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Cultural Resource Survey Of Proposed Expansion Areas For The Kerrville City Landfill And Limited Testing Of Site 41KR501, Kerrville, Kerr County, Texas

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Antiquities Permit No. 7238

Technical Report No. 121

by

AmaTerra Environmental, Inc.

Austin, Texas

July 2015

4009 Banister Lane, Suite 300
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AmaTerra Project No. 146-001

Cover photograph: View of the Western Expansion Area from above.

Abstract

In April of 2015, AmaTerra Environmental, Inc. staff conducted intensive cultural resource investigations of approximately 78 acres of proposed expansions to the City of Kerrville's existing Kerrville Landfill in Kerr County, Texas. Working on behalf of the City of Kerrville (the land owner and project sponsor) and their design consultant LNV, Inc., AmaTerra investigated portions of the Landfill's proposed Western Expansion Area (36.5 acres) and the Big Hill Expansion Area (41.5 acres) for compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended) and the Antiquities Code of Texas (Antiquities Permit 7238). Within undisturbed and previously-unsurveyed portions of the Big Hill Expansion Area, archeologists conducted intensive area survey and excavated 17 subsurface shovel tests, finding the expansion area composed of shallow, deflated, upland soils. Previously recorded Site 41KR673, a diffuse prehistoric surface scatter of non-diagnostic tools and lithic debris was expanded to encompass approximately 15 acres of the Big Hill Expansion Area.

The proposed Western Expansion Area was surveyed previously, hence, archeologists focused on intensive survey and limited NRHP/SAL-eligibility testing of a previously recorded prehistoric site, Site 41KR501. Nine backhoe trenches were excavated within the site area. These yielded seven flakes and three burned rock fragments in three of the trenches. All of the artifacts were found within secondary, high-energy, flood-related contexts (or subsurface disturbance) ranging from 70 to 210 centimeters below the surface. A small surface scatter of burned rock was also observed near the site's southern boundary. No evidence of intact features was observed. Given the lack of temporal diagnostics, very minimal artifacts, and the resulting poor level of research potential, Sites 41KR501 and 41KR673 are recommended as not eligible for listing in the National Register of Historic Places or as a State Antiquities Landmarks. Accordingly, AmaTerra recommends that the project proceed with no adverse effects to Historic Properties and/or State Antiquities Landmarks and no further work necessary. No artifacts were collected during the survey but all field-generated notes, forms, and photographs will be permanently curated at the Texas Archeological Research Laboratory in Austin.

Table of Contents

List of Figures

List of Tables

Chapter 1

Introduction

This report summarizes the results of cultural resource survey of proposed expansions of the existing City of Kerrville Landfill, east of the City of Kerrville, Kerr County, Texas. The survey was carried out by archeologists from AmaTerra Environmental, Inc. (AmaTerra) in April of 2015 on behalf of the City of Kerrville (the project sponsor and land owner; the City). For this project, the City proposes to increase capacity of their existing facility by expanding to the northwest and southeast in two separate expansion segments: the Western Expansion Area, which totals 36.5 acres, and the Big Hill Expansion Area, which covers 41.5 acres. While design-specific details are not available at this time, the project's engineers (LNV, Inc.) anticipate that landfill expansion will include deep excavation and subsurface soil preparation with maximum depths of impact of up to 10 feet (~3 meters). **Figure 1-1** indicates the location of these expansion areas overlaid on the Legion, Texas USGS topographic map. **Figure 1-2** depicts the project area on a recent aerial photograph.

The City of Kerrville currently owns the land proposed for construction, therefore the work was subject to state level archeological resource regulatory compliance outlined in the Antiquities Code of Texas. Additionally, the expansion will require individual permits from the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. Therefore, this survey was conducted for compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended; Section 106).

To assess the project's potential for impacts to significant cultural resources, AmaTerra conducted intensive areal survey of 34.5 acres of undisturbed and previously-unsurveyed portions of the 41-acre Big Hill Expansion Area. This survey included surface inspection and excavation of 17 subsurface shovel tests. Previously-recorded prehistoric surface lithic scatter Site 41KR673 was revisited and expanded but continues to be recommended as ineligible for listing at a Historic Property and/or SAL. All of the proposed Western Expansion Area had been surveyed twice previously with remnants of buried Site 41KR501 documented in both instances. AmaTerra conducted more intensive investigations of the components of the site that could be impacted by the proposed expansion to determine if those deposits were eligible for listing as a Historic Property and/or as a SAL. Through nine backhoe trenches excavated during the investigation, AmaTerra concludes that prehistoric artifacts associated with the site are present within the proposed expansion footprint, but those deposits are found in very low quantities and in disturbed and/or secondary context devoid of any research potential. Test unit excavation or broader evaluation through shovel testing was considered unnecessary.

For compliance with Section 106, AmaTerra survey staff evaluated the potential for indirect visual effects to non-archeological cultural resources that could result from project construction. AmaTerra reviewed modern aerial photography and visually inspected adjacent parcels, determining that very few buildings were located within the expansion area and its

immediately adjacent parcels. Those structures that are extant are modern and utilitarian in nature related to the landfill.

Mason Miller served as the project's Principal Investigator while Joel Butler served as the Project Archeologist. Noel Steinle was the project's crew chief while Rene Pickard operated the backhoe. Fieldwork took place between April 14th and 16th, 2015. This report is divided into five chapters: Chapter 2 details the environmental setting of the project area, Chapter 3 details previously documented archeological sites and work in the immediate vicinity as well as describes the regional cultural chronology, Chapter 4 describes the methods used in carrying out the field survey and testing as well as the results of fieldwork, and Chapter 5 summarizes the findings and makes recommendations for site eligibility for the two sites detailed in this report. Appendix A contains digitized shovel test logs from fieldwork.

