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An Intensive Cultural Resources Survey of American Midstream Partners, LP's Proposed Ajax UL6-31 Lateral Project Located on UT Land in Andrews and Martin Counties, Texas

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HJN 170212 AR
Texas Antiquities Committee Permit No. 8193

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Prepared by:

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February 2018

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MANAGEMENT SUMMARY

On 12 October 2017, Horizon Environmental Services, Inc. (Horizon) conducted an intensive cultural resources survey of American Midstream Partners, LP's (AMP) proposed Ajax UL6-31 Lateral pipeline right-of-way (ROW) located in northeastern Andrews and northwestern Martin counties, Texas (Project Area). The development of the pipeline ROW will be privately funded and will not require any federal permitting or coordination. However, it is located entirely on land owned by the University of Texas (UT Land). As UT Land is considered to be public property, the undertaking falls under the regulations of the Antiquities Code of Texas (ACT). At the request of Venado Environmental, LLC (Venado), Horizon conducted the cultural resources survey of the Project Area on behalf of AMP in compliance with the ACT. The purpose of the survey was to determine if any archeological sites were located within the Project Area and, if any existed, to determine if the project had the potential to have any adverse impacts on sites considered eligible for formal designation as State Antiquities Landmarks (SALs). The cultural resources survey was conducted under Texas Antiquities Committee (TAC) permit number 8193.

The Project Area measures approximately 2.3 miles (3.8 kilometers [km]) long by 100.0 feet (30.5 meters [m]) wide (approximately 27.9 acres). The entire length of the proposed ROW is located on UT Land.

The cultural resources survey of the Project Area resulted in entirely negative findings. No cultural materials were observed on the surface of the Project Area or within any of the 35 excavated shovel tests.

Based on the negative survey results, it is Horizon's opinion that the construction of the proposed Ajax UL6-31 Lateral Project across UT Land will have no adverse effect on significant cultural resources designated as or considered eligible for designation as SALs. Horizon therefore recommends that AMP be allowed to proceed with the construction of the proposed pipeline relative to the jurisdiction of the ACT.

TABLE OF CONTENTS

LIST OF FIGURES

Page

LIST OF TABLES

Page

ACKNOWLEDGEMENTS

Horizon Environmental Services, Inc. (Horizon) conducted the intensive cultural resources survey of American Midstream Partners, LP's (AMP) proposed Ajax UL6-31 Lateral pipeline right-of-way (ROW) reported herein in compliance with the Antiquities Code of Texas (ACT). Russell Brownlow served as the principal investigator for the project and lead author of this report. Jacob Lyons and Jared Wiersema conducted the field investigations, while Jacob Lyons was responsible for drafting the figures.

1.0 INTRODUCTION

This document reports the results of an intensive cultural resources survey of American Midstream Partners, LP's (AMP) proposed Ajax UL6-31 Lateral pipeline right-of-way (ROW) located in northeastern Andrews and northwestern Martin counties, Texas (Project Area; Figures 1-1 and 1-2). The development of the pipeline ROW will be privately funded and will not require any federal permitting or coordination. However, it is located entirely on land owned by the University of Texas (UT Land). As UT Land is considered to be public property, the undertaking falls under the regulations of the Antiquities Code of Texas (ACT). At the request of Venado Environmental, LLC (Venado), Horizon Environmental Services, Inc. (Horizon) conducted the cultural resources survey of the Project Area on behalf of AMP in compliance with the ACT. The purpose of the survey was to determine if any archeological sites were located within the Project Area and, if any existed, to determine if the project had the potential to have any adverse impacts on sites considered eligible for formal designation as State Antiquities Landmarks (SALs).

The Project Area measures approximately 2.3 miles (3.8 kilometers [km]) long by 100.0 feet (30.5 meters [m]) wide (approximately 27.9 acres). The entire length of the proposed ROW is located on UT Land.

The cultural resources investigations consisted of an archival review, an intensive cultural resources survey of the Project Area, and the production of a report suitable for review by the State Historic Preservation Officer (SHPO) in accordance with the Texas Historical Commission's (THC) *Rules of Practice and Procedure*, Chapter 26, Section 27, and the Council of Texas Archeologists (CTA) *Guidelines for Cultural Resources Management Reports*. Russell Brownlow (Horizon's cultural resources director) served as the project's principal investigator, while Jacob Lyons and Jared Wiersema (Horizon field technicians) conducted the field investigations. The cultural resources investigations were conducted under Texas Antiquities Committee (TAC) permit number 8193.

