WHITENTON group environmental consultants

11 June 2014

Alfred Dumaual
US Environmental Protection Agency Region 6
Air Permits Section (6PD-R)
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

RE: Request for Concurrence – Finding of Will Not Adversely Affect Archaeological and Historic Resources
Victoria WLE, LP – Victoria Power Station Expansion Project
Victoria, Victoria County, Texas

Mr. Dumaual:

On behalf of Victoria WLE, LP (Victoria), Whitenton Group, Inc. (WGI) is requesting a review of the enclosed project information for the Victoria Power Station Expansion project in Victoria, Victoria County, Texas. Victoria is seeking concurrence from the Texas Historical Commission (THC)/State Historic Preservation Officer (SHPO) and the United States (US) Environmental Protection Agency (EPA) that the construction and operation of the Victoria Power Station Expansion will not adversely affect historic properties listed in the National Register of Historic Places (NRHP) or that meet the criteria for the NRHP in accordance with Section 106 guidance. The proposed project requires a Prevention of Significant Deterioration (PSD) air quality permit for greenhouse gas (GHG) emissions from the EPA; and, therefore, is subject to regulation under Section 106 of the National Historic Preservation Act.

Victoria proposes to expand the existing Victoria Power Station and to increase production capacity by installing an additional natural gas-fired turbine and heat recovery steam generator (HRSG) with duct burners. The resulting new facility will be a combined cycle generating unit in a 2 by 2 by 1 configuration (two combustion turbines, two HRSGs with duct burners, and one steam turbine). The upgraded facility will increase total gross capacity from 290 megawatts (MW) to 540 MW with net max capacity increasing from 283 MW to 527 MW. No change to the steam generator will be

made, although power generation will be increased due to utilization of orphaned capacity.

The proposed project is located at 1205 S. Bottom Street in Victoria, Texas and is immediately adjacent to the Guadalupe River south of downtown Victoria (Figure 1 - Appendix A).

Project location information:

USGS Quads	Latitude/Longitude
Victoria East Victoria West	28.788039, -97.007900

Construction of the proposed expansion project will take place on a previously disturbed industrial site within the boundaries of the existing Victoria Power Station and the property owned by AEP immediately to the south of the Victoria Power Station. An additional gas supply pipeline is expected to be constructed and available for service in time to serve the additional capacity added by the project. Construction of the line would be by another entity not affiliated with the project (up to the project boundary) and would potentially include additional line capacity and connections to other potential customers along the pipeline route. Required permitting and regulatory approvals are expected to be independent of the project. The proposed pipeline corridor is located within an existing disturbed road right-of-way and is approximately 2.85 miles in length and a maximum width of 60 feet for a total of approximately 20.4 acres. The proposed pipeline corridor is in the preliminary design phase and may be subject to change in the future. The limits of the earth disturbance footprint will be referred to as the "Project Area." The Area of Potential Effect (APE) for the undertaking consists of the entire 7.4 acre Project Area and the 20.4-acre proposed pipeline. The Project Area and proposed pipeline are shown in Figures 1 - 4 of the enclosed Cultural Resources Assessment (Appendix B).

Approximately 2.4 acres of earth disturbance is proposed to occur in historically disturbed and currently maintained open space dominated by bermudagrass. The remaining earth disturbance is proposed to occur in areas currently and historically

disturbed by development (concrete, infrastructure, or caliche). The proposed pipeline would be constructed within an existing, disturbed and maintained road right-of-way. Photographs of the Project Area are included in Appendix C.

The following general construction activities are included:

- Site Dirt Work
- Installation of drilled shaft foundations and spread footings or driven piles
- Installation of pipe rack and other pipe supports
- Setting of major equipment items (gas turbine, generator, HRSG)
- Installation of inlet chilling equipment on both the existing and new gas turbines
- Installation of rack piping and interconnecting pipe between major equipment
- Installation of additional natural gas fuel supply to the facility
- Installation of Motor Control Center building and associated wiring to equipment motors

The estimated depth of disturbance includes concrete foundations up to approximately 3-5 feet deep and 650 (+20%/-30%) piles driven to the depth of bedrock (bedrock depth unknown at this time). The proposed pipeline would be constructed to a depth up to 6 feet.

The Project Area has historically been impacted by industrial development. Approximate depths of historical disturbance within the Project Area include the following:

- Ice house and two boilers disturbed to depth of approximately 1.5-15 feet.
- Fuel loading/unloading station (foundation still present) disturbed to depth of approximately 1 to 3 feet.
- Two buried rail tank cars disturbed to a depth of approximately 10 to 15 feet.
- Fuel oil tank (ring still present) disturbed to a depth of approximately 5 feet.
- Foundation (still present) for cotton gin (no longer present) disturbed to a depth of approximately 3 to 5 feet.

A Cultural Resources Review was conducted by Horizon Environmental Services, Inc. (Horizon). This review included a 1-mile radius of the Project Area. The results indicated the presence of 5 previously recorded archaeological sites, 96 historic properties listed on the National Register of Historic Places (NHRP), and 1 historic district listed on the NRHP within the 1-mile radius of the Project Area. No documented cultural resources are located within or immediately adjacent to the boundaries of the Project Area. Three prior surveys have been conducted within 1 mile of the APE. The detailed results of the cultural resources review are included in the enclosed document titled "Proposed Victoria Power Station Expansion Project, Victoria, Victoria County, Texas Cultural Resources Review" (Appendix B). There exists a low probability that intact cultural resources are present that would be eligible for listing on the NRHP.

Based on the results of the archival review, Victoria is requesting concurrence from the THC/SHPO and the EPA that the proposed power station expansion project construction and operation will not adversely affect historic properties listed in the NRHP or that meet the criteria for the NRHP in accordance with Section 106 guidance. In the unlikely event that any cultural materials are inadvertently discovered at any point during construction or operation of the Project Area, all work at the location of the discovery should cease immediately, and the THC and the EPA should be notified of the discovery. Enclosed with this letter is Figure 1 showing the project location, photographs of the proposed Project Area, and the Cultural Resources Assessment. Please call me at 512.353.3344 if you have any questions or need additional information.

Sincerely,

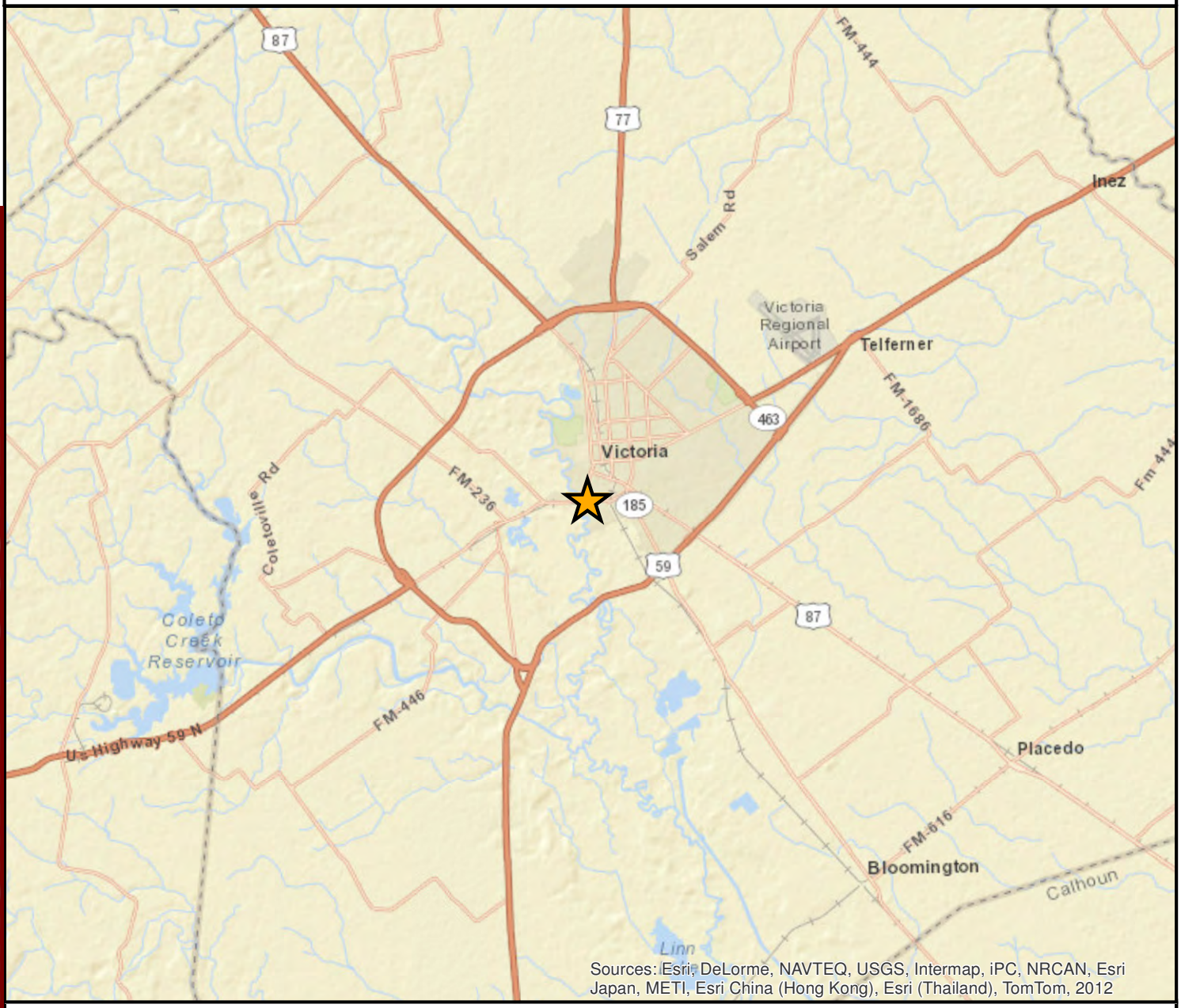
Jayme A. Shiner

Appendix A - Figure 1 - Project Location
Appendix B - Cultural Resources Review
Appendix C – Photographic Log

APPENDIX A

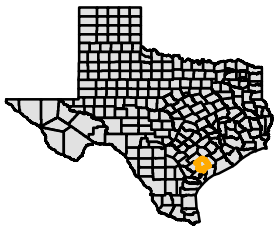
FIGURE 1 – PROJECT LOCATION

Figure 1
Project Location
Victoria Power Station Expansion Project
Victoria County, Texas



Victoria County

Project Location



Background Resources: ESRI World Street Map	Surveyor(s): Jayme Shiner PWS Scott Jecker CWB, PWS Debbie Scott AWB Bryan Whisenant	Project Number and Information: 1243 Victoria Power Station Expansion Project Biological Assessment	WHITENTON group environmental consultants 3413 Hunter Road San Marcos Texas 78666
GPS and Coordinate Type: Trimble Geo XH 6000 Series UTM NAD 1983 Zone 14 North	Map Created: 04/29/2013 by M. Pillion		Miles 0 3 6 N

APPENDIX B

CULTURAL RESOURCES REVIEW

Proposed Victoria Power Station Expansion Project, Victoria, Victoria County, Texas

Cultural Resources Review

By:

Jeffrey D. Owens

Prepared for:

Whitenton Group, Inc.
3413 Hunter Road
San Marcos, Texas 78666

Prepared by:

Horizon Environmental Services, Inc.
1507 South IH 35
Austin, Texas 78741

HJN 110012.11 AR

April 2014

MANAGEMENT SUMMARY

Horizon Environmental Services, Inc. (Horizon), has been contracted to provide a cultural resources assessment for the proposed expansion of the Victoria Power Station located in Victoria, Victoria County, Texas. Victoria WLE, LP, currently operates the Victoria Power Station and is proposing to expand the facility to increase the production capacity with the construction of a natural gas-fired, combined-cycle electric generating unit. The proposed new electric-generating unit would increase total gross capacity from 290 megawatts (MW) to 540 MW, with net maximum capacity increasing from 283 MW to 527 MW. The existing Victoria Power Station is located on the southwest side of the city of Victoria and is bounded on the east by South Bottom Street, on the west by the Guadalupe River, on the north by a Southern Pacific Railroad line, and on the south by East Wharf Street. Construction of the proposed expansion would take place on a previously disturbed industrial site within the boundaries of the existing facility within an area measuring approximately 3.0 hectares (7.4 acres) in size. In addition, an approximately 4.5-kilometer- (km) (2.8-mile-) long subsurface utility pipeline is expected to be constructed by a third-party and available for service in time to serve the additional capacity added by the proposed undertaking. The proposed pipeline right-of-way (ROW) would extend southeastward from the existing facility within the existing ROWs of Bottom Street, Southwest Ben Jordan Street, and Hand Road, and would continue southeastward within the existing ROW of the Southern Pacific Railroad tracks to terminate at US Highway (US) 59. The proposed pipeline ROW would measure approximately 4.5-km (2.8-miles) in length by no more than 18 meters (m) (60 feet) in width, covering an area of no more than 8.2 hectares (20.4 acres). Construction of the pipeline would be undertaken by a third party not affiliated with Victoria WLE, LP, up to the project boundary and potentially would include additional line capacity and connections to other potential customers along the proposed pipeline ROW. The Area of Potential Effect (APE) of the proposed undertaking would therefore consist of the proposed 3.0-hectare (7.4-acre) plant expansion area plus the 8.2-hectare (20.4-acre) proposed pipeline ROW, covering a total area of approximately 11.2 hectares (27.8 acres).

The proposed expansion of the Victoria Power Station will require a Prevention of Significant Deterioration (PSD) permit for Greenhouse Gas (GHG) emissions issued by the US Environmental Protection Agency (EPA). As such, the undertaking falls under the regulations of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, which is invoked when federal funds are utilized or when federal permitting is required for a proposed project. The NHPA states that the Advisory Council for Historic Preservation (ACHP) and the

Texas Historical Commission (THC), which serves as the State Historic Preservation Office (SHPO) for the state of Texas, must be afforded the opportunity to comment when any cultural resources potentially eligible for inclusion in the National Register of Historic Places (NRHP) are present in a project area affected by federal agency actions or covered under federal permits or funding.

In March 2014, Horizon conducted a cultural resources background study of the APE of the proposed undertaking. For purposes of the cultural resources assessment, the APE was established based on the direct impacts from construction and operation of proposed improvements, which consist of the cumulative 3.0-hectare (7.4-acre) area within the industrial facility plus the approximately 8.2-hectare (20.4-acre) area comprised by the proposed 4.5-km-(2.8-mile-) long pipeline ROW. Construction activities would include site work; installation of drilled shaft foundations and spread footings or driven piles; installation of a gas turbine generator with inlet chilling and a heat-recovery steam generator (HRSG) with associated pipe rack and supports; installation of major rotating equipment, electrical equipment, and other appurtenances, including gas turbine electrical and control houses, a motor control center enclosure, and a continuous emissions monitoring system enclosure; installation of a natural gas pipeline to the facility; and demolition of an out-of-service tower adjacent to the proposed expansion. No new intake or outfall structures would be required for the project, and no ground disturbance would be required outside of the proposed expansion area within the plant or the existing road ROWs within which the pipeline would be installed. Prior ground disturbances across the proposed expansion area extend to depths ranging from 1.0 to 15.0 feet below surface, and the proposed pipeline ROW would be installed adjacent to existing subsurface pipelines within the existing ROWs of Bottom Street, Southwest Ben Jordan Street, Hand Road, and the Southern Pacific Railroad tracks. Regarding direct effects within the existing plant, the proposed undertaking would involve only impacts associated with construction and process improvements and would not result in an increase to the overall footprint of the existing plant.

Regarding indirect effects, the existing facility would remain an industrial process area with no changes to the overall size and height of the facility; as such, there would not be a net increase to existing viewshed impacts in regard to historic properties in the surrounding area. The noise levels generated via the project construction and operation would not exceed those associated with typical daily facility activities; and indirect effects of air pollutant emissions would not contribute to the existing geographical boundaries of the APE. As such, the APE was not expanded due to indirect impacts resulting from viewshed, noise, or atmospheric effects.

The cultural resources assessment consisted of a desktop review of potential project impacts on historic properties or other culturally significant features or landscapes within the APE. No field investigations were undertaken as a part of the cultural resources assessment. Based on the results of desktop archival research, no known cultural resources are located within the boundaries of the existing Victoria Power Station complex, the proposed 3.0-hectare (7.4-acre) proposed expansion area, or the 4.5-km (2.8-mile) pipeline ROW. Five previously recorded archeological sites, 96 historic properties listed on the NRHP, and 1 historic district listed on the NRHP are present within a 1.6-km (1.0-mile) radius of the APE.

Three prior cultural resources surveys have been conducted in the vicinity of the APE. No portion of the existing Victoria Power Station complex has been previously surveyed for cultural resources. The portion of the proposed pipeline ROW located within Bottom Road has been previously surveyed for cultural resources, though the rest of the proposed pipeline ROW has not been previously surveyed.

The proposed expansion area is contained entirely within the existing Victoria Power Station industrial facility. Based on the extent of existing disturbances within the proposed expansion site resulting from prior construction, use, and ongoing maintenance of the industrial plant, there is a low probability that intact cultural resources are present that would be eligible for listing on the NRHP. Similarly, based on the extent of existing disturbances within the existing road and railroad ROWs within which the proposed pipeline ROW would be constructed, there is a low potential for intact cultural resources to be present within the proposed pipeline ROW. No known cultural resources were identified within the 3.0-hectare (7.4-acre) expansion area or the 4.5-km- (2.8-mile-) long pipeline ROW based on desktop archival research, and there is a low probability that any unrecorded, intact cultural resources are present that would be eligible for listing on the NRHP. It is Horizon's opinion that the proposed project's APE does not require an intensive cultural resources survey, and no known archeological or historic properties that are listed on, eligible for, or potentially eligible for inclusion in the NRHP would be adversely affected. However, in the unlikely event that any human remains or burial objects are inadvertently discovered at any point during construction, use, or ongoing maintenance in the APE, all work should cease immediately in the vicinity of the inadvertent discovery and the THC should be notified of the discovery.

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1.0 INTRODUCTION

Horizon Environmental Services, Inc. (Horizon), has been contracted to provide a cultural resources assessment for the proposed expansion of the Victoria Power Station located in Victoria, Victoria County, Texas. Victoria WLE, LP, currently operates the Victoria Power Station and is proposing to expand the facility to increase the production capacity with the construction of a natural gas-fired, combined-cycle electric generating unit. The proposed new electric-generating unit would increase total gross capacity from 290 megawatts (MW) to 540 MW, with net maximum capacity increasing from 283 MW to 527 MW. The existing Victoria Power Station is located on the southwest side of the city of Victoria and is bounded on the east by South Bottom Street, on the west by the Guadalupe River, on the north by a Southern Pacific Railroad line, and on the south by East Wharf Street. Construction of the proposed expansion would take place on a previously disturbed industrial site within the boundaries of the existing facility within an area measuring approximately 3.0 hectares (7.4 acres) in size. In addition, an approximately 4.5-kilometer- (km) (2.8-mile-) long subsurface utility pipeline is expected to be constructed by a third-party and available for service in time to serve the additional capacity added by the proposed undertaking. The proposed pipeline right-of-way (ROW) would extend southeastward from the existing facility within the existing ROWs of Bottom Street, Southwest Ben Jordan Street, and Hand Road, and would continue southeastward within the existing ROW of the Southern Pacific Railroad tracks to terminate at US Highway (US) 59. The proposed pipeline ROW would measure approximately 4.5-km (2.8-miles) in length by no more than 18 meters (m) (60 feet) in width, covering an area of no more than 8.2 hectares (20.4 acres). Construction of the pipeline would be undertaken by a third party not affiliated with Victoria WLE, LP, up to the project boundary and potentially would include additional line capacity and connections to other potential customers along the proposed pipeline ROW. The Area of Potential Effect (APE) of the proposed undertaking would therefore consist of the proposed 3.0-hectare (7.4-acre) plant expansion area plus the 8.2-hectare (20.4-acre) proposed pipeline ROW, covering a total area of approximately 11.2 hectares (27.8 acres) (Figures 1 to 4).

