

DRAFT

ENVIRONMENTAL ASSESSMENT

**PROPOSED SPORTING CLAYS COURSE
CORPUS CHRISTI PISTOL AND RIFLE CLUB
2832 FARM TO MARKET 763
CORPUS CHRISTI, NUECES COUNTY, TEXAS 78415**

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**Submitted To:
TEXAS PARKS AND WILDLIFE DEPARTMENT**

AND

U.S. FISH AND WILDLIFE SERVICE

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PROJECT NO. 1651.001



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1.0 INTRODUCTION

This environmental assessment (EA) has been prepared to assess the potential effects of the proposed sporting clays course at the Corpus Christi Pistol and Rifle Club (CCPRC). The Texas Parks and Wildlife Department (TPWD) is seeking the U.S. Fish and Wildlife Service's (USFWS) approval (through Federal Assistance grant) for this proposed project. CCPRC, in partnership with TPWD, is planning to expand its existing gun range facility with a sporting clays course to increase shooting and training opportunities, as well as promote hunting and hunter safety practices. The CCPRC is located at 2832 Farm to Market (F.M) 763, Corpus Christi, Nueces County, Texas (**Figure 1**). CCPRC proposes to construct a sporting clay course on approximately 43.3 acres located in cropland adjacent to the north of the existing CCPRC facility along with improved parking lots at an overflow parking area west of the existing clubhouse covering 0.64 acre and an overflow parking area east of the clubhouse covering 0.45 acre. The portion of the cropland and two parking areas considered for this EA are collectively the proposed action area and the 2,000-foot buffer area around the proposed action area is referenced as the study area.

This EA has been prepared to be consistent with National Environmental Policy Act (NEPA) requirements for environmental review. NEPA requirements are relevant since TPWD is seeking a grant under USFWS's Wildlife and Sport Fish Restoration (WSFR) Program. The USFWS administers the WSFR Program and will use this Draft EA to determine if the Proposed Action is likely to result in significant impacts to the human and natural environment. If it is determined that there are no significant adverse impacts, the USFWS will issue a Finding of No Significant Impact (FONSI). If it is determined that significant impacts may occur, the USFWS will be required to prepare an Environmental Impact Statement (EIS).

1.1 Description of Proposed Action

The Proposed Action is to construct a professionally designed sporting clays course capable of hosting shooting opportunities open to the public. The goal is to complete and open the course to the public within a short period after the grant approval. Construction is estimated to take 9 to 12 weeks to complete. The initial course design will be for 12 active stations on a 15 station course. It will have room to relocate the existing 5 stand field (existing equipment used for the sport of 5 stand at the trap/skeet field) to the sporting clays section of the club at a future date. The course will consist of shooting stations that are landscaped with berms, herbs, grasses, shrubs, and trees. A basic draft plan for the course is attached in **Appendix B**; however, additional detail including landscaping details will be added with the assistance of a professional course designer. An access road will provide access by foot traffic and golf cart to each shooting station. The project will be built with typical earth moving equipment such as bull dozer, scraper, excavator, front-end loader, and dump trucks utilizing normal construction best management practices (BMPs). The proposed project also will include an upgrade of two grass-covered overflow parking areas to improved parking lots.

1.2 Project Need

The new shotgun sporting course is an enhancement to the existing CCPRC range which is already serving the public. Texas Parks and Wildlife Department has a long-term relationship with CCPRC, having been the beneficiaries of prior grant funding from the Wildlife Restoration Program. This project will enhance CCPRC's ability to provide added experiences for new hunters with live fire at a wider variety of moving targets, to enhance hunter education and safe gun handling in simulated hunting situations. No public sporting clays course currently exists in proximity to Corpus Christi. The nearest public sporting clays courses are located on the northwest side of San Antonio, in Mission, and outside Laredo. The nearest location is slightly over a 2-hour drive from Corpus Christi. Sporting clays is the

only major shotgun shooting sport not currently offered at CCPRC. The public would benefit from access to areas and experiences to practice simulated real-world hunting situations that further hunter education and safety.

1.3 Project Purpose

The purpose of the project is to enhance hunter education and safe gun handling in simulated hunting situations by providing experiences for new hunters with live fire at a wide variety of moving targets simulating game bird and rabbit hunting. The Proposed Action will support enhancement of hunter education by providing public access to the fastest growing segment of shotgun shooting sports not currently served in the Corpus Christi area. CCPRC will operate and maintain the shooting facilities to provide hunter education instruction, train the public in the safe and responsible use of firearms, and provide a safe live fire experience. CCPRC supports hunter education by allowing other qualified instructors to provide hunter education training for shotgun, pistol and rifle education within the context of hunter education.

1.4 Project Funding

Financial assistance for this project would be provided by funding through a grant under USFWS WSFR Program that would be administered by the TPWD. The WSFR program provides grant funds to the states and insular areas fish and wildlife agencies for projects to restore, conserve, manage and enhance wild birds and mammals and their habitat. Projects also include providing public use and access to wildlife resources, hunter education, and development and management of shooting ranges. The program is authorized by the Wildlife Restoration Act (Pittman-Roberson Act) of 1937.

2.0 ALTERNATIVES ANALYSIS

The proposed action involves the expansion of an existing facility; therefore, two alternatives were considered which include a Preferred Alternative and a No Build Alternative. Because the proposed action involves the expansion of an existing facility, off-site alternatives were not considered.

2.1 Alternative 1 – Preferred Alternative

The preferred alternative would address the need and purpose of the project. The Preferred Alternative would include the expansion of the CCPRC which would include:

1. A sporting clays course with 12 active stations on a 15 station course.
2. The ability to accommodate the relocation of CCPRC's existing 5 stand field to the sporting clays course at a future date.
3. Construction of parking areas to support the sporting clays course.
4. The course will consist of shooting stations that are landscaped with berms, herbs, grasses, shrubs, and trees. A lead management plan will be in place as presented in **Appendix C**.
5. An unpaved access road will be constructed near the perimeter of the Site to allow access to the shooting stations by golf cart and access by pickup truck for maintenance activities.
6. The sporting clays course will be graded to divert area stormwater runoff around the facility to the extent practicable. A storm water detention basin will be constructed in the southeast corner of the sporting clays course to retain storm water runoff from the facility from routine discharge to a tributary of Oso Creek. The basin will not be fenced, but instead will have a gradual slope for safety purposes.

The proposed construction areas would occupy a footprint of approximately 43.3 acres within an area currently utilized as cropland and 1.09 acres of the existing CCPRC used for overflow parking.

2.2 Alternative 2 – No Action/No Build Alternative

A No Action or No Build Alternative would result in no action being taken. However, this alternative would not address the need and purpose of the project. Under the No Build Alternative, the area would continue to be utilized as a cropped field and overflow parking in a manner similar to existing land use. The existing CCPRC would continue to operate under the current business plan. Consequently, the CCPRC would not be able to meet the needs of expanding user groups under the No Build Alternative.

2.3 Alternatives Considered but Eliminated from Further Discussion

During the planning process, CCPRC has voluntarily changed plans to reduce the footprint and buffer the proposed action from neighboring properties while maintaining a safe and attractive course design. CCPRC minimized the footprint of the project on the cropland by moving planned parking areas from the cropland to lawn areas of the existing CCPRC facility, which are already routinely used for overflow parking. This change in layout had the potential to lessen environmental impacts to the cropland by reducing the project footprint while still meeting the project need.

During early meetings with the course designer, Mr. Heyward Cunningham of Promatic, Inc., the course was scaled back to leave buffers between it and the neighboring properties. CCPRC adopted other design considerations to dampen sound from the proposed action including plans to construct stations on the north end of the course so that they are oriented to shoot facing south; reducing the noise levels projected to the north. Shooting stations on the east and west sides toward the north end of the courses similarly

will have appropriate orientation to reduce noise projection as well as use of fencing and/or berms (engineering controls) for sound dampening. Also trees and shrubs will be utilized in a manor to assist in sound dampening. Operationally, CCPRC plans to allow shooting only after 9:00 am and will close the course 30 minutes prior to sunset, and possibly sooner during daylight savings months, to limit noise in morning and night time.

3.0 AFFECTED ENVIRONMENT

3.1 Physical Environment

The CCPRC is located in Nueces County in south Texas. It is approximately 10 miles southwest of downtown Corpus Christi. The gun range is east of F.M. 763 and south of Old Brownsville Road (F.M. 665). Representative site photographs can be found within the Biological Assessment, under separate cover.

The study area is mapped within the Atlantic and Gulf Coast Lowland Forest and Crop Region Land Resource Region and more specifically within the Gulf Coast Prairies Major Land Resource Area (NRCS, 2006). The area is characterized by nearly level plains that have low local relief and are dissected by rivers and streams that flow toward the Gulf of Mexico.

The proposed action area is located within a 114-acre property owned by CCPRC that is currently used as cropland and a portion of the existing facility used for overflow parking (**Figure 3**). According to the CCPRC manager, Mr. Craig Cook, recent crops grown at the proposed action area include grain sorghum and cotton. The CCPRC also hosts special shooting events at the cropland where a temporary sporting clays course is set up for the events. The area within 2,000 feet north of the project site contains cropland interspersed with six single-family residences. The nearest residence is approximately 1,100 feet north of the Proposed action area.

The area to the east is also utilized as cropland. There is an approximately 50-foot buffer of cropland between the proposed course and east-adjointing property. The east-adjointing property is the site of a construction and demolition material landfill operated by Gully-Hurst, LLC, which does not accept food wastes (Gully-Hurst 2016). The area adjacent to the west is cropland owned by CCPRC. Across F.M. 763 is additional cropland and a segment of airport runway associated with the Cuddihy Airfield (no longer operational), which was part of the Naval Air Station. The existing gun range facility occupied by CCPRC is located south of the proposed action area. Farther south is a perennial stream identified as Oso Creek. There are forested and grassed areas along the creek in a narrow riparian zone. The area south of the Oso Creek riparian zone is used as cropland

3.1.1 Climate

The climate is mostly temperate to hot and humid. The precipitation is fairly evenly distributed throughout the year, but it is slightly higher in spring and late summer into fall. Rainfall typically occurs as moderate intensity, tropical storms (NRCS, 1996). The average annual temperature is 72 degrees Fahrenheit (F) with the lowest average daily minimum of 46 degrees F in January and highest daily maximum of 93 degrees F in July and August (AgACIS, 2016). The freeze-free period averages 323 days and the average annual rainfall is around 32 inches (AgACIS, 2016).

3.1.2 Geology and Soils

The proposed action area is located mostly within the Beaumont Formation, areas predominantly clay (USGS, 2005). The formation is characterized as clay with silt intermixed and interbedded. It contains beds and lenses of fine sand. The formation includes plastic and compressible clay and mud bed in flood basins, coastal lakes, and former stream channels on a deltaic plain. The northeast corner of the proposed action area is mapped as Beaumont Formation, areas predominantly sand. The latter formation is characterized as fine quartz sand, silt, and minor fine gravel, intermixed and interbedded. It includes stream channel, point-bar, crevasse-splay, and natural levee ridge deposits, and clayey fill in abandoned channels.