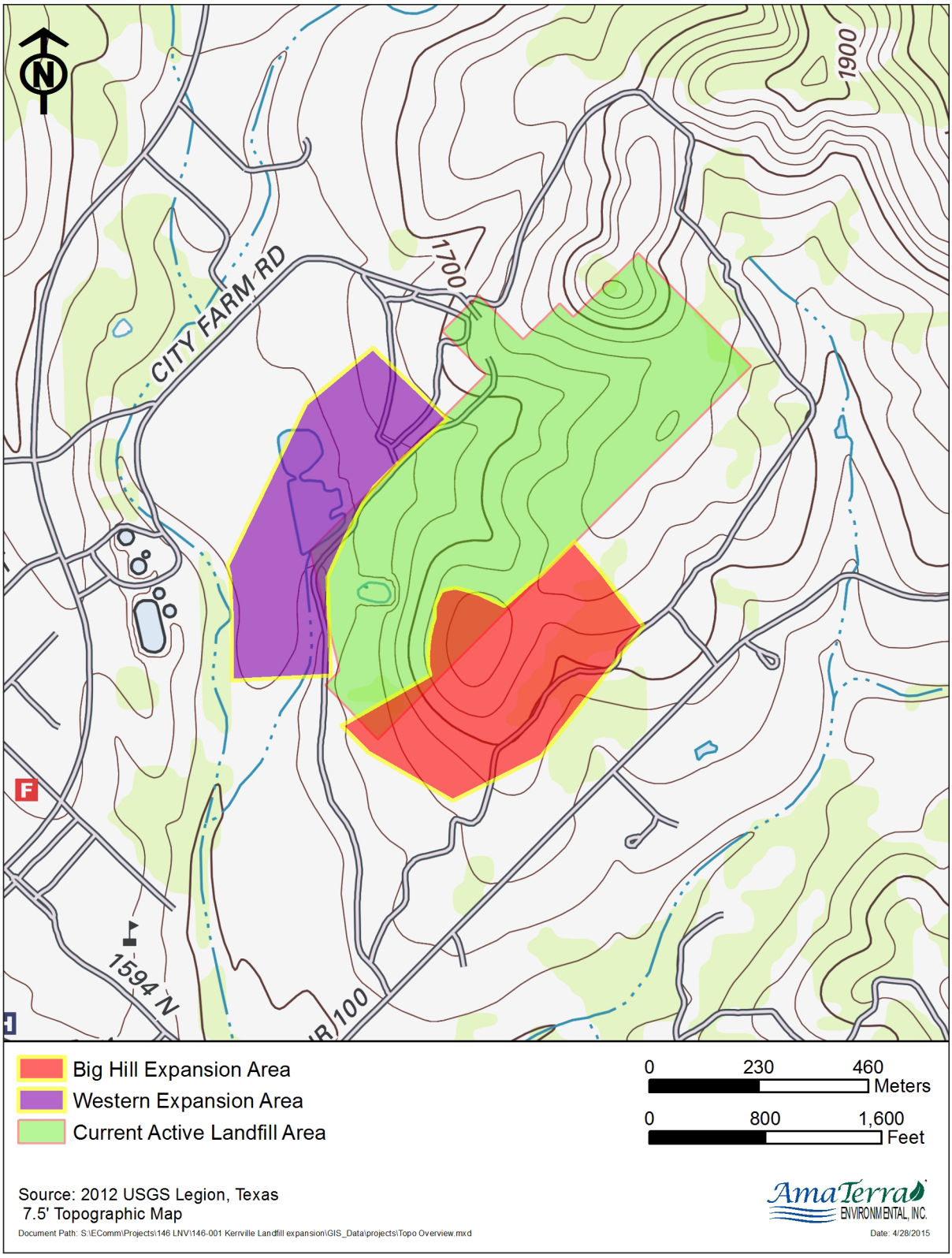

Figure 1-1. Project Area on 2012 Legion, Texas USGS 1:24000 Topographic Map

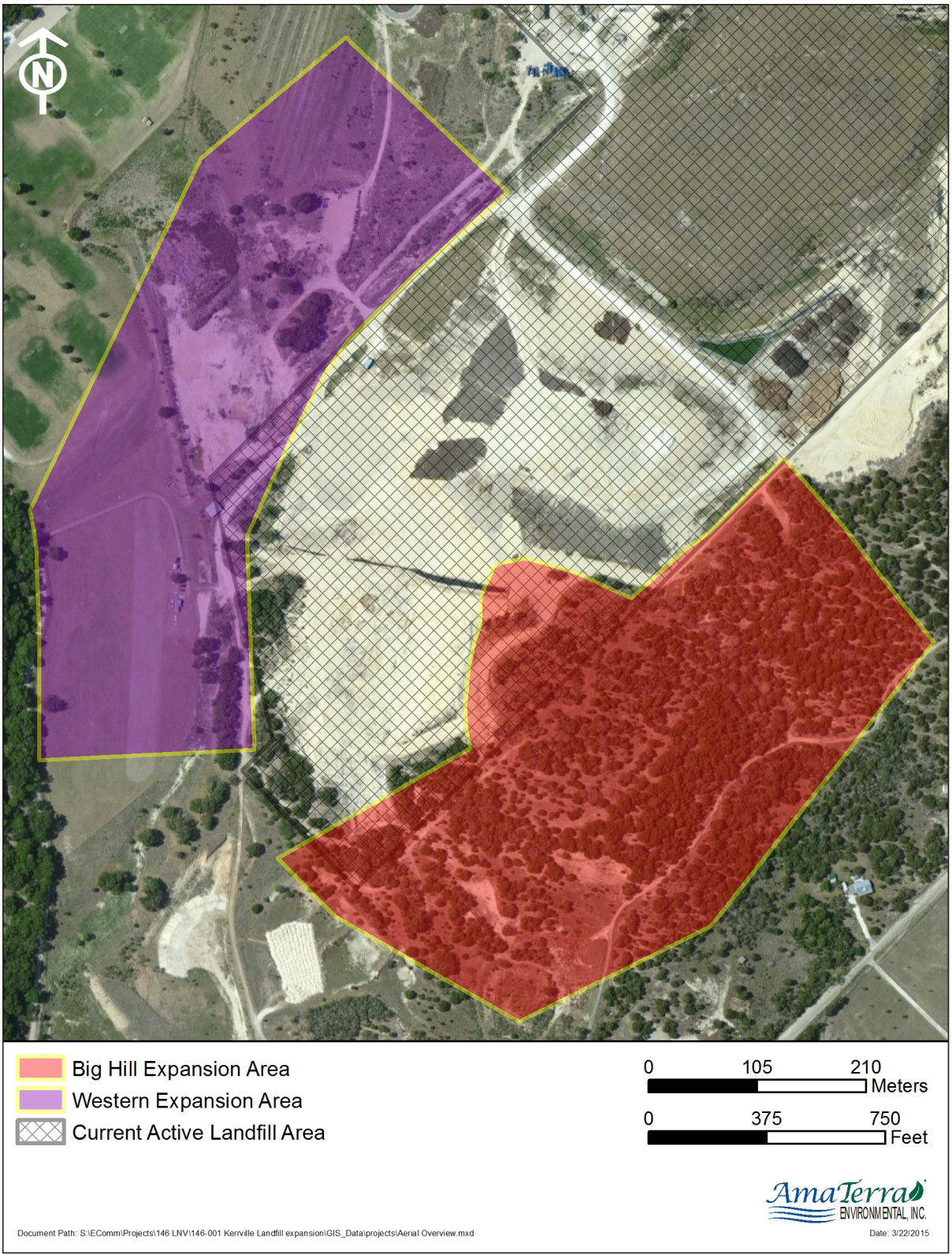

Figure 1-2. Project Area on recent aerial photograph

CHAPTER 2

ENVIRONMENTAL SETTING

2.1 GEOGRAPHY, GEOLOGY, AND HYDROLOGY

The project area is located in eastern Kerr County, within the Edwards Plateau of Central Texas. According to the Bureau of Economic Geology's "Geologic Map of Texas", the project area overlays marine-derived Glen Rose Formation (Kgr) geological deposits of Early Cretaceous age while Pleistocene-age alluvial terrace deposits (Qt) are depicted immediately north and south of the project area (BEG 1996).

