

ARCHEOLOGICAL INTENSIVE SURVEY SCOPE

WCS Spent Fuel Storage Facility Andrews County, Texas

Project Description

In collaboration with Andrews County, Waste Control Specialists LLC (WCS), a private company, proposes to develop an away-from-reactor spent nuclear fuel storage facility in the northwest part of the county, immediately north of an existing WCS facility (see **Figures 1 and 2**). The proposed footprint of the planned facility and access roads covers an area of approximately 140 acres (57 hectares). Because the project includes a host agreement with the County, a political subdivision of the State of Texas, the project is considered subject to the Antiquities Code of Texas (9 TNRC 191). The project would also be subject to Section 106 of the National Historic Preservation Act (NHPA), as amended (16 USC 470; 36 CFR 800), due to oversight by the U.S. Nuclear Regulatory Commission (NRC).

Background Information

The 140-acre (57-hectare) archeological area of potential effects (APE) is located at approximately 3,500 feet above mean sea level near the northwest corner of Andrews County and is immediately adjacent to the Texas/New Mexico state line (see **Figure 1**). The APE is located in a remote area north of Highway 176 (also called Highway 87) approximately 6.5 miles (10.5 kilometers) from Eunice, New Mexico. Existing disturbances in the area include an existing WCS facility just south of the APE, URENCO USA, a nuclear fuel enrichment facility in New Mexico, southwest of the APE, and various oil wells and pipelines (see **Figure 2**).

The APE falls into the stepped region of the Llano Estacado or the Southern High Plains. The nearest water source in the past would have been Baker Springs (no longer active) located approximately 0.4 miles or 0.65 kilometers west-southwest of the APE. The other major water sources in the region are the Pecos and Colorado Rivers, which are over 20 miles to the south and north, respectively. The geology of the APE includes the Pliocene-age Ogallala Formation with occurrences of Pleistocene-age windblown cover sand on the north side (BEG 1976). According to Natural Resources Conservation (NRCS) data, soils in the APE are primarily gently undulating Blakeney and Conger soils with small occurrences of Ratliff, Triomas, Wickett, and undulating Jalmar-Penwell soils (NRCS 2015). Most of the soils mapped within the APE have a low probability of buried materials; Blakeney and Conger soils are shallow, and Ratliff, Triomas, and Wickett soils are technically deep but their profiles include Pleistocene-age Blackwater Draw Formation parent material. The exception is Jalmar-Penwell soils, which tend to form on Holocene-age eolian deposits (NRCS 2015). Jalmar-Penwell soils are expected to be present only in the northeast corner of the APE.

A search of the *Texas Archeological Sites Atlas* (Atlas) maintained by the Texas Historical Commission (THC) and the Texas Archeological Research Laboratory (TARL) was conducted in order to identify archeological sites, historical markers (Recorded Texas Historic Landmarks or RTHLs), properties or districts listed on the National Register of Historic Places (NRHP), State Antiquities Landmarks (SALs), cemeteries, or other cultural resources that may have been previously recorded in or near the APE, as well as previous surveys undertaken in the area.

According to Atlas survey coverage data, the APE has not been subjected to an archeological survey. However, the Atlas does show that a portion of the existing WCS facility was surveyed in 1994 by Galván Eling Associates, Inc. (THC 2015). A review of the 1994 letter report by Galván Eling Associates, Inc. indicates that that project's APE was actually larger than the APE shown on the Atlas, and that the southern half of the current APE may have been included within it (Galván Eling Associates, Inc. 1994). Six pieces of burned caliche were found and no further work was recommended. The THC concurred on August 8, 1994. In 2004, URS Corporation contacted the THC on behalf of WCS regarding development of a portion of the Galván Eling 1994 survey area that had not

been developed between 1994 and 2004. The THC concurred that no further work was required on June 25, 2004. Because of the ambiguity in older survey maps, the lack of full coverage under the previous survey, and the fact that the previous study was over 20 years old, WCS elected to scope a survey of the entire new facility footprint.

According to the Atlas data, there are no other surveys within the study area and the nearest archeological site is over 3.7 miles (6 kilometers) away.

CMEC requested access to the *New Mexico Cultural Resources Information System* (NMCRIS) database administered by the Archeological Records Management Section (ARMS) of the New Mexico Historic Preservation Division (NMHPD) because a one-mile (1.6-kilometer) buffer around the APE extends into New Mexico. Approval by the New Mexico State Historic Preservation Officer (SHPO) is pending; CMEC expects that access will be granted and the results of that background study can be incorporated into the draft and final versions of the report.