Details of the soil units mapped at the proposed action area were obtained from the Soil Series Descriptions (USDA, 2016) and the Web Soil Survey (USDA Soil Survey, 2016). The predominant soil map unit at the proposed action area is Victoria clay, 0 to 1 percent slopes. The Victoria series consists of very deep, well drained, very slowly permeable soils that formed in clayey deltaic and marine sediments in the Beaumont Formation of Late Pleistocene age. These nearly level to very gently sloping soils are on the South Texas coastal plain.

According to the Official Soil Series Descriptions (USDA, 2016), most areas mapped with Victoria series soils are used for crop production with some areas used for livestock grazing and forage production. Crops are mainly grain sorghum, cotton, and corn with some small areas in vegetables. Native grasses are mainly little bluestem, seacoast bluestem, four flower trichloris, vine-mesquite, and indiangrass. Improved pasture is mainly coastal bermudagrass or Kleingrass. Native woody plants are invaders and consist mainly of mesquite trees, spiny hackberry, huisache, brazil, and lotebush. The ecological classification of the area is Blackland prairie.

Other soil units mapped at the proposed action area include Raymondville complex, 1 to 3 percent slopes, and gullied land. The Raymondville series consists of deep, moderately well drained, slowly permeable soils that formed in calcareous moderately fine and fine textured sediments. These soils are on nearly level to gently sloping uplands. According to Official Soil Series Descriptions (USDA, 2016), Raymondville series are generally used for dry and irrigated cropland and for range. Crops are mostly cotton, grain sorghums, and winter vegetables. Rangeland has a thick overstory of mesquite, retama, huisache, and other thorny shrubs, and a ground cover of mesquitgrass, buffalograss, and threeawn grass.

Gullied land is a description used for areas where gullies have removed diagnostic soil horizons and the soil generally needs to be re-worked before utilized for agriculture or development. Gullied land is mapped broadly in connection with the stream east of the proposed action area and extends into the northeast corner. The northeast corner of the proposed action area was not found to be gullied during the site reconnaissance, and off-site areas further east were recently graded as part of a landfill development. Gullied land is mapped in the riparian area along Oso Creek south of the proposed action area.

3.1.3 Prime and Unique Farmland Soils

The primary soil map units at the project location are Victoria clay, 0 to 1 percent slopes, and Ramondville complex, 1 to 3 percent slopes (USDA 2016). Each of these soil map units are classified as prime farmland soils. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. No unique farmland was identified at the proposed action area.

3.1.4 Surface Water

No surface water features are present within the proposed action area. A slight swale is visible in the northeast corner of the proposed action area that dissipates to a broad, gently sloped area in the southeast corner of the cropland. The resulting moisture gradient is visible by contrast in the soil colors but there were no historical or physical indications of persistent surface water associated with the swale, which appears to facilitate diffuse water runoff. Storm water runoff from the proposed project area follows the gentle surface slope southeast toward a ditch that discharges to a first order intermittent tributary to Oso Creek.

3.1.5 Groundwater

The Gulf Coast Aquifer is a major aquifer mapped in the vicinity of the study area. The aquifer is composed of discontinuous sand, silt, clay and gravel beds. The maximum total sand thickness of the

Gulf Coast Aquifer ranges from 700 feet to 1,300 feet. Freshwater saturated thickness averages about 1,000 feet (TWDB, 2011).

3.1.6 Topography

The U.S. Geological Survey (USGS) Oso Creek NW and Petronila NE 7.5-minute topographic quadrangle maps indicate that the proposed project area has a low, round hill covering a large area in the northwest corner of the proposed action area with elevation approximately 30 feet National Geodetic Vertical Datum (NGVD). The remainder of the proposed action area has a gentle slope downward to the south. The topographic maps indicate the presence of a first order intermittent stream located east of the proposed action area on property that is currently operating as a construction and demolition material landfill (Gulley-Hurst, 2016).

3.1.7 Floodplains

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) with coverage of the study area and surrounding lands (4854940505D) (**Biological Assessment**), Oso Creek is associated with Zone A, 100-year floodplain, which is mapped south of the proposed action area. Zone B is mapped east of the proposed action area and stops abruptly at the east CCPRC property boundary, apparently due the end of the floodplain study at that boundary that identified Zone B to the east. Zone B is identified by FEMA as an area of moderate flood hazard laying between the 100-year and 500-year boundary. Zone B also can be used to identify areas where flood risk is moderate due to risk of flood being less than 1-foot deep or flood risk from a drainage area less than 1 square mile.

3.2 Biological Environment

This area was originally a natural grass prairie with hardwood trees along the rivers and streams (NRCS, 2006). Little bluestem, Indiangrass, switchgrass, and big bluestem are the dominant species. A few groves of live oak dot the landscape.

The project location is primarily cropland that has been used for cotton and grain sorghum. The parking lot areas at the existing gun range facility are maintained as lawn and used for overflow parking. The setting matches the mapped use in *Vegetation Types of Texas* by Craig A. McMahon et al. (TPWD, 1984), in which the study area is located in an area identified as “crops” where there is a long history of a large area being cultivated for crops and at times fallow as part of a rotation. The Ecological Classification of the study area includes Blackland prairie across most of the study area.

3.2.1 Vegetation

The proposed action area has two predominant vegetation communities: the cropland where the sporting clays course is proposed and bermudagrass lawn where the parking lots are proposed. The cropped area was recently cultivated and not vegetated except for a few sparse weed seedlings. There was a swale and ditch outside the proposed action area along the east side of the cropland adjacent to the landfill with some sparse vegetation described below. The lawn area at the existing gun club is dominated by bermudagrass (*Cynodon dactylon*) and King Ranch bluestem (*Bothriochloa ischaemum*).

The habitats within the 2,000-foot buffer include additional cropland, a pond located within a recently-graded landfill property east of the proposed action area, lawn associated with the existing gun range to the south, and the riparian area along Oso Creek farther south.

The dominant plant species associated with an off-site small swale on the east side of the cropland include the following:

- Bermudagrass

- King Ranch Bluestem
- Johnsongrass (*Sorghum halepense*)
- Jungle rice (*Echinochloa colona*.)

The riparian area adjacent to Oso Creek had open grassy areas and groups of trees. Dominant species identified in the riparian area included the following:

- Honey mesquite (*Prosopis glandulosa*)
- Switchgrass (*Panicum virgatum*)
- Huisache (*Acacia farnesiana*)
- Acacia (*Acacia sp.*)
- Chinaberry tree (*Melia azedarach*)

3.2.2 *Threatened and Endangered Species*

A threatened and endangered species habitat survey was conducted to assess the existing conditions in the proposed project area and greater study area relative to such species. A current list of the state- and federally-listed threatened and endangered species known or suspected to occur in Nueces County and their preferred habitat was obtained from the TPWD and USFWS databases and included with the Biological Assessment. The Texas Natural Diversity Database (TXNDD) lists no species occurrences within or nearby the proposed project area. No estimated or designated critical habitat (50 Code of Federal Regulations (CFR) Parts 17 and 226) exists at the project location. No threatened or endangered species, or species of concern were observed during a field survey conducted by W&M November 16, 2016.

Several of the listed species for Nueces County are marine animals and/or affiliated with shoreline and barrier island habitats of the Gulf Coast. Those habitats are well removed from the study area and relatively simple to eliminate the potential for effect from the proposed action.

The federally-listed species include Eskimo curlew (*Numenius borealis*) and whooping crane (*Grus Americana*). Eskimo curlew may be extinct or survive in very low numbers (see Biological Assessment). The species historically migrated through the central plains where they fed on insects associated with native prairie. The history of cultivation at the proposed action area and maintenance of lawn in the existing gun range have effectively removed habitat to support Eskimo curlew and most others.

Whooping crane is a potential migrant that winters in coastal marshes of Aransas, Calhoun, and Refugio counties. They do stop over to rest and forage along the migration route. Their stopovers may include agricultural fields such as the one where the proposed activity is planned, although given the lack of wetlands at the proposed action area, the likelihood of their occurrence is very low.

Two federally-listed cats are listed in Nueces County as part of their historical range. The Gulf Coast jaguarundi (*Puma yagouaroundi cacomitli*) and ocelot (*Leopardus pardalis*) are similarly absent from the area, but have historical ranges that include Nueces County. They are associated with dense shrub and forest habitat that is not present in the vicinity of the study area. The riparian zone along Oso Creek in the southern extent of the study area has open prairie and wooded patches that could provide habitat or passage for wildlife, but it is not connected to suitable habitat for these endangered cats.

3.2.3 *Other Wildlife Species*

Wildlife species that are adapted to cropland at the edge of urban areas are likely to be present on the subject property. During the field survey Lilian's meadowlark (*Sturnella magna*), mourning dove (*Zenaida macroura*), great-tailed grackle (*Quiscalus mexicanus*), turkey vulture (*Cathartes aura*), double-crested cormorant (*Phalacrocorax auritus*), and red imported fire ants (*Solenopsis invicta*) were observed on or near the proposed action area. Typical wildlife species expected to occur within the riparian zone

along Oso Creek in the southern extent of the study area include whitetailed deer, raccoon, opossum, rabbit, fox, coyote, squirrel, nine-banded armadillo, nutria, quail, and mourning dove. Migratory waterfowl, such as ducks and geese, and neotropical migratory birds winter in the area and may utilize ponds not located at the proposed action area but within the study area.

3.2.4 Wetlands and other Waters of the United States

Jurisdictional wetlands, which are those that are regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act, must exhibit three characteristics: wetland hydrology, wetland-associated plants, and hydric soils (USACE, 1987). A wetland determination, in accordance with the USACE guidelines, was conducted in connection with the proposed action area site visit on November 16, 2016, along with observations for other waters of the U.S. and is documented in the Biological Assessment. Although a swale is visible in several aerial photographs crossing the northeast corner of the proposed action area, there were no wetlands or other waters of the U.S. identified in association with the swale. Similarly, there were no wetlands or waters of the U.S. identified in other areas of the proposed action area. There are wetlands outside of the proposed action area within the study area associated with Oso Creek to the south and an intermittent stream and associated ponds east of the proposed action area. The stream and ponds to the east have apparently been re-worked several times since 2002 in association with landfill development in that area.

3.3 Land Use

According to *Vegetation Types of Texas* by Craig A. McMahon et al. (TPWD, 1984), the study area is located in an area identified as “crops” where there is a long history of a large area being cultivated for crops and at times fallow as part of a rotation.