The majority of Kerr County lies within the Guadalupe River's drainage basin, with only its northwestern portion extending into the Llano River drainage. The Guadalupe River itself is located about 800 m (0.5 mile) south of the project area.

2.2 FLORA AND FAUNA

Kerr County receives an average of 32.6 inches of rainfall per year and lies within the southern Edwards Plateau Zone (Perttula 2004). As such, the vegetation consists primarily of juniper and live oak trees, grasses, scrub brush, white-tipped yucca, prickly pear (Gould 1975). Within the current project area, archeologists observed live oak, juniper, hackberry, cedar elm, pecan, mesquite, and Texas persimmon trees, sotol, prickly pear, and assorted grasses. Wildlife spotted during the survey included non-native axis deer, white-tailed deer, red squirrel, rock squirrel, black vulture, red-tailed hawk, meadowlark, great blue heron, mourning dove, scissor-tailed flycatcher, scrub jay, and killdeer. In addition, scat, wallows, and tracks provided evidence of numerous feral hogs in the area.

2.3 SOILS AND THE POTENTIAL FOR ARCHEOLOGICAL DEPOSITS

The project area is located in rolling terrain between the erosional, hilly uplands typical of the Texas Hill Country and the depositional terraces of Third Creek, a tributary to the Guadalupe River. The APE is roughly two kilometers upstream along Third Creek from its confluence with the Guadalupe River. According to the Natural Resources Conservation Service soils data, the proposed landfill expansion area is composed primarily of the Kerrville-Real association, Krumm Silty clay, Kerrville gravelly clay loam, Doss silty clay, and Nuvalde silty clay. In general, these soils have the potential to contain intact archeological deposits in surficial and shallowly-buried contexts only while pockets of Nuvalde soils along the southern and southwestern periphery of the Western Expansion Area have an increased potential of preserving intact, more deeply-buried deposits.

Kerrville-Real association (48 percent of the project area) consists of shallow to moderately deep gravelly and loamy soils typically with horizontal outcrops of limestone bedrock. The typical Real pedon is:

- 0–10 cm (0–4 inches) very dark gray gravelly clay loam;
- 10–41 cm (4–16 inches) very dark grayish brown extremely gravelly clay loam;
- 41 cm (16 inches) limestone bedrock.

Krum silty clay (18.9 percent of the project area) consists of gently sloping, deep, well drained soils on uplands. The typical Krum silty clay pedon is described as:

- 0–53 cm (0–21 inches) dark gray silty clay;
- 53–109 cm (21–43 inches) grayish brown silty clay;
- 109– 160 cm (43–63 inches) pale brown silty clay.

The Kerrville gravelly clay loam series (15.3 percent of the project area) contains undulating and hilly moderately deep loamy soils that formed from interbedded limestone and marl. The typical pedon of Kerrville clay loam (15 percent) is described as:

- 0–20 cm (0–8 inches) pale brown gravelly clay loam;
- 20– 38 cm (8–15 inches) very pale brown clay loam;
- 38– 61 cm (15–24 inches) light yellowish brown extremely gravelly clay loam;
- 61 cm (24 inches) limestone bedrock.

The Doss series (5.9 percent of the project area) consists of gently sloping and shallow well–drained clayey soils formed over limestone and marl bedrock. The typical Doss silty clay pedon (10 percent) is described as:

- 0–23 cm (0–9 inches) dark grayish brown silty clay;
- 23–43 cm (9–17 inches) reddish brown silty clay;
- 43 cm (17 inches) pink marl and limestone bedrock.

The Nuvalde series (4.2 percent of the project area) consists of nearly level to gently sloping deep, well drained clayey soils that formed in alluvium in stream terraces. The typical pedon for the Nuvalde silty clay (10 percent) is described as:

- 0–31 cm (0–12 inches) dark grayish brown silty clay
- 31–79 cm (12–31 inches) dark brown silty clay
- 79 – 102 cm (31–40 inches) light brown silty clay
- 102–160 cm (40–63 inches) light brown silty clay

Chapter 3

Cultural Background

3.1 Cultural Historical Framework

The project area is located within the Central Texas archeological region. Over the past century, numerous models have been proposed by prominent archeologists regarding Central Texas' prehistoric cultural chronology (Kelly 1947; Jelks 1962; Weir 1976; Prewitt 1981, 1985; Johnson and Goode 1994; Collins 1995; Black 1989a, 1995; Perttula 2004). The cultural background presented in this report is predominantly based on the chronological interpretations made by Johnson and Goode (1994) and Collins (1995). All dates are approximate and given as radiocarbon years before present or BP (i.e. before the development of radiocarbon dating in 1950). Human presence in Central Texas is divided into Prehistoric and Historic stages. Three major intervals or periods are identified in the Prehistoric Stage: the Paleoindian, the Archaic, and the Late Prehistoric while the historic is presented here in two subdivisions: the protohistoric and the historic.

Paleoindian

According to Collins (1995:381–383) the Paleoindian period (which is divided into Early and Late sub periods) occurred between 11,500-8,800 BP in Central Texas. The native inhabitants during the Early Paleoindian period are thought to have been nomadic hunter-gatherers that subsisted mainly on big game/megafauna hunting (Willey 1966:37). The Late Paleoindian period was a period when the native inhabitants shifted the focus of their subsistence strategy away from big game/megafauna hunting to other large herbivores such as deer (Collins 1995:382). Sites dating to this earliest period are rare in Central Texas and are inherently significant.

Archaic

According to Collins (1995), the Archaic period in Central Texas occurred between 8800–1200 or 1300 BP. The Archaic period is divided into three sub periods: Early, Middle, and Late Archaic (Collins 1995). Sites dating to the Archaic period, while more frequent than Paleoindian sites, are nonetheless uncommon and often contain significant research potential, especially if clearly stratified and/or well preserved.

The Early Archaic period in Central Texas occurred between 8800–6000 BP (Collins 1995). The hunting patterns that formed during the Late Paleoindian period continued into the Early Archaic. The hunter-gatherers during this time modified their existing subsistence strategy becoming more holistic by exploiting a wider array of food resources such as prickly pear,

rodents and rabbits (Story 1985:38–39, Weir 1976). Early Triangular, Martindale, and Andice are some of the projectile points commonly associated with this period (Black 1995).