Horizon conducted the survey of the Project Area on 12 October 2017. This entailed intensive surface inspection and subsurface shovel testing along the length of the Project Area. The Texas State Minimum Archeological Survey Standards (TSMASS) require a minimum of 16 shovel tests per mile for linear projects measuring up to 100.0 feet (30.5 m) wide. As the Project Area totals 2.3 miles (3.8 km) in length, a minimum of 38 shovel tests were necessary

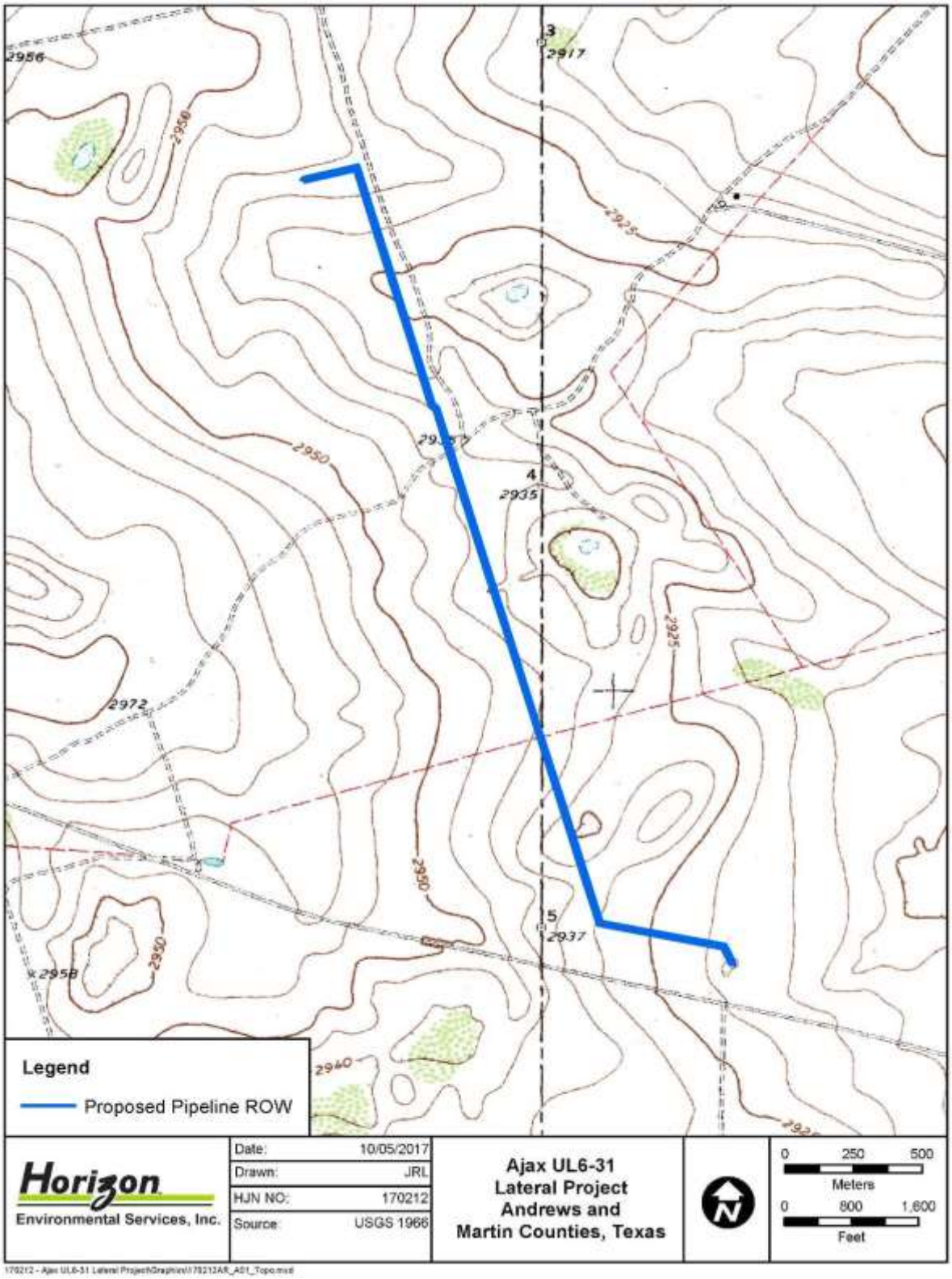

Figure 1-1. Topographic map with the location of the Project Area

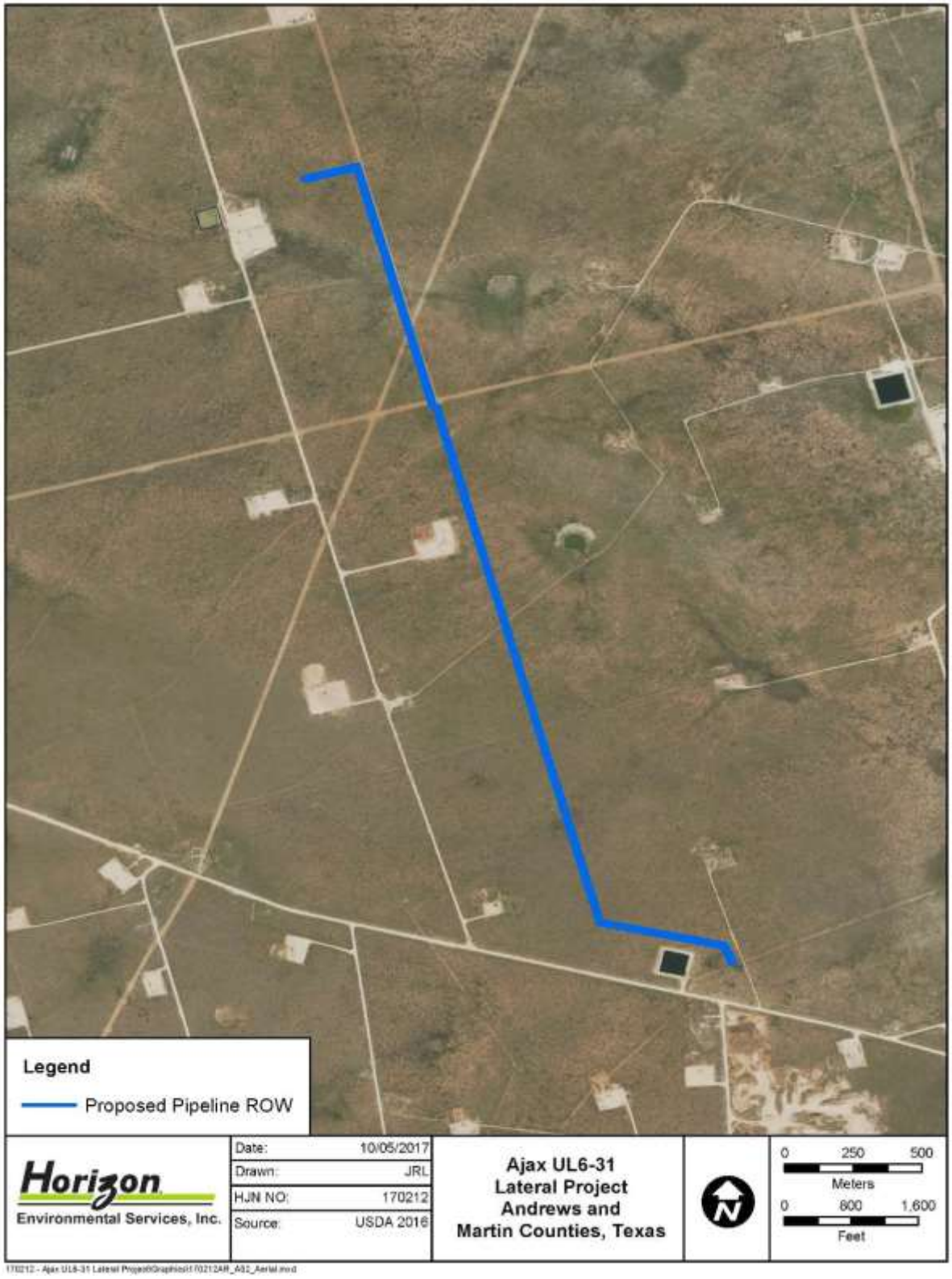

Figure 1-2. Aerial photograph with the location of the Project Area

within the Project Area in order to comply with the TSMASS. Horizon fell just short of the TSMASS by excavating a total of 35 shovel tests across the Project Area.

The cultural resources survey of the Project Area resulted in entirely negative findings. No cultural materials were observed on the surface of the Project Area or within any of the 35 excavated shovel tests.

Based on the negative survey results, it is Horizon's opinion that the construction of the proposed Ajax UL6-31 Lateral Project across UT Land will have no adverse effect on significant cultural resources designated as or considered eligible for designation as SALs. Horizon therefore recommends that AMP be allowed to proceed with the construction of the proposed pipeline relative to the jurisdiction of the ACT. However, in the unlikely event that any cultural materials (including human remains or burial features) are inadvertently discovered at any point during construction, use, or ongoing maintenance of the proposed pipeline ROW, even in previously surveyed areas, all work at the location of the discovery should cease immediately, and the THC and UT should be notified of the discovery.

2.0 ENVIRONMENTAL SETTING

2.1 GENERAL PROJECT AREA DESCRIPTION

AMP'S proposed Ajax UL6-31 Lateral Project is located in northeastern Andrews and northwestern Martin counties, approximately 20.0 miles (32.2 km) northeast of Andrews, Texas. It can be found on the US Geological Survey (USGS) 7.5-minute Scharbauer Ranch, Texas, topographic quadrangle map (see Figure 1-1). The Project Area consists of a pipeline ROW that measures approximately 2.3 miles (3.8 km) long by 100.0 feet (30.5 m) wide (approximately 27.9 acres). The entire length of the proposed ROW is located on UT Land. Representative images of the Project Area at the time of the cultural resources survey are presented in Figures 2-1 and 2-2.