The 2,000-foot buffer north of the project site contains cropland to the north interspersed with six single-family residences. The nearest residence is approximately 1,100 feet north of the proposed action area. The area to the east is utilized as cropland. There is an approximately 50-foot buffer of cropland between the proposed sporting clay course and east-adjoining property. The east-adjoining property is the site of a construction and demolition material landfill operated by Gully-Hurst, LLC, which does not accept food wastes (Gully-Hurst, 2016). The area adjacent to the west is cropland owned by CCPRC. Across F.M. 763 is additional cropland and a segment of airport runway associated with the Cuddihy Airfield, which is one of the auxiliary airfields of the Naval Air Station at Corpus Christi (TSHA, 2016) built during World War II and operated for several decades afterward. Based on review of aerial photographs, the airfield appears to be overgrown with vegetation and likely out of use, but several industrial buildings remain.

The existing gun range facility occupied by CCPRC is located south of the proposed action area. Farther south is a perennial stream identified as Oso Creek. There are forested and grassed areas along the creek in a narrow riparian zone. The area south of the Oso Creek riparian zone is used as cropland.

3.4 Cultural Resources

On November 28 and 29, 2016, Coastal Environments, Inc. conducted a cultural resources survey investigation for the proposed project area. The study revealed two sites that were determined to be ineligible for listing in the National Register of Historic Places. No further archeological investigations were recommended. The report was submitted to the Texas Historical Commission (THC) December 15, 2016. The Executive Director of the THC is the State Historic Preservation Officer (SHPO). The SHPO concurred with the cultural resource survey findings in their letter dated December 21, 2016 (**Appendix D**).

Based upon both pedestrian survey and shovel testing, no cultural resources were identified within the footprint of the expansion. The cultural resources report (Kimbell 2016) outlines the methods and findings of this investigation.

3.5 Hazardous Materials

Hazardous materials are defined as substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce. The term includes hazardous substances, hazardous wastes, marine pollutants, and elevated temperature materials (49 CFR §171.8).

The assessment of hazardous materials for this EA consisted of a review of a set of federal and state environmental databases, a site visit, a quality assurance/quality control review to confirm the information provided in the databases and to document any additional field observations. A regulatory database search was performed to obtain information concerning facilities that handle hazardous materials or regulated substances/materials. The databases are maintained by the State and/or Federal government regulatory agencies. The following list of databases were searched within 1 mile of the approximate center of the proposed action area using a third-party online service (NETR 2016):

- National Priorities List (NPL)
- Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) List
- CERCLIS No Further Remediation Action Planned (NFRAP)
- Resource Conservation and Recovery Act (RCRA) Corrective Action (CORRACTS) Facilities
- RCRA non-CORRACTS Transportation and Disposal (TSD) Facilities
- Federal Institutional Control / Engineering Control Registry
- Emergency Response Notification System (ERNS)
- U.S. Toxic Release Inventory
- U.S. RCRA Generators: Conditionally Exempt Small Quantity Generator (CESQG), Small Quantity Generator (SQG), and Large Quantity Generator (LQG)
- U.S. Assessment, Cleanup, and Redevelopment Exchange System (ACRES) (Brownfields)
- U.S. National Pollutant Discharge System (NPDES)
- U.S. Air Facility System (AIRS / AFS)
- Texas Commission on Environmental Quality (TCEQ) Leaking Petroleum Storage Tanks
- TX Drycleaners
- TX State Superfund Registry
- TX Brownfields
- TCEQ Voluntary Cleanup Program Sites
- TCEQ Innocent Owner Program
- TX Landfills

There was one listing in the NPDES database and three listings in the Texas Landfills database. The NPDES listing was associated with the Cuddihy Airfield wastewater treatment plant located nearly 1 mile west-northwest of the proposed action area. There were three database entries in the Texas Landfills database approximately 0.5 mile east-southeast of the proposed action area. Those listings appear to be related to the construction debris landfill east of the proposed action area operated by Gulley-Hurst.

A search of the TCEQ Central Registry for client name Gulley-Hurst yields three regulated entity numbers (RN104864608, RN105818066, and RN106185275). Those regulated entity numbers relate to a

Class IV (construction and demolition debris) landfill which has a new source air permit, municipal solid waste disposal permit, and stormwater permits.

Based on the records review for this EA as documented above, this assessment evaluated possible risks to the proposed action area from possible area sources of hazardous materials as discussed below.

The wastewater treatment plant at Cuddihy Airfield is located nearly 1 mile west of the proposed action area and topographically cross gradient with respect to the proposed action area. If airfield maintenance was conducted at the site, the wastewater treatment plant represents a possible pathway for associated hazardous materials to affect area groundwater. As an airfield, the facility would have stored and dispensed fuel over several decades. Given the distance of the facility from the proposed action area, high clay content of the area soils and underlying geologic formation, and topographic gradient toward Oso Creek south of the airfield, it is not likely that hazardous materials from Cuddihy Airfield would affect the proposed action area.

The landfill owned by Gulley-Hurst has an active cell approximately 1,800 feet northeast of the proposed action area visible in aerial photographs and during the proposed action area reconnaissance by W&M in November 2016. Areas owned by the landfill nearer to the proposed action area appear to have been excavated and graded, possibly as a borrow pit. Based on the aerial photograph review, the landfill appears to have been constructed sometime after 1995. The landfill is controlled, monitored, and inspected as evidenced in TCEQ Central Registry records. It is licensed as a Class IV landfill, which is restricted to receive construction and demolition wastes that are not likely to release contaminants to the ground or groundwater because the materials they receive do not degrade or degrade very slowly (ADEQ, 2016). Portions of the landfill property are topographically upgradient of the proposed action area, but much of the facility, including the active cell in the northeast corner of the landfill, is cross gradient and likely drains toward Oso Creek, which is south of the landfill and the proposed action area. Based on the limited materials reportedly received at the landfill, relatively recent history of the landfill, lack of releases reported in the government database search, and fact that it is permitted by the TCEQ, the landfill is not likely to impact the proposed action area with hazardous materials.

3.6 Air Quality

The Clean Air Act requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants that are common in outdoor air, considered harmful to public health and the environment, and that come from numerous and diverse sources. More stringent nonattainment area rules are established for those areas found to exceed the NAAQS. The proposed project area is in Nueces County, which currently has attainment status for all six parameters monitored (i.e., ozone, sulfur dioxide, etc.) (TCEQ, 2016).

3.7 Noise

Existing noise levels in the vicinity of the proposed project area are moderate. Notable sources include the outdoor gun range, traffic on F.M. 763, and heavy machinery at the east-adjacent landfill. Cuddihy Airfield was a historical source of noise within the study area. Corpus Christi International Airport is located approximately 3 miles north of the proposed action area and Cabaniss Field is a Naval Air Station airport located approximately 3 miles east of the proposed action area. The only potential noise-sensitive receptors within the study area are the six, single-family residential homes located over 1,100 feet north of the proposed action area.

3.8 Recreation

The proposed action area and surrounding property is privately owned and not in use or designated as a city, state, or federal recreational facility. Although not a city, state, or federal-designated recreational facility, the CCPRC provides recreational opportunities to the public in the form of firearm training, education, and practice.

3.9 Safety

The current CCPRC range design exceeds National Rifle Association (NRA) and National Shooting Sport Foundation (NSSF) Design Guide safety standards.

CCPRC has implemented rules and procedures for the safe use of their ranges and safe operation of weapons. CCPRC has range safety officers to supervise range activities and to ensure safe use of their ranges. Participants are required to sign an agreement stating acknowledgement of the safety rules and requiring that they understand and will abide by those safety rules and direction from range safety officers while at CCPRC.

A mandatory safety and orientation class is given to all new members that lasts about 1 ½ hrs before they can join. In this class, CCPRC covers the club rules and safety. As part of the class, CCPRC encourages their members to be proactive in the safety process by helping to watch for any unsafe actions by anyone using the range and calling the clubhouse upon observation of any unsafe act so that CCPRC can take any needed action to address same in a timely manner. Before each registered shoot or each corporate or fundraiser event, the manager gives a safety speech covering safety for the event to all participants. All members of the public that currently come to shoot trap, skeet or 5 stand are given a safety speech and ask to sign the aforementioned agreement.

All CCPRC employees are trained to monitor safety and rules issues that could arise at the club and each has a secondary job to act as a backup range safety officer. It is CCPRC's plan to monitor the sporting clays course actively during open hours with the use of the two electric golf carts that are used by staff to patrol the club property.

3.10 Local Economic Conditions

According to the Housing and Urban Development (HUD) Community and Planning Development (CPD) Maps, which uses updated U.S. Census data to visualize census data, the proposed project area does not contain minority or low-income individuals in or adjacent to the study area. The nearest minority population concentrations are a concentration of African-Americans in the Tiera Grande neighborhood approximately 5 miles west of the proposed action area and a concentration of persons of Hispanic origin north of Old Brownsville Road 1.25 mile north of the proposed action area. Areas with high concentration of poverty are centered near downtown Corpus Christi, approximately 7 miles northeast of the proposed action area, and near Robstown, approximately 10 miles northwest of proposed action area.

The current CCPRC facility contributes indirectly to the local economy because users, who travel in from the surrounding region, typically consume gas, food, and other amenities from surrounding businesses.

3.11 Environmental Justice

Executive Order 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" requires Federal agencies to identify and address disproportionate adverse

effects of proposed actions on minority populations and low-income communities. Based on information provided Section 3.9 (Local Economic Conditions) of this EA, there are no low-income communities near the proposed project area. As stated in Section 3.10, Census data does not indicate minority populations located directly at the project site or adjacent; however, there is a minority population located 1.25 miles north of the project site.

4.0 ENVIRONMENTAL CONSEQUENCES

In this section, the possible environmental consequences, both positive and negative, are assessed for each characteristic and alternative considered in this EA.

4.1 Physical Environment

4.1.1 Climate

Preferred Alternative and No Build Alternative – Neither alternative has the ability to measurably affect climate. However, the purpose of the proposed activity, to provide a local service when previously the nearest opportunity was over 2 hours away, will shorten travel times of area residents to access a sporting clays course, therefore reducing the hours of automobile operating time and associated greenhouse gas emissions.

4.1.2 Geology and Soils

Preferred Alternative – There would be soil disturbance due to construction of the proposed sporting clays course, access road, parking areas, and support structures. The sporting clays course is gently sloped cropped land and the parking area is leveled land used for lawn and parking overflow parking. The deepest excavations planned for the course is the detention pond planned for the southeast corner of the proposed action area. Construction design for the pond have not been completed; however, typical detention pond depths range from 5 to 15 feet. There would be no impacts anticipated to the geology from construction of the proposed action. The sandy clay and loam soils have relatively low erosion hazard due to the low slope and low soil erosion K factor (NRCS, 2016). Best management practices would be used throughout construction, and any remaining exposed topsoil would be stabilized following project activities.

No Build Alternative – The CCPRC would continue to maintain operations under the existing business plan. Consequently, there would be no impact to the proposed action area geology and soils under the No Build Alternative.

4.1.3 Prime and Unique Farmland Soils

Preferred Alternative – Prime farmland has been identified at the proposed action area and would lose its suitability for farming after construction of the preferred alternative due to land use change and extensive soil work. There is extensive farmland in the vicinity of the proposed action area that is notable as prime farmland and losing productivity on approximately 40 acres would not significantly affect the stability of the local agricultural production or economy.

