry,



**Figure 2-1. General view of Project Area, facing southwest**



**Figure 2-2. General view of Project Area, facing north**



**Figure 2-3. General view of Project Area, facing east**



**Figure 2-4. Borrow pit located at the southeast corner of the Project Area, facing west**

cedar elm, and retama occur. Little bluestem, bristlegrass, paspalum, windmill grass, and buffelgrass are dominant grasses.

The Tamaulipan/Mezquital ecoregion of southern Texas and northeastern Mexico has unique plant and animal communities containing tree- and brush-covered dunes, wind tidal flats, and dense native brushland (WWF 2017). Although there are large acreages of cultivated land on the South Texas Plains, most of the area is still rangeland. Land holdings are predominantly large cattle ranches. Deer and other wildlife species are common. This area originally supported a grassland- or savannah-type climax vegetation. Long-continued grazing and other factors have altered the plant communities to such a degree that ranchers of the region now face a severe brush problem (Gould 1975).

## 2.4 SOILS

Only 1 soil type is mapped within the Project Area. This soil is summarized in Table 2-1 (NRCS 2017) and in Figure 2-5.

**Table 2-1. Soils mapped at the Project Area**

Soil Name	Parent Material	Typical Profile (inches)
Copita fine sandy loam, 0 to 3% slopes (CpB)	Calcareous loamy residuum weathered from sandstone	0 to 2: Fine sandy loam 2 to 11: Fine sandy loam 11 to 26: Sandy clay loam 26 to 37: Sandy clay loam 37 to 49: Sandstone bedrock, weakly cemented 49 to 60: Sandstone bedrock, strongly cemented



Figure 2-5. Soils mapped within the Project Area





## **3.0 CULTURAL BACKGROUND**

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The prehistory of South Texas can essentially be divided into 3 major periods: (1) Paleoindian (9200 to 6000 B.C.); (2) Archaic, which has been subdivided into the Early Archaic (ca. 6000 to 2500 B.C.), Middle Archaic (ca. 2500 to 400 B.C.), and Late Archaic (ca. 400 B.C. to A.D. 800); and (3) Late Prehistoric (A.D. 800 to 1600). These prehistoric periods are principally defined by the presence of particular diagnostic projectile points, but they are intended to designate general cultural patterns based on ecology, technology, and subsistence strategies (Black 1989:48-57; Suhm et al. 1954).

### **3.1 PALEOINDIAN PERIOD (CA. 9200 TO 6000 B.C.)**

Evidence of Paleoindian occupations in South Texas (9200 to 6000 B.C.) usually consists of surface finds located most frequently in the Nueces-Guadalupe and Rio Grande plains. Only 2 stratified Paleoindian sites have been excavated in the region: Buckner Ranch (Sellards 1940) and Berger Bluff (Brown 1987). Both sites were deeply buried in alluvial terraces. Diagnostic projectile point styles of the Paleoindian period include Clovis (Meltzer 1986), Folsom (Largent et al. 1991), Golondrina, Scottsbluff, and Angostura (Black 1989:48-49). Finely flaked end scrapers fashioned on blades and bifacially worked Clear Fork tools are also diagnostic of the Paleoindian period. Paleoindian peoples have traditionally been characterized as terminal Pleistocene big-game hunters, but these highly mobile hunter-gatherers probably exploited a rich diversity of wild plant and animal foods. Investigations at Baker Cave, for instance, indicate that a diverse array of fish, snakes, and rodents was exploited by the Paleoindian occupants (Hester 1983). Paleoindian populations were probably organized into small groups that ranged over great distances across periglacial plains and marginally forested areas to acquire different food sources throughout the year (Black 1989:48).

### **3.2 ARCHAIC PERIOD (CA. 6000 B.C. TO A.D. 800)**

The major distinction of the Early Archaic period (6000 to 2500 B.C.) is the replacement of earlier lanceolate-shaped projectile points by stemmed and corner-notched types. These styles include Bell, Andice, Early Triangular, and Early Expanding Stemmed points such as Bandy, Martindale, Uvalde, and related forms (Turner and Hester 1999). Other diagnostic artifacts include Clear Fork tools and large, thin, triangular bifaces with concave bases. The beginning of the Early Archaic period marks the onset of the modern Holocene era, during which the periglacial climate of the late Pleistocene began to grow warmer. Available evidence from the Gulf Coastal Plain suggests that population densities remained low through the

beginning of the Archaic period in South Texas, reflecting a continuation of the highly mobile adaptations of the Paleoindian period.