Research Design

Although a portion of the APE was covered by the Galván Eling Associates, Inc. survey, the previous study was conducted more than 20 years ago. CMEC will conduct an intensive survey of the entire 140-acre (57-hectare) APE per category 6 under 13 TAC 26.15 and using the definitions in 13 TAC 26.3. Field methods and strategies will comply with the requirements of relevant subsections of 13 TAC 26, as elaborated by the THC and the Council of Texas Archeologists (CTA).

Based on the geographic setting, topography, geology, and soils in the APE, pedestrian examination supplemented by the excavation of shovel test units is anticipated. Shovel tests will be placed where ground surface visibility is below 30 percent, soils appear to be of sufficient depth to contain subsurface cultural materials, and/or previous disturbance appears minimal. All shovel tests will be excavated in natural levels to subsoil or 60 cm (24 in), whichever is encountered first. Excavated matrix will be screened through 0.635-cm (0.25-in) hardware cloth as allowed by moisture and clay content, which may require that the removed sediment be crumbled/sorted by hand, trowel, and/or shovel point. Deposits will be described using conventional texture classifications and Munsell color designations. Radial shovel tests will be placed at 5-m (16-ft) intervals around each shovel test positive for cultural material until two negative units have been established in each cardinal direction, as allowed by project limits, observed disturbance, and other constraints. Deviations from THC and CTA standards will be explicitly justified.

The project is located on privately owned land; therefore, diagnostic historic-age and prehistoric-age materials will be described and photographed in the field but not collected. At this time, full right of entry has been granted by WCS. However, if for any reason full access is not available at the time of the survey, a reasonable and good-faith effort will be made to document inaccessible areas from accessible areas for the purposes of the present permit. This permit would then be closed (assuming all work products and submittals meet THC/CTA requirements) and, if necessary, an additional permit application would be submitted at a future date when any remaining land becomes accessible.

Any site recorded during the investigation will be identified by a temporary marker placed on the site. The marker will have an identifying number in the form of the initials of the CMEC employee who recorded the site, followed by a consecutively assigned number that will indicate the order in which the sites were discovered (e.g. HR-01, HR-02, etc). This number is a temporary field number to be superseded by a formal site trinomial obtained following the completion of fieldwork (see below). Site designations will be applied only to features (whether surface or subsurface) that appear to represent occupation or activity areas and/or to clusters of artifacts (whether surface or subsurface), with the minimum threshold of two contiguous positive shovel test units.

CMEC personnel will keep a complete record of field notes supplemented by digital photographs, with observations including (but not limited to) identified sites, cultural materials, location markers, contextual

integrity, estimated time periods of occupations, vegetation, topography, hydrology, land use, soil exposures, general conditions at the time of the survey, and field techniques employed.

The project has a low probability of encountering human burials; however, if burials are found, Andrews County will be notified and all requirements of 8 THSC 711 will be followed.

Reporting and Curation

Relevant field observations for any new sites discovered will be transferred to TexSite forms and submitted to TARL for official recording and integration into the trinomial system. An analysis of recorded materials and site characteristics will be performed, and the results presented in a clear and concise manner. These data will be used to formulate a preliminary evaluation of the NRHP and/or SAL eligibility of each site, as well as a recommendation for further work or no further work, supported by explicit justifications (36 CFR 60; 36 CFR 800; 13 TAC 26.3; 13 TAC 26.10; 13 TAC 26.16). Data, sites recorded, and NRHP/SAL eligibility assessments will be presented in a standard draft survey report to be submitted to Andrews County, the NRC, and the THC. Per 13 TAC 26.16, the final permit-closure submittal to the THC will include a transmittal letter, abstract form, project area shapefile, tagged PDF files of the report in both restricted (with site locations) and public (without site locations) versions, as applicable. Copies of the public version of the report will be made available to future researchers at 11 repositories across the state; project records and artifacts (if applicable) will be curated at CAS per 13 TAC 26.16 and 26.17. It is understood that following submittal of records to CAS for curation, CAS will supply an approved Curation form to the THC as well as a Held-in-Trust form to be completed by personnel at the THC prior to the approval of permit closure.

References

Bureau of Economic Geology (BEG)

1976 *Geological Atlas of Texas, Hobbs Sheet*. University of Texas at Austin. Available at <http://twbd.state.tx.us/groundwater/acquifer/GAT/hobbs.htm>. Accessed April 22, 2015.