The proposed expansion of the Victoria Power Station will require a Prevention of Significant Deterioration (PSD) permit for Greenhouse Gas (GHG) emissions issued by the US Environmental Protection Agency (EPA). As such, the undertaking falls under the regulations of the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC § 470, et seq.); the Historic Sites Act (16 USC § 471, et seq.); the Archeological and Historic Preservation Act (16 USC § 469, et seq.); and Executive Order 11593, Protection and Enhancement of the

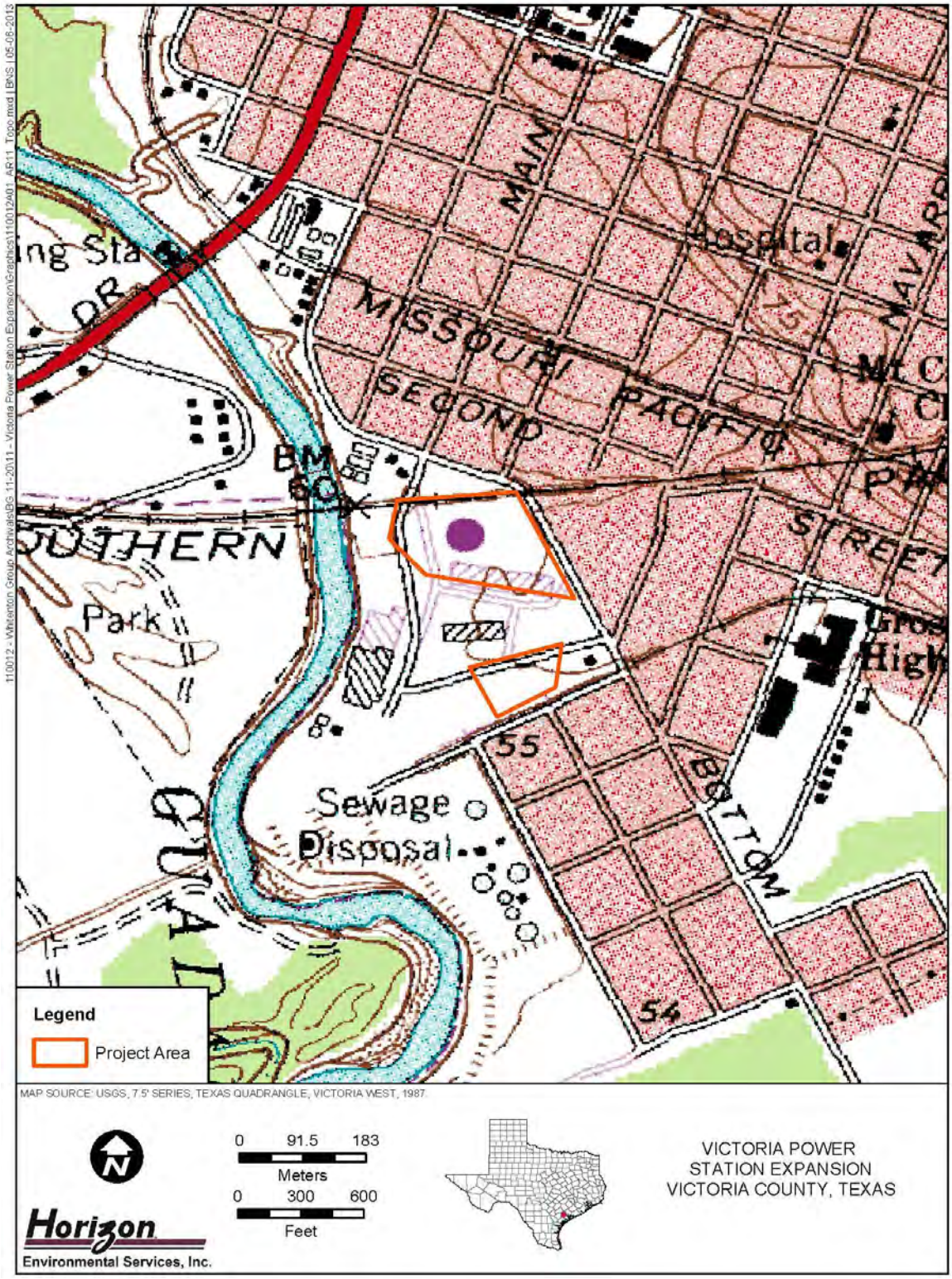

Figure 1. Location of Proposed Improvement Areas within Main Plant Site on USGS Topographic Quadrangle

Figure 2. Location of Proposed Improvement Areas within Main Plant Site on Aerial Photograph

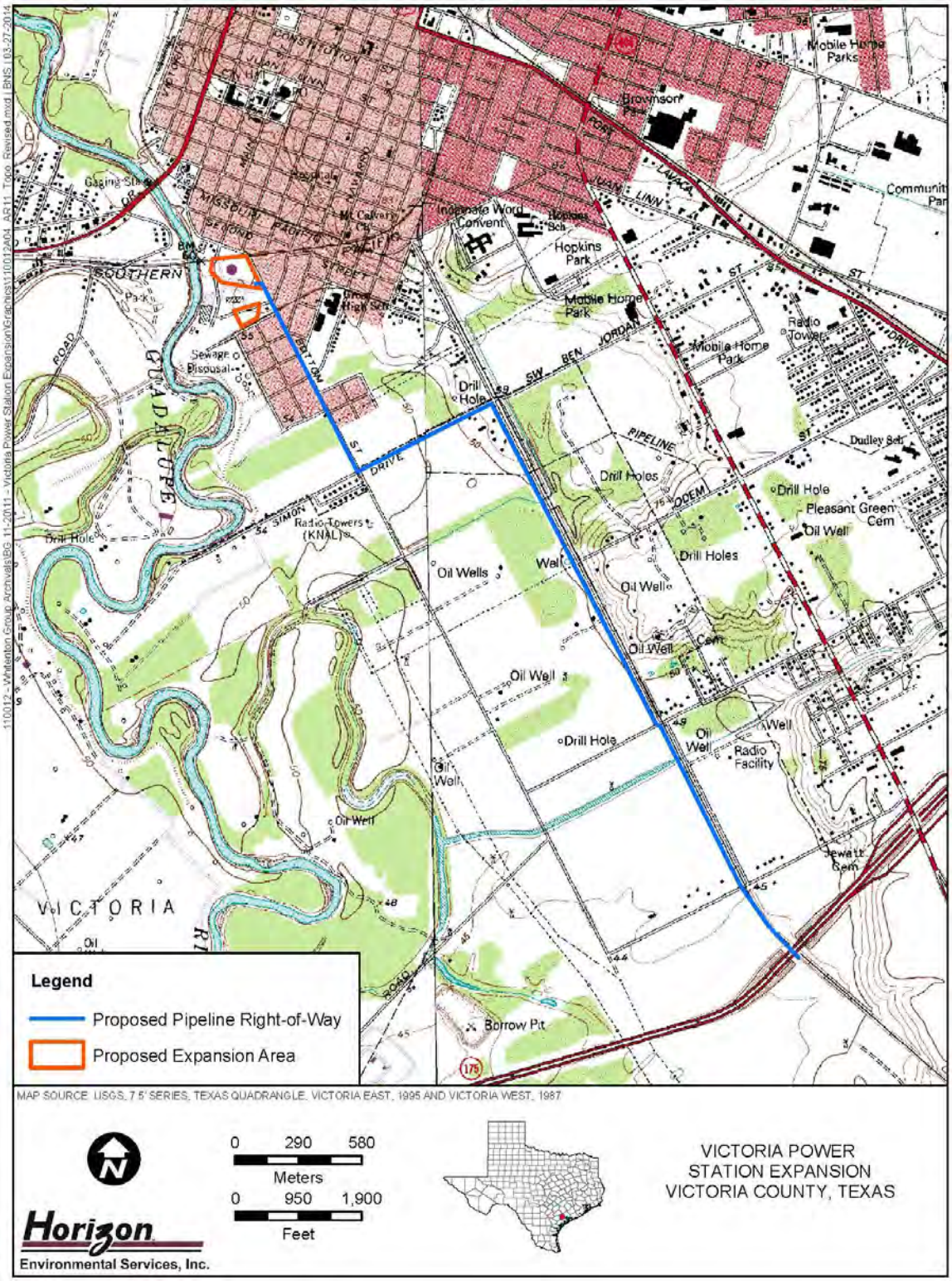

Figure 3. Location of Main Plant Site and Proposed Pipeline Right-of-Way on USGS Topographic Quadrangle

Figure 4. Location of Main Plant Site and Proposed Pipeline Right-of-Way on Aerial Photograph

Cultural Environment"; among others. These statutes are invoked when federal funds are utilized or when federal permitting is required for a proposed project. Section 106 of the NHPA (16 USC § 470) and its revised regulations (36 CFR Part 800) state that the Advisory Council for Historic Preservation (ACHP) and the Texas Historical Commission (THC), which serves as the State Historic Preservation Office (SHPO) for the state of Texas, must be afforded the opportunity to comment when any cultural resources potentially eligible for inclusion in the National Register of Historic Places (NRHP) are present in a project area affected by federal agency actions or covered under federal permits or funding.

In March 2014, Horizon conducted a cultural resources background study of the APE of the proposed undertaking. For purposes of the cultural resources assessment, the APE of the proposed project was established based on the direct impacts from construction and operation of proposed improvements, which consist of the cumulative 3.0-hectare (7.4-acre) area within the industrial facility plus the approximately 8.2-hectare (20.4-acre) area comprised by the proposed 4.5-km- (2.8-mile-) long pipeline ROW. Construction activities would include site work; installation of drilled shaft foundations and spread footings or driven piles; installation of a gas turbine generator with inlet chilling and a heat-recovery steam generator (HRSG) with associated pipe rack and supports; installation of major rotating equipment, electrical equipment, and other appurtenances, including gas turbine electrical and control houses, a motor control center enclosure, and a continuous emissions monitoring system enclosure; installation of a natural gas pipeline to the facility; and demolition of an out-of-service tower adjacent to the proposed expansion. No new intake or outfall structures would be required for the project, and no ground disturbance would be required outside of the proposed expansion area within the plant or the existing road ROWs within which the pipeline would be installed. Prior ground disturbances across the proposed expansion area extend to depths ranging from 1.0 to 15.0 feet below surface, and the proposed pipeline ROW would be installed adjacent to existing subsurface pipeline ROWs within the existing ROWs of Bottom Street, Southwest Ben Jordan Street, Hand Road, and the Southern Pacific Railroad tracks. Regarding direct effects within the existing plant, the proposed undertaking would involve only impacts associated with construction and process improvements and would not result in an increase to the overall footprint of the existing plant.

Regarding indirect effects, the existing facility would remain an industrial process area with no changes to the overall size and height of the facility; as such, there would not be a net increase to existing viewshed impacts in regard to historic properties in the surrounding area. The noise levels generated via the project construction and operation would not exceed those associated with typical daily facility activities; and indirect effects of air pollutant emissions would not contribute to the existing geographical boundaries of the APE. As such, the APE was not expanded due to indirect impacts resulting from viewshed, noise, or atmospheric effects.

The cultural resources assessment consisted of a desktop review of potential project impacts on historic properties or other culturally significant features or landscapes within the APE. No field investigations were undertaken as a part of the cultural resources assessment. Based on the results of desktop archival research, no known cultural resources are located within the boundaries of the existing Victoria Power Station complex, the proposed 3.0-hectare

(7.4-acre) proposed expansion area, or the 4.5-km (2.8-mile) pipeline ROW. Five previously recorded archeological sites, 96 historic properties listed on the NRHP, and 1 historic district listed on the NRHP are present within a 1.6-km (1.0-mile) radius of the APE.

Three prior cultural resources surveys have been conducted in the vicinity of the APE. No portion of the existing Victoria Power Station complex has been previously surveyed for cultural resources. The portion of the proposed pipeline ROW located within Bottom Road has been previously surveyed for cultural resources, though the rest of the proposed pipeline ROW has not been previously surveyed.

The proposed expansion area is contained entirely within the existing Victoria Power Station industrial facility. Based on the extent of existing disturbances within the proposed expansion site resulting from prior construction, use, and ongoing maintenance of the industrial plant, there is a low probability that intact cultural resources are present that would be eligible for listing on the NRHP. Similarly, based on the extent of existing disturbances within the existing road and railroad ROWs within which the proposed pipeline ROW would be constructed, there is a low potential for intact cultural resources to be present within the proposed pipeline ROW. No known cultural resources were identified within the 3.0-hectare (7.4-acre) expansion area or the 4.5-(km (2.8-mile-) long pipeline ROW based on desktop archival research, and there is a low probability that any unrecorded, intact cultural resources are present that would be eligible for listing on the NRHP. It is Horizon's opinion that the proposed project's APE does not require an intensive cultural resources survey, and no known archeological or historic properties that are listed on, eligible for, or potentially eligible for inclusion in the NRHP would be adversely affected. However, in the unlikely event that any human remains or burial objects are inadvertently discovered at any point during construction, use, or ongoing maintenance in the project area, all work should cease immediately in the vicinity of the inadvertent discovery and the THC should be notified of the discovery.

This document presents the results of Horizon's cultural resources background review of the proposed project site. Following this introductory chapter, Chapters 2.0 and 3.0 present the environmental and cultural backgrounds of the project area, respectively. Chapter 4.0 presents the results of the background review, and Chapter 5.0 summarizes the results of the background review and presents management recommendations for the proposed undertaking. Chapter 6.0 lists the references cited in the document. Appendix A contains the resume of the archeological Principal Investigator for this project.

2.0 ENVIRONMENTAL SETTING

2.1 PHYSIOGRAPHY AND HYDROLOGY

The APE is located in Victoria County, Texas, on the floodplain and terraces of the Guadalupe River on the southwestern side of the city of Victoria in Victoria County, Texas. Victoria County is situated on the Gulf Coastal Plain in southeastern Texas. The Gulf of Mexico represents a structural basin formed by lithosphere deformation. The Texas Coastal Plain, which extends as far north as the Ouachita uplift in southern Oklahoma and westward to the Balcones Escarpment, consists of seaward-dipping bodies of sedimentary rock, most of which are of terrigneous clastic origin, that reflect the gradual infilling of the basin from its margins (Abbott 2001). The area is underlain by rocks and unconsolidated sediments that are quite young in a geological sense, ranging from modern to Miocene in age. These consist predominantly of a series of fluviodeltaic bodies arranged in an offlapped sequence, with interdigitated and capping eolian, littoral, and estuarine facies making up a relatively minor component of the lithology. Major bounding disconformities between these formations are usually interpreted to represent depositional hiatuses that occurred during periods of sea level low stand. The oldest rocks in this fill are of Late Cretaceous age. As a result of the geometry of basin filling, successively younger rock units crop out in subparallel bands from the basin margin toward the modern coastline.

The APE is situated in an urbanized setting on the east bank of the Guadalupe River, which flows roughly southeastward and discharges directly into San Antonio Bay southeast of the APE. Topography on the existing Victoria Power Station site is relatively flat, with elevations averaging only approximately 15 meters (50 feet) above mean sea level (amsl). The proposed pipeline ROW runs within existing road ROWs along the edge of the eastern terrace of the wide Guadalupe River floodplain, with elevations ranging from approximately 14 to 15 meters (45 to 50 feet) amsl.

2.2 GEOLOGY AND GEOMORPHOLOGY

The APE is underlain by Holocene-age alluvium (Qal) within the Guadalupe River floodplain and Late Pleistocene-age fluviatile terraces undivided (Qt) along the river terraces in an area surrounded by the Beaumont Formation (Fisher 1975). The Beaumont, or Prairie, terrace is the youngest continuous coastwise terrace fronting the modern Gulf of Mexico (Abbott

2001). The Beaumont Formation consists of clay, silt, and fine sand arranged in spatial patterns that reflect the distribution of fluvial (e.g., channel, point bar, levee, and backswamp) and mudflat/coastal marsh facies (Van Siclen 1985). Sandy deposits associated with littoral facies are also frequently considered part of the Beaumont. Many investigators (cf. DuBar et al. 1991; Fisk 1938, 1940) have correlated the Beaumont terrace with the Sangamon Interglacial (ca. 130 to 75 thousand years ago [kya]), although age estimates range from Middle Wisconsinan (Alford and Holmes 1985) to 100 to 600 kya (Blum and Price 1994). While debate about the temporal affiliations of and correlations among the deposits that underlie the major coastline terraces remains active, they are of little direct geoarcheological relevance because virtually all investigators agree that these deposits considerably predate the earliest demonstrated dates of human occupation in North America.

Geomorphologically, the APE traverses a series of calcareous clayey alluvium on the Guadalupe River floodplain and loamy and clayey fluviomarine deposits along the terraces of the Guadalupe River (Figures 5 and 6; Table 1) (NRCS 2014). Within the proposed Victoria Power Station expansion area, the APE is characterized by only 1 mapped soil unit—Meguin silty clay, occasionally flooded (Me), which consists of Holocene-age calcareous clayey alluvium found on floodplains. The proposed pipeline ROW traverses a series of 4 mapped soil units. The northwestern portion of the proposed ROW is situated on Meguin silty clay, occasionally flooded (Me), which consists of Holocene-age alluvium. The rest of the proposed pipeline ROW traverses a mosaic of Laewest clay, o to 1% slopes (LaA); Telferner fine sandy loam, 1 to 3% slopes (TeB); and Telferner-Urban Land complex, 0 to 3% slopes (TfB). For the most part, these soils consist of clayey and loamy fluviomarine deposits of Late Pleistocene age, though the Urban Land component of the latter soil unit consists of historically modified artificial fills.

In Central Texas, aboriginal cultural resources are commonly encountered in deep alluvial sediments adjacent to major streams and rivers. The proposed power plant expansion area and the northwestern portion of the proposed pipeline ROW are mapped on Holocene-age calcareous clayey alluvium; as such, this portion of the APE may possess some potential to contain subsurface archeological deposits. However, it is likely that prior ground disturbances resulting from construction, use, and ongoing maintenance of the existing Victoria Power Station and existing road ROWs would have impacted the integrity of any archeological deposits. The portion of the proposed pipeline ROW that traverses the Late Pleistocene terraces of the Guadalupe River would have reduced potential for intact archeological deposits due to the antiquity of the landforms and the extent of prior ground disturbances within the existing road and railroad ROWs. Historic-age cultural resources may occur in virtually any physiographic setting; however, the existing industrial buildings on the power plant site appear to be modern in age. Any historic-age archeological or architectural resources that may be present within the existing Victoria Plant would be expected to retain minimal integrity due to prior industrial development on the site.

2.3 CLIMATE

Evidence for climatic change from the Pleistocene to the present is most often obtained through studies of pollen and faunal sequences (Bryant and Holloway 1985; Collins 1995).