Collins (1995) dates the Middle Archaic Period in Central Texas between 6000–4000 BP. During the Middle Archaic period, severe and prolonged altithermal (warm and dry) climatic conditions were predominant. The severe altithermal noted within Texas led to numerous important social and subsistence adaptations for the native inhabitants. The altithermal conditions caused bison populations, commonly observed in this region during the early stages of the Early Archaic Period, to migrate out of Texas into the more mesic climate in the northern Great Plains. With the total loss of bison and severe xeric conditions throughout Texas, native populations migrated into Central Texas where resource-rich environments were fed by natural springs that rise from the Balconies Escarpment fault zone.

Burned rock middens (large localized concentrations of discolored or fire-fractured rock), spread throughout Central Texas during the Middle Archaic, possibly as a result of increased vegetable food processing (Hester et al. 1989). While it has been suggested that other cultural uses (ritual stone heating and sweat lodge preparation, for example), may have played a role in their formation, there can be little doubt, judging by the quantities of mussel and snail shell, bone, and debitage, that food processing was at the heart of their use (Black, et al. 1997, Butler 2006). Although the Middle Archaic was their heyday, some burned rock middens include artifacts datable from the transitional Paleoindian to the Late Prehistoric, thus raising the possibility that burned rock middens were part of cultural tradition for most of Texas' human history (Butler 2006).

Collins (1995) dates the Late Archaic period in Central Texas between 4000–1200 or 1300 BP. During the Late Archaic, the severe dry conditions observed during the Middle Archaic waned and more mesic conditions prevailed (Collins 1995). The return of mesic conditions in Central Texas also brought about the return of the large bison populations that left Texas during the Early Archaic. The return of large bison herds brought about a substantial change in the population density and subsistence strategies employed by the native inhabitants in Central Texas. The mobile hunting and gathering subsistence strategy associated with plains bison-focused hunting replaced the sedentary and holistic food processing lifeways adopted during the Middle Archaic Period.

Late Prehistoric

The Late Prehistoric period in Central Texas occurred between 1250–260 BP (Collins 1995). The development of the bow and arrow along with the introduction of pottery in Central Texas are technological innovations that mark the shift from the Archaic to the Late Prehistoric (Black 1989b:32, Story 1985:45–47). The Late Prehistoric period is divided into two phases: the Austin Phase (ca. 1250 BP–800 BP) and the Toyah Phase (ca. 800 BP–260 BP). Sites dating to the Late Prehistoric are common in Central Texas and their significance and research potential must be closely assessed with regard to their precise data content and important research questions about the period.

The Austin Phase was a time of population decrease due to a drying climate and resulting decrease in food availability (Black 1989a:32). Early expanding stem projectile points (e.g., Scallorn) are common during this period. Evidence of widespread hostility is substantiated by the fact that a high proportion of arrow-wound fatalities are noticed in burials of this period (Prewitt 1974).

The Toyah Phase is characterized by the introduction of bladelet technology, the appearance of the first ceramics in Central Texas (bone-tempered plainware), and the use of lithic technology consisting of Perdiz arrow points, alternately beveled knives, and tear-shaped end scrapers (Black 1989b:32; Huebner 1991:346). Prewitt (1985) and Black (1989c) suggest that this technology encroached from North-Central Texas. Hester (1995:444) recognizes this phase as the "best documented Late Prehistoric pattern" throughout South Texas, with dates ranging between ca. 650/700 to 300/350 BP.

Historic

The Historic period in Texas is divided into two subperiods: Protohistoric and Historic. The following is a very brief and generalized description of the Historic period in Texas.

Protohistoric

The Protohistoric spans the period ca. 470 to 300 BP. The arrival of Spanish explorer Cabeza de Vaca into south and southeast Texas in 1528 marks the beginning of the Protohistoric period in Texas. Due to the fact that few written records are available for analysis, most of what we know regarding the Protohistoric has been gathered through archeological means (Hester 1995:449–450). Generally, archeological sites that date to this subperiod contain both traditional Native American artifacts (e.g., lithic tools) and imported European manufactured goods (e.g., glass beads, metal).

Historic

Kerrville, the county seat of Kerr County, is located 62 miles northwest of San Antonio along Interstate Highway 10. In the early 1800s, Joshua D. Brown immigrated to Texas. He was living in Gonzales in 1844 when he started a new venture of making cypress shingles. Brown, along with a group of men, traveled up the Guadalupe River and settled near a large spring. Indian presence drove the settlers out. Four years later, the group returned and named the settlement Brownsborough. Over the next several years, settlers established sawmills and farms along the river. The name as changed to Kerrsville, after Major James Kerr, who was a friend of Joshua Brown. The 's' was later dropped to become Kerrville (Lich 2015; City of Kerrville 2015).

The establishment of a large grist and saw mill, in 1857, led to the foundation of the Charles Schriener family business of retail, wholesale, banking, ranching, marketing, brokering opportunities. Sheep raising and wool production was on the rise in the 1860s and textile companies relied heavily on the wool-cloth manufacturing during the Civil War. Schreiner developed a commission system for sales of wool. For a percentage of the sale, Schreiner

handled, stored, and sold wool to buyers in the east. Not only would he sell on commission, he also financed many ranchers by providing loans and delivering food, equipment, and supplies.

After the Civil War, Kerrville continued to grow and the demand for lumber, farm and ranch produce, and skilled laborers boosted the economy. By 1894, Kerrville Water Works Company supplied water; the telephone service arrived in 1896; and streets were paved by 1912. Through the years, Kerrville has seen a steady growth in population. Its economic base includes business, agriculture, manufacturing, health care, transportation, education, and tourism. By 2000, the population was estimated over 20,000.

3.2 Previous Archeological Work in the Area

Background research for this project was conducted online through the Texas Archeological Sites Atlas, and focused on a search of previously recorded archeological sites, surveys, SALs, and sites listed on the National Register of Historical Places (NRHP). All sites and surveys discussed here are presented in **Figure 3**.

Two sites are recorded within the current project area (41KR501 and 41KR673).