Galván Eling Associates, Inc.

1994 *Cultural Resource Survey of a Proposed Waste Facility, Andrews County, Texas*. Letter Report. Galván Eling Associates, Inc., Austin.

Natural Resources Conservation Service (NRCS)

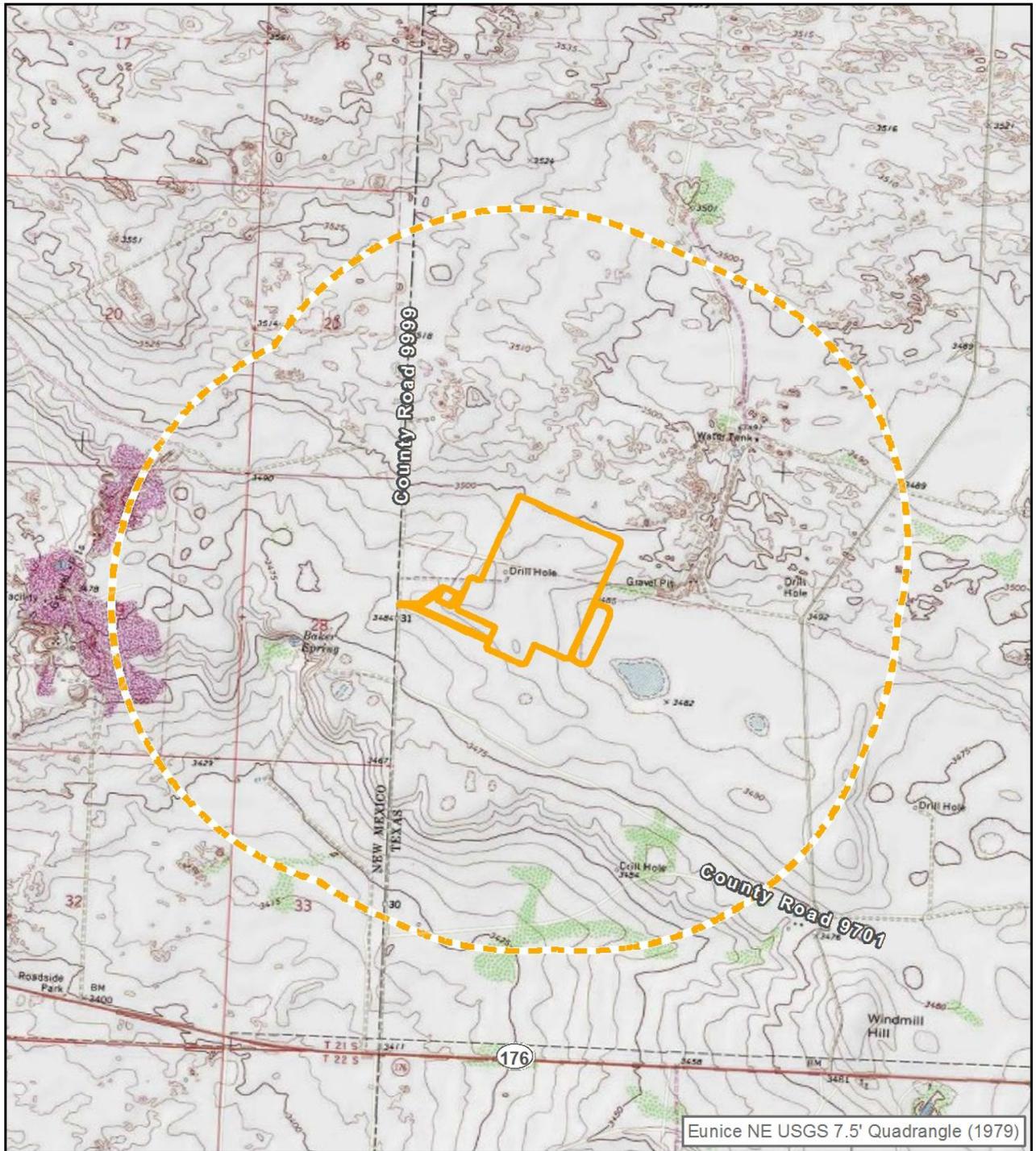
2015 NRCS SSURGO and STATSGO soil data viewed through SoilWeb KMZ interface for Google Earth, available at <http://casoilresource.lawr.ucdavis.edu/soilweb/>. U.S. Department of Agriculture and California Soil Resource Laboratory, University of California, Davis. Accessed April 22, 2015.