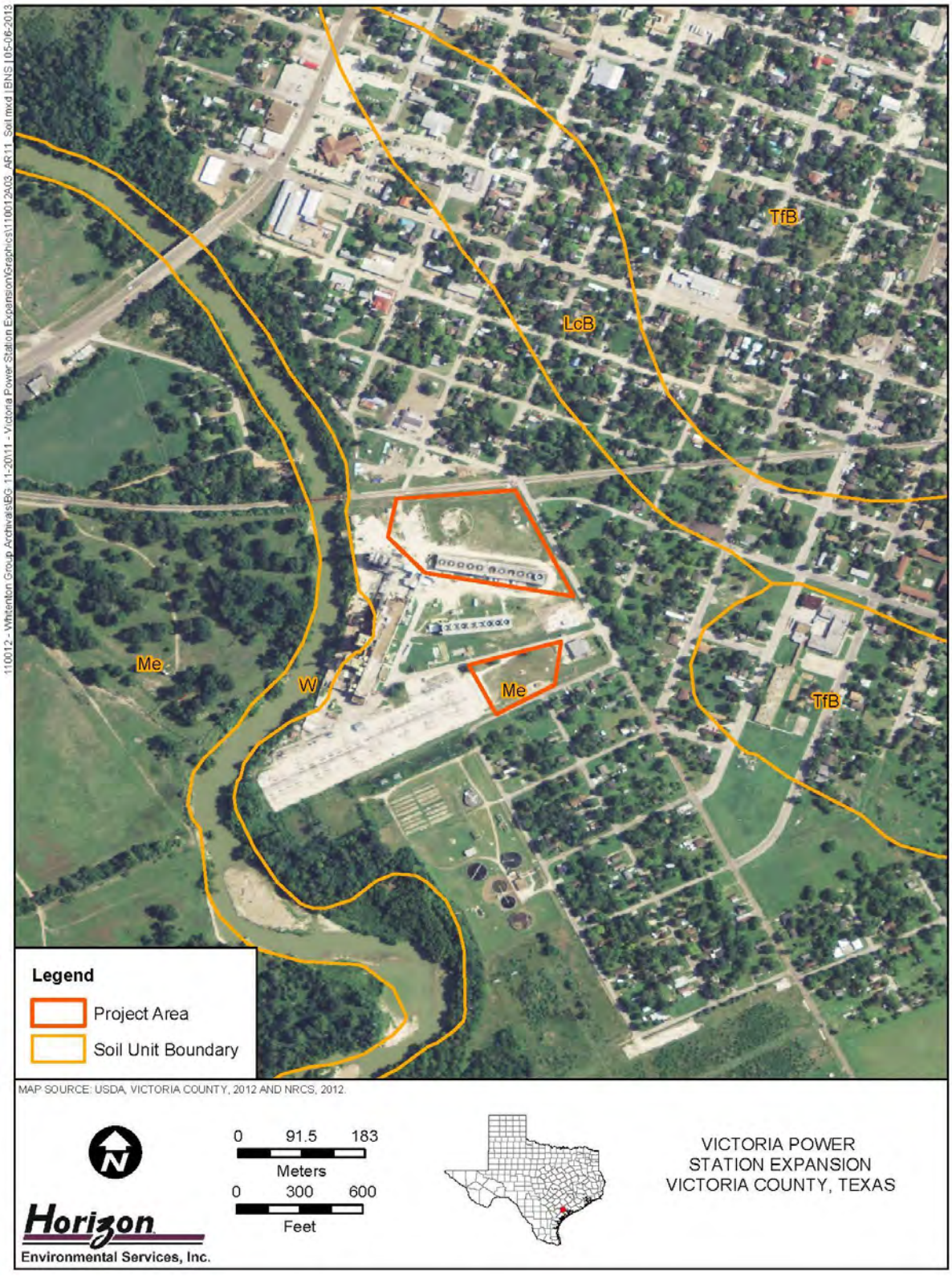

Figure 5. Mapped Soils within Proposed Improvement Areas on Main Plant Site

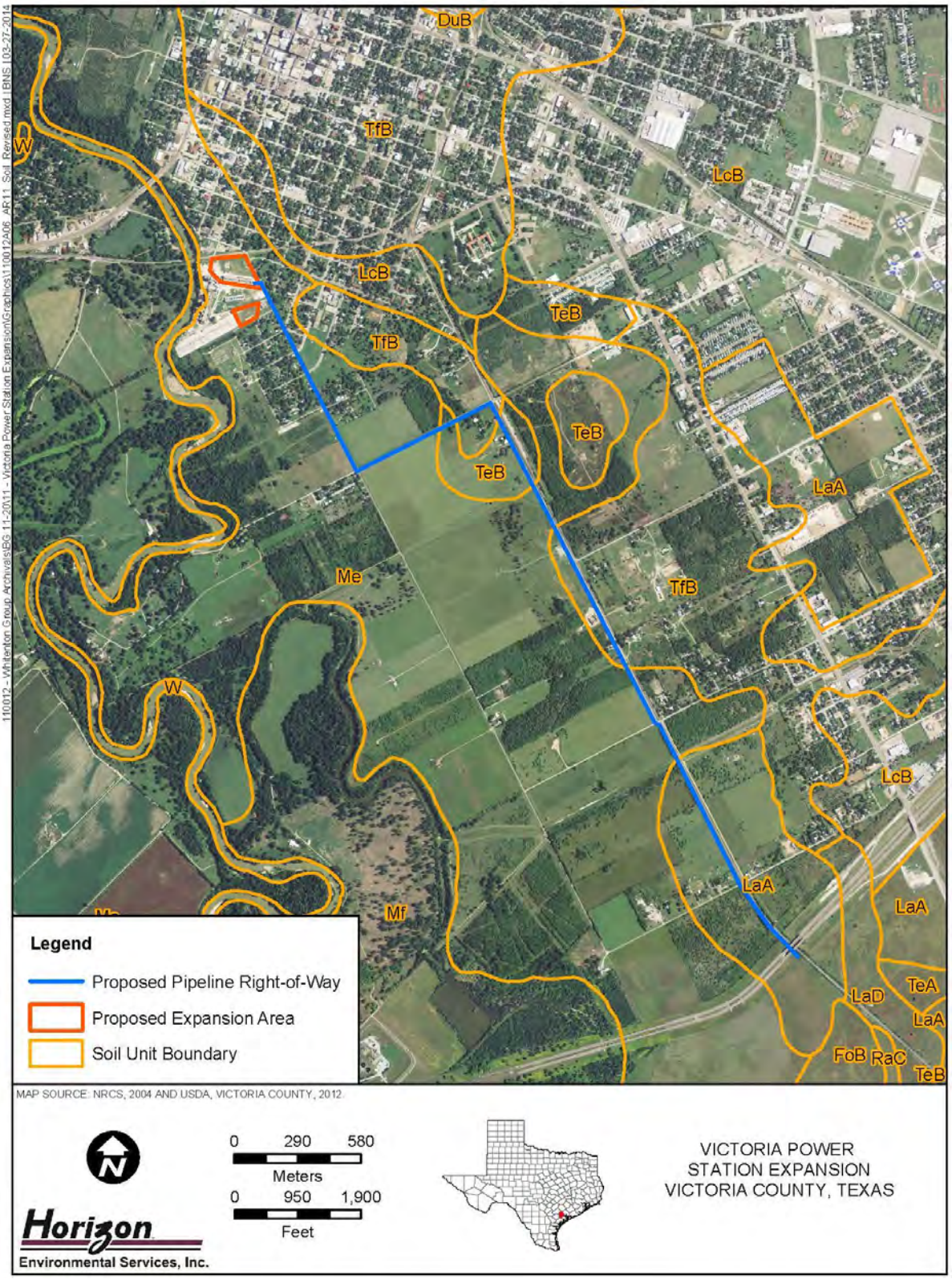

Figure 6. Mapped Soils within Main Plant Site and Proposed Pipeline Right-of-Way

Table 1. Summary of Mapped Soils in the APE

NRCS Soil Code	Soil Name	Description	Location within APE
LaA	Laewest clay, 0 to 1% slopes	Clayey fluviomarine deposits of Late Pleistocene age on coastal flats	Edge of floodplain of Guadalupe River in southern portion of pipeline ROW
Me	Meguin silty clay, occasionally flooded	Calcareous clayey alluvium on floodplains	Floodplain of Guadalupe River in main plant site and northern and southern portions of pipeline ROW
TeB	Telferner fine sandy loam, 1 to 3% slopes	Loamy fluviomarine deposits of Late Pleistocene age on meander scrolls	Interface of Guadalupe River floodplain and terraces in central portion of pipeline ROW
TfB	Telferner-Urban Land complex, 0 to 3% slopes	Telferner—Loamy fluviomarine deposits of Late Pleistocene age on meander scrolls Urban land—Modified fill	Interface of Guadalupe River floodplain and terraces in central portion of pipeline ROW

Source: NRCS 2014
APE = Area of Potential Effect
ROW = Right-of-Way
NRCS = National Resource Conservation Service

While the paleoclimatic history of the coastal region remains unclear, Bryant and Holloway (1985) present a sequence of climatic change for nearby east-central Texas that includes 3 separate climatic periods—the Wisconsin Full Glacial Period (22,500 to 14,000 B.P.), the Late Glacial Period (14,000 to 10,000 B.P.), and the Post-Glacial Period (10,000 B.P. to present). Evidence from the Wisconsin Full Glacial Period suggests that the climate in east-central Texas was considerably cooler and more humid than at present. Pollen data indicate that the region was more heavily forested in deciduous woodlands than during later periods (Bryant and Holloway 1985). The Late Glacial Period was characterized by slow climatic deterioration and a slow warming and/or drying trend (Collins 1995). In east-central Texas, the deciduous woodlands were gradually replaced by grasslands and post oak savannas (Bryant and Holloway 1985). During the Post-Glacial Period, the east-central Texas environment appears to have been more stable. The deciduous forests had long since been replaced by prairies and post oak savannas. The drying and/or warming trend that began in the Late Glacial Period continued into the mid-Holocene, at which point there appears to have been a brief amelioration to more mesic conditions lasting from roughly 6000 to 5000 B.P. Recent studies by Bryant and Holloway (1985) indicate that modern environmental conditions in east-central Texas were probably achieved by 1,500 years ago.

The modern climate of the central Texas coast, including the region surrounding Corpus Christi, is classified as subtropical humid (Abbott 2001; Larkin and Bomar 1983), forming a

transitional zone between the humid southeastern US and the semiarid to arid west. The climate reflects the influences of latitude, low elevation, and proximity to the Gulf of Mexico. As a result of proximity to the Gulf and the abundance of surface water, humidity in the early morning can approach 100% even on cloudless summer days, and it often exceeds 50% even on the warmest afternoons. Largely as a consequence of the relatively high humidity characteristic of the region, temperature patterns exhibit a moderate annual range and a modest diurnal range that increases slightly with distance from the coast. Average monthly high temperature ranges from a low of 17 to 19°Celcius (°C) (59 to 63°Fahrenheit [°F]) in January to a high of 38 to 40°C (89 to 96°F) in August. Average monthly lows range from 4 to 9°C (38 to 47°F) in January to 25 to 29°C (72 to 79°F) in July and August. Annually, average low temperatures range from 15 to 21°C (56 to 65°F), and average high temperatures range from 27 to 29°C (75 to 79°F) (Abbott 2001; Larkin and Bomar 1983).

The Corpus Christi region experiences 2 precipitation peaks throughout the year (Abbott 2001). The first occurs in the late spring (i.e., May to June) due to the passage of infrequent cold fronts that spawn chains of powerful frontal thunderstorms. The second occurs in the late summer to early autumn (i.e., August to September) due to the incidence of tropical storms and hurricanes from the Atlantic and, occasionally, Pacific oceans. In contrast, winter and early spring are relatively dry, and high summer rainfall is dominated by convectional thunderstorms that are relatively brief and localized, albeit frequently intense. Average annual precipitation varies from a low of approximately 100 centimeters (cm) (40 inches [in]) to a high of more than 132 cm (52 in). Average monthly precipitation varies from less than 5 to 8 cm (2 to 3 in) in March to more than 19 cm (7.5 in) occurring locally on the coast during September. Almost all of the measurable precipitation falls as rain—snowfall is extremely rare, occurring in measurable amounts in only 1 in 10 years.

2.4 FLORA AND FAUNA

The project site is located in the Tamaulipan Biotic Province (Blair 1950) 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 1 to 3 m (4 to 10 ft). 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 ebony, Texas sugarberry, cedar elm, and retama occur. Little bluestem, bristlegrass, paspalums, 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. Although there are large acreages of cultivated land on the South Texas Plains, most of the area is still rangeland. Land holdings predominantly are 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 ranchmen of the region now face a severe brush problem (Gould 1975).

3.0 CULTURAL BACKGROUND

Victoria County is situated within the South Texas archeological region in a transitional area between the coastal plains of Southeast Texas and the rolling plains and semiarid deserts of South Texas. The prehistory of South Texas can essentially be divided into 3 major periods—(1) PaleoIndian (9200–6000 BC); (2) Archaic, which has been subdivided into the Early Archaic (ca. 6000–2500 BC), Middle Archaic (ca. 2500–400 BC), and Late Archaic (ca. 400 BC–AD 800); and (3) Late Prehistoric (AD 800–1600). 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. 9200–6000 BC)

Evidence of PaleoIndian occupations in South Texas (9200–6000 BC) usually consists of surface finds found 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 BC–AD 800)

The major distinction of the Early Archaic period (6000–2500 BC) 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 (2500–400 BC) 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 are also common during this period, and ground stone tools, such as tubular grinding stones and manos, appear for the first time (Black 1989:49). Site densities in South Texas increase 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 BC–AD 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 continue 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 appear 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. AD 800–1600)

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 (AD 800–1350) and Toyah (AD 1350–1600) 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. AD 1520 TO PRESENT)

The first European incursion into what is now known as Texas was in 1519, when Alonso Álvarez de Pineda explored the northern shores of the Gulf of Mexico. In 1528, Álvar Núñez Cabeza de Vaca crossed South Texas after being shipwrecked along the Texas Coast near Galveston Bay. However, European settlement did not seriously disrupt native ways of life until after 1700. The first half of the 18th century was the period in which the fur trade and mission system, as well as the first effects of epidemic diseases, began to seriously disrupt the native culture and social systems. This process is clearly discernable at the Mitchell Ridge site on Galveston Island, where the burial data suggest population declines and group mergers (Ricklis 1994), as well as increased participation on the part of the Native American population in the fur trade. By the time that heavy settlement of Texas began in the early 1800s by Anglo-Americans, the indigenous Indian population was greatly diminished. By the era of contact with early EuroAmerican settlers, 4 distinct native groups were living in the Victoria County area—the Karankawas, last seen at Kemper's Bluff before fleeing to Mexico in 1842; the Aranamas; the Tamiques; and the Tonkawas. Comanche, Lipan, and Tawakoni raids were common in the area by the early 19th century as well.

Fort St. Louis, established in 1685 by René Robert Cavelier, Sieur de La Salle, on Garcitas Creek in what would later become Victoria County, was a French fort that constituted the future Victoria County's first Euro-American settlement.[1] Alonso De León discovered and named the Guadalupe River on April 14, 1689, at the approximate site of present-day Victoria while on a mission from the Spanish government to find and destroy La Salle's settlement. The establishment in April 1722 of Nuestra Señora de Loreto Presidio and Nuestra Señora del Espíritu Santo de Zúñiga Mission (La Bahía) near the ruins of Fort St. Louis marked the first Spanish settlement in what is now Victoria County. The mission and presidio were moved in August 1726 to the Guadalupe River near the site of present-day Mission Valley because of Indian depredations and an ill-commanded garrison. Until the mission was removed to the San Antonio River in the fall of 1749, the padres at La Bahía cultivated crops, produced enough hay and corn to export their excess to San Antonio and settlements in East Texas, and established in Victoria County the foundation of a characteristic Texas industry raising cattle and horses. Although the number of livestock grazed on the Guadalupe River prairie is not known, the mission owned 3,220 branded cattle, 120 horses, and 1,600 sheep when inventoried in 1758, 9 years after the move to the site of present-day Goliad. With the removal of La Bahía to the San Antonio River, no further permanent settlement occurred in Victoria County until the 19th century, although La Bahía Road, the most protected route to San Antonio and East Texas from the Rio Grande, provided constant activity. There were individual settlements, such as Carlos de la Garza's rancho at Anaqua and Margaret Wright's homestead at Mission Valley, but colonization of the area occurred only in 1824 with the establishment of Nuestra Señora de Guadalupe de Jesús Victoria by the empresario Martín De León. The settlement, known as Guadalupe Victoria, prospered, and more than 100 titles to land grants were issued by the Mexican government by 1835. In addition to the La Bahía ranch, De León, who had amassed

[1] The following history of Victoria County is adapted from TSHA (2014).

about 5,000 branded cattle by the time he started his colony, established Victoria County's claim to be the ~~"~~Cradle of the Texas Cattle Industry."

Despite border clashes with DeWitt's colony to the north and the Power and Hewetson colony to the south, De León's colonists were settled in all of the territory of present-day Victoria and Calhoun counties and in part of that of Lavaca, Jackson, and DeWitt counties as well. Such was the area that constituted Guadalupe Victoria as a district under the Mexican government in 1832 and as a municipality under the legislature of Coahuila and Texas in 1835. The settlement had the distinction of being the only primarily Mexican colony in Texas. Although the settlers supported the revolution against Antonio López de Santa Anna, the Mexican colonists were ostracized and forced to flee after the revolution in 1836, and Anglo-Americans resettled the area. Immediately following the victory at San Jacinto, 3,000 troops of the Texas army, the largest single gathering of Texans in 1836, encamped near Spring Creek, Victoria County, under the command of Gen. Thomas J. Rusk. This force was the main defense against a threatened attack by Mexican general José de Urrea. The attack failed to materialize, and the camp was dispersed by September and removed to Texana. Mexican forces returned, however, and terrorized the county in 1842 in invasions led by Rafael Vásquez and Adrián Woll. Of the 34 Victoria men who joined other Texans and crossed the Rio Grande with the retaliatory Mier expedition, 4 drew black beans and were executed at Salado by Santa Anna's orders.

Victoria was among the original 23 counties established by the First Congress of the Republic of Texas on March 17, 1836. Its modern boundaries were defined by the Texas legislature on March 31, 1846. Conflicting claims between Victoria County and Lavaca, Jackson, and Calhoun counties were settled in Victoria's favor on April 23, 1846, 19 days after Calhoun County was demarked primarily from the Victoria County coastal area. Because Victoria lay on the important cart road from the port of Indianola to San Antonio and New Braunfels, as well as on the old Goliad road from east to west, the county was heavily traveled by traders and immigrants and populated by many who found the area satisfactory. The German element was particularly large and influential at Coletoville, Mission Valley, and Victoria. Though there were several points at which travelers and traders could cross the Guadalupe River, White's Ferry and Kemper's Bluff were the most serious competition to Victoria as trade centers and embarkation points. In 1840, the county commissioners approved rates ~~"~~payable in good money" for a municipal ferry across the river at Victoria to handle the traffic. The first toll bridge erected across the river was also built at Victoria by Richard Owens and Sylvester Sutton in February 1851. The move for a free bridge began about 1885, and the river was spanned in February 1886 by King Iron and Bridge Company of Cleveland, Ohio. Also in 1886, a ferry known as Bray's Ferry was established at the San Antonio River by G.B. Amery and John Bray.

The Guadalupe River itself assumed economic importance because of its navigability to Kemper's Bluff and Victoria, a distance of about 78 miles from its mouth. The legislature of Coahuila and Texas approved a government-sponsored attempt at making the river navigable in 1828 and again in 1833 and 1835, but the Texas Revolution ended this effort. The Republic of Texas, however, passed similar legislation, authorizing river improvements in 1840, as did the Texas state legislature in 1853. By then, several boats, such as the *William Penn*, owned by

Jesse O. Wheeler, were making regular trips from Victoria to Saluria, a port formerly on Matagorda Island about 3 miles across Matagorda Bay from the site of present-day Port O'Connor. Although a committee chaired by John J. Linn worked with the state legislature to clear the river in 1857, river transportation waned with the completion of the San Antonio and Mexican Gulf Railroad from Victoria to Port Lavaca in 1861 and was interrupted from the Civil War to the 1880s.

Until oil was discovered in the 1930s, Victoria County's economy was primarily agrarian. The major industry remained the raising of cattle, horses, and cotton; other farming generally was for sustenance. Only 20 other Texas counties had a greater number of cattle in 1850, when Victoria County ranked 13th in total value of all livestock at $205,725. Ten years later, the county still ranked 21st, but the number of beef cattle had grown from 8,783 to 39,287, and the value of all livestock had increased to $534,314. By 1836, there was some commercial farming that engaged slave labor on the river bottoms. Corn became important to the numerous freighting teams frequenting the area and for export to other Texas settlements. County farmers produced 54,110 bushels in 1850 and 129,570 bushels 10 years later. Cotton was considerably more important to the county's economy before the Civil War; the 270 bales produced in 1850 were dwarfed by the 2,212 bales recorded in 1860. Victoria County also ranked 4th in Texas in 1850 in gallons of molasses produced from cane sugar. As the number of slaves increased from 28.3% to 33.9% of the population from 1850 to 1860, the total number of acres under cultivation jumped from 4,072 to 31,495. The county registered 1,396 whites, 52 free blacks, and 571 slaves in 1850, a total of 2,019 people, of whom 806 lived in Victoria, then the most populated Texas town besides Galveston, Houston, Marshall, New Braunfels, and San Antonio. The last census taken before the Civil War enrolled 1,413 black slaves and 2,757 whites, of whom 32% were foreign-born (primarily Germans). The population of the city of Victoria increased to 1,986 and included the county's only remaining free black, a man aged at least 50 years.