- Site 41KR501 was initially recorded in 1995 by Bryant Saner, Jr. as a prehistoric accumulation of burned rock that had been severely disturbed by grading and scraping for construction of athletic fields. The site was assessed as having no research value due to the extensive disturbance. However, the site form also stated, "If more development near this site further surveys should be done. [sic]" In 2008, Ecological Communications Corporation (EComm, now AmaTerra) expanded 41KR501's site boundary during their intensive survey at this location and excavated three backhoe trenches within the site to evaluate the potential for intact deposits and datable features. Trenching encountered small quantities of chert flakes, though none of the features described by surveyors in 1995 were observed. However, trenching was limited and encountered mostly heavily disturbed and landscaped areas within the eastern site periphery. In their final, approved report, EComm recommended avoidance or further backhoe trenching and testing prior to any expansion of the landfill within the site boundary (Butler 2009).
- Site 41KR673 was identified by EComm's 2008 survey as well. This site is located along a thin strip of survey area within the current "Big Hill Expansion Area." This site was an Early Archaic through Late Prehistoric-aged (based upon the presence of Uvalde and Perdiz points) surface scatter of lithic artifacts atop thin silty soil and bedrock. This site was determined to be ineligible for listing in the NRHP or as an SAL.

In addition, four more previously recorded archeological sites are mapped within a one kilometer radius of the expansion area.

- Site 41KR566 is located approximately 700 meters (m; 0.4 miles) southwest of the proposed landfill expansion. This site was recoded in 1998 as a severely disturbed lithic procurement area. Chert-bearing gravels contained biface fragments, biface preforms, modified flakes,

core tools, and utilized flakes. The site was assessed as having no research value due to the extensive disturbance and no further work was recommended.

- 41KR106 is located approximately 575 m (0.4 miles) south of the project area. This site was recoded in 1971 as a burned rock midden with deposits at least 70 centimeters deep, containing diagnostic artifacts dating to the Early Archaic through Late Archaic. The site was re-recorded in 1997 and was found to have been disturbed by grading and sewer line trenching. The NRHP status of the site is unknown, but it was considered to have additional research value.
- 41KR2 is located approximately 760 m (0.5 miles) southeast of the current project location. This site was recoded in 1962 as a large prehistoric site with three to four hearth features. Subsequent investigations are uncertain and the NRHP status of the site is unknown.
- Site 41KR672 is located directly (~90 m/0.05 mi) north of the Western Expansion area of the current survey. It was recorded by EComm in 2008 as an historic-aged trash scatter from a bulldozed home site dating to the middle Twentieth Century. It was determined to be ineligible for listing in the NRHP or as an SAL.

The Texas Archeological Sites Atlas lists one previous field investigation within the proposed project footprint, carried out by EComm in 2008 under Antiquities Permit Number 5068. This survey covered parts of the current project area and newly-documented two archeological sites (41KR672 and 41KR673) and expanded site 41KR501.

Additionally, a 1983 survey of 92 acres was conducted within the currently permitted landfill site. This survey was conducted by archeologist Alton Briggs under Antiquities Permit #356 (or #365—the records show both numbers) and is not listed in the THC atlas for unknown reasons. One "locality of potential concern" was noted, consisting of a scatter of prehistoric lithic tools and cores. No artifacts were observed in subsurface shovel probes. This locality was not recorded as a site.

In 1995, a linear survey was conducted approximately 1,000 meters southwest of the current APE. The survey was conducted for the Lower Colorado River Authority (LCRA) in advance of a transmission line replacement project. No sites were recorded within one mile of the current project area during the course of survey.

The Atlas shows a 2012 LCRA survey adjacent to their 1995 survey 300 meters south of the current project area. No new sites were associated with this survey.

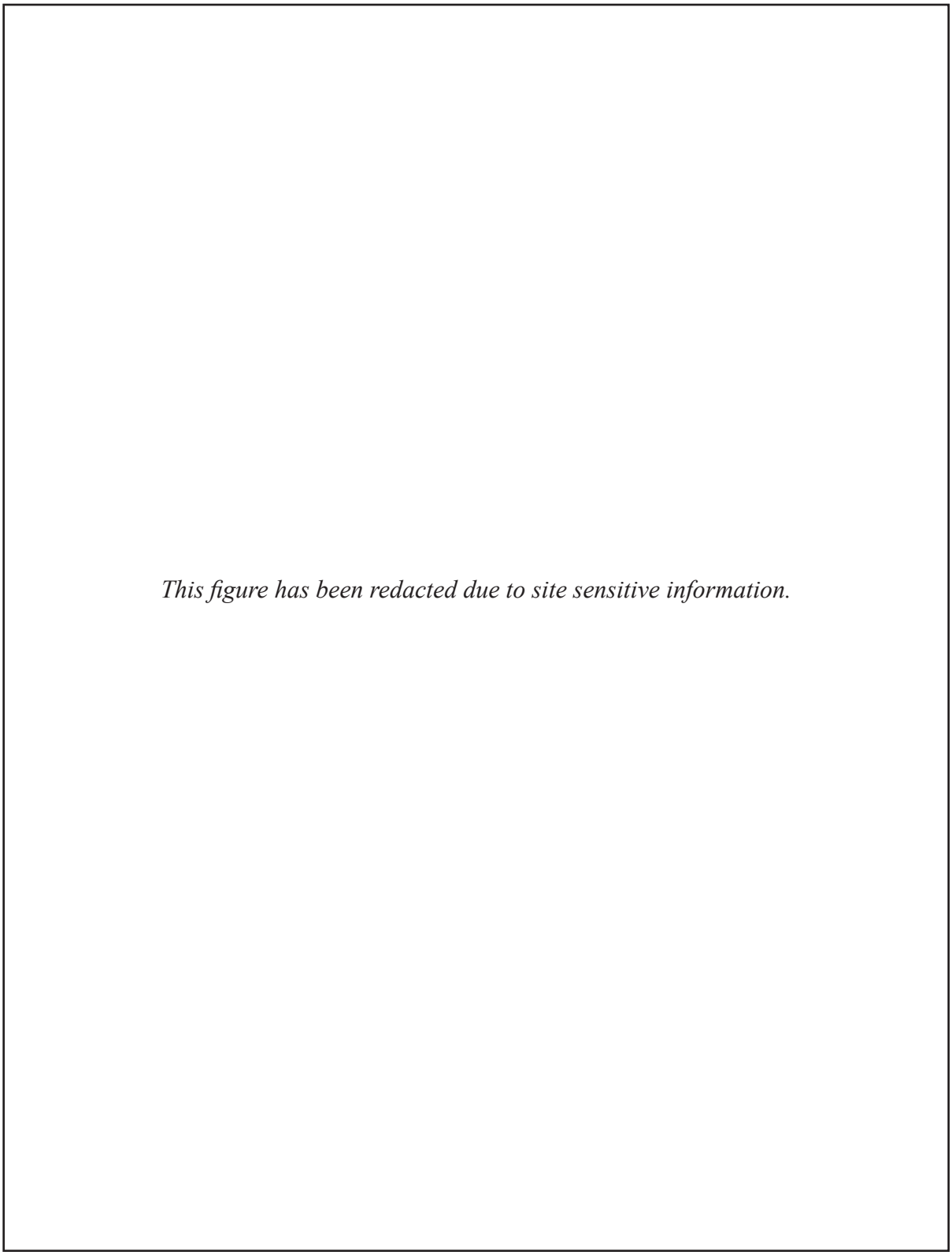

Figure 3-1. Previous surveys and identified sites within one kilometer of the project area on 2012 Legion, Texas USGS 1:24000 topographic map.