No Build Alternative – Prime farmland would likely continue to be leased for annual crop production and utilized for special shooting events under the No Build Alternative. The proposed action area setting just outside of a growing (US Census, 2016) urban population center with nearby industrial and residential development. These conditions suggest that there are imminent pressures for other types of property development that would negatively affect the prime farmland under the No Build Alternative.

4.1.4 Surface Water

Preferred Alternative – There are no surface water bodies at the proposed action area that would be directly affected by the preferred alternative. Extensive grading is planned to accommodate the course design. The design will influence stormwater runoff pathways, but the overall plan is to facilitate drainage toward a stormwater detention basin to be constructed at the southeast corner of the course which is in the direction of natural runoff minimizing the overall effect on storm water drainage. Storm

water control BMPs would be utilized during construction and permanent stormwater controls will be utilized following completion of the project construction. No long-term water quality impacts would occur as a result of the Preferred Alternative. Furthermore, this alternative would not alter rainfall drainage patterns or contaminate or otherwise adversely affect the public water supply, water treatment facilities, or water distribution systems. According to Mr. Cooks, the CCPRC has not sold water rights associated with the property.

No Build Alternative - No impact or change to surface water quality would occur within the proposed project area under the No Build Alternative.

4.1.5 Groundwater

Preferred Alternative and No Build Alternative - Groundwater would not be required for the proposed project. The project construction would involve shallow excavation which would not affect groundwater. The dominant soil map unit, Victoria clay, has an associated depth to water table greater than 80 inches (NRCS, 2016). No major or minor aquifer is mapped beneath the CCPRC land. The Gulf Coast Aquifer is a major aquifer mapped approximately 2 miles southwest of the CCPRC property (TWDB 2011). The Gulf Coast Aquifer is comprised of stratified soils that include clay layers that inhibit infiltration from surface to groundwater. No adverse effects to groundwater would occur as no use or interaction with local groundwater would occur for either alternative.

4.1.6 Topography

Preferred Alternative – The proposed action will require construction of berms to separate shooting lanes. The berms will subtly affect surface topography, but major reworking of the topography for this project is not proposed or practical. Topography would not be significantly altered.

No Build Alternative – Topography would not change within the project area under the No Build Alternative.

4.1.7 Floodplains

Preferred Alternative and No Build Alternative – The project area does not lie within any designated floodplain boundary; therefore, neither alternative would have an impact on floodplains.

4.2 Biological Environment

4.2.1 Vegetation

Preferred Alternative - Construction would occur in areas that are currently cultivated or mowed and maintained regularly. No trees would need to be removed from the proposed action area. The cropland where the course is planned would be landscaped with herbs, grasses, trees, and shrubs intended to provide screening and prevent erosion. Typical construction BMPs would be utilized to minimize impacts to surrounding vegetation. No significant impacts to area vegetation is anticipated.

No Build Alternative – Cultivation of the cropland and mowing and maintenance of the lawn area would continue under the No Build Alternative.

4.2.2 Threatened and Endangered Species

Preferred Alternative - Based on a review of TPWD, TXNDD, and USFWS records, no species occurrence or designated critical habitat for threatened and endangered species occurs in the proposed project area or adjacent to the project area.

Based on a field investigation performed by W&M, the agricultural fields at the proposed action area and adjacent to the proposed action area have potential to be utilized by whooping cranes as a stopover during migration. Species utilization of the proposed action area and adjacent habitat would require acclimatization to the current elevated level of anthropogenic activity in the area and would be unlikely to be disturbed by construction activities. No whooping cranes were observed during the field investigation and CCPRC staff report that neither whooping cranes, sandhill cranes, nor even geese have been observed utilizing the cropland. The field investigation by W&M was conducted in November which is during the October 15 to May 15 period that whooping cranes are known to use coastal marshes of nearby counties.

Potential effects to whooping cranes during migration will be mitigated by alerting contractors to stop activity if whooping cranes are identified within 1,000 feet of construction site. No equipment above 15 feet in height is anticipated to be used, except for the operation of hydraulic excavators. The contractor will use Case IH 485 tractors for most of the work, which are under 10 feet in height. For a period of 2 to 3 days the contractor may, if needed, utilize a Case IH 350C excavator that with the boom lowered is 12.5 feet tall. The contractor will leave the boom down at night and when not in use to avoid potential conflicts with construction equipment at elevated heights.

No structures above 15 feet tall are planned for the sporting clays course. Maximum structure height planned for the proposed action is 8 feet tall. Because of the proposed measures to mitigate potential effects to whooping cranes (including stopping construction in the event of a whooping crane being present), and no observations of whooping cranes at the project site or adjacent areas, the Service has determined that the proposed project may affect, but is not likely to adversely affect whooping cranes.

Other listed species have range or historic range in Nueces County, but are not expected to be impacted by the proposed activity. Eskimo curlews are thought to be extirpated as it was last documented in Texas in 1962 (ADFG, 2016). Gulf Coast jaguarundi and ocelot may use riparian corridors for traveling between habitats, but no such suitable habitat exists within the surrounding portion of Nueces County or along Oso Creek. The proposed activity will have no effect on the cat species due to the lack of suitable habitat. Slender rushpea and south Texas ambrosia are not likely to survive the years of cultivation, mowing, and maintenance at the proposed action area (see Table 1 in **Biological Assessment**). Cultivation of the cropland included raising cotton, which is typically grown and even harvested with use of herbicides.

No Build Alternative – Cultivation of the cropland and mowing and maintenance of lawn areas within the proposed project area would prevent biological succession and would eliminate the potential for habitat naturalization under the No Build Alternative.

4.2.3 Other Wildlife Species

Preferred Alternative - Due to the intensive use of the proposed action area and surrounding area, other wildlife species likely to utilize the area would include birds, small terrestrial mammals, amphibians, reptiles, and insects that are tolerant of these conditions. Such wildlife that could be utilizing the proposed action area may experience some short-term displacement impact during the project construction. However, affected species are expected to disperse to adjacent areas outside of the construction zone. The affected species should re-colonize (or continue to utilize) areas on the property that are not subjected to the development activities following completion of the project construction. No permanent or long-term impacts to other wildlife species are expected to occur from the project.

No Build Alternative – Continued cultivation, mowing and maintenance within the proposed project area would prevent biological succession thereby limiting potential wildlife utilization on the subject property.

4.2.4 Wetlands and other Waters of the United States

Preferred Alternative and No Build Alternative – The proposed action area does not contain any jurisdictional wetlands or other waters of the U.S. Consequently, there would be no impacts to these resources under either alternative.

4.3 Land Use

Preferred Alternative – Currently, the proposed action area is used for cropland and special shooting events. The proposed parking lots are currently lawn used for overflow parking within the existing CCPRC facility. Because the project areas are currently used for their proposed uses, the proposed project will not have a significant effect on land use.

No Build Alternative – The No Build Alternative will likely be used for its current use in the short term, but based on its location at the edge of a growing regional population center (Corpus Christi) and nearby residential and industrial uses, future land use changes are anticipated under the No Build Alternative.

4.4 Cultural Resources

Preferred Alternative – Coastal Environments, Inc. completed an archeological investigation of the proposed action area and concluded that no cultural resources eligible for listing in the National Register of Historic Places would be impacted by implementation of the Preferred Alternative. In the event that archeological deposits or features should be encountered during construction, work would cease immediately and the Archeology Division of the Texas Historic Commission (THC) would be contacted for further consultation. In a letter dated December 21, 2016, the SHPO concurred with the cultural resource survey findings that no historical properties were present or would be affected by the proposed activity. Their letter is enclosed in **Appendix D**.

No Build Alternative – No impact to cultural resources would occur as a result of the No Build Alternative.

4.5 Hazardous Materials

The wastewater treatment plant at Cuddihy Airfield is located nearly 1 mile west of the proposed action area and topographically cross gradient with respect to the proposed action area. If airfield maintenance was conducted at the site, the wastewater treatment plant represents a possible pathway for associated hazardous materials to affect area groundwater. As an airfield, the facility would have stored and dispensed fuel over several decades. Given the distance of the facility from the proposed action area, high clay content of the area soils and underlying geologic formation, and topographic gradient toward Oso Creek south of the airfield, it is not likely that hazardous materials from Cuddihy Airfield would impact the proposed action area.

The east-adjacent landfill is controlled, monitored, and inspected as evidenced in TCEQ Central Registry records. Based on aerial photograph review, it appears to have been constructed sometime after 1995. Class IV landfills are limited to receive wastes that are not likely to release contaminants to the ground or groundwater because the materials they receive do not degrade or degrade very slowly (ADEQ, 2016). Portions of the landfill property are topographically upgradient of the proposed action area, but much of the facility is cross gradient and likely drains toward Oso Creek, which is south of the landfill and the proposed action area. Based on the limited materials reportedly received at the landfill, relatively recent history of the landfill, and fact that it is permitted by the TCEQ, the landfill is not likely to impact the proposed action area with hazardous materials.

Neither the Preferred Alternative nor the No Build Alternative would have an impact on hazardous materials, as their presence is unlikely.

4.6 Air Quality

Preferred Alternative - Construction may likely cause a disturbance of soils in the proposed action area. Dust from this type of disturbance would become airborne during dry periods. Exhaust from construction equipment would be similar to that of the surrounding road traffic and landfill machinery operation. The project construction would not exceed NAAQS. Dust from construction activities is not anticipated to become a nuisance due to similar dust conditions of construction would be expected to be similar to normal cropping practices in the area. Periodic application of water to construction areas may be necessary to achieve optimal grading conditions and have the added benefit of reducing the airborne dust load during dry periods. There would be no permanent or long-term impact to air quality as a result of the Preferred Alternative.

No Build Alternative – No impacts to air quality would occur as a result of the No Build Alternative.

4.7 Noise

Preferred Alternative - Noise levels associated with construction equipment and activities would be temporary and are estimated to be less than existing noise from the existing gun range. Construction activities would occur during the daytime when such activities are more tolerable. Further, noise resulting from the project construction would be of an intermittent nature rather than constant.

Existing noise levels in the vicinity of the proposed project area are moderate. Notable sources include the existing outdoor gun range that operates adjacent to the south and hosts special shooting events at the proposed action area, traffic on F.M. 763, and heavy machinery at the east-adjacent landfill. Cuddihy Airfield was a historical source of noise within the study area that had a runway aligned with the study area located just 2,200 feet northeast of the proposed action area. Corpus Christi International Airport is located approximately 3 miles north of the proposed action area and Cabaniss Field is a Naval Air Station airport located approximately 3 miles east of the proposed action area.

The only potential noise-sensitive receptors within the study area are the six, single-family residential homes located over 1,100 feet north of the proposed action. Shooting is already occurring at the proposed action area during special events. The design of the course will mitigate some potential effects of the increase use of the proposed action area for shooting at the sporting clays course.