In 1861, Victoria County joined the majority of organized Texas counties in voting for secession from the Union by a margin of 313 to 88. Some 300 county men served with the Confederate Army; at least 48 died from wounds or disease. Units organized in Victoria County included Company C, Fourth Regiment, Texas Mounted Volunteers, which served in New Mexico; Company B, Sixth Texas Infantry, which was attached to the Army of Tennessee and saw action east of the Mississippi; and Company A, Thirteenth Texas Cavalry (Waller's Battalion), sent to western Louisiana with Bagby's Brigade. Camp Henry E. McCulloch was established about 4 miles from Victoria under the command of Col. R.R. Garland, who for 8 months trained 643 men of the Sixth Texas Infantry, with companies from Port Lavaca, Victoria, Austin, Matagorda, Seguin, Gonzales, and elsewhere. Victoria County served as a transportation, military, and supply center during the war since its major town was on a branch of the Cotton Road, which provided access to guns, ammunition, medicine, and supplies from Mexico in exchange for crops. In 1863, Gen. John B. Magruder, Confederate commander of the Department of Texas, destroyed the railroad from Port Lavaca to Victoria when Union invasion seemed imminent; he also rendered the Guadalupe River unnavigable by sinking trees and boats. After the Union victory, the county was occupied from 1867 to 1869 by federal troops,

who rebuilt the railroad but also committed such local terrorist acts as the murder of Benjamin F. Hill.

War and Reconstruction considerably altered the county's wealth and economic base. Between 1860 and 1870, the value of all property fell from $3,088,476 to $1,503,295; the families owning property valued at $20,000 or more were reduced from 33 to 5. Much of the property value had been tied up in the county's 1,413 slaves, who had contributed to the success of the cotton economy and to the wealth of such plantation owners as Preston R. and John Washington Rose. The transformation to a cattle and young manufacturing economy was evident by 1870. Cotton production fell to 205 bales, while the number of cattle grew to 61,651, the county rising from 21st to 7th in numbers of cattle in Texas. Manufacturing establishments increased from 10 to 25. By 1873, the Gulf, Western Texas, and Pacific Railway connected Victoria with Cuero and the coast, and, in 1882, the New York, Texas, and Mexican Railway, built primarily by Italian immigrants, many of whom settled in Victoria, provided the first cross-country route to Rosenberg Junction. These lines, together with Victoria's strategic location on the old Goliad and Indianola roads, contributed to the county's rise as the commercial center of the surrounding agricultural counties. The German element remained a strong influence in the county into the 21st century, though increasing numbers of immigrants from Mexico continued to reassert the original cultural heritage of the area. Roads crossing Victoria County improved considerably. Before the Civil War, a Galveston newspaper credited the county with having the ~~-w~~worst road in that part of the State." Railroads and river navigation impeded road construction, but a series of graded roads was built in 1889, and, in 1911, the county constructed one of the first extensive all-weather, graveled road systems in the state. Concrete paving followed from 1928 to 1932. Improvements in transportation helped unite the county and enabled its primary industry (raising cattle) to prosper along with the growth in commercial trucking.

Victoria County has been a leader in the development of the Texas cattle industry since the Spanish and Mexican eras, but especially just after Reconstruction. The abundant natural grasslands and subtropical climate allow grazing year-round and minimize the need for winter shelter. The county's major pioneer ranchers, James A. McFaddin, Thomas and Dennis O'Connor, John J. Welder, and John N. Keeran, replaced the longhorn cattle with shorthorn, Hereford, and Brahman cattle. The progress to 1930, when Victoria County held more cattle than any other county in Texas, was uneven, for the county ranked 7th in 1870, 12th in 1880, and 21st in 1890 and was still 8th as late as 1920. In 1930, 93,997 head were counted. The establishment at Victoria of one of the state's first meat-packing plants in 1869 underscored the county's early importance in the cattle trade, as did the erection in 1883 of the largest plant in Texas by the Texas Continental Meat Company. The company, financed by local ranchers, installed A.F. Higgs, inventor of the refrigerated railroad car, as president. The plant enjoyed a wide reputation as a packer of mutton, pork, and poultry in addition to beef.

Commercial farming of diverse crops developed only in the 1890s as knowledge grew about cultivating prairie soils. The production of corn and cotton again grew in importance; in 1900, the county harvested 490,080 bushels of corn and 9,459 bales of cotton, a level maintained until World War II. Victoria County's cotton production of 10,181 bales in 1910 led the coastal region, and, in 1934, cotton occupied two-thirds of the county's cropland, corn about

half of that. Although sugar cane and molasses production declined to minimal amounts, the production of honey increased to 20,512 pounds in 1930. The turn of the century saw some experimentation with citrus fruits, pears, peaches, and especially grapes. In 1900, the county produced 2,022 gallons of wine and 40,086 pounds of grapes, ranking Victoria as 15th and 27th in the state, respectively. Figs and pecans also grew somewhat in importance. The establishment in the early 1900s of the Victoria Rice and Irrigation Company on the Guadalupe River, a pumping plant irrigating 3,800 acres, and the Clark Rice and Irrigation Company on Lone Tree Creek, designed to water 4,000 to 5,000 acres, demonstrated an early interest in rice farming. However, rice, like sugar cane, failed to maintain economic importance. Only 100 acres were harvested by 1920, when Victoria was last among the 13 Texas counties planting rice. Poultry production, especially of turkeys, proved a profitable supplement to agriculture, however, and, in 1930, Victoria County had 145,318 chickens and 50,427 turkeys, the latter valued at $121,025.

The oldest industry other than agriculture and ranching was the manufacture of bricks from Guadalupe River clay; several plants were built before 1850, and the first large factory was completed in 1899. The sand and gravel business grew out of river-dredging operations. John J. Welder, James A. McFaddin, and Henry E. Rathbone established the first large-scale company, the Guadalupe River Navigation Company, in 1906. Welder also supplied, at low cost, the gravel for the county's first all-weather roads in 1911 to 1913, about the time the river was dredged for navigation for the last time. Besides cattle, oil and gas contributed most to the county's economy before the growth of service industries after World War II. Although various ranchers discovered oil in the late 19th century when drilling for water, they considered it a nuisance and a hazard to valuable grazing lands. Nevertheless, the first mineral leases were contracted by Guffey Petroleum Company of Pittsburgh (later Gulf Oil Corporation) soon after the Spindletop discovery in 1900. Various drilling operations occurred, some by the local Victoria Oil and Gas and Guadalupe Valley Oil companies, though the first commercial oil and gas wells were not struck until 1930 at McFaddin. Other fields followed but developed slowly because of the Great Depression and flooded oil markets.

Although the depression slowed the growth of the oil industry and created widespread unemployment, it also brought the New Deal to Victoria County. The Civil Works Administration allocated $130,000 in federal funds to the completion of several public projects, and the Civilian Conservation Corps, the Work Projects Administration, and the National Recovery Administration were also active in the county. The post-World War II era has seen Victoria County prosper and gain regional importance. The Aloe and Foster army air field, established during the war to train Army Air Corps pilots, became Victoria County Airport and Foster Air Force Base, and, though the base was closed in 1957, it was transformed and still operates as Victoria Regional Airport. The number of manufacturing establishments recorded in 1950 and 1983 grew from 21 to 43; 145 wholesale businesses, 646 retail businesses, and 550 service industries were also listed, many geared toward the valuable hunting and fishing trade. A DuPont plant was established in 1949 and has particularly benefited the area. It was the third DuPont plant to be built in Texas and one of the first in the United States operated from central controls. The Victoria Barge Canal was completed to the plant in July 1967, connecting Victoria County with the Intercoastal Canal, which carried almost 10% of US domestic commerce in

1976. The Victoria Barge Canal was the outgrowth of the original Intracoastal Canal Association established locally in 1905; Congress did not authorize the construction of a barge canal, except for the dredging of the Guadalupe River, until 1945. Construction began only in 1954 through Calhoun County and in 1958 in Victoria County.

4.0 ARCHIVAL RESEARCH RESULTS

In March 2014, Horizon conducted a cultural resources desktop review of the proposed 3.0-hectare (7.4-acre) APE. The background review examined an area extending 1.6 km (1.0 mile) from the boundaries of the proposed APE. Based on background archival research conducted via the Internet on the THC's online *Texas Archeological Sites Atlas* (Atlas) restricted-access database and the National Park Service's (NPS) NRHP Google Earth map layer, no known cultural resources are located within the boundaries of the existing Victoria Power Station complex, the proposed 3.0-hectare (7.4-acre) proposed expansion area, or the 4.5-km (2.8-mile) pipeline ROW. Five previously recorded archeological sites, 96 historic properties listed on the NRHP, and 1 historic district listed on the NRHP are present within a 1.6-km (1.0-mile) radius of the APE (Figure 7; Table 2) (NPS 2014; THC 2014).

Of the 5 previously recorded archeological sites within the 1.6-km (1.0-mile) archival review area, 2 sites (41VT105 and 41VT138) were recommended as eligible for inclusion in the NRHP, 1 site is of unknown or undetermined eligibility (41VT169), 1 site is considered ineligible (41VT104), and 1 site (41VT134) is a listed State Antiquities Landmark (SAL) that is also considered eligible for inclusion in the NRHP (though it is not currently listed on the NRHP).

Site 41VT104 consists of a low- to moderate-density subsurface scatter of aboriginal lithic debris and historic-age/modern trash found to extend 10 to 60 cm in depth in sandy loam sediments on a rise above the Guadalupe River floodplain. The site was recommended as ineligible for inclusion in the NRHP. While the report of investigations is not available on the THC's Atlas, the site form notes prior disturbances from erosion and plowing, and mixing of the aboriginal and historic-age/modern deposits appears to have occurred, suggesting that the archeological deposits on the site lack sufficient integrity to warrant listing on the NRHP.

Site 41VT105, also known as the McNamara House, consists of a scatter of historic-age household debris, including ceramics, bottle glass, window glass, and faunal bones associated with the former location of a late 19th- to early 20th-century household, as well as a nearby scatter of horseshoe nails, coal, leather straps, and miscellaneous hardware suggesting the possible location of a blacksmith's shop. No standing structures were present, though archeological deposits extended to depths of up to 50 cm below surface. Based on its potential research value, site 41VT105 was recommended as eligible for inclusion in the NRHP, though it is not currently listed.

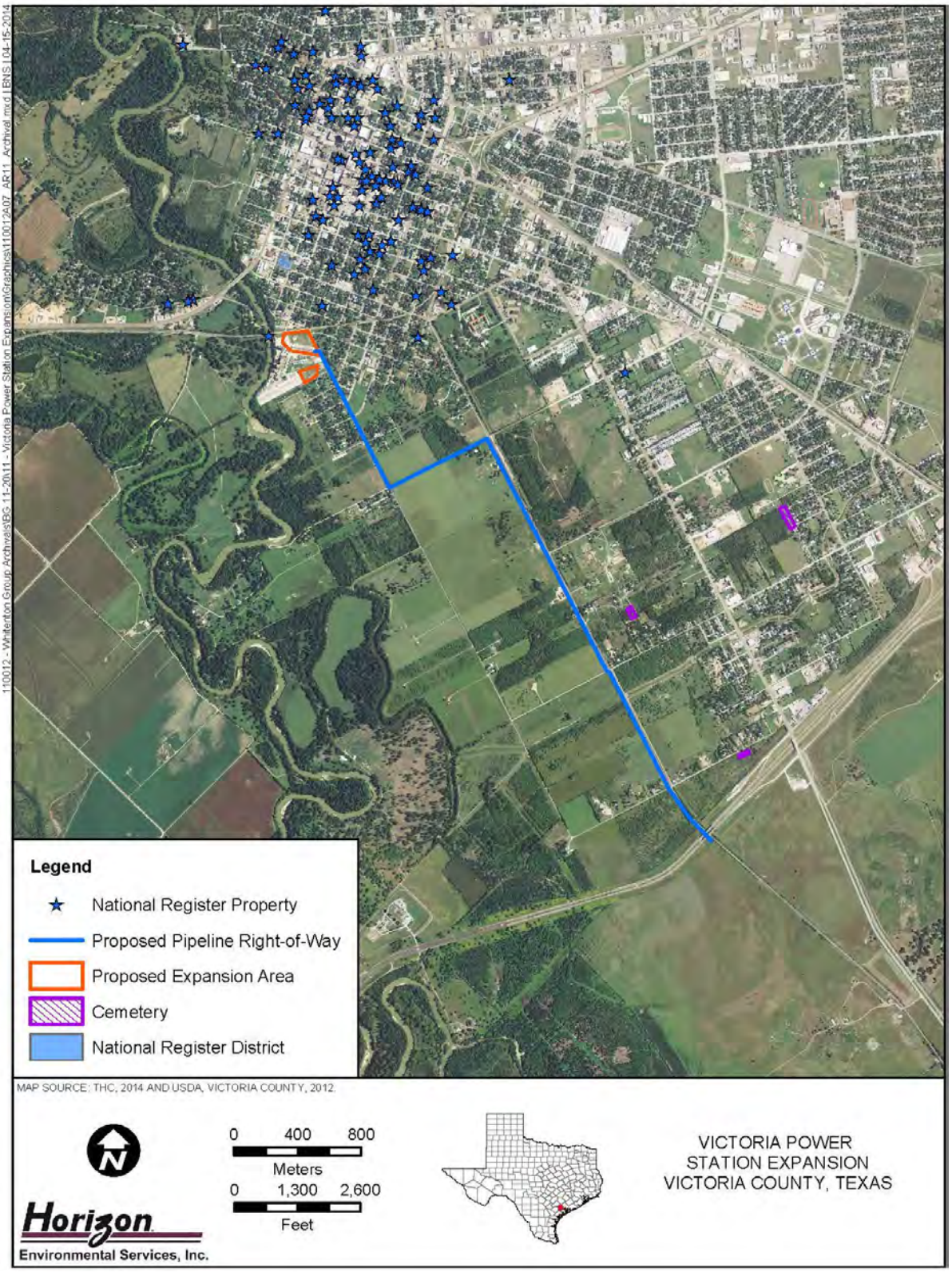

Figure 7. Locations of Historic Properties and Cemeteries Within 1 Mile of APE

Table 2. Previously Recorded Cultural Sites Within 1 Mile of APE

Site Trinomial, Cemetery, or Historic Property	Site Type	NRHP/SAL Eligibility Status	Distance/Direction from APE	Potential for Direct Impacts?
Archeological Sites				
41VT104	Aboriginal campsite (undetermined prehistoric)	Ineligible	0.4 miles southeast	No
41VT105	McNamara House (late 19th- to early 20th-centuries)	Recommended eligible	0.9 miles northeast	No
41VT134	Schuhmacher Company Building	Listed SAL	0.9 miles northeast	No
41VT138	Mexican Railroad stations (late 19th-century)	Recommended eligible	0.8 miles northwest	No
41VT169	Historic house and retail facility foundations and artifact scatter (early 20th-century)	Undetermined	0.5 miles northeast	No
Listed NRHP Properties				
South Bridge Street Historic District	Historic business district	Listed on the NRHP	0.3 miles north	No
Southern Pacific Railroad Guadalupe Bridge	Historic railroad bridge	Listed on the NRHP	140.0 feet west	No
House at 702 Siegfreid	Historic house	Listed on the NRHP	0.4 miles northwest	No
House at 706 Siegfreid	Historic house	Listed on the NRHP	0.4 miles northwest	No
House at 1907 Southwest Ben Jordan	Historic house	Listed on the NRHP	0.5 miles east	No
House at 804 Siegfreid	Historic house	Listed on the NRHP	0.5 miles northwest	No
Moeller House	Historic house	Listed on the NRHP	0.4 miles east	No
Hull House	Historic house	Listed on the NRHP	0.6 miles northeast	No
Goldman's Cotton Gin Warehouse	Historic warehouse	Listed on the NRHP	0.5 miles northeast	No
Henry Schrader House	Historic house	Listed on the NRHP	0.4 miles northeast	No
Pippert House	Historic house	Listed on the NRHP	0.1 miles northeast	No
Fred Urban House	Historic house	Listed on the NRHP	0.3 miles northeast	No
Diebel-Hyak House	Historic house	Listed on the NRHP	0.5 miles northeast	No
Victoria Colored School	Historic school	Listed on the NRHP	0.5 miles northeast	No
Frank Alonso House	Historic house	Listed on the NRHP	0.5 miles northeast	No
Farmers and Merchants Cotton Gin	Historic warehouse	Listed on the NRHP	0.6 miles northeast	No

Site Trinomial, Cemetery, or Historic Property	Site Type	NRHP/SAL Eligibility Status	Distance/Direction from APE	Potential for Direct Impacts?
Warehouse				
Clark House	Historic house	Listed on the NRHP	0.3 miles northeast	No
E.J. Fossati House	Historic house	Listed on the NRHP	0.3 miles northeast	No
B.F. Williams House	Historic house	Listed on the NRHP	0.3 miles northeast	No
D.H. Regan House	Historic house	Listed on the NRHP	0.3 miles northeast	No
Presbyterian Iglesia Nicea	Historic church	Listed on the NRHP	0.4 miles northeast	No
Jules Lefflard House	Historic house	Listed on the NRHP	0.4 miles northeast	No
E.H.D Bendt House	Historic house	Listed on the NRHP	0.4 miles northeast	No
E.C. Kaufman House	Historic house	Listed on the NRHP	0.4 miles northeast	No
House at 407 East Convent	Historic house	Listed on the NRHP	0.4 miles northeast	No
Webster Chapel United Methodist Church	Historic church	Listed on the NRHP	0.4 miles northeast	No
Hiller House	Historic house	Listed on the NRHP	0.5 miles northeast	No
Alphonse T. Sengele House	Historic house	Listed on the NRHP	0.6 miles northeast	No
Sigmund House	Historic house	Listed on the NRHP	0.6 miles northeast	No
Max Bettin House	Historic house	Listed on the NRHP	0.6 miles northeast	No
House at 604 East Santa Rosa	Historic house	Listed on the NRHP	0.7 miles northeast	No
Townsend-Wilkins House	Historic house	Listed on the NRHP	0.7 miles northeast	No
Stuart House	Historic house	Listed on the NRHP	0.4 miles northeast	No
St. Mary's Catholic Church	Historic church	Listed on the NRHP	0.4 miles northeast	No
Old Nazarene Academy	Historic school	Listed on the NRHP	0.4 miles northeast	No
Thomas M. O'Connor House	Historic house	Listed on the NRHP	0.5 miles northeast	No
Fossati's	Historic business	Listed on the NRHP	0.5 miles northeast	No
Keef-Filley Building	Historic business	Listed on the NRHP	0.5 miles northeast	No
C.R. Alden Building	Historic business	Listed on the NRHP	0.5 miles northeast	No
Randall Building	Historic business	Listed on the NRHP	0.6 miles northeast	No
Robert H. Welder House	Historic house	Listed on the NRHP	0.5 miles northeast	No
Pela House	Historic house	Listed on the NRHP	0.6 miles northeast	No
Herman and Alvina Zahn House	Historic house	Listed on the NRHP	0.6 miles northeast	No

Site Trinomial, Cemetery, or Historic Property	Site Type	NRHP/SAL Eligibility Status	Distance/Direction from APE	Potential for Direct Impacts?
Mrs. J.V. Murphy House	Historic house	Listed on the NRHP	0.6 miles northeast	No
Building at 205 East Constitution	Historic business	Listed on the NRHP	0.6 miles northeast	No
A. Goldman Building	Historic business	Listed on the NRHP	0.6 miles northeast	No
Texas Company Filling Station	Historic business	Listed on the NRHP	0.6 miles northeast	No
Magnolia Service Station No. 122	Historic business	Listed on the NRHP	0.6 miles northeast	No
Old Federal Building and Post Office	Historic business	Listed on the NRHP	0.6 miles northeast	No
Weber-Schurhart House	Historic house	Listed on the NRHP	0.7 miles northeast	No
Mohris-Abschier House	Historic house	Listed on the NRHP	0.7 miles northeast	No
Trinity Lutheran Church	Historic church	Listed on the NRHP	0.7 miles northeast	No
McDonald House	Historic house	Listed on the NRHP	0.7 miles northeast	No
House at 306 E. Forrest	Historic house	Listed on the NRHP	0.7 miles northeast	No
E.J. Jecker House	Historic house	Listed on the NRHP	0.7 miles northeast	No
Tasin House	Historic house	Listed on the NRHP	0.7 miles northeast	No
Calhoun Bakery	Historic business	Listed on the NRHP	0.7 miles northeast	No
DeLeon Plaza and Bandstand	Historic plaza	Listed on the NRHP	0.7 miles northeast	No
Old Victoria County Courthouse	Historic courthouse	Listed on the NRHP	0.7 miles northeast	No
J.T. Jecker House	Historic house	Listed on the NRHP	0.7 miles northeast	No
Our Lady of Lourdes Church	Historic church	Listed on the NRHP	0.7 miles northeast	No
O'Connor-Proctor Building	Historic business	Listed on the NRHP	0.7 miles northeast	No
George H. Hauschild Building	Historic business	Listed on the NRHP	0.7 miles northeast	No
Gramann House	Historic house	Listed on the NRHP	0.8 miles northeast	No
Gervais House	Historic house	Listed on the NRHP	0.8 miles northeast	No
Jordon-Koch House	Historic house	Listed on the NRHP	0.8 miles northeast	No
William Wheeler House	Historic house	Listed on the NRHP	0.9 miles northeast	No
McNamara-O'Connor House	Historic house	Listed on the NRHP	0.9 miles northeast	No
Victoria Grist Windmill	Historic mill	Listed on the NRHP	0.9 miles northeast	No