Chapter 4

Methods and Results of Field Investigations

4.1 Archeology

4.1.1 Field Methods

Big Hill Expansion Area

Based on the potential for archeological sites, an intensive area survey was conducted to identify and assess significance of archeological resources within the Big Hill Expansion Area. The survey included pedestrian inspection and shovel testing of 34 acres of the proposed 41.5-acre Big Hill parcel. This excluded the area previously surveyed by EComm in 2008 as well as the obviously disturbed portion of the expansion footprint, which was part of active landfill activities. Archeologists walked the property in approximately 30-meter transects, performing systematic shovel tests, except in areas of previous disturbance or surface-exposed bedrock. AmaTerra excavated 17 shovel tests, a rate of one test per two acres. Because of generally shallow soils, backhoe trenching was not employed as part of survey in this area.

Shovel tests were hand-plotted onto aerial photographs and digitally mapped using a hand-held Global Positioning System (GPS) unit. Shovel tests were excavated to a depth of 80 centimeters (cm), bedrock, or culturally sterile soil, whichever was encountered first in approximately 20-centimeter levels. Soil from shovel tests was screened through ¼-inch hardware cloth and all artifacts found within tests were documented and reburied in their original location. Archeologists recorded observations from all shovel tests on standardized forms.

Western Expansion Area

Since all of the Western Expansion Area had been previously surveyed, assessing the condition of previously recorded 41KR501 was the primary focus of investigations within the proposed Western Expansion Area. Within the 41KR501 site area (estimated at approximately 10 acres), AmaTerra proposed a combination of survey and limited NRHP/SAL-eligibility testing (if necessary) to document the condition of site deposits. Citing previous survey findings in the area and the prevailing deep, alluvial terrace on which the site was located, within this survey segment, AmaTerra relied almost entirely on backhoe trenching to assess the condition of deeply-buried components of Site 41KR501.

Nine backhoe trenches were excavated during the course of field investigations (**Figure 4-1**). Each was approximately four meters in length and extended to the pre-defined maximum depth

of impact of approximately three meters (or to clearly sterile subsoil/bedrock). Archeologists screened through ¼-inch mesh a representative sample of sediment from each soil zone and periodically trowel and shovel-scraped trench walls and floors to evaluate the soil inclusions and composition (**Figure 4-2**). The scant number of artifacts found in the screens were recorded through notes and photographs then returned to their find location. Trenches were documented through notes and photographs as well, with profiles drawn and photographed for each trench. All trenches were mapped with a GPS receiver and immediately backfilled upon completion.

If intact features were observed within a backhoe trench, a 50 x 50-centimeter unit(s) was proposed for excavation along the trench wall to assess the resource in plan view, however no such

Figure 4-1. Panoramic view of excavations at Backhoe Trench 3 facing northwest.

features were observed. Additionally, AmaTerra had proposed excavating up to 20 additional shovel tests within the 10-acre expansion area to define site components if necessary. AmaTerra determined through previous survey findings and observations from the current trenching effort that such work was unnecessary to assess the significance of 41KR501 in the expansion area, particularly considering that the majority of materials observed were well below the reach of a shovel test. One shovel test, however, was excavated near the expansion area's southeastern boundary where the survey crew observed a small, diffuse surface scatter of burned rock.

Site assessment in the field met the State of Texas' minimum standards while no archival research was conducted due to a lack of historic-age archeological resources observed All survey

Figure 4-2. Archeologist inspecting gravel lens observed in the wall of Backhoe Trench 2.

notes, photographs, and forms (shovel test, photograph log, and trenching) will be permanently curated the Texas Archeological Research Facility (TARL) in Austin, Texas.

4.1.2 Results of Field Investigations

Big Hill Expansion Area—41.5 acres of proposed expansion, 34 acres surveyed, remainder disturbed and/or previously surveyed.

The Big Hill Expansion Area (**Figure 4-3**) was mostly covered in dense ashe juniper brush with sparse grasses and prickly pear. Bedrock outcrops were common throughout the area, which was entirely covered with sparsely scattered to dense limestone scree (**Figure 4-4**). Approximately 40 percent of the Big Hill Expansion Area was previously disturbed by quarrying and surface scraping (see Figure 4.3; **Figure 4-5**), leaving surface visibility estimated at 70 percent. Thicker, more obscuring grass cover mostly occurred on the hilltop adjacent to the current landfill operations and at the eastern edge, along the toe slope of the hill. An extremely diffuse surface scatter of prehistoric lithic debris was observed along the peak of the landform. This debris is attributed to previously recorded Site 41KR673 (see below).

Seventeen shovel tests were excavated in selected areas where minimal disturbance was visible and where subsurface deposits was possible (Appendix A; Figure 4-3). Most shovel tests (n=15) were excavated to depths of 30 cm below the surface (cmbs) or less where silty topsoil transitioned to decayed bedrock and caliche; a typical view of this profile is seen in a small roadcut (**Figure 4-6**). Two shovel tests, both dug near the north/south midpoint of the proposed expansion area at the crest of the landform, contained one lithic flake each, but all other shovel tests were devoid of archeological resources. These flakes are within the newly-expanded boundaries of Site 41KR673.

Site 41KR673 was recorded in EComm's 2008 survey of the proposed landfill expansion, but was limited to the previous project's APE, which was a narrow access road strip along the southern edge of the landfill (see Figure 4-3). The current project area encompasses the previous site boundary, allowing a more thorough investigation of the larger landform to determine the entire limits of the site (see Figure 4-3). While two shovel tests recovered chert flake artifacts in the upper 20 cmbs, the majority of artifacts were noted on the bare surface of the site (see Figure 4-3). Artifacts documented during the survey included numerous isolated tertiary chert flakes (1-2 flakes per 40-meter-radius area), a proximal biface fragment (**Figure 4-7**), and a crude uniface/core tool with a cortex gripping surface (**Figure 4-8**). The two tools were found near the crest of the hill while the remaining surface artifacts were scattered sparsely down the hill toward the south and east (primarily the former). The deepest soil within site 41KR673 was found in shovel test 4 at the crest of the hill, which was excavated to 50 cmbs and contained one chert flake at 0–20 cmbs. Most of the site can be characterized as a sparse lithic scatter with a shallow to erosional surface and little or no stratified deposits. No surface or subsurface features were observed, nor did researchers identify any temporal diagnostics. The site does not exhibit a significant amount of research potential and continues to be recommended as ineligible for listing as a Historic Property or SAL.