The Middle Archaic period (2500 to 400 B.C.) in South Texas is defined by the presence of Pedernales, Langtry, Kinney, Bulverde, and Tortugas projectile point styles (Bell 1958; Turner and Hester 1999). Distally beveled tools were also common during this period, and ground stone tools, such as tubular grinding stones and manos, appeared for the first time (Black 1989:49). Site densities in South Texas increased markedly during the Middle Archaic, possibly reflecting a decrease in group mobility and/or an increase in territoriality among groups (Black 1989:51). A heavier reliance on vegetal foods may be indicated by the introduction of ground stone technology and the appearance of large, burned rock middens throughout Central Texas.

Late Archaic (400 B.C. to A.D. 800) occupations in South Texas are defined by small corner- and side-notched dart points, including Ensor, Frio, Marcos, Fairland, and Ellis types (Bell 1958, 1960; Turner and Hester 1999). Site densities continued to increase throughout the Late Archaic period, possibly indicating that population densities continued to rise. Cultural deposits on Late Archaic sites also tend to be deeper than during preceding periods, suggesting that occupations were either more extended in duration or that reoccupation of the same locations was more frequent (Black 1989:51). Cemeteries appeared during this period, possibly indicating higher levels of social organization and increasing territoriality (Black 1989:51). During the Late Archaic, the exploitation of different ecological niches continued to intensify, becoming increasingly oriented toward the exploitation of seasonal food sources. This kind of adaptation is best illustrated by the frequent occurrence of shell middens along the coast and burned rock middens farther inland. Data collected from inland sites indicate that the economy was based primarily on vegetal resources supplemented with the hunting of small game such as rodents and rabbits (Black 1989:51).

### **3.3 LATE PREHISTORIC PERIOD (CA. A.D. 800 TO 1600)**

The onset of the Late Prehistoric period is defined by the appearance of pottery and the bow and arrow. The small dart points of the Late Archaic period were largely replaced by arrow points (Black 1989:52). The Late Prehistoric period in South Texas has been divided into 2 distinct time horizons, the Austin (A.D. 800 to 1350) and Toyah (A.D. 1350 to 1600) phases (Black 1986). The Austin phase is characterized by the presence of Scallorn arrow points, while the Toyah phase is defined by the presence of Perdiz arrow points. Faunal resources became increasingly important during this period, especially large mammals such as bison and deer. Lithic tool kits seem to have been manufactured for the processing of large mammals (Black 1989:51-57). Late Prehistoric sites are relatively common throughout South Texas, which might be interpreted as the result of population increases. The movement of bison from Central to South Texas may coincide with a movement of peoples and/or technology from both the Austin and Toyah phases of Central Texas (Black 1989:51-57).

### **3.4 HISTORIC PERIOD (CA. A.D. 1520 TO PRESENT)**

The historic era of South Texas began with the arrival of Europeans in the region and can be subsumed within the overall history of Texas. In South Texas, the historic era has been divided into 3 time periods: (1) Spanish Exploration and Colonial (ca. A.D. 1520 to 1821); (2) Mexican (1821 to 1836); and (3) Texas-American (ca. 1836 to present). The Protohistoric era in this region can generally be incorporated within the early part of the Spanish Exploration and Colonial period.

#### *Protohistoric*

Records from the initial Spanish expeditions provide the earliest ethnohistoric accounts of the Coahuiltecan-affiliated groups indigenous to the Rio Grande Plain (Hester 1989a:1-4; 1989b:77-82). Based on fragmentary ethnohistorical records, it appears that these people—part of an extinct cultural group that occupied lands stretching from South Texas deep into Mexico—were highly nomadic hunter-gatherers who moved in a seasonal pattern within distinctive territories (Hester 1989a). Available evidence suggests that Coahuiltecan living in the Rio Grande Plain (as well as in other parts of South Texas and northern Mexico) subsisted on a number of seasonal food sources, ranging from prickly pear in the fall to bison or deer in the late fall or winter, as well as small mammals and roots during off seasons or in times of hardship (Hester 1989b:77-81).

Two causes can be cited for the early destruction of the Coahuiltecan groups on the Rio Grande Plain. The primary reason stems from the great period of unrest among Native American groups generated by the introduction of the horse by the Spanish. Groups who adopted the horse (especially the Apache and the Comanche) eagerly took to raiding neighboring groups. Nomadic peoples such as the Coahuiltecan were especially vulnerable to such pressure, as they could neither consolidate for protection nor occupy defensible positions without risking starvation. Therefore, finally, the Coahuiltecan asked for missions to be established in their territories in order to protect them from the Apache and Comanche raiders. After the establishment of the Spanish missions in South Texas during the first half of the 18th century, the remnants of the indigenous Native American groups were rapidly integrated into the mission system or were subjected to outright extinction by depredation or disease (John 1975:171-174).