Site Trinomial, Cemetery, or Historic Property	Site Type	NRHP/SAL Eligibility Status	Distance/Direction from APE	Potential for Direct Impacts?
Schummacker Company Building	Historic business	Listed on the NRHP	0.9 miles northeast	No
House at 401 East Stayton	Historic house	Listed on the NRHP	0.9 miles northeast	No
Woodhouse House	Historic house	Listed on the NRHP	1.0 mile northeast	No
Levi-Welder House	Historic house	Listed on the NRHP	0.8 miles north	No
Robert Clark House	Historic house	Listed on the NRHP	0.8 miles north	No
Gaylord-Levy House	Historic house	Listed on the NRHP	0.8 miles north	No
James McFaddin House	Historic house	Listed on the NRHP	0.8 miles north	No
McCan-Nave House	Historic house	Listed on the NRHP	0.9 miles north	No
Royston Nave Memorial	Historic commemorative property	Listed on the NRHP	0.9 miles north	No
Pickering House	Historic house	Listed on the NRHP	0.9 miles north	No
Lander-Hopkins House	Historic house	Listed on the NRHP	0.9 miles north	No
Proctor House	Historic house	Listed on the NRHP	1.0 mile northeast	No
House at 304 West Stayton	Historic house	Listed on the NRHP	1.0 mile northeast	No
Braman House	Historic house	Listed on the NRHP	1.0 mile northeast	No
Theodore Buhler House	Historic house	Listed on the NRHP	1.0 mile northeast	No
W.C. Barnes House	Historic house	Listed on the NRHP	1.0 mile northeast	No
B'nai Isreal	Historic church	Listed on the NRHP	1.0 mile northeast	No
Krenek House	Historic house	Listed on the NRHP	1.0 mile northeast	No
George and Adele Hauschild House	Historic house	Listed on the NRHP	0.8 miles north	No
Roselle-Smith House	Historic house	Listed on the NRHP	0.8 miles north	No
J.V. Vandenberge House	Historic house	Listed on the NRHP	0.8 miles north	No
Guy Mitchell House	Historic house	Listed on the NRHP	0.9 miles north	No
Barden-O'Connor House	Historic house	Listed on the NRHP	0.9 miles north	No
F.H. Crain House	Historic house	Listed on the NRHP	0.9 miles north	No
Old Brownson School	Historic school	Listed on the NRHP	0.9 miles north	No
Thomas O'Connor House	Historic house	Listed on the NRHP	1.0 mile north	No
John H. Clegg House	Historic house	Listed on the NRHP	1.0 mile north	No
Little House	Historic house	Listed on the NRHP	1.0 mile north	No

Site Trinomial, Cemetery, or Historic Property	Site Type	NRHP/SAL Eligibility Status	Distance/Direction from APE	Potential for Direct Impacts?
Cemeteries				
Hill Cemetery (VT-C010)	Cemetery	Undetermined	0.2 miles east	No
Jewett Cemetery (VT-C011)	Cemetery	Undetermined	0.3 miles east	No
Pleasant Green Cemetery (VT-C012)	Cemetery	Undetermined	0.9 miles east	No

APE Area of Potential Effect
NRHP National Register of Historic Places
SAL State Antiquities Landmark

Site 41VT134 consists of a historic commercial building, the Schuhmacher Company Building, located at 402 East Power Avenue in Victoria, Texas. The site is a listed SAL and is considered eligible for inclusion in the NRHP based on its architectural and archeological characteristics; however, the information available on the THC's Atlas concerning this building is minimal.

Site 41VT138 consists of the foundation and several outbuildings associated with a segment of the San Antonio Gulf Railroad, known locally as the ~~M~~exican Railroad," constructed in the late 19th century. The original railroad line through Victoria was destroyed during the Civil War and subsequently rebuilt by Union Troops in 1866. The rail line changed hands several times through the late 19th and early 20th centuries, eventually becoming part of the Galveston, Harrisburg, and San Antonio Railroad. Investigations on the site have been limited to archival research and the report of investigations is not available on the THC's Atlas. The site was recommended as potentially eligible for listing on the NRHP, presumably due to its association with the development of historic railroad transportation systems in Texas, though the site has not been fully assessed.

Site 41VT169 consists of a shallow subsurface scatter of late 19th- to early 20th-century historic-age cultural materials observed in a flat urban lot located at 407-409 Cameron Street within the city of Victoria. Cultural debris observed on the site includes construction debris (i.e., bricks, wood), bottle and window glass, metal (i.e., nails, corroded pipes), ceramics (whiteware and polychrome), and faunal bone suggestive of mixed domestic and retail functions located behind the remnants of a foundation of a house structure that is no longer extant. The site was recorded in 2013 by a Victoria College student and was described as having the potential to illuminate early 20th-century Germanic immigrant and African-American life. The site form does not explicitly offer a recommendation regarding the NRHP or SAL eligibility of the site but mentions that the Museum of the Coastal Bend intends to conduct supplemental excavations on the site prior to the development of the lot by a private developer.

In addition to the 5 previously recorded archeological sites within the archival review area, a total of 96 historic properties and 1 historic district listed on the NRHP are present within

1.6 km (1.0 mile) of the APE (Table 2). The listed NRHP historic properties consist of historic-age houses, warehouses, a bridge, schools, churches, a plaza, a courthouse, a mill, a commemorative property, and various businesses within the city of Victoria. The historic district, the South Bridge Street Historic District, represents a historic business district in the city of Victoria. Also, 3 cemeteries—the Hill Cemetery, the Jewett Cemetery, and the Pleasant Green Cemetery—are located within the archival review area.

No prior cultural resources surveys have been conducted within the boundaries of the existing Victoria Power Station complex or the proposed 3.0-hectare (7.4-acre) expansion area, though a prior cultural resources survey was conducted within a portion of the proposed pipeline ROW immediately south of the existing plant within the existing ROW of Bottom Street. A total of 3 prior surveys have been conducted within 1.6 km (1.0 mile) of the APE (Table 3) (THC 2014). The earliest of these 3 surveys was conducted in 1982 by the Texas Department of Highways and Public Transportation (TDHPT), now known as the Texas Department of Transportation (TxDOT), of a short segment of US Highway (US) 87 located on the east side of the city of Victoria. Limited information is available about this early survey on the THC's Atlas, and no bibliographic reference is available, though no cultural resources appear to have been recorded as a result of this survey. In 1999, the City of Victoria sponsored a survey connected with proposed wastewater system improvements (Walter et al. 1999). This survey included a linear wastewater utility line that ran within the existing ROW of South Bottom Street, which passes along the eastern boundary of the Victoria Power Station.. Most recently, the City of Victoria sponsored a survey of the proposed 78-acre site of a wastewater treatment plant located southeast of the city, though no archeological sites were documented during this survey (Griffith and Dase 2010).

Victoria WLE, LP, personnel provided Horizon with construction specifications for the industrial structures currently standing on the Victoria Power Station. Figures 8 to 13 show representative photographs of these structures.

Table 3. Previous Cultural Resource Surveys Conducted within 1 Mile of APE

Survey Name	Acres Surveyed	Survey Date	No. Sites Recorded within 1 Mile of APE	Site Nos. Recorded within 1 Mile of APE	Reference
City of Victoria Wastewater Improvements Survey	55	1999	1	41VT138	Walter et al. 1999
City of Victoria WWTP Survey	76	2010	0	N/A	Griffith and Dase 2010
TDHPT US 87 Survey	Unknown	1982	0	N/A	Not Available

APE Area of Potential Effect (of current project)
N/A Not applicable
TDHPT Texas Department of Highways and Public Transportation (former name of Texas Department of Transportation)
WWTP Wastewater Treatment Plant

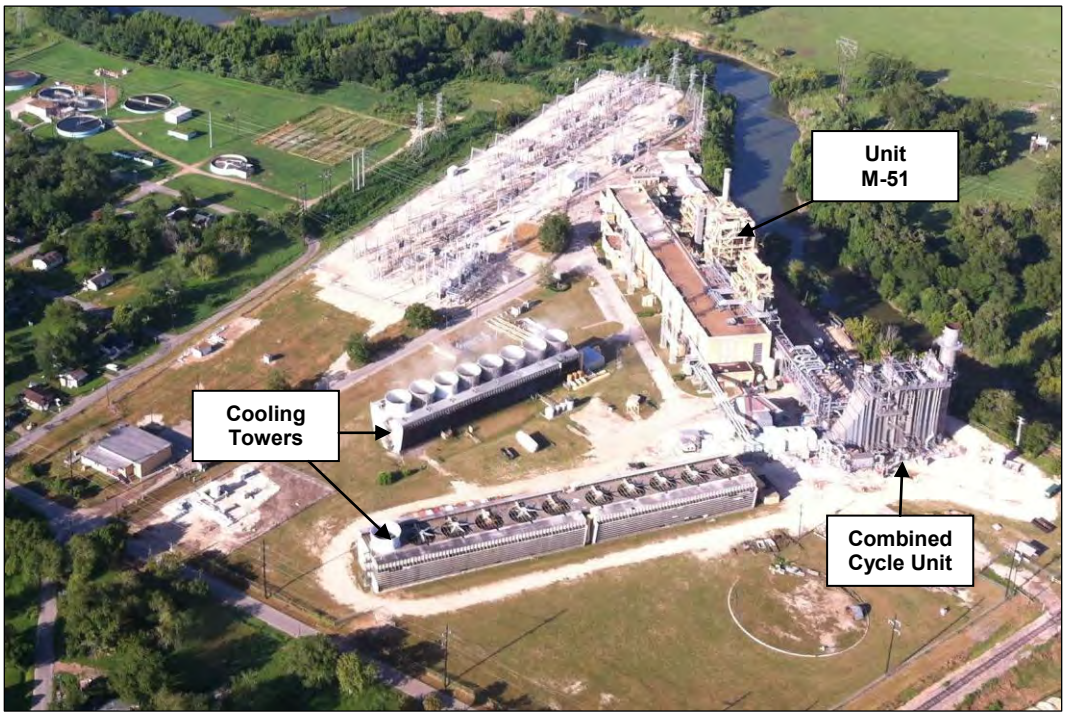

Figure 8. Aerial Fly-over View of Victoria Power Station

Figure 9. Ground-Level View of Standing Structures on Victoria Power Station

Figure 10. View of Cooling Tower (left) (Constructed pre-1995) and Unit M-51 (center) (Constructed 1951-1966)

Figure 11. View of Unit M-51 (Constructed 1951-1966)

Figure 12. View of Cooling Tower (Constructed Pre-1995)

Figure 13. View of Combined-Cycle Unit (Constructed 2008)

Based on available engineering plans, the building that houses the control room, designated as Unit M-51, is composed of multiple units, designated as Units 3, 4, 5, and 6, that were constructed between 1951 and 1966. Specifically, Unit 3 was constructed in 1951, Unit 4 in 1953, Unit 5 in 1961, and Unit 6 in 1966. The 2 cooling towers were constructed prior to 1995; while the exact date of construction is not available, these structures are not believed to be of historic age. The existing combined-cycle unit was constructed in 2008. None of the standing structures on the Victoria Power Station site appear to meet the criteria of significance for inclusion in the NRHP.

The proposed expansion area is contained entirely within the existing Victoria Power Station industrial facility. Based on the extent of existing disturbances within the proposed expansion site resulting from prior construction, use, and ongoing maintenance of the industrial plant, there is a low probability that intact cultural resources are present that would be eligible for listing on the NRHP. Similarly, based on the extent of existing disturbances within the existing road and railroad ROWs within which the proposed pipeline ROW would be constructed, there is a low potential for intact cultural resources to be present within the proposed pipeline ROW. No known cultural resources were identified within the 3.0-hectare (7.4-acre) expansion area or the 4.5-km- (2.8-mile-) long pipeline ROW based on desktop archival research, and there is a low probability that any unrecorded, intact cultural resources are present that would be eligible for listing on the NRHP. It is Horizon's opinion that the proposed project's APE does not require an intensive cultural resources survey, and no known archeological or historic properties that are listed on, eligible for, or potentially eligible for inclusion in the NRHP would be adversely affected. However, in the unlikely event that any human remains or burial objects are inadvertently discovered at any point during construction, use, or ongoing maintenance in the APE, all work should cease immediately in the vicinity of the inadvertent discovery and the THC should be notified of the discovery.

5.0 RESULTS OF INVESTIGATIONS

5.1 ELIGIBILITY CRITERIA FOR INCLUSION IN THE NATIONAL REGISTER OF HISTORIC PLACES

Determinations of eligibility for inclusion in the NRHP are based on the criteria presented in 36 CFR §60.4(a-d). The 4 criteria of eligibility are applied following the identification of relevant historical themes and related research questions:

> The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> a. [T]hat are associated with events that have made a significant contribution to the broad patterns of our history; or,
>
> b. [T]hat are associated with the lives of persons significant in our past; or,
>
> c. [T]hat embody the distinctive characteristics of a type, period, or method of construction, or that represent a significant and distinguishable entity whose components may lack individual distinction; or,
>
> d. [T]hat have yielded, or may be likely to yield, information important in prehistory or history.

The first step in the evaluation process is to define the significance of the property by identifying the particular aspect of history or prehistory to be addressed and the reasons why information on that topic is important. The second step is to define the kinds of evidence or the data requirements that the property must exhibit to provide significant information. These data requirements in turn indicate the kind of integrity that the site must possess to be significant. This concept of integrity relates both to the contextual integrity of such entities as structures, districts, or archeological deposits and to the applicability of the potential database to pertinent research questions. Without such integrity, the significance of a resource is very limited.

For an archeological resource to be eligible for inclusion in the NRHP, it must meet legal standards of eligibility that are determined by 3 requirements: (1) properties must possess significance, (2) the significance must satisfy at least 1 of the 4 criteria for eligibility listed above, and (3) significance should be derived from an understanding of historic context. As discussed here, historic context refers to the organization of information concerning prehistory and history

according to various periods of development in various times and at various places. Thus, the significance of a property can best be understood through knowledge of historic development and the relationship of the resource to other, similar properties within a particular period of development. Most prehistoric sites are usually only eligible for inclusion in the NRHP under Criterion D, which considers their potential to contribute data important to an understanding of prehistory. All 4 criteria employed for determining NRHP eligibility potentially can be brought to bear for historic sites.

Criterion A—Events

To be considered for listing under Criterion A, a property must be associated with 1 or more events important in the defined historic context. Criterion A recognizes resources associated with single events, such as the founding of a town, or with a pattern of events, repeated activities, or historic trends, such as the gradual rise of a port city's prominence in trade and commerce. The event or trends, however, must clearly be important within the associated context of settlement, in the case of the town, or development of a maritime economy, in the case of the port city. Moreover, the property must have an important association with the event or historic trends, and it must retain historic integrity.

Criterion B—Persons

Criterion B applies to resources associated with individuals whose specific contributions to history can be identified and documented. Persons –significant in our past" refers to individuals whose activities are demonstrably important within a local, state, or national historic context. The criterion is generally restricted to those resources that illustrate (rather than commemorate) a person's important achievements.

Criterion C—Design or Construction

This criterion applies to resources significant for their physical design or construction, including such elements as architecture, landscape architecture, engineering, and artwork. To be eligible under this criterion, a property must meet *at least one* of the following requirements—embody distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic value; or represent a significant and distinguishable entity whose components may lack individual distinction.

Criterion D—Information Potential

Certain important research questions about human history can only be answered by the actual physical material of cultural resources. Criterion D encompasses the resources that have the potential to answer, in whole or in part, those types of research questions. The most common type of property nominated under this Criterion is the archeological site (or a district composed of archeological sites). Buildings, objects, and structures (or districts composed of these property types), however, can also be eligible for their information potential. Criterion D has 2 requirements, which must *both* be met for a property to qualify—the property must have, or have had, information to contribute to our understanding of human history or prehistory, and the information must be considered important.

5.2 SUMMARY AND RECOMMENDATIONS

In March 2014, Horizon conducted a cultural resources background study of the APE of the proposed undertaking. The cultural resources assessment consisted of a desktop review of potential project impacts on historic properties or other culturally significant features or landscapes within the APE. No field investigations were undertaken as a part of the cultural resources assessment. Based on the results of desktop archival research, no known cultural resources are located within the boundaries of the existing Victoria Power Station complex, the proposed 3.0-hectare (7.4-acre) proposed expansion area, or the 4.5-km (2.8-mile) pipeline ROW. Five previously recorded archeological sites, 96 historic properties listed on the NRHP, and 1 historic district listed on the NRHP are present within a 1.6-km (1.0-mile) radius of the APE.

Three prior cultural resources surveys have been conducted in the vicinity of the APE. No portion of the existing Victoria Power Station complex has been previously surveyed for cultural resources. The portion of the proposed pipeline ROW located within Bottom Road has been previously surveyed for cultural resources, though the rest of the proposed pipeline ROW has not been previously surveyed.

The proposed expansion area is contained entirely within the existing Victoria Power Station industrial facility. Based on the extent of existing disturbances within the proposed expansion site resulting from prior construction, use, and ongoing maintenance of the industrial plant, there is a low probability that intact cultural resources are present that would be eligible for listing on the NRHP. Similarly, based on the extent of existing disturbances within the existing road and railroad ROWs within which the proposed pipeline ROW would be constructed, there is a low potential for intact cultural resources to be present within the proposed pipeline ROW. No known cultural resources were identified within the 3.0-hectare (7.4-acre) expansion area or the 4.5-km- (2.8-mile-) long pipeline ROW based on desktop archival research, and there is a low probability that any unrecorded, intact cultural resources are present that would be eligible for listing on the NRHP. It is Horizon's opinion that the proposed project's APE does not require an intensive cultural resources survey, and no known archeological or historic properties that are listed on, eligible for, or potentially eligible for inclusion in the NRHP would be adversely affected. However, in the unlikely event that any human remains or burial objects are inadvertently discovered at any point during construction, use, or ongoing maintenance in the APE, all work should cease immediately in the vicinity of the inadvertent discovery and the THC should be notified of the discovery.

6.0 REFERENCES CITED

Abbott, J.T.

2001 *Houston Area Geoarcheology—A Framework for Archeological Investigation, Interpretation, and Cultural Resource Management in the Houston Highway District*. Archeological Studies Program, Report No. 27, Environmental Affairs Division, Texas Department of Transportation, Austin.

Alford, J.J., and J. C. Holmes

1985 Meander Scars as Evidence of Major Climate Changes in Southeast Louisiana. *Annals of the Association of American Geographers* 75:395-403.

Bell, R.E.

1958 *Guide to the Identification of Certain American Indian Projectile Points*. Special Bulletin No. 1. Oklahoma Anthropological Society, Norman.

1960 *Guide to the Identification of Certain American Indian Projectile Points*. Special Bulletin No. 2. Oklahoma Anthropological Society, Norman.

Black, S.L.

1986 *The Clemente and Herminia Hinojosa Site, 4IJW8: A Toyah Horizon Campsite in Southern Texas.* Special Report 18. Center for Archaeological Research, the University of Texas at San Antonio.

1989 South Texas Plains. In *From the Gulf to the Rio Grande: Human Adaptation in Central, South, and Lower Pecos, Texas,* edited by T.R. Hester, S.L. Black, D.G. Steele, B.W. Olive, A.A. Fox, K.J. Reinhard, and L.C. Bement, pp. 39-62. Research Series No. 33. Arkansas Archeological Survey, Fayetteville.