2.2 PHYSIOGRAPHY AND HYDROLOGY

The Project Area is located in northeastern Andrews and northwestern Martin counties in far West Texas. It is situated within an area of gently undulating desert hills dotted with several small playa basins to the north of Mustang Draw (see Figure 1-1). The proposed ROW initiates at an existing well pad in Andrews County and extends southeasterly to an existing gathering line in Martin County. Elevations within the Project Area range between 2920.0 and 2950.0 feet (890.0 and 899.2 m) above mean sea level. Hydrologically, the proposed ROW is situated within the Colorado River basin. It is drained to the south by Mustang Draw. Mustang Draw flows to the southeast, joining Beals Creek approximately 38.6 miles (62.2 km) southeast of the Project Area. Beals Creek flows easterly, joining the Colorado River approximately 81.2 miles (130.6 km) southeast of the Project Area.

2.3 CLIMATE

Andrews and Martin counties have cool-temperate, dry steppe climates. Winters are mild, with an average temperature of 46.2 degrees Fahrenheit (°F). The summer months are hot, with an average temperature exceeding 90.0°F. The average annual total precipitation is about 14.0 inches (35.6 centimeters [cm]), with most of it falling between May and October (NRCS 1974a and 1974b).

Figure 2-1. View along proposed ROW, facing west

Figure 2-2. Another view along proposed ROW, facing north

2.4 FLORA AND FAUNA

The Project Area is situated within Blair's Kansan biotic province that takes in the Panhandle and the red plains to the east of the escarpment of the high plains. The plants and animals are mostly grassland species, but some Austroriparian species extend along wooded stream valleys into the eastern part of the province (Blair 1950). The proposed ROW is located along the southern edge of the Llano Estacado ecoregion (Griffith et al. 2007). The Llano Estacado ecoregion was historically a shortgrass prairie supporting large herds of buffalo. Common plants species on these prairies included buffalograss, blue and sideoats grama, silver bluestem, mesquite, yucca, prickly pear, and juniper (Griffith et al. 2007). In addition to supporting vast bison herds, this ecosystem also included prairie dogs, black-footed ferrets, burrowing owls, coyotes, pronghorn antelope, gray wolves, and a variety of deer. Playa basins scattered across this region also attracted migratory waterfowl such as the sandhill crane (Griffith et al. 2007).

2.5 SOILS

A total of 5 soil types are mapped along the Project Area. These soils are presented in Table 2-1 (NRCS 1974c, 1974d) and in Figure 2-3.

Table 2-1. Soils mapped within the Project Area

Soil Name	Soil Type	Soil Depth (inches)	Setting
Faskin and Douro soils, gently undulating (FdB)	Faskin Fine sandy loam Douro Fine sandy loam	Faskin 0 to 8: Fine sandy loam 8 to 60: Sandy clay loam Douro 0 to 4: Fine sandy loam 4 to 30: Sandy clay loam 30 to 80: Caliche	Faskin Sloping uplands Douro Plains
Miles loamy fine sand, 0 to 3% slopes (MlB)	Loamy fine sand	0 to 10: Loamy fine sand 10 to 14: Fine sandy loam 14 to 55: Sandy clay loam 55 to 72: Fine sandy loam	Uplands
Ratliff soils, gently undulating (RaB)	Loam	0 to 10: Loam 10 to 80: Clay loam	Plains
Triomas loamy fine sand, 0 to 3% slopes (TrB)	Fine sand	0 to 16: Fine sand 16 to 80: Sandy clay loam	Plains
Triomas and Wickett soils, gently undulating (TwB)	Triomas Fine sand Wickett Loamy fine sand	Triomas 0 to 16: Fine sand 16 to 80: Sandy clay loam Wickett 0 to 15: Loamy fine sand 15 to 36: Fine sandy loam 36 to 63: Caliche	Triomas Plains Wickett Uplands