Shooting stations at the north side of the course, nearest to the residents, will face south. Data from Rasmussen et al. (2009) indicates that sound levels are approximately 20 dB lower behind the shooter compared to areas in front of the shooter. The course has been scaled back to leave buffers between it and the neighboring properties. Shooting stations on the east and west sides toward the north end of the courses similarly will have appropriate orientation to reduce noise projection as well use of fencing and/or berms (engineering controls) for sound dampening. Trees and shrubs will be utilized in a manor to assist in sound dampening. Operationally, CCPRC plans to allow shooting only after 9:00 am and will close the course 30 minutes prior to sunset, and possibly sooner during daylight savings months, to limit noise in morning and night time.

The study area distance of 2,000-foot radius was based on data from noise studies at other gun ranges that indicated sound levels were far below 65 db at 2,000 feet. Sound measurements at 2,000 feet from their source ranged from 47 dB to 54 dB indicating that the threshold of significance was a shorter distance

than 2,000 feet across an open field (AECOM, 2016). A sound level reading reported from a .30-06 caliber rifle at 500 feet from the source was 63 dB and the sound level from a 0.22 caliber handgun at 500 feet was 51 dB (KDWP, 2011) suggesting that the threshold of significance may be less than 500 feet.

Based on the available data and design considerations of the sporting clays course, there would be no significant impacts to noise sensitive receptors as a result of the project.

No Build Alternative – Implementation of the No Build Alternative would not result in an increase in noise levels in the proposed project area nor surrounding areas. However, continued use of the open field for special shooting events without implementing designs to reduce noise may result in greater sound levels emanating from the proposed action area under the No Build Alternative than those under the Preferred Alternative.

4.8 Recreation

Preferred Alternative – The nature of the facility, in part, is to provide recreational opportunities to the public. The proposed expansion would result in an increase in capacity and variety of recreational usage at CCPRC.

No Build Alternative – Under the No Build Alternative recreational services of the CCPRC would continue at their current level.

4.9 Safety

Preferred Alternative – Standard safety procedures for construction would be implemented for the proposed project activities.

National Rifle Association (NRA) and National Shooting Sport Foundation (NSSF) Design Guide safety will be incorporated into the course design. CCPRC has implemented rules and procedures for the safe use of their ranges and safe operation of weapons that will be extended to the sporting clays course. Those policies and procedures include the use of range safety officers to supervise range activities and to ensure safe use of their ranges. Participants are required to sign an agreement stating acknowledgement of the safety rules and requiring that they understand and will abide by those safety rules and direction from range safety officers while at CCPRC.

A mandatory safety and orientation class is given to all new members that last about 1 ½ hrs before they can join. In this class CCPRC covers the club rules and safety. As part of the class they encourage members to be proactive in the safety process by helping us watch for any unsafe actions by anyone using the range and calling CCPRC staff upon observation of any unsafe act. Before each registered shoot and each corporate or fundraiser event the manager gives a safety speech covering safety for the event to all participants. All members of the public that will use the course will be given a safety speech and ask to sign the aforementioned agreement.

All CCPRC employees are trained to monitor safety and rules issues that could arise at the club and each has a secondary job to act as a backup range safety officer. It is CCPRC's plan to monitor the sporting clays course actively during open hours with the use of the two electric golf carts that are used by staff to patrol the club property.

No Build Alternative – The No Build Alternative should have no significant effect on safety.

4.10 Local Economic Conditions

Preferred Alternative – Minority and low-income populations are not shown to be prevalent in the vicinity of the proposed project area. No adverse impacts are anticipated as a result of the Preferred Alternative. Due to the nature of the Preferred Alternative, no disproportionately high and adverse human health or environmental impacts are anticipated to these populations. Additionally, the Preferred Alternative would not result in any population displacements.

The Preferred Alternative would result in an expansion of services that would provide a positive impact due to increased use of the area. Locally, users would result in an increase in sales of gas, food, and other similar products and services. Construction of the CCPRC sporting clay course will provide some short-term employment opportunities. However, due to the relatively small scale of the proposed construction, the number of jobs would be minimal and effects to employment rates and the local economy from the construction labor force would be negligible.

The Preferred Alternative will result in the addition of 1.5 to 2 additional full-time employees to operate the sporting clay course, which is a positive for job additions in the area, but will have a minimal effect on the local economy.

No Build Alternative – There would be no change to the local economy from the implementation of the No Build Alternative.

4.11 Environmental Justice

Preferred Alternative - Based on information provided in Section 3.9 (Local Economic Conditions) of this EA, there are no low-income near the proposed action area and the nearest minority community is located approximately 1.25 mile north of the proposed action. Consequently, the Preferred Alternative would not result in disproportionate adverse effects to low income or minority populations. Furthermore, the CCPRC is available to the public at large.

No Build Alternative – No impacts would occur to minority and low income populations under the No Build Alternative.

5.0 CUMULATIVE EFFECTS

Preferred Alternative – An analysis of cumulative effects is intended to disclose the incremental impacts that the alternatives could cause when considered in the context of impacts associated with past, present, and reasonably foreseeable future actions. The Preferred Alternative would expand upon ongoing operations that the Corpus Christi Pistol and Rifle Club, including adding the addition of the sporting clays course, access road, and expanded parking area. It has been further determined that the cumulative effects are expected to be minimal to non-existent in some cases for resources including wetlands and other waters of the U.S. and groundwater. The proposed project would occupy areas (approximately 44 acre) that are currently cropland used for special shooting events or maintained as a mowed lawn and used for overflow parking.

When combined with the effects of other cumulative actions, the effects of the Preferred Alternative would be largely not contribute to any negative cumulative impacts on any resource or threatened or endangered species or critical habitat.

No Build Alternative – Cumulative effects to the human environment and natural environment would not occur under the No Build Alternative.

Environmental Commitments Section

CCPRC will restrict normal shooting hours to after 9 a.m. and closing prior to sunset in order to restrict noise at night and during early morning. CCPRC will also implement lead management activities at the facility.

6.0 AGENCY COORDINATION

Under the USFWS Grant Program, the CCPRC has worked closely with the USFWS and TPWD to ensure compliance with the Grant requirements and other requirements, including preparation of this EA. As an added measure, W&M has reached out to the USFWS Texas Coastal Ecological Field Services, Corpus Christi Office biologists and local TPWD biologists for informal consultation regarding potential issues regarding this EA.

Coastal Environments, Inc. submitted the Cultural Resources Survey Report to the THC in December 2016 for review and concurrence. The SHPO provided concurrence in a letter dated December 21, 2016 (**Appendix D**).

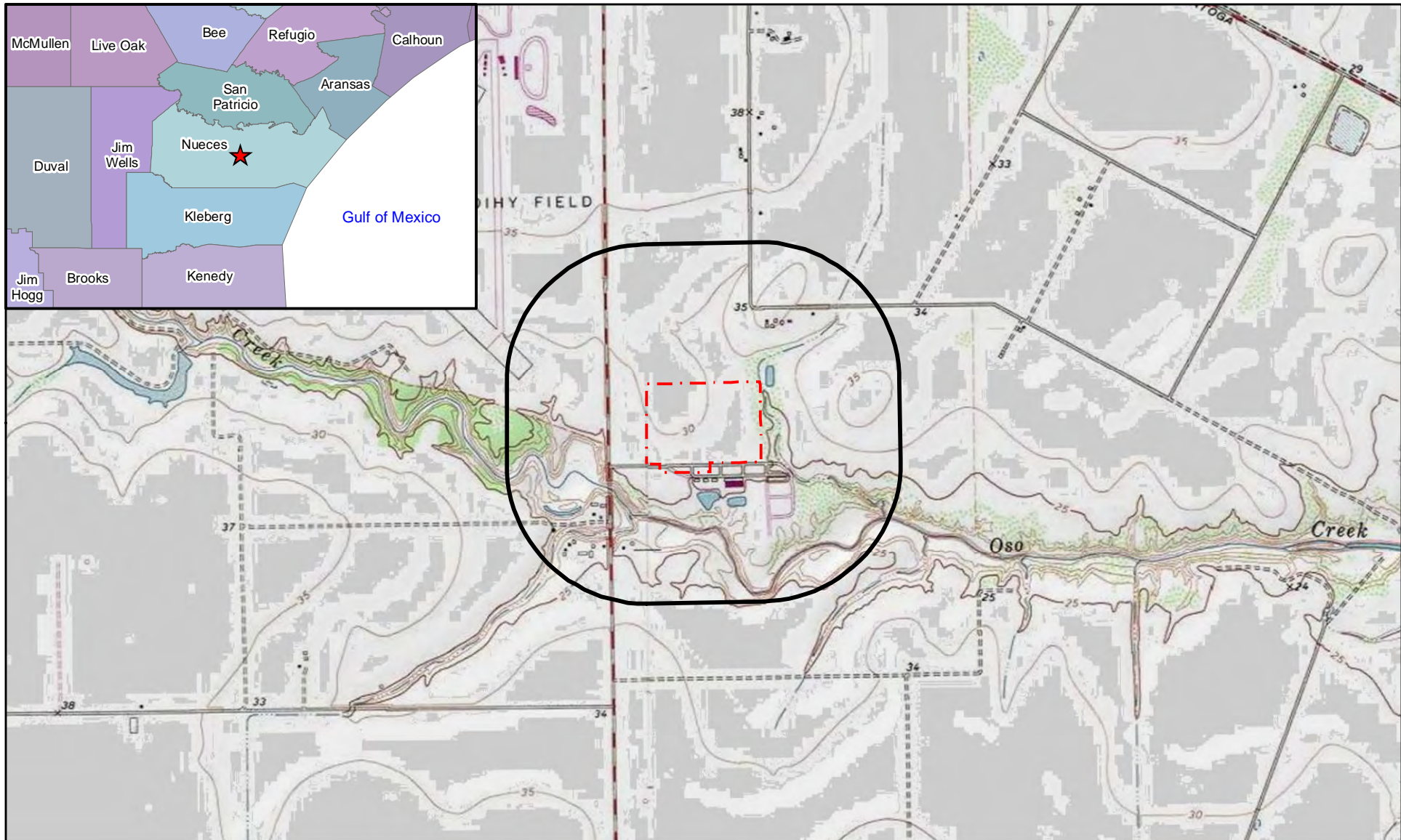
Public Involvement

CCPRC has not held any public meetings or published promotions of the proposed sporting clays course. They are open to the public and have hosted skeet shooting events at the proposed activity location that are advertised to the public. Additional public announcements are planned by CCPRC for the period after the project has been approved and funded. CCPRC has communicated the intention to build a sporting clays course with the club membership and the south Texas shotgun shooting community which CCPRC reports have expressed support, approval and anticipation for the course being built.



7.0 PREPARERS

This EA has been prepared on behalf of the Corpus Christi Pistol and Rifle Club, USFWS, and TPWD by staff at W&M Environmental Group, LLC. Resumes of preparers are included in **Appendix E**.