Blair, W. F.

1950 The Biotic Provinces of Texas. *Texas Journal of Science* 2:93-117.

Blum, M.D., and D.M. Price

1994 Glacio-Eustatic and Climatic Controls on Quaternary Alluvial Plain Deposition, Texas Coastal Plain. *Transactions of the Gulf Coast Association of Geological Societies* 44:85-92.

Brown, K.M.

1987 Early Occupations at Berger Bluff, Goliad County, Texas. *Current Research in the Pleistocene* 4:3-5.

Bryant, V.M., Jr., and R.G. Holloway

1985 A Late-Quaternary Paleoenvironmental Record of Texas: An Overview of the Pollen Evidence. In *Pollen Records of Late-Quaternary North American Sediments*, edited by V.M. Bryant, Jr., and R.G. Holloway, pp. 39-70. American Association of Stratigraphic Palynologists Foundation, Dallas, Texas.

Collins, M.B.

1995 Forty Years of Archeology in Central Texas. *Bulletin of the Texas Archeological Society* 66:361-400.

DuBar, J.R., T.E. Ewing, E.L. Lundelius, E.G. Otvos, and C.D. Winkler

1991 Quaternary Geology of the Gulf of Mexico Coastal Plain. In *The Geology of North America, Volume K2: Quaternary Non-Glacial Geomorphology, Conterminous United States*, edited by R. B. Morrison, pp. 583-610. Geological Society of America, Boulder, Colorado.

Fisher, W.L.

1975 *Geologic Atlas of Texas—Beeville-Bay City Sheet*. Bureau of Economic Geology, The University of Texas at Austin.

Fisk, H.N.

1938 *Geology of Grant and LaSalle Parishes*. Geological Bulletin No. 10. Louisiana Department of Conservation, Baton Rouge.

1940 *Geology of Avoyelles and Rapides Parishes*. Geological Bulletin No. 18. Louisiana Department of Conservation, Baton Rouge.

Gould, F.W.

1975 Texas Plants – A Checklist and Ecological Summary. College Station: Texas A&M University.

Griffith, T., and A. Dase

2010 *Archeological and Historic Resources Survey of a Proposed Wastewater Treatment Plant, City of Victoria, Victoria County, Texas*. Letter Report No. 822. Prewitt and Associates, Inc., Austin, Texas.

Hester, T. R.

1983 Late Paleo-Indian Occupations at Baker Cave, Southwestern Texas. *Bulletin of the Texas Archeological Society* 53: 101-119.

Largent, F.B., Jr., M.R. Waters, and D.L. Carlson

1991 The Spatiotemporal Distribution of Folsom Projectile Points in Texas. *Plains Anthropologist* 36(137):323-341.

Larkin, T.J., and G.W. Bomar

1983 *Climatic Atlas of Texas*. Publication LP-192. Texas Department of Water Resources, Austin.

Meltzer, D.J.

1986 The Clovis Paleoindian Occupation of Texas: Results of the Texas Fluted Point Survey. *Bulletin of the Texas Archeological Society* 57:27-86.

National Park Service (NPS)

2014 National Park Service National Register of Historic Places Google Earth Map Layer – South Region. <http://nrhp.focus.nps.gov/natreg/docs/Google_Earth_Layers.html>. Accessed March 28, 2014.

Natural Resources Conservation Service (NRCS)

2004 SSURGO Database for Victoria County, Texas. Natural Resources Conservation Service, US Department of Agriculture.

2014 Web Soil Survey. <http://websoilsurvey.nrcs.usda.gov/app/>. Accessed March 28, 2014.

Ricklis, R.A.

1994 Toyah Components: Evidence for Occupation in the Project Area During the Latter Part of the Late Prehistoric Period. In *Archaic and Late Prehistoric Human Ecology in the Middle Onion Creek Valley, Hays County, Texas*, by R.A. Ricklis and M.B. Collins, pp. 207-316. Studies in Archeology, No. 19. Texas Archeological Research Laboratory, The University of Texas at Austin.

Sellards, E.H.

1940 Pleistocene Artifacts and Associated Fossils from Bee County, Texas. *Bulletin of the Geological Survey of America* 51: 1627-1657.

Suhm, D.A., A.D. Krieger, and E.B. Jelks

1954 An Introductory Handbook of Texas Archeology. *Bulletin of the Texas Archeological Society*, No. 25.

Texas Historical Commission (THC)

2014 *Texas Archeological Sites Atlas Restricted Database*. <http://www.nueces.thc.state.tx.us/>. Accessed March 28, 2014.

Texas State Historical Association (THSA)

2014 Victoria County. The Handbook of Texas Online. <http://www.tshaonline.org/handbook/online/articles/hcv03>. Accessed March 28, 2014.

Turner, E.S., and T.R. Hester

1999 *A Field Guide to Stone Artifacts of Texas Indians*. Third Revised Edition. Gulf Publishing Company, Houston.

US Department of Agriculture (USDA)

2012 Digital orthophoto, Victoria County, Texas. National Agriculture Imagery Program, Farm Service Agency, Aerial Photography Field Office.

US Geological Survey (USGS)

1987 7.5-minute series topographic maps, Victoria West, Texas, quadrangle.

1995 7.5-minute series topographic maps, Victoria East, Texas, quadrangle.

Van Siclen, D.C.

1985 Pleistocene Meander-Belt Ridge Patterns in the Vicinity of Houston, Texas. *Transactions of the Gulf Coast Association of Geological Societies* 35:525-532.

Walter, R.W., E.A. Schroeder, and J.T. Jones

1999 *An Intensive Archeological Survey of the Proposed Wastewater Improvements by the City of Victoria, Victoria County, Texas*. Paul Price Associates, Inc., Austin, Texas.

APPENDIX A:

Principal Investigator's Resume

Horizon
Environmental Services, Inc.

Jeffrey D. Owens, M.A., R.P.A.

Archeological Principal Investigator/Project Manager

EXPERTISE

- Prehistoric Archeology
- Historic Archeology

RESEARCH AREAS

- Eastern North America (esp. Midwest, Southeast)
- Great Plains
- American Southwest

AREAS OF EXPERTISE

- Project Management
- Archival and Historical Research
- Archeological Survey, Testing, and Data Recovery
- National Register of Historic Places (NRHP) Evaluations
- Section 106 of the National Historic Preservation Act (NHPA)
- Antiquities Code of Texas (ACT)
- Native American Graves Protection and Repatriation Act (NAGPRA)
- Lithic and Ceramic Analysis
- Technical Writing and Editing
- Quality Assurance/ Quality Control

EDUCATION

- A.B.D., Anthropology, Southern Methodist University, 1997
- M.A., Anthropology, New York University, 1995
- B.A., Anthropology, New York University, 1991

Mr. Owens is an accomplished cultural resources professional with more than 23 years of experience in archeological fieldwork, research and analysis, and cultural resources management (CRM). He is an adept principal investigator and project manager, proficient at managing suites of turnkey, fast-turnaround projects as well as long-term, multidisciplinary research projects. He is fully versed in historic and environmental preservation laws, assessing the National Register of Historic Places (NRHP) eligibility of cultural resources, and developing management plans for historic properties that ensure compliance with applicable federal, state, and local laws while ensuring projects meet construction schedules and adhere to budgetary constraints.

Mr. Owens has planned, implemented, and successfully completed cultural resources survey, testing, and data recovery projects in Arizona, Arkansas, Illinois, Louisiana, Mississippi, Missouri, New Jersey, New Mexico, New York, Oklahoma, Pennsylvania, and Texas. He has completed hundreds of projects for a broad range of clients in the public and private sectors, including oil and gas exploration, development, and transportation; ethanol and petrochemical production; coastal and inland residential, commercial, and industrial land development; solid waste landfills; dredging activities; municipal planning; reservoir development; coastal port and channel improvements; transportation infrastructure; water and wastewater transportation and treatment; electricity generation and transportation; military reservations; and university research.

Mr. Owens also regularly contributes cultural resources oversight to the preparation of environmental regulatory documents, including Environmental Assessments (EA), Environmental Impact Statements (EIS), Biological Assessments (BA), and Categorical Exclusions (CE) for National Environmental Policy Act (NEPA) compliance projects.

Mr. Owens' project management style incorporates innovative leadership skills, resourcefulness, versatility, swift adaptability, and attention to the bottom line. His success is due in part to his thorough familiarity with federal, state, and local historic preservation laws and long-standing personal relationships with regulatory agency reviewers.

CERTIFICATIONS/QUALIFICATIONS

- Meets all Secretary of the Interior's standards for performing cultural resources investigations
- Permittable to perform cultural resource investigations on federal and state projects
- Listed on qualified cultural resource consultant lists in numerous states
- Pre-certified by TxDOT for Service 2.10.1 (Archeological Surveys, Documentation, Excavations, Testing, Reports, and Data Recovery Plans) and Service 2.11.1 (Historical and Archival Research)

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Crew Chief Sep 1993 – Nov 1993
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TECHNICAL PUBLICATIONS

n.d. *Intensive Cultural Resources Survey of the Proposed 1.2-Mile-Long Cottonwood Creek Water Transmission Main Pipeline, San Marcos, Hays County, Texas*. HJN 140064. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Proposed Magellan Terminals Holdings, L.P., Corpus Christi Terminal Expansion Project, Corpus Christi, Nueces County, Texas*. HJN 110012.42. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Proposed Lon C. Hill Power Station Expansion Project, Corpus Christi, Nueces County, Texas—Cultural Resources Review*. HJN 110012.40. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey of USACE Jurisdictional Areas on a 35.0-Acre Tract in Harris County, Texas*. HJN 140051. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey of the Proposed 77-Acre Pinecrest Energy Center Tract, Lufkin, Angelina County, Texas. Addendum—Linear Facilities*. HJN 080122.40. Horizon Environmental Services, Inc., Austin, Texas.

2014 *Intensive Cultural Resources Survey of the County Road 60 Realignment Project, San Patricio, San Patricio County, Texas*. HJN 140028. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey of the Proposed Eagle Mountain Stream Electric Station, Tarrant County, Texas*. HJN 080122.80. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey of the Proposed Tradinghouse Power Plant Tract, McLennan County, Texas*. HJN 080122.79. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey of the Proposed DeCordova II Power Plant Tract, Hood County, Texas*. HJN 080122.78. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Cultural Resources Survey Report: Proposed Prue Road at French Creek (LC-6) Improvements, San Antonio, Bexar County, Texas*. HJN 130025. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Cultural Resources Survey and Construction Monitoring for the Proposed Kansas City Southern K478.0 Bridge Construction and Railroad Alignment Project, Bowie County, Texas*. HJN 130023. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Proposed Alpha Olefin Chemical Company, LLC, Alpha Olefins Plant, Freeport, Brazoria County, Texas—Cultural Resources Assessment*. HJN 110012.21. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey of the Proposed 0.67-acre Lindshire Lane Wastewater System Improvements Project, Austin, Travis County, Texas*. HJN 130138. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Archeological and Geoarcheological Investigations, M&G Resins USA, LLC/ChemTex International, Inc., Proposed Jumbo Project, Corpus Christi, Nueces County, Texas* (with Charles D. Frederick). HJN 080122.56. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey of the Proposed Enterprise Mont Belvieu Complex Fractionation Units 9 and 10 Project, Chambers County, Texas*. HJN 110012.17. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey of 5.9 Miles of Proposed Subsurface Utility Relocations, FM 1637 Expansion Project, Waco, McLennan County, Texas*. HJN 130031. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Proposed Victoria Power Station Expansion Project, Victoria, Victoria County, Texas—Cultural Resources Review*. HJN 110012.11. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey for the Proposed INVENERGY Energy Center, Ector County, Texas*. HJN 080122.54. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey for the Proposed Kansas City Southern K478.0 Bridge Construction and Railroad Alignment Project, Little River County, Arkansas*. HJN 130023. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey for the Proposed Southern Company Natural Gas Plant, Trinidad, Henderson County, Texas*. HJN 080122.53. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey of Proposed Yoakum Cryogenic Gas Processing Plant Expansion Areas, Lavaca County, Texas*. HJN 110012.15. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Assessment of Proposed INVISTA Victoria Plant Improvements, Victoria County, Texas*. HJN 130035. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Proposed Equistar Chemicals, L.P., Corpus Christi Complex Expansion Project, Corpus Christi, Nueces County, Texas—Cultural Resources Assessment*. HJN 110012.13. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey of the Proposed 78-Acre La Paloma Energy Center Tract, Harlingen, Cameron County, Texas*. HJN 080122.31. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Proposed Clinker Production Increase at the CEMEX Construction Materials South, LLC, Balcones Cement Plant, Comal County, Texas—Cultural Resources Review*. HJN 080122.39. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey of the Proposed 77-Acre Pinecrest Energy Center Tract, Lufkin, Angelina County, Texas*. HJN 080122.40. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Proposed Guadalupe Generating Station Expansion Project, Marion, Guadalupe County, Texas—Cultural Resources Review*. HJN 130016. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey of the Proposed 181-Acre Enterprise Mont Belvieu Complex Propane Dehydrogenation Unit Project, Chambers County, Texas*. HJN 110012.12. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey of a Proposed 20-Acre Expansion Tract Adjacent to an Existing PL Propylene, LLC, Facility, Houston, Harris County, Texas*. HJN 080122.30. Horizon Environmental Services, Inc., Austin, Texas.

2014 *Intensive Cultural Resources Survey of the 119.0-Acre Northpark Tract, Porter, Montgomery County, Texas*. HJN 130216. Horizon Environmental Services, Inc., Austin, Texas.

2014 *Intensive Cultural Resources Survey of the County Road 60 Realignment Project, San Patricio, San Patricio County, Texas*. HJN 140028. Horizon Environmental Services, Inc., Austin, Texas.

2014 *Intensive Cultural Resources Survey of the 42.2-Acre Saltgrass Tract, La Marque, Galveston County, Texas*. HJN 140047. Horizon Environmental Services, Inc., Austin, Texas.

2014 *Intensive Cultural Resources Survey of a Proposed 121.0-Acre Beaumont Polyethylene Plant Area, Beaumont, Jefferson County, Texas*. HJN 140020. Horizon Environmental Services, Inc., Austin, Texas.

2014 *Results of Cultural Resources Survey: ExxonMobil Baytown Olefins Plant, Areas 17 & 75, Baytown, Harris County, Texas*. Letter report dated March 14, 2014. HJN 130264. Horizon Environmental Services, Inc., Austin, Texas.

2014 *Archeological and Historical Investigations for the Proposed Dell Medical School Phase 1 Project, Austin, Travis County, Texas*. HJN 130112. Horizon Environmental Services, Inc., Austin, Texas.

2013 *Results of Cultural Resources Survey: ExxonMobil Baytown Olefins Plant Natural Gas Odorizer Area, Baytown, Harris County, Texas*. Letter report dated December 13, 2013. HJN 130264. Horizon Environmental Services, Inc., Austin, Texas.

2013 *Intensive Cultural Resources of a Proposed 12.6-acre Apartment Complex Development, Belton, Bell County, Texas*. HJN 130212. Horizon Environmental Services, Inc., Austin, Texas.

2013 *Intensive Cultural Resources Survey of the Proposed University Boulevard and Parcel 150 Pipeline Rights-of-Way, Round Rock, Williamson County, Texas*. HJN 130118. Horizon Environmental Services, Inc., Austin, Texas.

2013 *Intensive Cultural Resources Survey of a Proposed 171.0-Acre Residential Development, Conroe, Montgomery County, Texas*. HJN 130162. Horizon Environmental Services, Inc., Austin, Texas.

2013 *Intensive Cultural Resources Survey of Segments of Browder Loop Road, Eldridge Lane, and North Butch Arthur Road, San Jacinto County, Texas*. HJN 130103. Horizon Environmental Services, Inc., Austin, Texas.

2013 *Intensive Cultural Resources Survey of 4 USACE Jurisdictional Areas on Chesapeake Energy Corporation's Proposed JEA West Lateral Pipeline Right-of-Way, Dimmit County, Texas* (with R.K. Brownlow). HJN 130087.04. Horizon Environmental Services, Inc., Austin, Texas.

2013 *Intensive Cultural Resources Survey of Chesapeake Energy Corporation's Proposed Sugarland DIM H Well Pad and Access Road, Dimmit County, Texas* (with R.K. Brownlow). HJN 130087.03. Horizon Environmental Services, Inc., Austin, Texas.

2013 *A Cultural Resources Assessment of the USACE Jurisdictional Areas along BridgeTex Pipeline Company, LLC's, Proposed BridgeTex North Pipeline ROW* (with R.K. Brownlow and J.L. Cochran). HJN 120166. Horizon Environmental Services, Inc., Austin, Texas.

2013 *Intensive Cultural Resources Survey of the Proposed 545-Acre Kansas City Southern Railroad Wylie Intermodal Facility, Wylie, Collin County, Texas*. HJN 130042. Horizon Environmental Services, Inc., Austin, Texas.

2013 *Intensive Cultural Resources Survey of a USACE Jurisdictional Area on a Proposed 4.6-Acre HEB Grocery Store Expansion Tract, Georgetown, Williamson County, Texas*. HJN 120085. Horizon Environmental Services, Inc., Austin, Texas.

2013 *Cultural Resources Investigations along the Proposed Lone Star Competitive Renewable Energy Zone (CREZ) 345-kV Transmission Line Right-of-Way in North-Central Texas*, Vols. I and II (with Jennifer L. Cochran, Russell K. Brownlow, and Raymundo Chapa). HJN 100137. Horizon Environmental Services, Inc., Austin, Texas.

2013 *Intensive Cultural Resources Survey of the San Antonio River Outfall Project, San Antonio, Bexar County, Texas*. HJN 120150. Horizon Environmental Services, Inc., Austin, Texas.

2012 *Intensive Archeological Survey for the Proposed Brushy Creek Regional Trail Gap Project, Round Rock, Williamson County, Texas*. HJN 080151. Horizon Environmental Services, Inc., Austin, Texas.

2012 *Intensive Archeological Survey for the Proposed San Gabriel River Trail Extension Project, Georgetown, Williamson County, Texas*. HJN 120057. Horizon Environmental Services, Inc., Austin, Texas.

2012 *Intensive Cultural Resources Survey of the 1,102-Acre Creekside Park West Tract, Harris County, Texas* (with Raymundo Chapa). HJN 100142. Horizon Environmental Services, Inc., Austin, Texas.

2012 *Intensive Cultural Resources Survey of Two 0.9-Acre HDD Locations on the Trinity River, Madison and Houston Counties, Texas*. HJN 120009.14. Horizon Environmental Services, Inc., Austin, Texas.

2012 *Intensive Cultural Resources Survey of a USACE Jurisdictional Area on the Proposed 18.5-Acre Esperanza Crossing Tract, Austin, Travis County, Texas*. HJN 120052. Horizon Environmental Services, Inc., Austin, Texas.

2012 *Intensive Cultural Resources Survey, One USACE Jurisdictional Area, Existing East Red Segment 1 Pipeline Maintenance Activities, Clay County, Missouri*. HJN 120075. Horizon Environmental Services, Inc., Austin, Texas.

2012 *Intensive Cultural Resources Survey, Two USACE Jurisdictional Area Dig Sites (#253 and #261) on the Existing Eskridge to Kearney Pipeline Maintenance Activities, Clay County, Missouri*. HJN 120075. Horizon Environmental Services, Inc., Austin, Texas.

2012 *Intensive Cultural Resources Survey for the Penn City Coal Expansion Project, Houston, Harris County, Texas*. HJN 110097. Horizon Environmental Services, Inc., Austin, Texas.

2012 *Intensive Cultural Resources Survey for the Lake Anahuac East Levee Project, Anahuac, Chambers County, Texas* (with Sally Victor). HJN 120004. Horizon Environmental Services, Inc., Austin, Texas.

2012 *Intensive Cultural Resources Survey, One USACE Jurisdictional Area on the Existing Eskridge to Kearney Pipeline Right-of-Way, Platte County, Missouri*. HJN 120075. Horizon Environmental Services, Inc., Austin, Texas.

2012 *Intensive Cultural Resources Survey of the Proposed 0.6-Mile-Long Rattler Road Extension Project, San Marcos, Hays County, Texas*. HJN 120036. Horizon Environmental Services, Inc., Austin, Texas.