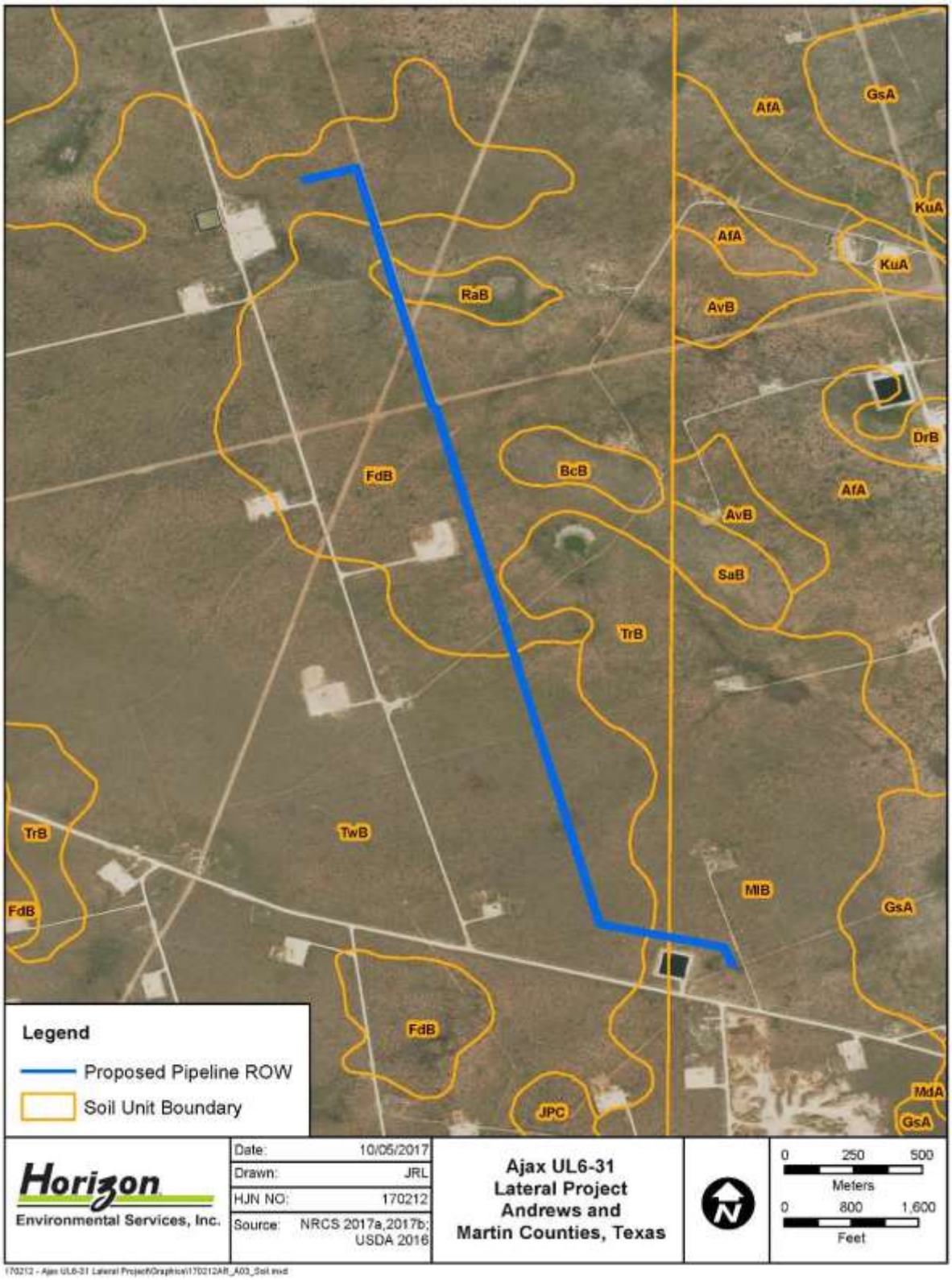

Figure 2-3. Soils mapped within the Project Area

3.0 CULTURAL BACKGROUND

The general temporal framework for most prehistoric archeological sites in Texas is based on the seriation of projectile point types originally established by Suhm et al. (1954) and later revised by Suhm and Jelks (1962), Prewitt (1981, 1985), and Turner and Hester (1999). This temporal framework, consisting of a tri-partite system based on technological changes in diagnostic artifacts that occurred as a result of indigenous adaptation to changing environments and subsistence strategies, is broken down into 3 main periods: the Paleoindian (pre-8500 B.P.), the Archaic (8500 to 1250 B.P.), and the Late Prehistoric (1250 to 250 B.P.). The Archaic period is further subdivided into the Early Archaic (8500 to 6000 B.P.), the Middle Archaic (6000 BP to 3500 B.P.), and the Late Archaic (3500 to 1250 B.P.).

3.1 PALEOINDIAN (PRE-8500 B.P.)

The Paleoindian period is characterized by highly mobile groups hunting over large areas. Although now-extinct megafauna such as mammoth and bison are often found associated with sites of this time period, smaller game such as deer and turtles were also likely utilized as food items. Undoubtedly, plant foods made up a portion of the diet as well. Based upon the low number of diagnostic artifacts recovered from sites of this period, as well as the low frequency of sites, population densities are considered low and probably consisted of small family groups. An increase in projectile point frequency toward the end of the period may suggest an increased population density or, perhaps, an increase in macro-band aggregation for the purpose of communal hunts. Sites from this time period are found mostly in upland tributary and spring settings, as well as deeply buried in floodplain alluvium. Clovis and Folsom points are indicative of Early Paleoindian occupations, while Plainview, Golondrina, Scottsbluff, Meserve, Eden, Dalton, San Patrice, and Angostura points are characteristic of the later span of the period.

3.2 EARLY ARCHAIC (8500 TO 6000 B.P.)

Like the Paleoindian period, Early Archaic population densities remained low, still consisting of small, mobile bands. However, a more generalized hunting-and-gathering strategy is evidenced by the use of river mussels. Early Archaic sites are typically located on terraces along tributary watercourses, but are also often found deeply buried in floodplain alluvium. Site locale and an increased use of river mussels possibly indicate a shift in subsistence strategies in order to exploit the bottomlands of major waterways during this period of wetter climates.