#### *Spanish Colonial*

The first European incursion into Texas was by Alvarez de Pineda in 1513 during the course of a Spanish mapping expedition. In 1528, Cabeza de Vaca crossed South Texas after being shipwrecked along the Texas Coast near Galveston Bay (Folan et al. 1989:85). Between 1688 and 1717, Spanish explorers such as Mazanet and Espinosa passed through the Rio Grande Plain from Mexico on their way to the Caddoan settlements in Northeast Texas (Hester 1989b:80-81). These early Spanish explorers recorded observations about the aboriginal groups in the region, but they were primarily engaged in consolidating territory for the Spanish Crown.

Following the founding of San Antonio in 1718, the town of Laredo was established along the Rio Grande in 1755 when rancher Tomas Sanchez de la Berrera y Gallardo was granted permission by the great Spanish colonizer Jose de Escandon to form a new settlement. Located in the province of Nuevo Santander, which included most of northeastern Mexico and parts of present-day Texas, Laredo was one of a series of settlements that Escandon established or authorized as part of Spain's effort to colonize the area south of the Nueces River (Clark and Juarez 1986:85; Folan et al. 1986:6).

Laredo was founded near a ford on the Rio Grande River on a grant consisting of 15 sitios de ganado mayor, or 66,000 acres. In 1767, Spanish authorities visited the community and laid out San Agustin Plaza. They also granted porciones (parcels of land fronting on the river) to the settlers. The community grew steadily after its designation as a villa or town, and by 1789, the population consisted of approximately 700 individuals. The town included a stone church and a priest's house, military barracks to house the soldiers who guarded the community against frequent Indian attacks, and approximately 85 civilian dwellings. The economy was based on ranching and salt mining at Sal del Rey in modern Hidalgo County (Anonymous n.d.; Clark and Juarez 1986:87-88; Folan et al. 1986:6).

#### *Mexican and Texas-American*

Prior to the Treaty of Guadalupe Hidalgo, a Spanish garrison was established in Laredo to minimize the effects of depredations by Lipan Apache and Comanche raiders. In 1790, a daring attack on the city overran the garrison and exploded the powder magazine, deepening fears "that the Comanches' efforts to sweep through south Texas were succeeding" (Briggs 1982:7). Once the Texas-Mexico border was established along the Rio Grande in 1848, the role of protection in the Laredo area passed to the United States. In 1849, a company of mounted infantry under Second Lieutenant E.L. Viele arrived to establish an army post on "some high flats west of the city, opposite a ford and just north of a bend in the Rio Grande" (Briggs 1982:7) on the Texas side of the river about 0.75 miles west of the old Spanish town of Laredo. Originally named Camp Crawford (or Camp Laredo), the name of the post was changed in 1850 to Fort McIntosh in honor of Lieutenant Colonel James S. McIntosh, who died in September 1847 from wounds received at the Battle of Molino del Rey during the Mexican-American War (Frazer 1972). When construction began in 1850, the general military objective of the fort was to provide "escort service to caravans of travelers and [to reduce] Indian depredations and general outlawry" (Briggs 1982:8).

The 5th Infantry arrived at Fort McIntosh in November 1853 and, under the direction of the Army Corps of Engineers, began construction of a field fort north of the McIntosh Cantonment. This field fort was constructed of earthen embankments and designed as an artillery emplacement. Due to its 5-pointed shape, this bermed structure became known as Star Fort, as well as Field Fort McIntosh, and was located about 0.5 miles north of the post proper (Warren 1991:6). Star Fort was completed in less than 3 months, including a stone magazine within the enclosure. By the time it was abandoned in 1859, the cantonment area (south of Star Fort) included offices, storehouses, kitchens, a blacksmith shop, a sutler's store, stables, a hospital, a carpenter's shop, officers' quarters, a parade ground, and possibly even a ranch house that predated the fort (Briggs 1982:11).

Throughout Fort McIntosh's early period, enlisted men apparently camped in tents and under brush arbors at various locations in and around the cantonment area and outside of Star Fort. After a year without Indian depredations in the area, Fort McIntosh was abandoned. The following year (1860), however, the post was reoccupied due to raiding, only to be abandoned again in 1861 as Texas took possession of it during the Civil War. At the close of the war in 1865, the infantry again arrived at Fort McIntosh. They found that much of the fort had been dismantled and removed during the war, leaving it essentially devoid of structures. By 1869, construction was again underway and a new post hospital, storehouse, guardhouse, and bakery were completed by 1870. During the last major construction episode in the 1880s, buildings at the fort were constructed of yellow Laredo brick. Many of these structures remain today.