2011 *Intensive Cultural Resources Survey of 6 Jurisdictional Stream Crossings for the City of Hamshire Water System Improvements Project, Hamshire, Jefferson County, Texas*. HJN 110070. Horizon Environmental Services, Inc., Austin, Texas.

2011 *Cultural Resources Investigations on the Proposed Waller Creekside Apartments Tract, Austin, Travis County, Texas*. HJN 110116. Horizon Environmental Services, Inc., Austin, Texas.

2011 *Intensive Cultural Resources Survey of the Woodland Oaks Wastewater Treatment Plant Proposed 1.3-Acre Expansion Tract, Houston, Harris County, Texas*. HJN 100024. Horizon Environmental Services, Inc., Austin, Texas.

2011 *Intensive Archeological Survey of the Farm-to-Market Road 1660 Realignment Project, Hutto, Williamson County, Texas*. HJN 090047. Horizon Environmental Services, Inc., Austin, Texas.

2011 *Intensive Archeological Survey of a 3.7-Acre Tract in San Marcos, Hays County, Texas*. HJN 110124. Horizon Environmental Services, Inc., Austin, Texas.

2011 *Intensive Cultural Resources Survey of USACE Jurisdictional Areas on the Proposed Whispering Pines Par 3 Golf Course Tract, Trinity County, Texas*. HJN 110031. Horizon Environmental Services, Inc., Austin, Texas.

2011 *Archeological Avoidance Plan for the Proposed Washburn 3D Seismic Survey Project, Houston, Harris County, Texas*. HJN 110122. Horizon Environmental Services, Inc., Austin, Texas.

2011 *Intensive Cultural Resources Survey of the Orange County Sewer and Natural Gas Infrastructure Improvements Project, Orange County, Texas*. HJN 110121. Horizon Environmental Services, Inc., Austin, Texas.

2011 *Intensive cultural Resources Survey for the McInnish Park Water System Improvements Project, Carrollton, Dallas County, Texas*. HJN 110135. Horizon Environmental Services, Inc., Austin, Texas.

2011 *Intensive Cultural Resources Survey for the City of Liberty Wastewater System Improvement Project, Liberty County, Texas*. HJN 110005. Horizon Environmental Services, Inc., Austin, Texas.

2011 *Cultural Resource Investigations to Offset Mechanical Impacts to the Clear Creek Golf Course Site (41CV413), Fort Hood, Texas* (with J. Michael Quigg, Christopher Lintz, Grant D. Smith, and David DeMar). TRC Technical Report No. 02353. ARM Series, Research Report No. 60. TRC Environmental Corporation, Austin, Texas.

2011 *Archeological Avoidance Plan for the Proposed North Clinton Dome 3D Seismic Survey Project, Houston, Harris County, Texas*. HJN 110011. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Cultural Resources Assessment and Avoidance Plan for Shot Holes, Source Lines, and Access Routes, Shelby East 3D Seismic Survey Project, Sabine National Forest, San Augustine and Shelby Counties, Texas*. HJN 090017. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resources Survey of the 10.6-Acre Helbig Road Tract, Beaumont, Jefferson County, Texas*. HJN 100099. Horizon Environmental Services, Inc., Austin, Texas

2010 *Intensive Cultural Resources Survey of the 44-Acre Creekside Park, Section 18, Tract, The Woodlands, Harris County, Texas*. HJN 100079. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resources Survey of the 66-Acre Royal Shores Tract, Kingwood, Harris County, Texas*. HJN 100005. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resources Survey of the Proposed 74 Ranch Pittman 1-H Well Pad, Campbellton, Atascosa County, Texas*. HJN 100093.01. Horizon Environmental Services, Inc., Austin, Texas

2010 *Intensive Cultural Resources Survey of the Proposed 74 Ranch Axis 1-H Well Pad, Campbellton, Atascosa County, Texas*. HJN 100093.02. Horizon Environmental Services, Inc., Austin, Texas

2010 *An Intensive Cultural Resources Survey of the USACE Jurisdictional Areas within Eagle Rock Energy Partners' Proposed "20" East Texas Mainline Extension Pipeline Right-of-Way in Nacogdoches County, Texas.* HJN 100019. Horizon Environmental Services, Inc., Austin, Texas.

2010 *An Intensive Cultural Resources Survey of a Proposed HDD Location Under an Abandoned Tram Road in Nacogdoches County, Texas*. HJN 100019. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resources Survey for the Green Valley Special Utility District's Water Supply Improvement Project, Guadalupe County, Texas*. HJN 090102. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive and Reconnaissance Survey of the Proposed Lake Halbert Water Treatment Plant Expansion Project, Corsicana, Navarro County, Texas*. HJN 100015. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resources Survey of a Proposed 2.9-Mile-Long Force Main Right-of-Way, Houston, Harris County, Texas*. HJN 100051. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resources Survey of a 13.9-Acre Tract for the Proposed Fort Bend County MUD No. 116 Wastewater Treatment Plant Project, Richmond, Fort Bend County, Texas*. HJN 100047. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resources Survey of a Proposed 3,100-Foot-Long Erosion-Control Bulkhead on the T-BAR-O Ranch, Llano County, Texas*. HJN 100075. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resources Survey of the 21.6-Acre Kalentari Tract, San Marcos, Hays County, Texas*. HJN 100055. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resource Survey of a 14.8-Acre Tract on Williams Gully in Houston, Harris County, Texas*. HJN 090127. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resources Survey of the Proposed Crossroad Exhibit Hall Expansion, Fort Griffin State Historic Site, Shackelford County, Texas*. HJN 090019. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Phase I Cultural Resources Survey of 3.5 Miles of M2 LGS, LLC's, Proposed Natural Gas Pipeline Right-of-Way on the Mansfield Battlefield, DeSoto Parish, Louisiana*. HJN 090055.025. Horizon Environmental Services, Inc., Austin, Texas.

2009 *Intensive Archeological Survey of the US Highway 69 Expressway and Reliever Route, Jacksonville, Cherokee County, Texas*. HJN 080173. Horizon Environmental Services, Inc., Austin, Texas.

2009 *Intensive Cultural Resource Survey of the Proposed 5.4-Acre Floral Gardens Senior Living Apartments Tract, Houston, Harris County, Texas*. HJN 090129. Horizon Environmental Services, Inc. Austin, Texas.

2009 *Intensive Cultural Resource Survey, PEC Marshall Ford to Buttercup Substations Transmission Line Rebuild Project, Travis and Williamson County, Texas*. HJN 090096. Horizon Environmental Services, Inc. Austin, Texas.

2009 *Intensive Cultural Resources Survey of the Possum Kingdom Lake Hike and Bike Trail, Phase III, Palo Pinto County, Texas*. HJN 090053. Horizon Environmental Services, Inc., Austin, Texas.

2009 *Intensive Cultural Resource Survey of the Proposed 2.2-Acre Junker-Spencer Well No. 69, Fannett, Jefferson County, Texas*. HJN 090079. Horizon Environmental Services, Inc., Austin, Texas.

2009 *Cultural Resource Survey of the Proposed 60-Acre Harrison Ranch Park, Dripping Springs, Hays County, Texas*. HJN 090080. Horizon Environmental Services, Inc. Austin, Texas.

2009 *Intensive Cultural Resource Survey of the Tyrrell Park Storm Water Detention Pond Project, Beaumont, Jefferson County, Texas*. HJN 090042. Horizon Environmental Services, Inc. Austin, Texas.

2009 *Intensive Cultural Resource Survey of 7 Miles of Proposed Dredge Disposal Areas along Green Pond Gully, Beaumont, Jefferson County, Texas*. HJN 090041. Horizon Environmental Services, Inc. Austin, Texas.

2009 *Intensive Cultural Resource Survey of for the Lumberton Lift Station Rehabilitation Project, Loeb, Hardin County, Texas*. HJN 080008. Horizon Environmental Services, Inc. Austin, Texas.

2009 *An Intensive Cultural Resources Survey of the Port of Houston Authority's 43-Acre Acryl Tract, Seabrook, Harris County, Texas*. HJN 080163. Horizon Environmental Services, Inc. Austin, Texas.

2009 *Intensive Cultural Resource Survey of 34 Acres of Dredge Disposal Areas along Bayou Din, Beaumont, Jefferson County, Texas*. HJN 090038. Horizon Environmental Services, Inc. Austin, Texas.

2009 *Intensive Cultural Resources Survey of the 2.8-Acre Harris County MUD No. 148 Wastewater Treatment Plant No. 2, Harris County, Texas*. HJN 090048. Horizon Environmental Services, Inc., Austin, Texas.

2009 *Intensive Cultural Resources Survey of the Round Rock ISD 181-Acre Pearson/ England Tract, Round Rock, Williamson County, Texas*. HJN 090027. Horizon Environmental Services, Inc., Austin, Texas.

2009 *Intensive Cultural Resources Survey of the Round Rock ISD 12.8-Acre Stone Oak School Tract, Round Rock, Williamson County, Texas*. HJN 090006. Horizon Environmental Services, Inc., Austin, Texas.

2009 *Intensive Cultural Resources Survey of the 136-Acre Sweetwater Ranch Tract, Travis County, Texas*. HJN 090005. Horizon Environmental Services, Inc., Austin, Texas.

2009 *Intensive Cultural Resources Survey of the Elm Fork Relief Interceptor Segment EF-3 Project, Dallas and Farmers Branch, Dallas County, Texas*. HJN 080185. Horizon Environmental Services, Inc., Austin, Texas.

2009 *Intensive Cultural Resources Survey of Oak Branch Drive at US Highway 290 and Nutty Brown Road, Hays County, Texas*. HJN 080166. Horizon Environmental Services, Inc., Austin, Texas.

2009 *Intensive Cultural Resources Survey of the Bachelor Creek Interceptor Project, Terrell, Kaufman County, Texas*. HJN 080132. Horizon Environmental Services, Inc., Austin, Texas.

2009 *Intensive Cultural Resources Survey of the Washington Street Improvements Project, Sherman, Grayson County, Texas*. HJN 080179. Horizon Environmental Services, Inc., Austin, Texas.

2009 *Intensive Cultural Resources Survey of the Canyon Creek Drive Extension Project, Sherman, Grayson County, Texas*. HJN 080178. Horizon Environmental Services, Inc., Austin, Texas.

2008 *Archeological Surveys and Impact Evaluations in the Texas Department of Transportation's Abilene, Brownwood, Fort Worth, and Waco Districts, 2006-2008*. HJN 080104. Texas Department of Transportation, Environmental Affairs Division, Archeological Studies Program, Report No. 112. Horizon Environmental Services, Inc., Austin, Texas.

2008 *Intensive Cultural Resources Survey of the Wells Ranch Carrizo Groundwater Project, Bexar, Gonzales, and Guadalupe Counties, Texas*. HJN 070157. Horizon Environmental Services, Inc., Austin, Texas.

2008 *Intensive Cultural Resource Survey of the Westwood Water Supply Corporation Water System Improvements Project, Jasper County, Texas*. HJN 080060. Horizon Environmental Services, Inc., Austin, Texas.

2008 *Intensive Cultural Resources Survey of 1,118 Feet of the Bethune Gathering System Pipeline Right-of-Way, Sam Rayburn Reservoir, Nacogdoches County, Texas*. HJN 060042. Horizon Environmental Services, Inc., Austin, Texas.

2008 *Intensive Cultural Resources Survey of 15 Earthen Levee Segments on White's Ranch, Jefferson and Chambers Counties, Texas*. HJN 070196. Horizon Environmental Services, Inc., Austin, Texas.

2008 *Intensive Cultural Resources Survey of the 107-Acre Juno Lake No. 1 Reservoir Project, Trinity and Polk Counties, Texas*. HJN 080034. Horizon Environmental Services, Inc., Austin, Texas.

2008 *Intensive Cultural Resources Survey of a 0.9-Acre Tract Between Broadway and Garfield Streets, Del Rio, Val Verde County, Texas*. HJN 080091. Horizon Environmental Services, Inc., Austin, Texas.

2008 *Intensive Cultural Resource Survey of the Green Acres Storm Water System Project, Fannett, Jefferson County, Texas*. HJN 080068. Horizon Environmental Services, Inc., Austin, Texas.

2008 *Intensive Cultural Resources Survey of USACE Jurisdictional Areas on the Sunchase Tract, Austin, Travis, and Bastrop Counties, Texas*. HJN 080079. Horizon Environmental Services, Inc., Austin, Texas.

2008 *Intensive Cultural Resources Survey of 2 USACE Jurisdictional Areas on the 70-Acre Regal Oaks Tract, Travis County, Texas*. HJN 080041. Horizon Environmental Services, Inc., Austin, Texas.

2008 *Intensive Cultural Resources Survey of the Proposed 10-Acre Mitchell Island Development, The Woodlands, Montgomery County, Texas* (with Russell K. Brownlow). HJN 070183. Horizon Environmental Services, Inc., Austin, Texas.

2008 *The Varga Site: A Multicomponent, Stratified Campsite in the Canyonlands of Edwards County, Texas, Volume I* (with J.M. Quigg, P.M. Matchen, G. Smith, R.A. Ricklis, M.C. Cody, and C.D. Frederick). TRC Technical Report No. 35319. TRC Environmental Corporation, Austin, Texas.

2008 *Phase I Cultural Resource Investigations for the Deer Park LPG Terminal Project in Chambers and Harris Counties, Texas* (with Price Laird, Larissa Thomas, and Paul Matchen). TRC Environmental Corporation, Austin, Texas.

2007 *Intensive Cultural Resources Survey of 5 USACE Jurisdictional Waterway Impact Areas on the 418-Acre Watersedge Tract, Travis County, Texas*. HJN 070011. Horizon Environmental Services, Inc., Austin, Texas.

2007 *Intensive Cultural Resources Survey of the North Brushy Creek Interceptor Extension, Phase 1, Cedar Park, Williamson County, Texas*. HJN 060258. Horizon Environmental Services, Inc., Austin, Texas.

2007 *Cultural Resources Survey of 2.4 Miles of Proposed Pipeline Reroutes, Dripping Springs Wastewater Treatment System, Dripping Springs, Hays County, Texas*. HJN 050073.002. Horizon Environmental Services, Inc., Austin, Texas.

2007 *Intensive Cultural Resources Survey of the Loop 4 Extension Project, Buda, Hays County, Texas*. HJN 070071. Horizon Environmental Services, Inc., Austin, Texas.

2007 *Intensive Archeological Survey of 5.6 Miles of US 290 from US 183 to Gilleland Creek, Travis County, Texas*. HJN 040029.006. Horizon Environmental Services, Inc., Austin, Texas.

2007 *Intensive Cultural Resources Survey of 3,550 Feet of Jurisdictional Waterways on the 112-Acre Brushy Creek Business Park Tract, Williamson County, Texas*. HJN 050006. Horizon Environmental Services, Inc., Austin, Texas.

2007 *Intensive and Reconnaissance Cultural Resources Survey of the Bexar Metropolitan Water District's Trinity Aquifer Water Supply Project, Bexar County, Texas*. HJN 070012. Horizon Environmental Services, Inc., Austin, Texas.

2007 *Intensive Cultural Resources Survey of the 65.5-Acre Southeast Metropolitan Park Expansion and 2.3-Mile Raw Water Pipeline Right-of-Way, Austin, Travis County, Texas*. HJN 070062. Horizon Environmental Services, Inc., Austin, Texas.

2007 *Intensive Cultural Resources Survey of Section 404 Jurisdictional Waterways on the 260-Acre Winding Creek Tract, Williamson County, Texas*. HJN 070032. Horizon Environmental Services, Inc., Austin, Texas.

2007 *An Intensive Cultural Resources Survey and Subsequent NRHP Eligibility Testing of the USACE Jurisdictional Areas within the Proposed 4.5-Mile Townsen Road Right-of-Way, Montgomery and Harris Counties, Texas* (with Abigail Peyton and Russell K. Brownlow). HJN 050161. Horizon Environmental Services, Inc., Austin, Texas.

2007 *Intensive Cultural Resources Survey of 2.0 Miles of the Proposed Grande Avenue Extension Project, New Copeland Road to SH 110, Tyler, Smith County, Texas*. HJN 070066. Horizon Environmental Services, Inc., Austin, Texas.

2007 *Intensive and Reconnaissance Cultural Resources Survey of the City of Meridian 14.8-Mile Treated Water Delivery System, Bosque County, Texas*. HJN 050182. Horizon Environmental Services, Inc., Austin, Texas.

2007 *An Intensive Cultural Resource Survey of the USACE Jurisdictional Areas within the Proposed 6-Mile Loco Bayou Pipeline Right-of-Way, Angelina and Nacogdoches Counties, Texas* (with Pollyanna Held and Russell K. Brownlow). HJN 060053. Horizon Environmental Services, Inc., Austin, Texas.

2007 *Intensive Cultural Resources Survey of the Possum Kingdom Lake Hike and Bike Trail, Phase II, Palo Pinto County, Texas*. HJN 070148. Horizon Environmental Services, Inc., Austin, Texas.

2007 *Cultural Resource Survey of 3.1 Miles of the US Highway 69 Expressway and Reliever Route, Jacksonville, Cherokee County, Texas* (with contributions by Abigail Weinstein). HJN 050093. Horizon Environmental Services, Inc., Austin, Texas.

2006 *Archeological Surveys in the Texas Department of Transportation's Abilene, Brownwood, Fort Worth, and Waco Districts, 2006*. HJN 060170. Texas Department of Transportation, Environmental Affairs Division, Archeological Studies Program, Report No. 90. Horizon Environmental Services, Inc., Austin, Texas.

2006 *An Intensive Cultural Resources Survey of the USACE Jurisdictional Areas within the Proposed 4.5-Mile Townsen Road Right-of-Way, Montgomery and Harris Counties, Texas* (with R.K. Brownlow and A. Peyton). HJN 050161. Horizon Environmental Services, Inc., Austin, Texas.

2006 *Intensive Archeological Survey of Farm-to-Market Road 1460 from Old Settler's Boulevard to Quail Valley Cove, Georgetown, Williamson County, Texas*. HJN 040029.006. Horizon Environmental Services, Inc., Austin, Texas.

2006 *An Intensive Cultural Resources Survey of the Sun 6-Inch-Diameter Pipeline Reroute, Orange County, Texas* (with Abigail Peyton and Russell K. Brownlow). HJN 060213. Horizon Environmental Services, Inc., Austin, Texas.

2006 *Intensive Archeological Survey of 3.9 Acres of New Right-of-Way at the Intersection of FM 3405 and Ronald Reagan Boulevard, Williamson County, Texas*. HJN 060194. Horizon Environmental Services, Inc., Austin, Texas.

2006 *Interim Report: Phase Ia Cultural Resource Inventory Survey, Lake Columbia Water Supply Project, Cherokee and Smith Counties, Texas* (with Terri Myers, Charles D. Frederick, Reign Clark, Abigail Peyton, and A. Elizabeth Butman). HJN 050082. Horizon Environmental Services, Inc., Austin, Texas.

2006 *Intensive Cultural Resources Survey of Two Road Easements in Buescher State Park, Bastrop County, Texas* (with Reign Clark and Marie Archambeault). HJN 060178. Horizon Environmental Services, Inc., Austin, Texas.

2006 *Intensive Cultural Resource Survey of 58.2 Acres of Langham Creek for the Langham Creek Flood Bypass Project, Harris County, Texas* (with Abigail Peyton). HJN 060160. Horizon Environmental Services, Inc., Austin, Texas.

2006 *Cultural Resource Survey of 6,600 Feet of Langham Creek for the Langham Creek Flood Bypass Project, Harris County, Texas*. HJN 060001. Horizon Environmental Services, Inc., Austin, Texas.

2006 *Intensive Cultural Resources Survey of the La Nana Bayou Detention Ponds, Nacogdoches County, Texas* (with Marie J. Archambeault). HJN 060068. Horizon Environmental Services, Inc., Austin, Texas.

2006 *Cultural Resource Survey of the City of Jarrell Wastewater Treatment System, Williamson County, Texas*. HJN 050130. Horizon Environmental Services, Inc., Austin, Texas.

2005 *Cultural Resource Survey of the Farm-to-Market Road 2001 Extension Project, Buda, Hays County, Texas*. HJN 050140. Horizon Environmental Services, Inc., Austin, Texas.