Split-stemmed points such as Gower, Martindale, and Uvalde, as well as Big Sandy, Hardin, and Hoxie, are diagnostic of Early Archaic occupations.

3.3 MIDDLE ARCHAIC (6000 TO 3500 B.P.)

During the Middle Archaic, the trend to bottomland exploitation increased, with fewer sites found along minor tributaries. Population density remained relatively low, but obviously increased over prior periods, with broad-spectrum hunting and gathering represented at larger sites where food sources were more abundant.

3.4 LATE ARCHAIC (3500 TO 1250 B.P.)

In contrast to earlier time periods, the Late Archaic represents a period of increased population and site density. Subsistence focused on hunting and gathering within the bottomlands of major creeks and rivers. Deer remains are quite common at Late Archaic sites, and the exploitation of plant foods (nuts) seems to have increased during this period, based upon an increase in plant-processing tools. Late Archaic sites are typically found on sandy terraces along tributaries, as well as on clayey floodplains.

3.5 LATE PREHISTORIC I (1250 TO 250 B.P.)

The Late Prehistoric, in general, is characterized by the advent of the bow and arrow in Texas, as well as ceramics. Hunting and gathering continued, with an emphasis on deer and other small game. Horticulture also became evident in some areas. As with the Late Archaic, sites continue to be located on sandy terraces along major creeks and rivers. In fact, the majority of Late Prehistoric sites contain some traces of Late Archaic occupations. A marked population increase is highly evident, and increased territorial conflicts possibly explain the recovery of burials with indications of violent deaths. Furthermore, differentiated burial practices also suggest the development of non-egalitarian societies.

4.0 ARCHIVAL RESEARCH

4.1 DATABASE AND MAP REVIEW

Archival research conducted via the Internet at the THC's *Texas Archeological Sites Atlas* (Atlas) website indicated the presence of no previously recorded archeological sites or cemeteries within a 1.0-mile (1.6-km) perimeter of the Project Area (THC 2017). Similarly, a review of the National Park Service's (NPS) Nation Register of Historic Places (NRHP) Google Earth map layer indicated the presence of no historic properties listed on the NRHP within the review perimeter (NPS 2017). No documented cultural resources, including any listed on the NRHP or formally designated as SALs, are located within or immediately adjacent to the boundaries of the Project Area. Based on the Atlas database, no previous cultural resources surveys have been undertaken within the boundaries of the current Project Area.

The closest documented cultural resource to the Project Area is a historic-era WWII bombing target practice area. This site, 41Ad66, is located approximately 4.3 miles (6.9 km) west of the Project Area.

4.2 PROBABILITY ASSESSMENT

Prehistoric archeological sites are commonly found in upland areas and on alluvial terraces near stream/river channels or drainages. Additionally, in this part of the state, they are often found in proximity to playa lake beds and dune blowouts. Based on the location of the Project Area on elevated landforms above several playa basins, it was Horizon's opinion, prior to the field efforts, that there existed a moderate to high potential for undocumented prehistoric cultural deposits within the Project Area.

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

5.0 SURVEY METHODOLOGY

A 2-person Horizon archeological field crew completed the intensive pedestrian survey of the Project Area on 12 October 2017. This entailed intensive surface inspection and subsurface shovel testing along the length of the Project Area. The TSMASS require a minimum 16 shovel tests per mile for linear projects measuring up to 100.0 feet (30.5 m) wide. As the Project Area totals 2.3 miles (3.8 km) in length, a minimum of 38 shovel tests were necessary within the Project Area in order to comply with the TSMASS. Horizon fell just short of the TSMASS by excavating a total of 35 shovel tests across the Project Area. All excavated matrices were screened through 0.25-inch (6.3-millimeter [mm]) hardware mesh or were trowel-sorted if the dense clay soils prohibited successful screening.

Field notes were maintained on terrain, vegetation, soils, landforms, shovel tests, cultural material observed (if any), etc. Standardized shovel test forms were completed for every shovel test. These forms included location data, depth, soil type, and notations on any artifacts encountered. For any new archeological sites recorded, standard site forms were completed and filed at the Texas Archeological Research Laboratory (TARL) for permanent housing. Similarly, for any previously recorded archeological sites that were assessed, updated site forms were completed and filed at the TARL.