Until its final military abandonment in 1949, Fort McIntosh continued to be used for military training of troops and, in 1942, became the home of the Southern Liaison Patrol of the newly formed Civil Air Patrol (Briggs 1982). According to Warren (1991:7), "[d]uring its long history, Fort McIntosh was involved in protecting local settlers and travelers from Indians and bandits, and played a role in the Civil War, the Mexican Revolution, the Spanish American War, and World Wars I and II."

Since 1946, Fort McIntosh has been utilized as a teaching facility, housing Laredo Junior College. Although the post has been altered to meet the needs of a college campus, several structures and some of its early period subsurface deposits remain potentially intact (Briggs 1982:25-26). Thus, Fort McIntosh, along with Star Fort, maintains its National Register District and State Archeological Landmark (SAL) status.

Throughout the late 18th century and first half of the 19th century, the citizens of Laredo considered themselves to be politically separate from the Anglo-American settlements developing in other parts of Texas. Nevertheless, their key location on the corridor between Mexico and the United States embroiled them in Mexico's war for independence against Spain prior to 1821, in the Texas revolution during the 1830s, and in the Mexican-American War of 1846 to 1848. Insurgents, troops, and supplies passed through the town regularly, keeping the community in a constant state of flux for 50 years. Population turnover was continuous, although the number of residents changed little (Clark and Juarez 1986:89-95; Folan et al. 1986:6-7).

The organization of Webb County in 1848 and subsequent increasing numbers of Anglo-American merchants contributed to a period of prosperity for Laredo. The town's economy was further stimulated during the Civil War, when it became a center for the Confederate cotton trade. Twenty years later, the arrival of the Texas-Mexican Railway and the International-Great Northern Railroad in 1881 caused Laredo's population to soar, and within a decade the number of residents had increased from 3521 to 11,319 (Anonymous n.d.; Folan et al. 1986:8). A major influx of Anglo-American entrepreneurs resulted in the construction of an electric railway system, the opening of new suburban developments, and the construction of numerous residential and commercial buildings. The establishment of coal mines northwest of Laredo contributed to the general prosperity of the region (Anonymous n.d.), as did a period of agricultural development after 1900. Further significant population growth occurred during the second decade of the 20th century as large numbers of Mexican nationals crossed the border to escape the ravages of civil war. The population swelled by 50% between 1910 and 1920

(Anonymous n.d.), and new immigrants created a demand for housing throughout the city while contributing to the local infrastructure as teachers, businessmen, and laborers.

Discovery of oil in Webb County in 1921 assisted Laredo in sustaining a period of growth during the 1920s and 1930s, after which the city suffered the effects of the Great Depression. Establishment of the Laredo Army Air Field in 1942 aided in a general economic recovery that continued after World War II as the community became the location of numerous service industries. Increasing trade between the United States and Mexico further stimulated the local economy, which has remained strong throughout the last few decades.

## 4.0 ARCHIVAL RESEARCH

### 4.1 DATABASE AND MAP REVIEW

Archival research conducted via the THC's Texas Archeological Site Atlas (Atlas) online database indicated the presence of 2 previously recorded archeological sites within a 1.0-mile (1.6-km) radius of the Project Area, while a review of the National Park Service's (NPS) NRHP Google Earth map layer indicated the presence of no historic properties listed on the NRHP within the review perimeter. These documented cultural resources and their distances from the Project Area are summarized in Table 4-1, while their locations relative to the proposed Project Area are presented in Figure 4-1. No documented cultural resources, including any listed on the NRHP, are located within or immediately adjacent to the Project Area. Based on the Atlas database, the Project Area has not been previously assessed for cultural resources. A review of historic aerial imagery containing the Project Area revealed that no construction or obvious development at the location has occurred between 1964 and the present.