2005 *Cultural Resource Survey of the 46-Acre Arbor Walk Property, Austin, Travis County, Texas*. HJN 040189. Horizon Environmental Services, Inc., Austin, Texas.

2005 *Cultural Resource Survey of Reunion Ranch, a 550-Acre Property in Hays County, Texas*. HJN 040065. Horizon Environmental Services, Inc., Austin, Texas.

2005 *An Intensive Cultural Resources Survey of the Proposed City of Orange Sewer and Water Lines, Orange County, Texas* (with Marie J. Archambeault). HJN 050205. Horizon Environmental Services, Inc., Austin, Texas.

2005 *Cultural Resource Constraints Analysis: Farm-to-Market Road 973 Route Study, Manor, Travis County, Texas*. HJN 040029.009. Horizon Environmental Services, Inc., Austin, Texas.

2005 *Cultural Resource Survey of 2.4 Miles of Kuykendahl Road, Harris County, Texas*. HJN 050039. Horizon Environmental Services, Inc., Austin, Texas.

2005 *Cultural Resource Survey of 26-Acre Dredge Disposal and 11-Acre Borrow Areas, Greens Bayou Sediment Remediation Project, Harris County, Texas*. HJN 050135. Horizon Environmental Services, Inc., Austin, Texas.

2005 *Cultural Resource Survey for the Woodlands Waterway West Relocation Project, The Woodlands, Montgomery County, Texas*. HJN 050171. Horizon Environmental Services, Inc., Austin, Texas.

2005 *An Intensive Cultural Resources Survey of the Proposed Lumberton 2.9-Mile Sewer Line, Hardin County, Texas* (with Rebecca Sick and Russell K. Brownlow). HJN 040111. Horizon Environmental Services, Inc., Austin, Texas.

2005 *Cultural Resource Survey of the Proposed Lumberton 2.7-Mile Sewer Line and Lift Station along US Highway 69, Hardin County, Texas* (with Marie J. Archambeault). HJN 040111. Horizon Environmental Services, Inc., Austin, Texas.

2005 *Cultural Resource Survey of the Nacogdoches Wastewater System Improvement Project, Nacogdoches, Texas* (with Marie J. Archambeault). HJN 050115. Horizon Environmental Services, Inc., Austin, Texas.

2005 *Cultural Resource Survey of the 65-Acre Gregg Manor Road Property, Manor, Travis County, Texas*. HJN 040137. Horizon Environmental Services, Inc., Austin, Texas.

2005 *Cultural Resource Survey for County Road 132 Realignment Project, Buda, Hays County, Texas*. HJN 050192. Horizon Environmental Services, Inc., Austin, Texas.

2005 *Cultural Resource Survey of Willow Marsh Bayou Relocation Project, Beaumont, Jefferson County, Texas*. HJN 050080. Horizon Environmental Services, Inc., Austin, Texas.

2005 *Cultural Resource Survey of the Dripping Springs Wastewater Treatment System, Dripping Springs, Hays County, Texas*. HJN 050073. Horizon Environmental Services, Inc., Austin, Texas.

2005 *Cultural Resource Survey of Overpass Road from Interstate 35 Northbound Frontage Road to Farm-to-Market Road 2001, Buda, Hays County, Texas*. HJN 050140. Horizon Environmental Services, Inc., Austin, Texas.

2005 *Cultural Resource Survey of the 148-Acre Comal County Landfill Expansion, Comal and Guadalupe Counties, Texas*. HJN 050078. Horizon Environmental Services, Inc., Austin, Texas.

2005 *Scope of Work: Cultural Resource Survey, Lake Columbia Water Supply Project, Cherokee and Smith Counties, Texas*. HJN 050082. Horizon Environmental Services, Inc., Austin, Texas.

2005 *An Intensive Cultural Resources Survey of US Army Corps of Engineers Jurisdictional Drainages within the Proposed 101-Acre Stone Oak Development Located on US 281 at Stone Oak Parkway, San Antonio, Bexar County, Texas* (with Reign Clark and Russell K. Brownlow). HJN 040133. Horizon Environmental Services, Inc., Austin, Texas.

2005 *An Intensive Cultural Resources Survey of Portions of the Brakes Bayou Flood Mitigation Project, Beaumont, Jefferson County, Texas* (with Russell K. Brownlow). HJN 050149. Horizon Environmental Services, Inc., Austin, Texas.

2005 *An Intensive Cultural Resources Survey of a Proposed 48-Acre Wastewater Treatment Plant Expansion Tract in Lumberton, Hardin County, Texas* (with Rebecca Sick and Russell K. Brownlow). (with Russell K. Brownlow). HJN 040111. Horizon Environmental Services, Inc., Austin, Texas.

2005 *Cultural Resource Survey for the Liberty Hill Regional Wastewater System Project, Williamson County, Texas* (with Marie J. Archambeault). TRC Technical Report No. 44169. TRC Environmental Corporation, Austin, Texas.

2004 *Phase I Cultural Resource Inventory Survey for the Chiles Dome Storage Expansion Project, Atoka, Coal, Latimer, and Pittsburg Counties, Oklahoma* (with Marie J. Archambeault). TRC Technical Report No. 43627. TRC Environmental Corporation, Austin, Texas.

2004 *Cultural Resource Survey of Five Proposed Detention Ponds at the Intersection of State Highway 6 and U.S. 90A, Fort Bend County, Texas*. TRC Technical Report No. 43224. TRC Environmental Corporation, Austin, Texas.

2004 *Cultural Resource Survey of U.S. 75 (Central Expressway Between Spur 399 and State Highway 121, Collin County, Texas*. TRC Technical Report No. 40968. TRC Environmental Corporation, Austin, Texas.

2004 *Cultural Resource Survey of 0.54 Linear Mile of FM 2234 at the SH 122 (Fort Bend Parkway Toll Road) Crossing, Fort Bend County, Texas*. TRC Technical Report No. 40948. TRC Environmental Corporation, Austin, Texas.

2004 *Impact Evaluations of Three TxDOT Bridge Expansion Projects in Collin and Denton Counties, Texas (TxDOT CSJs 0047-09-029; 2980-01-008; 0135-12-025)*. TRC Environmental Corporation, Austin, Texas.

2003 Cultural Resource Survey of 11 Arroyo Crossings for the Laredo Energy Pipeline Project, Zapata County, Texas. TRC Technical Report No. 40959. TRC Environmental Corporation, Austin, Texas.

2003 Cultural Resource Survey of 0.75 Linear Mile of Undeveloped Rangeland for the City of Elgin Water System Project, Bastrop County, Texas. TRC Technical Report No. 40294. TRC Environmental Corporation, Austin, Texas.

2003 Cultural Resource Survey of Two Miles of U.S. Highway 87 at West Rita Blanca Creek on the Rita Blanca National Grasslands, Cibola National Forest, Dallam County, Texas. TRC Technical Report No. 39218. TRC Environmental Corporation, Austin, Texas.

2003 Data Recovery Investigations at the Varga Site (41ED28), Edwards County, Texas: Final Research Design. Research design prepared for the Texas Department of Transportation, Environmental Affairs Division, Archeological Studies Program. TRC Environmental Corporation, Austin, Texas.

2003 Cultural Resource Feasibility Study for the Layne, Texas, Water Transmission Pipeline, Austin to Dallas-Fort Worth, Texas. Feasibility study prepared for Hunter Research, Inc. TRC Environmental Corporation, Austin, Texas.

2002 *Final Data Recovery Phase at the Varga Site (41ED28), Edwards County, Texas: Interim Report* (with J. Michael Quigg and Grant D. Smith). Interim report prepared for the Texas Department of Transportation, Environmental Affairs Division, Archeological Studies Program. TRC Environmental Corporation, Austin, Texas.

2002 *Testing of the Noodle Creek Site (41JS102), Jones County, Texas* (with J. Michael Quigg, Grant D. Smith, and Audrey L. Scott). Texas Department of Transportation, Environmental

Affairs Division, Archeological Studies Program, Report No. 48, and TRC Technical Report No. 35398. TRC Environmental Corporation, Austin, Texas.

2000 *Cultural Resources Survey of a Proposed 520.6-Acre Drop Zone Site for Dyess Air Force Base, Runnels County, Texas*. Miscellaneous Reports of Investigations, No. 199. Geo-Marine, Inc., Plano, Texas.

1999 *Cultural Resources Survey of Four DEC Streambank Stabilization Sites in the Black Creek and Batupan Bogue Watersheds in Holmes, Montgomery, and Grenada Counties, Mississippi* (with Doug C. McKay). Geo-Marine, Inc., Plano, Texas.

1999 *Cultural Resources Evaluation and Geoarcheological Investigations of a 6.39-Acre Tract at Stemmons Crossroads, Dallas, Texas*. Miscellaneous Reports of Investigations, No. 191. Geo-Marine, Inc., Plano, Texas.

1999 *Archeological Test Excavations at Five Prehistoric Sites at the Proposed Malden Lake Park Expansion, Wright Patman Lake, Bowie County, Texas* (with Steven M. Hunt). Miscellaneous Reports of Investigations No 189. Geo-Marine, Inc., Plano, Texas.

1999 *Cultural Resources Evaluation and Geoarcheological Investigation of a 12-Acre Tract, Stemmons Crossing, Dallas, Texas*. Miscellaneous Reports of Investigations, No. 183. Geo-Marine, Inc., Plano, Texas.

1999 *Preliminary Cultural Resources Assessment of a 100-Acre Tract in Southwestern Logan County, Oklahoma*. Miscellaneous Reports of Investigations, No. 182. Geo-Marine, Inc., Plano, Texas.

1999 *City of Irving, Lake Chapman Water Supply Project, Cultural Resources Survey and Geoarcheological Investigation of the Proposed Lake Chapman Water Supply Project Phase II Pipeline, Collin and Denton Counties, Texas* (with Brandy Gibson). Miscellaneous Reports of Investigations, No. 181. Geo-Marine, Inc., Plano, Texas.

1999 *Cultural Resources Survey of 398.2 Acres of Proposed Thin-Layer Disposal Areas and Water-Control Structure Locations of the Upper Yazoo Projects, Item 4, LeFlore County, Mississippi*. Miscellaneous Reports of Investigations, No. 174. Geo-Marine, Inc., Plano, Texas.

1998 *Relocation and Reinvestigation of 45 Archeological Sites at Wister Lake, LeFlore County, Oklahoma* (with Floyd B. Largent, Jr., and Margaret J. Guccione). Miscellaneous Reports of Investigations, No. 168. Geo-Marine, Inc., Plano, Texas.

1998 *Cultural Resources Survey of LA 1 Between LA 169 and LA 538, Oil City, Caddo Parish, Louisiana* (with Marsha Prior). Miscellaneous Reports of Investigations, No. 167. Geo-Marine, Inc., Plano, Texas.

1998 *Cultural Resources Survey of 23 Acres North of Del Rio, Val Verde County, Texas*. Miscellaneous Reports of Investigations, No. 165. Geo-Marine, Inc., Plano, Texas.

1998 *Cultural Resources Survey of 10 Acres Northeast of Laredo, Webb County, Texas*. Miscellaneous Reports of Investigations, No. 164. Geo-Marine, Inc., Plano, Texas.

1998 *Cultural Resources Survey for a Joint Task Force Six (JTF-6) Action in Webb, Maverick, and Dimmit Counties, Texas* (with Johnna L. Buysee and Steve Gaither). Miscellaneous Reports of Investigations, No. 158. Geo-Marine, Inc., Plano, Texas.

1998 *Preliminary Results of Relocation and Reinvestigation of 45 Archeological Sites at Wister Lake, LeFlore County, Oklahoma*. Letter Reports, No. 30, submitted to U.S. Army Corps of Engineers, Tulsa District. Geo-Marine, Inc., Plano, Texas.

1998 *Archeological Monitoring of a Joint Task Force Six (JTF-6) Action in Webb and Maverick Counties, Texas*. Letter Reports, No. 29, submitted to U.S. Army Corps of Engineers, Fort Worth District, and Joint Task Force Six. Geo-Marine, Inc., Plano, Texas.

1998 *Potential Hazardous Waste Materials Sites on LA 1 Between LA 169 and LA 538, Oil City, Caddo Parish, Louisiana*. Letter report submitted to Louisiana Department of Transportation and Development. Geo-Marine, Inc., Plano, Texas.

1998 *Management Summary: Phase I Survey of 398.2 Acres of Proposed Thin-Layer Disposal Areas and Flood Control Structure Locations, LeFlore County, Mississippi*. Letter report submitted to U.S. Army Corps of Engineers, Vicksburg District. Geo-Marine, Inc., Plano, Texas.

1995 *A Cultural Resources Survey of 136 Acres (Parcel H) of the Desert Mountain Properties, North Scottsdale, Maricopa County, Arizona*. Soil Systems Technical Report No. 95-24. Soil Systems, Inc., Phoenix, Arizona.

1995 *An Archaeological Assessment of AZ U:5:155 (ASM), a Hohokam Settlement on the DC Ranch Property, North Scottsdale, Maricopa County, Arizona*. Soil Systems Technical Report No. 95-23. Soil Systems, Inc., Phoenix, Arizona.

1995 *A Cultural Resources Survey of Hayden Road Between McKellips Road and the Red Mountain Freeway, Tempe, Maricopa County, Arizona*. Soil Systems Technical Report No. 95-22. Soil Systems, Inc., Phoenix, Arizona.

1995 *Archaeological Test Excavations at AZ U:5:149 (ASM), AZ U:5:150 (ASM), AZ U:5:151 (ASM), and AZ U:5:152 (ASM) on the DC Ranch Property, North Scottsdale, Maricopa County, Arizona*. Soil Systems Technical Report No. 95-21. Soil Systems, Inc., Phoenix, Arizona.

1995 *A Cultural Resources Survey of 14 Acres of Private Land Southeast of Pinnacle Peak and Pima Roads, North Scottsdale, Maricopa County, Arizona*. Soil Systems Technical Report No. 95-20. Soil Systems, Inc., Phoenix, Arizona.

1995 *Archaeological Monitoring of Two Segments of the Santa Fe Pipeline in Pima County, Arizona, and Luna County, New Mexico*. Soil Systems Technical Report No. 95-19. Soil Systems, Inc., Phoenix, Arizona.

1995 *A Cultural Resources Survey of 41 Acres of Private Land Near McKellips Road and Stapley Drive, North Mesa, Maricopa County, Arizona*. Soil Systems Technical Report No. 95-18. Soil Systems, Inc., Phoenix, Arizona.

1995 *A Cultural Resources Survey of 1.4 Miles of State Highway 69, New River and Lake Pleasant Roads, New River, Maricopa County, Arizona*. Soil Systems Technical Report No. 95-15. Soil Systems, Inc., Phoenix, Arizona.

1995 *A Cultural Resources Survey of 1.3 Miles of Forest Road 751 Near Blue Ridge Reservoir, Coconino National Forest, Coconino County, Arizona*. Soil Systems Technical Report No. 95-13. Soil Systems, Inc., Phoenix, Arizona.

1995 *A Cultural Resources Survey of Sections 29 and 31 of the DC Ranch Property, North Scottsdale, Maricopa County, Arizona*. Soil Systems Technical Report No. 95-12. Soil Systems, Inc., Phoenix, Arizona.

1995 *A Cultural Resources Survey of 59th Avenue Between Southern Avenue and Dobbins Road, Phoenix, Maricopa County, Arizona*. Soil Systems Technical Report No. 95-06. Soil Systems, Inc., Phoenix, Arizona.

1995 *A Cultural Resources Survey of Germann Road Between Arizona Avenue and Cooper Road, Chandler, Maricopa County, Arizona*. Soil Systems Technical Report No. 95-05. Soil Systems, Inc., Phoenix, Arizona.

1995 *A Cultural Resources Survey of Bush Highway and Usery Pass Road, Tonto National Forest, Maricopa County, Arizona* (with Caroline P. Davies). Soil Systems Technical Report No. 95-02. Soil Systems, Inc., Phoenix, Arizona.

1994 *A Cultural Resources Survey of 1.4 Miles of Old U.S. Highway 80 in Arlington, Maricopa County, Arizona*. Soil Systems Technical Report No. 94-47. Soil Systems, Inc., Phoenix, Arizona.

1994 *A Cultural Resources Survey of 91st Avenue Between Interstate Highway 10 and Buckeye Road, Tolleson, Maricopa County, Arizona*. Soil Systems Technical Report No. 94-46. Soil Systems, Inc., Phoenix, Arizona.

1994 *A Cultural Resources Survey of Miller Road at the Roosevelt Canal, Valencia, Maricopa County, Arizona*. Soil Systems Technical Report No. 94-45. Soil Systems, Inc., Phoenix, Arizona.

1994 *A Cultural Resources Survey of 5.9 Miles of Residential Streets in Queen Creek, Maricopa County, Arizona*. Soil Systems Technical Report No. 94-44. Soil Systems, Inc., Phoenix, Arizona.

1994 *A Cultural Resources Survey of Germann Road Between Gilbert and Lindsay Roads, Chandler, Maricopa County, Arizona*. Soil Systems Technical Report No. 94-43. Soil Systems, Inc., Phoenix, Arizona.

1994 *A Cultural Resources Survey of Ellsworth Road Between Warner and Guadalupe Roads, Gilbert, Maricopa County, Arizona* (with Caroline P. Davies). Soil Systems Technical Report No. 94-42. Soil Systems, Inc., Phoenix, Arizona.

1994 *A Cultural Resources Survey of Lindsay Road Between Germann and Williams Field Roads, Chandler, Maricopa County, Arizona* (with Caroline P. Davies). Soil Systems Technical Report No. 94-41. Soil Systems, Inc., Phoenix, Arizona.

ACADEMIC PUBLICATIONS

n.d. "Dimensions of Variability at Baehr-Gust: Framing Hypotheses of Site Structure, Chronology, and Function." In *Papers in Memory of Howard Dalton Winters*, edited by Anne-Marie Cantwell and Lawrence A. Conrad. Center for American Archeology, Kampsville, Illinois (in press).

1995 *Activity Organization and Site Function at a Late Middle Woodland Regional Center in the Lower Illinois Valley: Preliminary Investigations of Variability in Surface Scatters at the Baehr-Gust Site*. M.A. Thesis, Department of Anthropology, New York University

PAPERS PRESENTED AND PUBLIC LECTURES GIVEN AT PROFESSIONAL CONFERENCES

2003 "The Toyah of Southwestern Texas: The View from the Varga Site (41ED28)." Paper presented at the 74th Annual Meeting of the Texas Archeological Society, Fort Worth, Texas, October 24-26, 2003.

1997 "Alternate Hypotheses of Intrasite Chronology at the Baehr-Gust Site: A Factor Analysis of Surface Collections." Paper presented at the 62nd Annual Meeting of the Society for American Archaeology, Nashville, Tennessee, April 2-6, 1997.

1993 "Excavations at the Trinity Church Cemetery Site, Newark, New Jersey." Lecture presented at the 8th Annual Meeting of the Archaeological Society of New Jersey. September 1993.

APPENDIX C

PHOTOGRAPHIC LOG

WHITENTON group environmental consultants

PHOTOGRAPHIC LOG 1

Victoria Power Station Expansion Project 07/25/2012 Victoria County, Texas View: Southwest aerial view of the Project Area.	
Victoria Power Station Expansion Project 07/25/2012 Victoria County, Texas View: Northwest view of the Project Area. Cooling tower in view will be demolished.	
Victoria Power Station Expansion Project 07/25/2012 Victoria County, Texas View: North view of the proposed location of the new gas turbine and heat recovery steam generator within the Project Area.	

Whitenton Group, Inc.
ENVIRONMENTAL CONSULTANTS

Victoria Power Station Expansion Project

07/25/2012

Victoria County, Texas

View: North view of the proposed location of the new gas turbine and heat recovery steam generator within the Project Area.

Victoria Power Station Expansion Project

07/25/2012

Victoria County, Texas

View: Northeast view of the east end of the proposed location of the new gas turbine and heat recovery steam generator and a proposed laydown area.

Victoria Power Station Expansion Project

07/25/2012

Victoria County, Texas

View: Northeast view of the east end of the proposed location of the new gas turbine and heat recovery steam generator and a proposed laydown area.

Victoria Power Station Expansion Project

07/25/2012

Victoria County, Texas

View: South view of a proposed laydown area.

Victoria Power Station Expansion Project

07/25/2012

Victoria County, Texas

View: West view of a proposed laydown area.