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

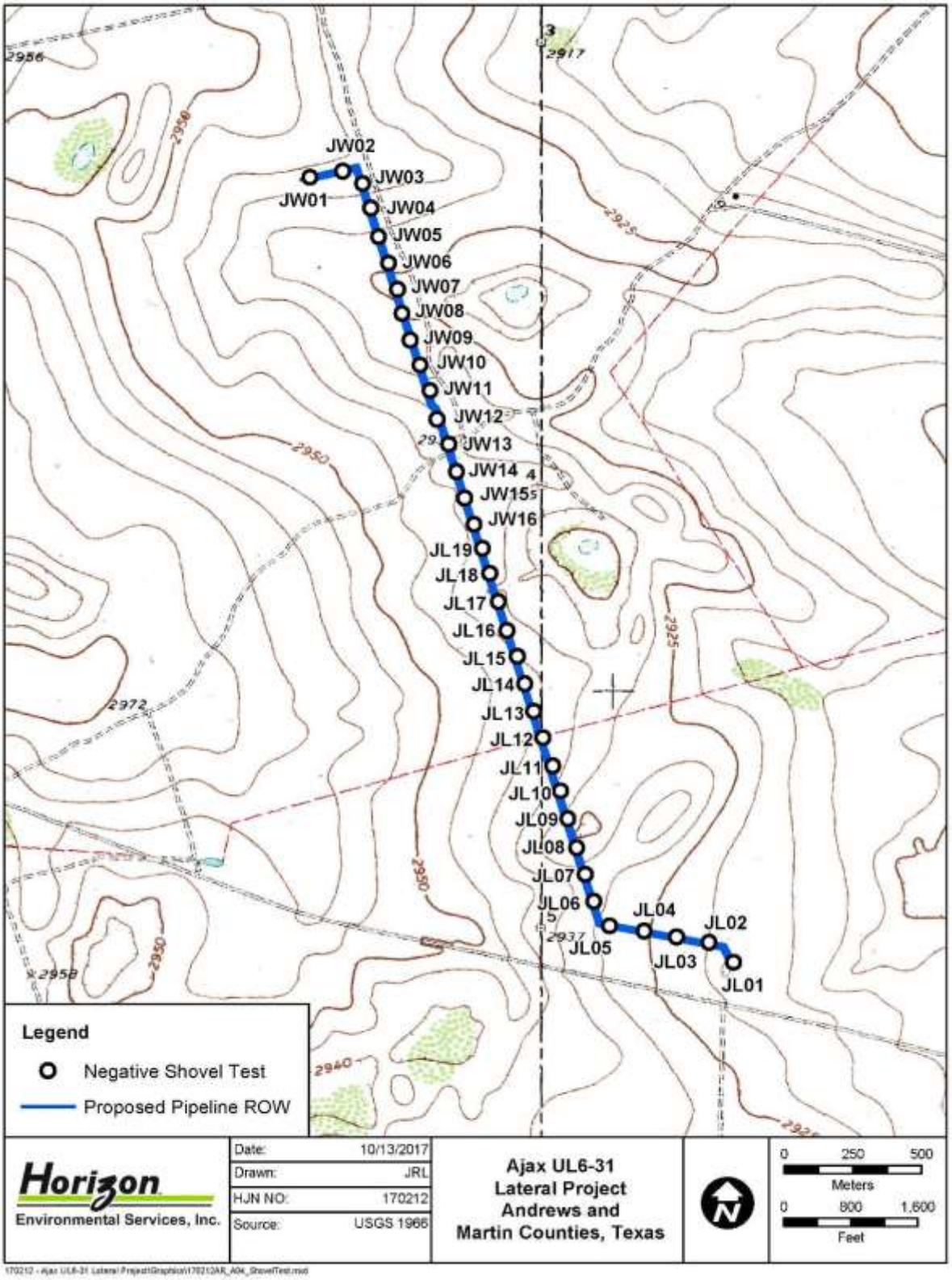

Figure 5-1. Shovel test locations within the Project Area

6.0 RESULTS AND RECOMMENDATIONS

6.1 RESULTS

On 12 October 2017, Horizon conducted an intensive cultural resources survey of AMP's proposed Ajax UL6-31 Lateral pipeline ROW located in northeastern Andrews and northwestern Martin counties, Texas. The development of the pipeline ROW will be privately funded and will not require any federal permitting or coordination. However, it is located entirely on land owned by the University of Texas. As UT Land is considered to be public property, the undertaking falls under the regulations of the ACT. At the request of Venado, Horizon conducted the cultural resources survey of the Project Area on behalf of AMP in compliance with the ACT. The purpose of the survey was to determine if any archeological sites were located within the Project Area and, if any existed, to determine if the project had the potential to have any adverse impacts on sites considered eligible for formal designation as SALs. The cultural resources survey was conducted under TAC permit number 8193.

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The cultural resources survey of the Project Area resulted in entirely negative findings. No cultural materials were observed on the surface of the Project Area or within any of the 35 excavated shovel tests.

6.2 RECOMMENDATIONS

Based on the negative survey results, it is Horizon's opinion that the construction of the proposed Ajax UL6-31 Lateral Project across UT Land will have no adverse effect on significant cultural resources designated as or considered eligible for designation as SALs. Horizon

therefore recommends that AMP be allowed to proceed with the construction of the proposed pipeline relative to the jurisdiction of the ACT. However, in the unlikely event that any cultural materials (including human remains or burial features) are inadvertently discovered at any point during construction, use, or ongoing maintenance of the proposed pipeline ROW, even in previously surveyed areas, all work at the location of the discovery should cease immediately, and the THC and UT should be notified of the discovery.