**Table 4-1. Summary of Cultural Resources Within 1.0 Miles of Project Area**

Site Trinomial, Cemetery, or Historic Property	Site Type	NRHP Eligibility Status	Distance/Direction from Project Area	Potential to be Impacted by Project?
41WB536	Prehistoric lithic scatter and historic-era debris scatter	Undetermined	0.4 miles northeast	No
41WB458	Prehistoric campsite and lithic procurement area	Undetermined	0.5 miles east	No

NRHP = National Register of Historic Places

### 4.2 PROBABILITY ASSESSMENT

Prehistoric archeological sites are commonly found in upland areas and on alluvial terraces near stream/river channels or drainages. Based on the location of the Project on an elevated landform above Manadas Creek and its tributaries, in conjunction with the presence of 2 previously recorded prehistoric sites within the review perimeter, it was Horizon's opinion prior to the field efforts that there existed a high potential for undocumented prehistoric cultural deposits within the Project Area.

*Sensitive Site Location Data Omitted*

**Figure 4-1. Documented cultural resources within 1.0 miles of the Project Area**



In regard to historic-era resources, the lack of visible structures in immediate proximity to the Project Area on the relevant topographic quadrangle map suggests a decreased potential for historic-era standing structures or associated cultural deposits within the boundaries of the Project Area.



## **5.0 SURVEY METHODOLOGY**

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A 2-person Horizon archeological field crew completed the intensive pedestrian survey of the Project Area on 29 November 2017. Horizon's archeologists traversed the Project Area on foot and thoroughly inspected the modern ground surface for aboriginal and historic-age cultural materials. In addition to pedestrian walkover, the TSMASS require a minimum of 1 shovel test per 2.0 acres for projects between 11.0 and 100.0 acres in size. As such, a minimum of 7 shovel tests would be required within the 13.0-acre Project Area. Horizon excavated a total of 10 shovel tests, thereby exceeding the TSMASS for a Project Area of this size. All excavated matrices were screened through 0.25-inch (6.3-millimeter [mm]) hardware mesh or were trowel-sorted if the dense clay soils prohibited successful screening.

Field notes were maintained by the field crew on terrain, vegetation, soils, landforms, number of excavated shovel tests, photograph numbers and descriptions, and cultural materials observed. In addition, standardized shovel test forms were completed for each shovel test. These forms included location data, depth, soil type, and notations on any artifacts encountered. For any new archeological sites recorded, standard site forms were completed and filed at the Texas Archeological Research Laboratory (TARL) for permanent housing. Similarly, for any previously recorded archeological sites that were assessed, updated site forms were completed and filed at the TARL.

A selective collection strategy was utilized during the survey efforts wherein only diagnostic cultural materials were collected for eventual curation at an approved facility or for return to the appropriate landowner. Non-diagnostic artifacts were tabulated and assessed in the field and placed back where they were found. Digital photographs with a photo log were completed as appropriate. The locations of all shovel tests were recorded via handheld GPS units utilizing the Universal Transverse Mercator (UTM) coordinate system and the North American Datum of 1983 (NAD 83). Shovel test locations are presented in Figure 5-1, while shovel test data are presented in Appendix A.