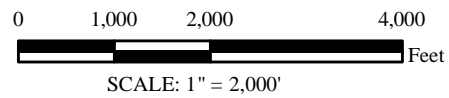
FIGURES



Legend

-  Approximate Site Boundary
-  2,000-Foot Radius (Study Area)

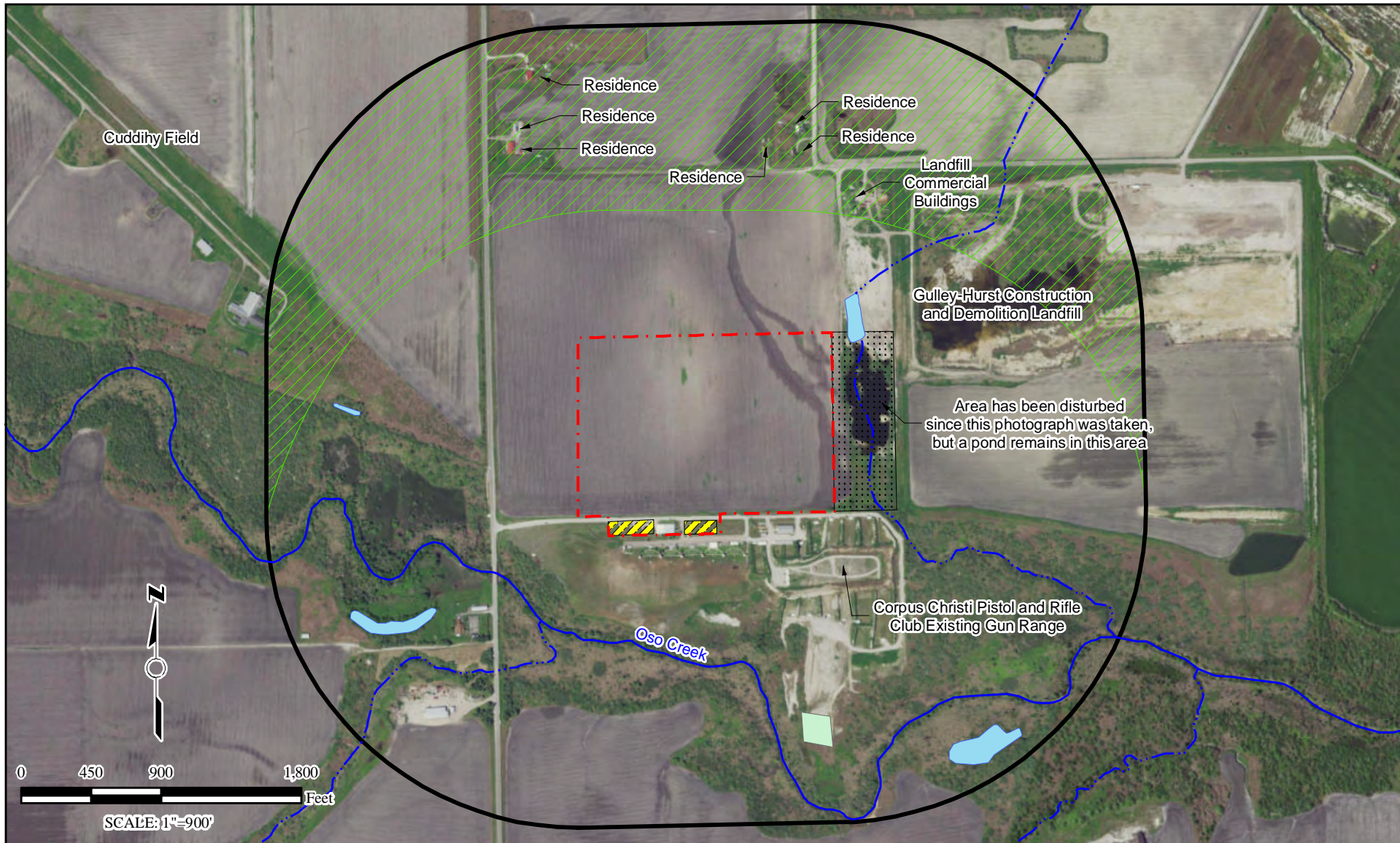
Source: USGS Topographic Map, Oso Creek NW and Petronila NE Quadrangles (1977)



**Figure 1
Site Location**

Corpus Christi Pistol & Rifle Club
2832 F.M. 763
Corpus Christi, Texas



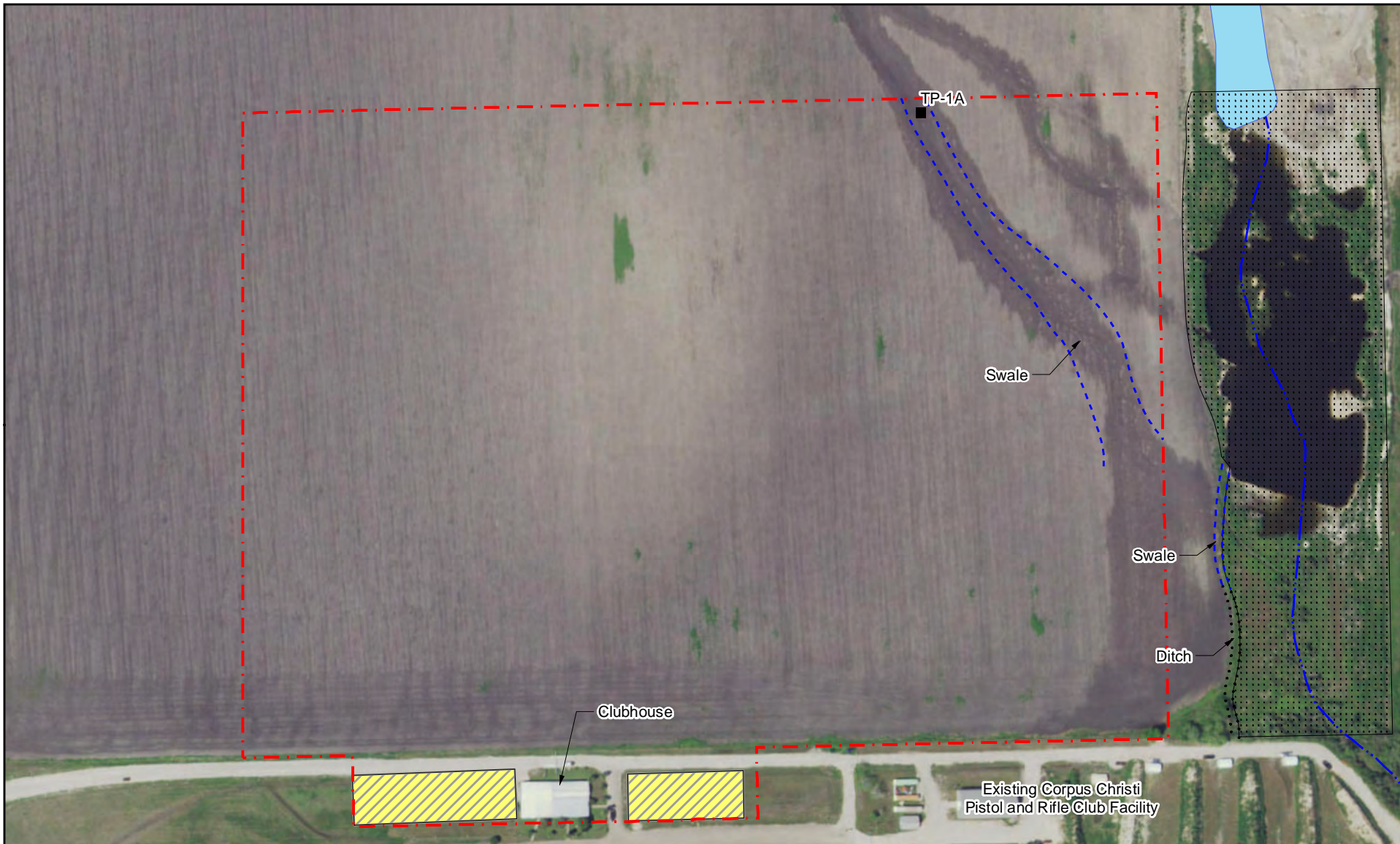


Legend

- | | | |
|---------------------------|--------------------------------|--|
| Approximate Site Boundary | Intermittent Stream (USGS) | Estimated Extent of Possible Increased Noise from Operation of Sporting Clays Course |
| Parking Expansion Area | Water Body (USGS) | |
| Recently Graded Area | Detention Pond | |
| Perennial Stream (USGS) | 2,000-Foot Radius (Study Area) | |

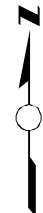
Figure 2
Site and Study Area
 Corpus Christi Pistol & Rifle Club
 2832 F.M. 763
 Corpus Christi, Texas





Legend

- | | | |
|--|--------------------------------------|--------------------|
| ■ Test Plot | Approximate Extent of Ditch | Water Body (USGS) |
| - - - - - Approximate Site Boundary | ▨ Parking Expansion Area | 0 125 250 500 Feet |
| Type | ▤ Recently Graded Area | SCALE: 1"=250' |
| - - - - - Approximate Extents of Swale | - · - · - Intermittent Stream (USGS) | |



**Figure 3
Site Detail**

Corpus Christi Pistol & Rifle Club
2832 F.M. 763
Corpus Christi, Texas



REFERENCES

APPENDIX A

REFERENCES

- AECOM. *Jeffco Public Shooting Range Sound Measurements*. Community Meeting. May 31, 2016. Accessed via internet in 2016 at: <http://jeffco.us/bcc/documents/board-programs-documents/shooting-range-documents/public-meetings-documents/aecom-noise-study-preliminary-findings-presentation/>
- Agricultural Applied Climate Information System (AgACIS). Climate data accessed via the web in November 2016 at: <http://agacis.rcc-acis.org/48015/mtot>
- Alaska Department of Game and Fish (ADFG). Eskimo Curlew (*Numenius borealis*) Species Profile. Accessed via internet in November 2016 at: <http://www.adfg.alaska.gov/index.cfm?adfg=eskimocurlew.main>
- Arkansas Department of Environmental Quality (ADEQ). *Class IV Landfills, Prohibited and Allowed Wastes*. Accessed via internet in December 2016 at: https://www.adeq.state.ar.us/sw/permits/pdfs/allowable_types_of_waste_for_acceptance_at_a_class_4_landfill.pdf
- Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health (NIOSH). *Noise and Lead Exposures at an Outdoor Firing Range – California*. Authors Lilia Chen and Scott E. Brueck. Health Hazard Evaluation Report HETA 2011-0069-3140. September 2011.
- Department of the Interior; Fish and Wildlife Service. *Endangered and Threatened Wildlife and Plants; Determination of the Northern Aplomado Falcon To Be an Endangered Species*. Vol. 51. No. 37 Fed. Reg. February 25, 1986. To be codified at 50 CFR Part 17.
- Department of the Interior; Fish and Wildlife Service. *Endangered and Threatened Wildlife and Plants; Draft Ocelot (LEOPARDUS PARDALIS) Recovery Plan, First Revision*. Vol. 75, No. 165 Fed. Reg. August 26, 2010.
- Department of the Interior; Fish and Wildlife Service. *Endangered and Threatened Wildlife and Plants; Draft Recovery Plan for the Gulf Coast Jaguarondi*. Vol. 77 No. 247 Fed. Reg. December 26, 2012.
- Environmental Laboratory. (1987). *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS
- Environmental Protection Agency. *Best Management Practices for Lead at Outdoor Shooting Ranges*. EPA-902-B-01-001. June 2005.
- Freytag, John C. *Los Altos Rod and Gun Club: Shooting Noise Assessment*. Accessed via internet in November 2016 at: http://www.sccoplanning.com/Portals/2/County/Planning/devrev/LARGC_NoiseAssessment_Report_1.pdf