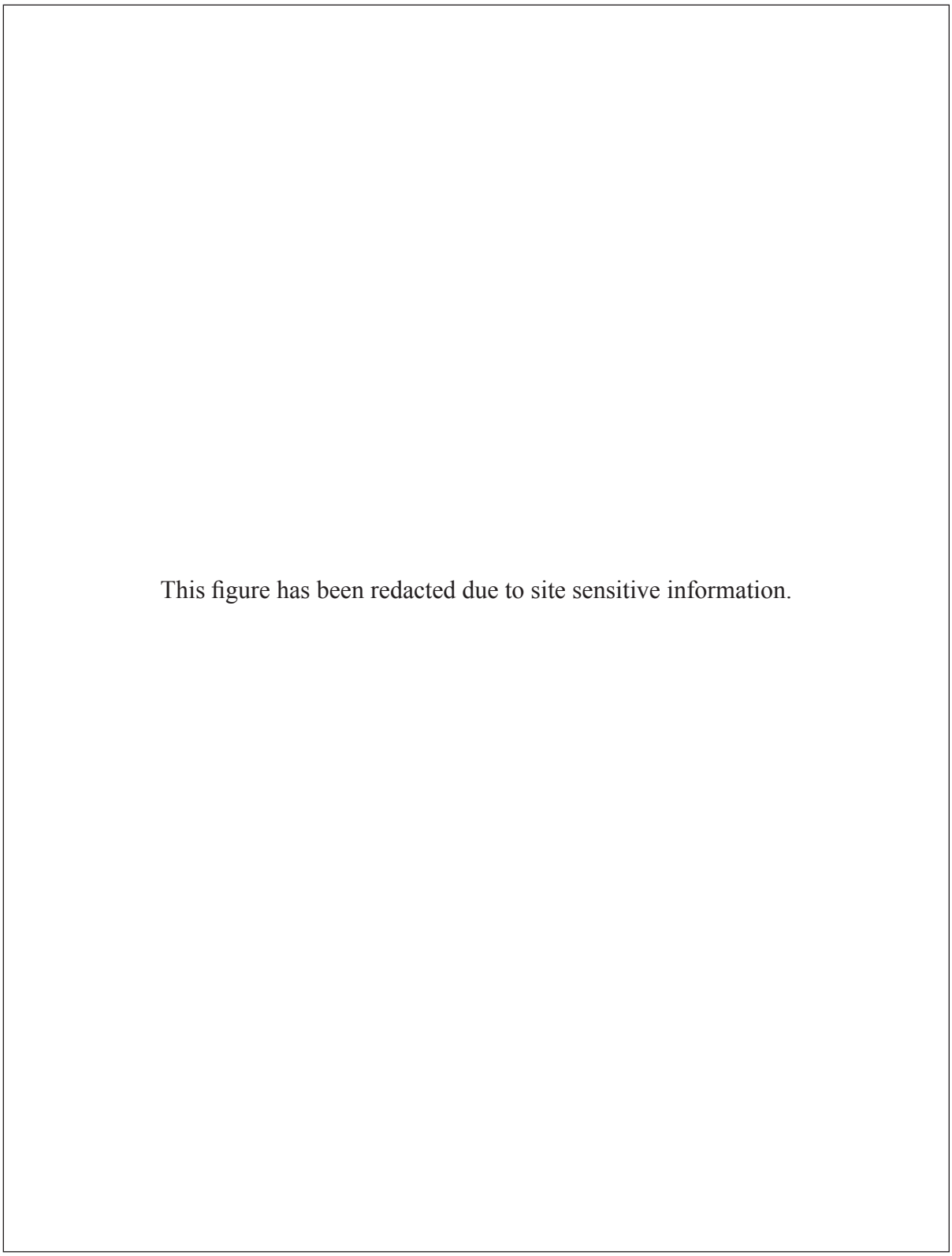

Figure 4-3. Big Hill Expansion Area survey results.

Figure 4-4. Big Hill Expansion Area setting within site 431KR673-ashe juniper and limestone scree surface, facing northeast.

Figure 4-5. Disturbed area (borrow pit) of Big Hill Expansion Area, facing northwest.

Figure 4-6. Typical soil profile from shallow road cut, Big Hill Expansion Area, facing north.

Figure 4-7. Biface fragment surface find from 41KR673.

Figure 4-8. Core tool surface find from 41KR673.

Western Expansion Area—36.5 acres of proposed expansion, 10 acres subject to intensive survey/limited NRHP/SAL Testing of Site 41KR501; remainder previously surveyd.

Rather than resurvey the entire 36.5-acre Western Expansion Area, AmaTerra concentrated efforts on the 10-acre portion of 41KR501 that appeared relatively undisturbed and retained the highest potential for intact archeological deposits (see Figure 1-1; **Figure 4-9**). The rest of the site falls within heavily disturbed portions of the current project footprint that had been surveyed twice before. Within this 10-acre study area, archeologists found a flat, open floodplain that was maintained for park use rising between a Third Creek relict channel to the southwest and an unnamed ephemeral drainage to the northeast (see Figure 4-1; **Figure 4-10**). Along the floodplain's center, the mowed grasses were trimmed even shorter for use as a radio controlled (RC) airplane airstrip. A small RC Control facility was located immediately east of the strip. Archeologists excavated nine backhoe trenches on this floodplain landform (avoiding the RC airstrip and associated facility) to depths ranging from one to three meters. All trenches exhibited evidence of high energy flooding episodes of dense beds of small to medium-sized gravels and cobbles interspersed with long periods of low energy alluvial and colluvial deposition characterized by silty loams and clays. In the project area's northern corner, highly-varied soil columns within three directly adjacent trenches as well as mixed soils suggest previous disturbance (see Figure 4-5). This possibly disturbed area also contained the highest concentration of recovered subsurface artifacts (see below).

AmaTerra archeologists excavated four backhoe trenches (Trenches 1-4; Figure 4-9; **Figures 4-11, 4-12, 4-13, 4-14,** and **4-15**; **Tables 4-1, 4-2, 4-3,** and **4-4**) along the western edge of the landform, adjacent to one Third Creek paleochannel. These trenches demonstrated similar progressive, nearly horizontal layers of flood gravel deposits and silty clays. Backhoe Trench 3 was typical of this portion of the floodplain, containing a 45-centimeter layer of 10YR 3/2 crumbly topsoil overlying a layer of five percent pea gravels and silty loam to 62 centimeters. This layer transitioned to a roughly 17-centimeter-thick densely-packed (80 percent) gravel and cobble lens that immediately transitioned to a 10YR 5/4 pea graveled and cherty, slightly sandy clay that extended to a depth of approximately 140 centimeters. Beyond this, archeologists observed a strong brown 7.5YR 5/6 sterile subsoil clay with fist-sized cobbles throughout, increasing with depth. This layer extended to 173 cmbs and was interpreted as sterile subsoil.