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1966 7.5-minute series topographic map, Scharbauer Ranch, Texas, quadrangle.

APPENDIX A:

SHOVEL TEST DATA

Table A-1. Shovel Test Summary Data

ST No.	UTM Coordinates[1]		Depth (cmbs)	Soils	Artifacts
	Easting	Northing			
JW1	761435	3596508	0-80	Reddish brown sandy loam	None
			80-100	Reddish brown loam	None
JW2	761536	3596533	0-100+	Reddsih brown loam	None
JW3	761598	3596489	0-80	Reddish brown sandy loam	None
			80-90+	Reddish brown sandy clay loam	None
JW4	761625	3596402	0-80	Reddish brown sandy loam	None
			80-90+	Reddish brown sandy clay loam	None
JW5	761653	3596298	0-80	Reddish brown sandy loam	None
			80+	Reddish brown sandy clay loam	None
JW6	761686	3596202	0-80	Brown sandy clay	None
			70-80+	Very dark brown sandy clay	None
JW7	761715	3596109	0-70	Brown loam	None
			70+	Brown clay loam	None
JW8	761732	3596021	0-30	Brown silty loam	None
			30-80+	Reddish brown sandy loam	None
JW9	761760	3595926	0-60	Dark reddish brown sandy loam	None
			60+	Dark reddish brown sandy clay	None
JW10	761792	3595836	0-40	Light reddish brown sandy loam	None
			40+	Very dark brown clay loam	None
JW11	761825	3595743	0-100+	Reddish brown sandy loam	None
JW12	761850	3595641	0-100+	Reddish brown sandy loam	None
JW13	761887	3595550	0-70	Reddish brown sandy loam	None
			70+	Reddish brown sandy clay	None
JW14	761915	3595452	0-70	Reddish brown sandy loam	None
			70+	Reddish brown sandy clay	None
JW15	761941	3595357	0-70	Reddish brown sandy loam	None
			70+	Reddish brown sandy clay	None
JW16	761973	3595262	0-80	Reddish brown sandy loam	None
			80+	Reddish brown sandy clay	None
JL1	762813	3593694	0-85	Reddish brown fine loamy sand	None
			85-100+	Moist dark gray brown sandy clay loam	None
JL2	762736	3593765	0-50	Reddish brown fine loamy sand	None
			50-60+	Dense reddish brown clay	None
JL3	762635	3593783	0-60	Reddish brown fine loamy sand	None
			60-70+	Dense reddish brown clay	None

ST No.	UTM Coordinates[1]		Depth (cmbs)	Soils	Artifacts
	Easting	Northing			
JL4	762536	3593801	0-60	Reddish brown fine loamy sand	None
			60-70+	Dense reddish brown clay	None
JL5	762429	3593817	0-50	Reddish brown fine loamy sand	None
			50-60+	Dense reddish brown clay	None
JL6	762378	3593905	0-65	Reddish brown fine loamy sand	None
			65-75+	Dense reddish brown clay	None
JL7	762349	3594001	0-55	Reddish brown fine loamy sand	None
			55-65+	Dense reddish brown clay	None
JL8	762320	3594099	0-60	Reddish brown fine loamy sand	None
			60-75	Dark reddish brown sandy clay loam	None
			75+	Very dark reddish brown sandy clay	None
JL9	762291	3594203	0-95	Pale reddish brown fine loamy sand	None
			95-100+	Dark gray brown/reddish brown sandy clay	None
JL10	762264	3594302	0-65	Pale reddish brown fine loamy sand	None
			65-75+	Very dark reddish brown sandy clay	None
JL11	762238	3594394	0-60	Pale reddish brown fine loamy sand	None
			60-70+	Very dark reddish brown sandy clay	None
JL12	762205	3594494	0-65	Pale reddish brown fine loamy sand	None
			65-75+	Very dark reddish brown sandy clay	None
JL13	762175	3594589	0-80	Pale reddish brown fine loamy sand	None
			80+	Very dark reddish brown sandy clay	None
JL14	762145	3594689	0-45	Pale reddish brown fine loamy sand	None
			45-55+	Very dark reddish brown sandy clay	None
JL15	762119	3594787	0-70	Pale reddish brown sandy loam	None
			70+	Dark reddish brown sandy clay	None
JL16	762084	3594881	0-65	Reddish brown fine sandy loam	None
			65-75+	Very dark reddish brown sandy clay	None
JL17	762056	3594984	0-60	Pale reddish brown sandy loam	None
			60-70+	Very dark reddish brown sandy clay	None
JL18	762026	3595085	0-55	Dark reddish brown sandy clay loam	None
			55-70+	Dense reddish brown sandy clay	None
JL19	762002	3595176	0-90	Orange brown fine sandy loam	None
			90+	Sandstone bedrock	None

[1] All UTM coordinates are located in Zone 14 and utilize the North American Datum of 1983 (NAD 83)

cmbs = Centimeters below surface

ST = Shovel test

UTM = Universal Transverse Mercator