- Google Earth historical imagery that is a mix of private collections and photographs provided by the USGS and USDA Farm Service Agency with coverage of the study area between December 31, 1955 and November 22, 2014.
- Gulley-Hurst Landfill. Landfill materials accepted and not accepted. Accessed in November 2016 via internet at: <http://www.gulleyhurst.com/services.html>
- Housing and Urban Development (HUD), Office of Community Planning and Development (CPD). CDP Maps. Accessed in via internet in December 2016 at: <https://egis.hud.gov/cpdmaps/>
- Kanas Department of Wildlife and Parks, Parks Division, and U.S. Fish and Wildlife Service. *Draft Environmental Assessment, Hillsdale Shooting Range, Hillsdale State Park, Paola, Kansas*. July 2011.
- Nationwide Environmental Title Research (NETR). Environmental Radius Report. Accessed via internet in December 2016 at: <http://www.netronline.com/>
- Rasmussen et al. *Measuring Recreational Firearm Noise*. Sound and Vibration. August 2009.
- Ritchie Bros. Auctioneers. *RitchieSpecs Equipment Specifications: Caterpillar 330 DL Hydraulic Excavator*. Accessed via internet in December 2016 at: <http://www.ritchiespecs.com/specification?category=Hydraulic%20Excavator&make=CATERPILLAR&model=330dl&modelid=92298>
- Schomer, Paul D. *Criteria for Assessment of Noise Annoyance*. Noise Control Engineering Journal. Vol. 53 (4), Jul-Aug 2005.
- Texas Commission on Environmental Quality (TCEQ) Corpus Christi Current Attainment Status. Accessed via internet in December 2016 at: <https://www.tceq.texas.gov/airquality/sip/cc/cc-status>
- TCEQ. Central Registry Query. Accessed in December 2016 via internet at: <http://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=cust.CustSearch>
- TPWD. *Vegetation Types of Texas* by Craig A. McMahon et al. 1984.
- Texas State Historical Association. *Handbook of Texas Online*, Art Leatherwood, "Naval Air Station, Corpus Christi," accessed December 2016, <http://www.tshaonline.org/handbook/online/articles/qbn01>
- Texas Water Development Board (TWDB). *Aquifers of Texas, Report 380*. July 2011
- U.S. Census Bureau. *Quick Facts: Corpus Christi, Texas*. Accessed via internet in December 2016 at: <http://www.census.gov/quickfacts/table/PST045215/4817000>
- U.S. Department of Agriculture (USDA) National Resource Conservation Service (NRCS) *Web Soil Survey*. Accessed via internet in November and December 2016 and March 2017 at: <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>
- USDA. NRCS. *Official Soil Series Descriptions* (<http://ortho.ftw.nrcs.usda.gov/cgi-bin/osd/osdname.cgi>)

USDA. Handbook 296 *Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin*. June 2006.

USDA Field Office Climate Data for WETS tables and precipitation data (<http://agacis.rcc-acis.org/>)

United States Geological Survey (USGS) *7.5 Minute Topographic Quadrangle Map for Oso Creek NW and Petronilla NE* (1977) (**Figure 1**)

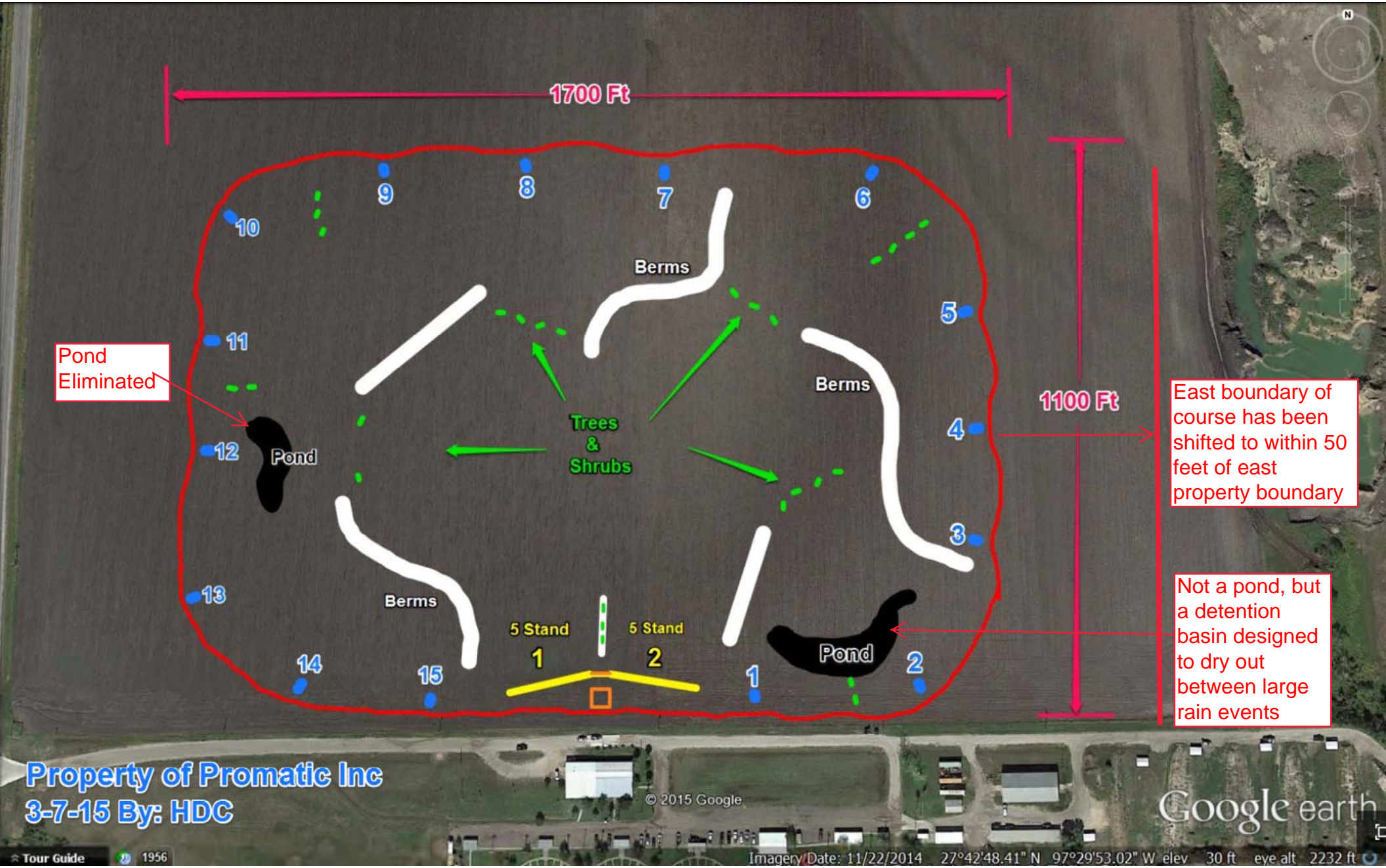
USGS Open-File Report 2005-1351 Preliminary integrated geologic map databases for the United States: Central states: Montana, Wyoming, Colorado, New Mexico, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Texas, Iowa, Missouri, Arkansas, and Louisiana <http://pubs.usgs.gov/of/2005/1351/>

USGS. Texas Geologic Map Data. USGS Open-File Report 2005-1351. *Preliminary integrated geologic map databases for the United States: Central states: Texas et. al.* (<https://mrdata.usgs.gov/geology/state/state.php?state=TX>)

Washington State Department of Transportation. *Biological Assessment Preparation Advanced Training Manual, Version 10-2015. Chapter 7: Noise Impact Assessment dated September 2016*. Accessed via internet in November 2016 at: <https://www.wsdot.wa.gov/Environment/Biology/BA/BAguidance.htm#manual>

DRAFT SITE PLAN

APPENDIX B



1700 Ft

1100 Ft

Pond Eliminated

East boundary of course has been shifted to within 50 feet of east property boundary

Not a pond, but a detention basin designed to dry out between large rain events

Property of Promatic Inc
3-7-15 By: HDC

© 2015 Google

Google earth

LEAD MANAGEMENT PLAN

APPENDIX C

LEAD MANAGEMENT PLAN

Existing Facility

The existing facilities at the Corpus Christi Pistol and Rifle Club (CCPRC) manage lead by a lead recovery program as described below:

It is CCPRC's intent to reclaim lead at the club as an on needed basis such that it is economically viable for the club and the mining company. CCPRC based their policy on the recommendation of the mining company that has performed lead recovery at CCPRC in the past. Samples collected in December 2016 estimated 12 ounces of lead per square foot at the existing facility. The mining company requires a threshold of 16 ounces per square foot to recover approximately 300,000 pounds of lead from the existing facility. Lead was recovered from CCPRC in 2010. The current target usage from 2010 through December 31, 2016 is 5,314,653 for an average of 885,776 targets shot per year. The next lead recovery event is estimated for winter 2017-spring 2018. The addition of a future sporting clays course is estimated to increase the annual targets at the facility and should shorten the recovery period to a 6-year cycle.

Proposed Sporting Clays Course

Based on data from the Web Soil Survey (USDA 2017), the soil at the proposed sporting clays course has a pH in the upper two feet of 8.1 to 8.2 standard units, which is within the "ideal" pH range of 6.5 to 8.5 (EPA 2005). Soils with pH within this range cause lead to precipitate which retards leaching.

The soils mapped at the proposed Sporting Clays Course are classified as clay (USDA 2016) and useable water is typically encountered at depths greater than 100 feet (relayed to CCPRC manager by local water well driller). Based on the soil type, pH, and depth to useable water, lead leaching is not anticipated to be an issue at the CCPRC.

The following BMPs will be implemented to control lead at the proposed sporting clays course:

1. The course design will use ground contouring and berms to divert stormwater run-on around the course and to direct stormwater runoff from the course toward a detention basin, which will minimize potential for off-site lead migration. The detention basin is not designed to retain water, but rather dry out between large rain events.
2. The course design will concentrate lead-containing shot toward the middle. The shot fall zone will not be underlain by perennial open water bodies, which will minimize potential exposure to waterfowl.
3. The course design will employ berms as containment for lead shot.
4. Grasses will be used within the course to minimize erosion and associated lead migration. The grass cover will be actively maintained to keep a dense cover and better achieve the goal of preventing erosion.
5. Lead recovery will be conducted as often as economically practical. The current estimate is one recovery event every 6 years.