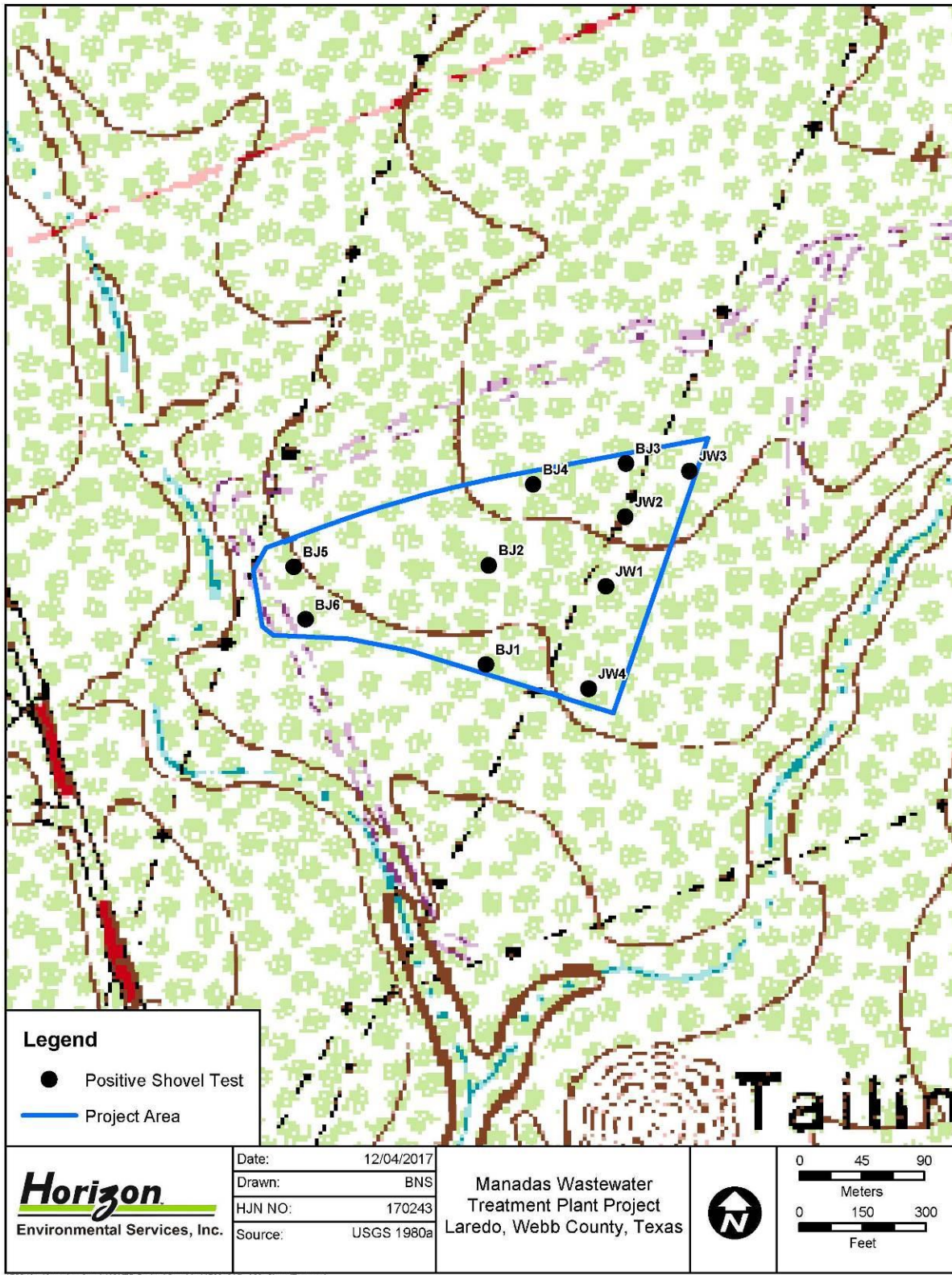


Figure 5-1. Shovel test locations within the Project Area

## **6.0 RESULTS OF THE INVESTIGATIONS**

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The cultural resources survey of Manadas Wastewater Treatment Plant resulted in the documentation of 1 newly recorded prehistoric archeological site (41WB842). The site is discussed in detail below.

### **6.1 SITE 41WB841**

#### **General Description**

Site 41WB842 is a newly recorded archeological site that was documented as a high-density prehistoric open campsite covering the entirety of the Project Area (Figures 6-1 and 6-2). The site is situated on a ridge between Manadas Creek and one of its unnamed tributaries. Vegetation across the site consists of scattered clump grasses, prickly pear cacti, and mesquite (Figure 6-4). The central portion of the site was difficult to access due to dense vegetation. Ground visibility on the site ranges between 0% in heavily vegetated areas to 100% in exposed, eroded areas. Cultural materials consisted entirely of prehistoric lithic materials and were observed on the surface as well as subsurface in deep sandy soils. A total of 10 shovel tests were excavated across the site, all of which were positive for cultural materials between 0.0 and 31.4 inches (0.0 and 80.0 cm) below surface. High concentrations of lithic materials were found eroding out of 2-track roads that traverse the site on both the east and west ends (Figure 6-5). Lithic materials were also observed at depths of 39.3 inches (100.0 cm) below surface within the wall profiles of a borrow pit located at the southeast end of the site (Figure 6-5).

#### **Observed Cultural Materials**

Cultural materials observed on site 41WB842 consisted of over 100 pieces of lithic debitage, 11 bifacially flaked tools, and numerous pieces of FCR (Figures 6-6 through 6-10). Two of the 11 observed bifacially-worked specimens appear to represent fragments of formal tools. The 2 observed formal tool fragments include the distal tip of a possible triangular dart point and the proximal end (base) of a possible dart point. While no complete dart points capable of refining the temporal affiliation of the site were observed, the presence of the 2 dart point fragments suggests a general Archaic Period utilization of the site. Lithic materials observed on the site were manufactured from various types of medium- to fine-grained chert, much of which has been heat treated. While lithic specimens were prolific on the site, no preserved floral or faunal remains were observed during the assessment of site 41WB842.