Texas Historical Commission (THC)

2015 *Texas Archeological Sites Atlas*. Texas Archeological Research Laboratory and the Texas Historical Commission. Available at <http://nueces.thc.state.tx.us>. Accessed April 22, 2015.

Figures

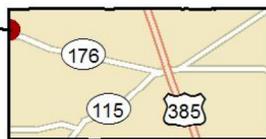
1. Location of archeological APE (topo base)
2. Location of archeological APE (aerial base)



-  Project APE
-  1-mile Buffer Study Area

Note: no previously recorded Texas resources mapped within the APE or Study Area

Project Area



Andrews County

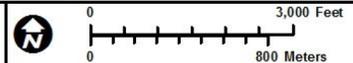


Figure 1
Location of Archeological APE

 **COX | McLAIN**
Environmental Consulting

Prepared for: WCS	1 in = 3,000 feet
	Scale: 1:36,000
Prepared by: SL	Date: 4/28/2015

Sources: THC (2015), TARL (2015), NHD (2014), National Geographic Society (2013)



 Project APE

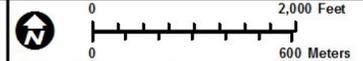


Figure 2
Aerial Photograph

 **COX | McLAIN**
Environmental Consulting

Prepared for: WCS	1 in = 2,000 feet
	Scale: 1:24,000
Prepared by: SL	Date: 4/28/2015

Aeria Source: NAIP (2014)



TRANSMITTAL MEMO

Cox|McLain Environmental Consulting, Inc.

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www.coxmclain.com
(512) 338-2223

To: Tiffany Osburn, THC

CC: Scott Kirk, WCS

RECEIVED
JUL 02 2015

From: Chris Dayton, CMEC

Date: 07/02/15

RE: Draft Report Submittal: *Intensive Archeological Survey of the Proposed Waste Control Specialists Spent Nuclear Fuel Consolidated Interim Storage Facility, Andrews County, Texas* (NRC)

Dear Ms. Osburn:

Please find enclosed one (1) unbound copy of the draft report *Intensive Archeological Survey of the Proposed Waste Control Specialists Spent Nuclear Fuel Consolidated Interim Storage Facility, Andrews County, Texas*. The work was carried out under Texas Antiquities Permit 7277 and Section 106 of the National Historic Preservation Act, as amended.

The archeological area of potential effects (APE) consists of the 216.6-acre footprint of the proposed facility. The APE was found to be heavily disturbed by recent grading and road construction and also contained ubiquitous evidence of chaining, root-plowing, and/or brush-hogging in the last several decades, likely related to the parcel's previous use for livestock ranching. The survey consisted of pedestrian examination due to the extent of previous disturbance, the lack of alluvial or dune deposits in the APE, and the high visibility of the ground surface. No archeological materials of any kind were observed within the APE, and no further work is recommended within the APE prior to the construction of the proposed storage facility.

Please do not hesitate to call or email if you have any questions or comments.

Sincerely,

Chris Dayton, PhD, RPA
chris@coxmcclain.com
(512) 338-2223

NO HISTORIC
PROPERTIES AFFECTED
PROJECT MAY PROCEED
by 
for Mark Wolfe
State Historic Preservation Officer
Date 7/29/15
Track# 201510249



July 8, 2015

Jeff Pappas, PhD
State Historic Preservation Officer and Director
New Mexico Historic Preservation Division
Department of Cultural Affairs
Bataan Memorial Building
407 Galisteo Street, Suite 236
Santa Fe, NM 87501

Re: Project Review under Section 106 for a Proposed Consolidated Interim Spent Fuel Storage Facility

Dear Dr. Pappas:

Waste Control Specialists LLC (WCS) intends to file an application for a license for the independent storage of spent nuclear fuel and reactor-related, greater-than-Class C wastes at a site in western Andrews County, Texas (see **Figure 1**, attached). These activities are regulated by the U.S. Nuclear Regulatory Commission (NRC); the project is therefore subject to Section 106 of the National Historic Preservation Act. The site is in the northwestern-most corner of Andrews County and is immediately adjacent to the Texas/New Mexico state line. Because a portion of the area of potential effect (APE) for visual/indirect effects extends into New Mexico, we are seeking your input on the project.