**SHPO CONCURRENCE
LETTER**

APPENDIX D

This Correspondence sent to jenni.hatchett@gmail.com on 21-12-2016



TEXAS HISTORICAL COMMISSION
real places telling real stories

Re: Project Review under Section 106 of the National Historic Preservation Act and/or the Antiquities Code of Texas
201702709

Corpus Christi Pistol and Rifle Club Improvements
2832 FM 763
Corpus Christi, TX 78415

Dear Jennifer Kimbell:

Thank you for your submittal regarding the above-referenced project. This response represents the comments of the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission (THC), pursuant to review under Section 106 of the National Historic Preservation Act.

The review staff led by Casey Hanson and Justin Kockritz has completed its review and has made the following determinations based on the information submitted for review:

Above-Ground Resources

- No historic properties present or affected

Archeology Comments

- No historic properties present or affected
- THC/SHPO concurs with information provided
- THC/SHPO has comments on the draft report submitted to this office for review
- Draft report acceptable. Please submit another copy as a final report along with shapefiles showing the area where the archeological work was conducted. Shapefiles should be submitted electronically to [email].

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this review process, and for your efforts to preserve the irreplaceable heritage of Texas. If you have any questions concerning our review or if we can be of further assistance, please email the following reviewers: casey.hanson@thc.texas.gov, justin.kockritz@thc.texas.gov.

Sincerely,

Mark Wolfe, State Historic Preservation Officer
Executive Director, Texas Historical Commission

Please do not respond to this email.

RESUMES OF PREPARERS

APPENDIX E



Aaron Brewer, P.G.

Project Manager/Wetlands Specialist

Education/Certifications

Licensed Professional Geoscientist in Texas – Soil Science (License # 10824)
Bachelor of Science in Plant Biology; University of Minnesota (1998)
Certified Wetland Delineator (Minnesota Certification No. 1006)

Experience

Aaron has over 15 years experience as an environmental consultant. The majority of his current clients are oil and gas companies, developers, industrial companies, and their attorneys. Project experience includes site assessments, tank removals, remediation, site closure, endangered species, and wetlands. Aaron has assisted clients with state Voluntary Cleanup Programs, federal permits, NEPA documentation, and served as an expert witness in environmental litigation. Aaron has recently completed multiple well-pad permit projects in Louisiana's shale fields as well as in the Eagle Ford in Texas. He has participated the oil company client's planning meetings and worked with the field staff in optimizing well locations and managed spill responses.

Aaron has experience conducting and interpreting geophysical explorations and in the use of GPS and GIS technology for mapping. Aaron also has a history of community service and experience working with community groups. He has represented his residential neighborhood in several Citizen Advisory Councils for city park/master plan projects and served in his residential neighborhood group as an environmental coordinator. Currently Aaron provides technical assistance for a prairie restoration project at Commons Ford Park in Austin, Texas, and serves as president of his neighborhood association.

Projects

Wetland Delineation, Permits, Mitigation
NEPA Compliance
Environmental Protection Plans
BLM and USFS Permits
SWPPP
Expert Witness

Remediation Investigation/Design
Remediation Oversight
Voluntary Cleanup Program
Underground Storage Tank (UST) Closure
Phase I ESA Expert
Phase II Investigations

Clients

Comstock Resources
Strausburger & Price
Prosperity Bank
Encana
Frost Brown Todd
EnerVest Operating

Cox Smith Mathews
G&A Consultants
First Strike Services
Jackson Walker
Gold Metal Recyclers
HP Civil Engineering





Diana Rader, PG
Senior Consultant, Central Texas Regional Manager

Education

Bachelor of Science in Geology; University of Texas

Registrations/Certifications/Licenses

Texas Registered Professional Geoscientist (PG) No. 1179

Mississippi Registered Professional Geoscientist (PG) No. 0823

Professional Affiliations

Industry Council on the Environment (ICE) – Chairman 2009 – 2011, Committee Chair 2012 – 2014

Austin Geological Society

Mickey Leland Environmental Internship Program – Advisory Board – 2013 – 2016

Additional Training

40-hour Hazardous Waste Operations and Emergency Response (HazWOPER)

Transportation Worker Identification Credential (TWIC)

Experience

Ms. Rader is a registered professional geoscientist in Texas and Mississippi with more than 20 years consulting experience in environmental permitting, due diligence, soil and groundwater investigations, remediation, and water resource studies. She has conducted and managed environmental due diligence projects for transactions involving portfolios of industrial sites, oil and gas production sites, and commercial sites. Her permitting experience includes public water supply wells, natural gas storage, petroleum pipelines, lignite mining, uranium mining, and hazardous and solid waste sites. Her environmental investigation and remediation experience include petroleum pipelines, refineries, petrochemical plant, Texas State Superfund site, and other industrial and manufacturing facilities.

Projects

Environmental Investigation and Remediation
Voluntary Cleanup Program (VCP)
State Superfund Remedial Investigation
Environmental Due Diligence
Pipeline Permitting
Surface Mine Permitting
Wetlands Permitting

FERC Permitting
Solid & Hazardous Waste Landfill Permitting
Public Water Supply Well Permitting
Environmental Assessment
Litigation Support
Baseline Environmental Studies
Water Resource Studies

Clients

NuStar Energy
Koch Pipeline Co.
ConocoPhillips

Calumet Specialty Products Partners, LP
North American Coal Co.
INEOS Nitriles





Jamie Maxwell
GIS/CAD Analyst II

Education

Bachelor of Science in Geography; University of North Texas
Minor in Economics

Associate of Applied Science in Computer Networking; North Central Texas College

Registrations/Certifications/Licenses

Economic Geography Certificate; University of North Texas

Experience

Jamie's areas of expertise include figures and exhibit creation, geographic analysis, borehole logging, groundwater modeling, and historical research at the TCEQ. He has over two years' experience using Geographic Information Systems (GIS) and AutoCAD in the environmental consulting field to create figures for a wide range of reports supporting soil and groundwater remediation, storm water pollution prevention plans (SWP3s), spill prevention control and countermeasure (SPCC), wetland delineations, and environmental safety and health (EHS) compliance. In addition, Jamie has several years of experience in data analysis and database administration.

Projects

Phase I/II Site Assessment	Wetland delineation
Affected Property Assessment Report (APAR)	Wastewater permit
Underground storage tank (UST) removal	Vapor intrusion
Storm water pollution prevention plan (SWP3)	Lead/asbestos sampling
Spill prevention control and countermeasure (SPCC)	EHS compliance

Software Proficiencies and Skills

ArcGIS	Groundwater modeling
AutoCAD	Borehole logging
QGIS	MS Excel/Access





Michael P. Fawdry, P.E.
Division Manager

Education

Bachelor of Science in Civil and Environmental Engineering; Clarkson University
Associates in Applied Science; Jefferson Community College

Registrations/Certifications

Licensed Professional Engineer:
NYS (Lic. No.: 066031)
Qualified Energy Assessor (AEE)

Professional Affiliations

National Society of Professional Engineers
Association of Energy Engineers (AEE)
South Texas Environmental Professionals

Experience

Mike possesses over 35 years of diverse experience in effectively dealing with stake holders in the industrial, utility, renewable, commercial, and government sectors. This experience encompasses strategic regulatory planning, permit strategy development, energy and sustainability consulting, civil engineering, and construction management. The unique nature of Mike's professional experience enables him to apply these skills to all levels within an organization or group of stake holders to successfully create consensus around innovative, cost-effective solutions to complex problems. His projects have been conducted throughout the U.S. in: Texas, Louisiana, California, Virginia, Maryland, New York, New Jersey, Pennsylvania, Massachusetts, and Vermont. Mike has managed projects regulated by a variety of state regulatory agencies relating to a range of regulatory programs. These projects include: air permitting, including permit development under the Texas "permit by rule" (PBR) program; storm water management and permitting programs; energy auditing; NPDES/TPDES permitting; wetlands and endangered species impact mitigation; development of combined heat and power (CHP) projects; development of renewable energy projects; and, power plant licensing through the California Energy Commission (CEC). Mike is the Division Manager for W&M Environmental, where he manages both technical services as well as strategic growth in the south Texas area. W&M's motto is, "we get projects done" and Mike insures the timely delivery of high quality service to clients.

Projects

Air Permitting	Storm water Permitting
Spill Prevention, Control & Countermeasure (SPCC)	Waste water Permitting
Environmental Management System Development	Environmental Compliance Auditing
Impact Identification/Mitigation - Endangered Species	CHP and Distributed Generation Systems
Renewable Energy Projects (Wind, solar, geothermal)	Energy Auditing
401 & 404 Permitting of the Federal Clean Water Act	

Clients

Stabilis/Flint Hills Resources	Port of Corpus Christi
Port Corpus Terminal	Superior Weighting Products
MilWhite	Igzami Development
Berkshire Hathaway Renewable Energy	Dixie Iron Works/MSI
Oxy Midstream Strategic Services	TPCO America





Trudy S. Hasan, PG
Project Manager

Education

Bachelor of Science in Geology; Trinity University, San Antonio

Registrations/Certifications/Licenses

Registered Professional Geoscientist (PG), Texas Board of Professional Geoscientists (No. 384)
Corrective Action Project Manager (CAPM), Texas Commission on Environmental Quality (No. 1629)
40-Hour OSHA HAZWOPER, current with 8-Hour Refresher

Professional Affiliations

Austin Geological Society
Association of Environmental and Engineering Geologists
Geological Society of America

Experience

Trudy has 25 years of environmental consulting and regulatory experience, including soil and groundwater assessment, remediation, and management of sites under the Texas Risk Reduction Program (TRRP) and underground and aboveground petroleum storage tank rules. For more than 10 years, she worked as a regulatory coordinator under contract with the Texas Commission on Environmental Quality's Remediation Division. Trudy has overseen closure of numerous projects throughout Texas, beginning with release determination through assessment and cleanup of soil and groundwater. Trudy's field and project management experience includes soil and groundwater assessment and remediation at commercial and industrial facilities such as gasoline stations, petroleum refineries, shipyards, and foundries. Other experience includes Phase I environmental site assessments and document research/litigation support for EPA Superfund sites.

Projects

Release Determination
LPST and TRRP Assessments
Drinking Water Surveys
Chemical Oxidant Injections

Phase I & II Environmental Site Assessments
Corrective Action, Voluntary Cleanup
NORM Assessments
Municipal Setting Designations

Clients

Calumet Specialty Products Partners, LP
Glazer's Distributors of Texas, Inc.
AutoZone Texas, LP

Southwest Shipyard, LP
GFR Development Services, LLC
Dykema Gossett, PLLC