*Sensitive Site Location Data Omitted*

**Figure 6-1. Location of site 41WB842 within Project Area**

*Sensitive Site Location Data Omitted*

**Figure 6-2. Sketch map of site 41WB842**



**Figure 6-3. View of site 41WB842, facing northwest**



**Figure 6-4. View of site 41WB842, facing north**





**Figure 6-5. Artifacts in wall profile of borrow pit on southeast end of site 41WB842**



**Figure 6-6. FCR feature observed on site 41WB842**



Figure 6-7. FCR specimens observed on site 41WB842



Figure 6-8. Representative lithic debitage assemblage observed on site 41WB842



Figure 6-9. Representative bifacially flaked specimens observed on site 41WB842



Figure 6-10. Formal tool fragments and bifaces observed on site 41WB842

### **Cultural Features**

Multiple FCR features were observed on the surface of site 41WB842. These features consisted of relatively intact clusters of FCR located on the eastern portion of the site (see Figures 6-5 and 6-6). The FCR features measured approximately 2.0 feet (60.9 cm) in diameter on average. FCR specimens were also observed scattered on the surface and subsurface in shovel tests throughout the entire site, suggesting that additional FCR features were present at one time and are now scattered and deflated.

### **Horizontal and Vertical Extents of the Cultural Materials**

Based on the extent of the observed cultural materials across the surface of the site and subsurface within shovel tests, the site covers the entire 13.0-acre Project Area. The assessed horizontal extent of the site measures approximately 611.0 feet (186.2 m) north to south by 866.0 feet (263.9 m) east to west.

A total of 10 shovel tests were excavated on site 41WB842, all of which were positive for cultural materials between 0.0 and 31.4 inches (0.0 and 80.0 cm) below surface.

### **Summary**

Site 41WB841 consists of a high-density prehistoric open campsite documented over the entirety of the 13.0-acre Project Area. The site is situated on a ridge bounded by Manadas Creek to the west and one of its unnamed tributaries to the east. Artifacts were found both on the surface of the site and subsurface in shovel tests to depths of 31.4 inches (80.0 cm) below surface. The high density of artifacts and the presence of formal tool fragments dating to the general Archaic period suggest that the site was repeatedly occupied over long periods of time. Multiple small, intact FCR features were observed on the site, and the presence of scattered FCR across the site surface as well as subsurface in shovel tests suggests that additional FCR features were present at one time and are now scattered and deflated. No preserved floral or faunal remains were observed during the assessment of site 41WB842.

As the site boundaries were delineated only within the current Project Area, portions of site 41WB842 undoubtedly extend beyond the documented site boundaries. Because the entire extent of site 41WB842 was not assessed, its overall NRHP/SAL eligibility remains undetermined. However, the high artifact density on the site, along with presence of deeply buried cultural materials, suggests a high potential for preserved cultural deposits. As such, it is Horizon's opinion that the portion of site 41WB842 within the current Project Area could be a contributing element to the overall NRHP/SAL eligibility of the site. Additional NRHP eligibility testing-level investigations would be necessary to formally determine the NRHP eligibility status of the site prior to any ground-disturbing activities.

## **7.0 SUMMARY AND RECOMMENDATIONS**

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### **7.1 SUMMARY**

On 29 November 2017, Horizon conducted an intensive cultural resources survey of the City's proposed 13.0-acre Manadas Wastewater Treatment Plant Project in Laredo, Webb County, Texas. To facilitate its construction, the City is pursuing federal funding through the TWDB's CWSRF program. As these funds are ultimately federal monies issued by the EPA, the undertaking falls under the regulations of Section 106 of the NHPA of 1966, as amended. Additionally, the Project Area will be located on property owned by the City. Because the City is a political subdivision of the state, the Project Area also falls under the regulations of the ACT. At the request of Zephyr, Horizon conducted the cultural resources survey of the Project Area on behalf of the City in compliance with Section 106 of the NHPA and the ACT. The purpose of the survey was to determine if any archeological sites were located within the Project Area and, if any existed, to determine if the undertaking had the potential to have any adverse impacts on sites eligible for inclusion in the NRHP or for formal designation as SALs. The investigations were conducted under TAC permit number 8230.

Horizon surveyed the Project Area for cultural resources on 29 November 2017. Horizon's archeologists traversed the Project Area on foot and thoroughly inspected the modern ground surface for aboriginal and historic-age cultural resources. In addition to pedestrian walkover, the TSMASS require a minimum of 1 shovel test per 2.0 acres for projects between 11.0 and 100.0 acres in size. As such, a minimum of 7 shovel tests would be required within the 13.0-acre Project Area. Horizon excavated a total of 10 shovel tests, thereby exceeding the TSMASS for a Project Area of this size.