A previous license for disposal of low-level radioactive waste on the WCS complex was coordinated with Lisa Meyer in your office in July 2006 (file reference 078585). The New Mexico SHPO concurred that there would be no historic properties affected on July 21, 2006.

Coordination with the Texas Historical Commission (THC), the Texas State Historic Preservation Officer, has been completed for historic resources and is underway for archeological resources. On May 6, 2015, the THC concurred with the recommendations made by architectural historians at Cox|McLain Environmental Consulting (CMEC), that no historic properties would be affected and that the project may proceed. In May 2015, CMEC archeologists conducted an archeological survey under Texas Antiquities Permit 7277. No archeological resources were found within the proposed footprint; reporting of these results is currently in process.

Project Description

WCS is requesting authorization from the NRC to construct and operate a Consolidated Interim Spent Fuel (CISF) storage facility for spent nuclear fuel on approximately 216.6 acres of land within the approximately 14,000-acre complex owned by WCS (see **Figure 2**). The project is located in a sparsely populated area, with the town of Eunice, New Mexico located approximately five miles west of the site. The area is surrounded by a high density of oil wells to the west and some oil wells to the north; there is little development to the south and east, excluding portions of the existing WCS facility. Operations at the WCS facility began in 1994; none of the development is historic-age.

The proposed facility would house a dry cask storage system. WCS is exploring several different options for the system. One option would be an above-ground system utilizing several low-rise buildings (see **Figure 3**), while another option would store the casks underground. Both the above-ground and below-



ground design options are assumed to require the presence of a crane approximately 60 feet in height during the operating license timeframe.

Historic Resources

The Area of Potential Effect (APE) for direct impacts is proposed as the project footprint (see **Figure 4**). Taking into consideration the height of the crane that would be required, the height of the potential above-ground facility, and the relatively flat surrounding terrain, the APE for indirect/visual impacts is proposed as a one-mile radius from the proposed project footprint (see **Figure 4**). WCS anticipates that the NRC will issue a Final Environmental Impact Statement by April 2018; issuance of the license is expected by April 2019. Therefore, a historic-age date of 1974 (45 years prior to 2019) is proposed.

According to a search of the digital Sites Atlas maintained by the THC and a search of the New Mexico Cultural Resources Information System (NMCRIS), there are no previously-identified non-archeological historic resources located within the APE for direct or indirect impacts. The nearest previously identified resource in Texas is the historical marker for Andrews County, located approximately 17 miles southeast of the project area. The closest historic resource in New Mexico is "HCPI 37299" (building at 703 Ruth Circle, Eunice, Lea County), located approximately 4.5 miles from the site.

Adjacent to the WCS facility to the west is a large uranium enrichment plant called the National Enrichment Facility, operated by URENCO USA. This facility was developed within the past 15 years. The proposed project area is located in a sparsely populated area of Texas with little development aside from the non-historic age WCS and URENCO USA facilities. The proposed project would not result in a direct effect to any historic resources.

The nearest developed area is Eunice, New Mexico, which is located approximately five miles west of the proposed site. There are two large visual obstructions between viewers in Eunice and the proposed crane at the site: red soil mounds approximately 100 feet in height on WCS property, and the Urenco facility (see **Figure 5**). Based on information from WCS, the soil mounds will be in place indefinitely or potentially utilized as fill. As illustrated in **Photos 3-5** in the attached photo sheets, the red soil mounds and the Urenco facility are visible from the outskirts of Eunice but tend to dissolve visually into the horizon. Excluding the crane, the CISF storage facility would be approximately 30 feet above the surface and less visible from Eunice than existing features and structures.

Archeological Resources

According to the Atlas/NMCRIS search referenced above, no cemeteries, State Antiquities Landmarks (SALs), or archeological sites have been recorded in the project area or within one mile (NMDCA 2015; THC 2015). The closest known resources, five prehistoric sites, are all located in New Mexico, just outside the one-mile study buffer. Sites LA140701, LA140702, LA140703, LA140704, and LA140705 are all surface and near-surface scatters of fire-cracked rock, flaking debris, and ground stone recorded in an aeolian dune field by Western Cultural Resource Management during a 2003 survey for the New Mexico State Land Office (NMDCA 2015). These sites were excavated prior to destruction of the dune field by the construction of the National Enrichment Facility.

In May 2015, a pedestrian archeological survey was completed under Texas Antiquities Permit 7277. The archeological APE consists of the 216.6-acre footprint of the proposed spent fuel site. The APE was found