The cultural resources survey of the Project Area resulted in the documentation of 1 newly recorded prehistoric archeological site. Site 41WB842 was recorded as a prehistoric open campsite covering the entirety of the 13.0-acre Project Area. Hundreds of chert flakes, FCR specimens, multiple bifaces, and 2 dart point fragments were observed on the site, suggesting that it may have served as a long-term campsite. Artifacts were observed scattered on the surface of the site, as well as subsurface in shovel tests to depths of 31.4 inches (80.0 cm). The site was only recorded within the current Project Area, and undocumented portions of the site undoubtedly extend beyond the current Project Area. Considering the high artifact density on the site, along with the presence of temporally diagnostic tools and deeply buried

deposits, it is Horizon's opinion that the portion of site 41WB842 within the current Project Area could be a contributing element to the overall NRHP/SAP eligibility of the site.

## **7.2 RECOMMENDATIONS**

The primary focus of cultural resources surveys is to inventory cultural resources that may be impacted by a proposed undertaking. However, the limited data available at the survey level of investigation usually are not sufficiently in-depth to fully evaluate NRHP/SAL significance of many types of cultural resources, including archeological sites that are large in size, have deep or complex archeological deposits, or date to past time periods about which comparatively little is known. In the latter situation, a supplemental phase of investigation is typically required in order to fully evaluate the significance of the resource. This phase of work involves controlled excavations and in-depth technical studies that are designed to evaluate such things as the depth, stratigraphic structure of archeological deposits, the intactness of archeological deposits, the function (or functions) of the site, and the date (or dates) at which the site was occupied. These investigations are designed to provide sufficient data to determine whether or not the site has the potential to address research questions appropriate to the site based on its function, cultural association, and age.

Based on the limited information about site 41WB842 gathered during the survey phase of activities, insufficient data are currently available to determine whether or not the site meets the eligibility criteria for inclusion in the NRHP and/or for designation as an SAL (as appropriate to this project). As such, the site is currently considered to be of undermined NRHP and/or SAL eligibility. Horizon recommends avoidance of all ground-disturbing activities within the documented site boundaries in order to avoid any adverse effects to archeological deposits that may meet the criteria of significance. If avoidance is not feasible, then a supplemental phase of archeological significance testing investigations may be required to fully assess the eligibility of the site for inclusion in the NRHP and/or for designation as a SAL.

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**APPENDIX A:**

**Shovel Test Data**



**Table A-1. Shovel Test Summary Data**

ST #	UTM Coordinates <sup>1</sup>		Depth	Soil Description	Artifacts
	Easting	Northing			
JW1	450180	3050944	0-30	Pale brown silty loam	None
			30-40	Pale brown sandy loam	1 secondary chert flake
			40-70+	Pale brown sandy loam	None
JW2	450192	3050993	0-20	Pale brown silty loam	4 secondary chert flakes, 2 tertiary chert flakes
			20-40	Pale brown silty loam	2 tertiary flakes
			40-70+	Pale brown sandy loam	None
JW3	450234	3051026	0-20	Pale brown sandy loam	2 FCRs, 3 tertiary chert flakes
			20-40	Pale brown sandy loam	1 FCR, 2 secondary chert flakes
			40-80	Pale brown sandy loam	2 secondary chert flakes
JW4	450168	3050870	0-50	Pale brown sandy loam	None
			50-60	Pale brown sandy loam	1 secondary chert flake
			60-100	Pale brown sandy loam	None
BJ1	450103	3050883	0-40	Pale brown sandy loam	Lithic materials on surface
			40+	Very compact pale brown sandy loam	None
BJ2	450105	3050959	0-40	Pale brown sandy loam	1 secondary chert flake
			40+	Very compact pale brown sandy loam	None
BJ3	450188	3051097	0-50	Pale brown sandy loam	Lithic materials on surface
			50+	Very compact pale brown sandy loam	None
BJ4	450137	3051061	0-50	Pale brown sandy loam	Lithic materials on surface
			50+	Very compact pale brown sandy loam	None
BJ5	449980	3050958	0-60	Pale brown sandy loam	1 tertiary chert flake
			60+	Very compact pale brown sandy loam	None
BJ6	449983	3050904	0-50	Pale brown sandy loam	1 tertiary chert flake
			50+	Very compact pale brown sandy loam	None

<sup>1</sup> All UTM coordinates are located in Zone 14 and utilize the North American Datum of 83 (NAD 83).

cmbs = Centimeters below surface

ST = Shovel test

UTM = Universal Transverse Mercator