The only artifacts recovered from this portion of the landform came from a dense gravel lens within Backhoe Trench 2 between 70 and 85 cmbs (see Figure 4-12). The artifacts include one primary flake, one piece of angular lithic debris (likely natural), and one potlid (**Figure 4-16**). None of the artifacts were found in association with one another and detailed inspection of the soil profile and base within the trench revealed no other associated artifacts or features (see Figure 4-2). Given their provenience within the high-energy flood deposits within this trench, AmaTerra concludes that the artifacts are in secondary context and not intact. Trenches 1 and 3-4 were devoid of archeological resources.

As archeologists moved to the opposite (east) side of the floodplain landform, they began in the northeastern corner and moved south with Trenches 5-9 (see Figure 4-9). Trenches 5–9 contained larger, more jagged gravels, indicating a close primary source, most likely the small ephemeral drainage that traces the eastern edge of the Expansion Area. In the northern-most

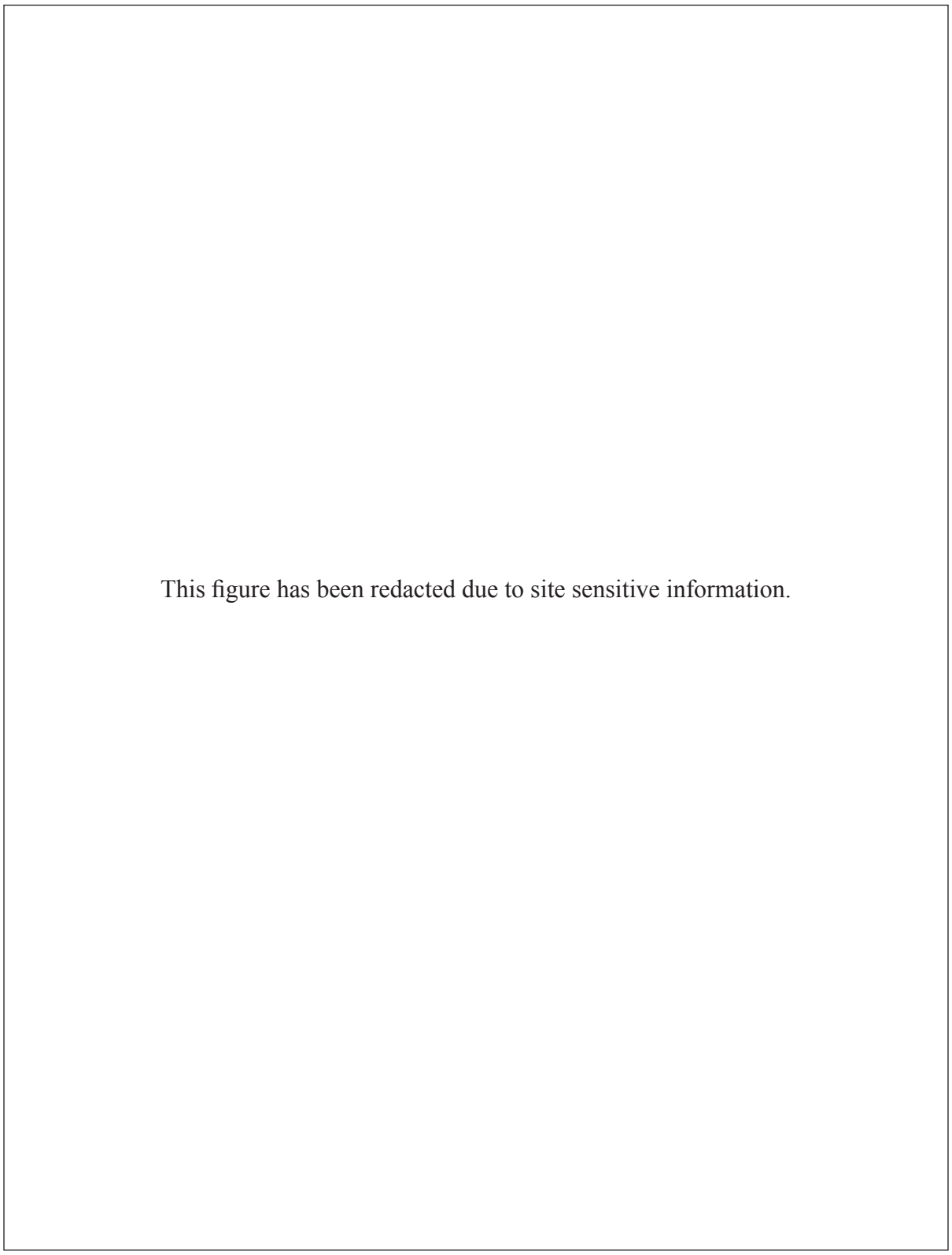

Figure 4-9. Western Expansion Area testing results.

Figure 4-10. Western Expansion Area from Backhoe Trench 1 location, facing east.

Table 4-1. Profile of Backhoe Trench 1.

Backhoe Trench 1	Length: 3 meters			Maximum Depth: 180 centimeters
Location: On floodplain at southern end of study area, west of Third Creek				
Soil Zone	Depth Range (cmbs)	Soil Description	Positive?	Comment
1	0–30	10YR 4/2 silty loam topsoil	Negative	
2	30–60	10YR 4/2 gravelly clay loam with abundant stream-rounded and angular gravels.	Negative	gravel lens
3	60–120	10YR 6/6 dense clay with CaCO3 nodules throughout and sparse gravels	Negative	
4	120–180+	10YR 7/4 silty clay with dense, stream-rounded gravels exceeding 5 cm diameter.	Negative	Sterile subsoil/ relict streambed(?)

Figure 4-11. Photographic profile of Backhoe Trench 1.

Table 4-2. Profile of Backhoe Trench 2.

Backhoe Trench 2	Length: 3 meters		Maximum Depth: 220 centimeters	
Location: On floodplain in the center of study area, east of Third Creek				
Soil Zone	Depth Range (cmbs)	Soil Description	Positive?	Comment
1	0–80	10YR 4/4 topsoil zone	Negative	
2	70–85	10YR 4/5 silty clay with abundant stream-rounded gravels (each ~0.5 cm diameter)	Positive	gravel lens; 1 potlidded flake, 1 primary flake, 1 angular lithic debris (likely natural) intermixed in gravels.
3	85–130	10YR 5/4 dense, uniform clay	Negative	
4	130–270+	10YR 6/4 silty clay with large, dense, stream-rounded gravels exceeding 5 cm diameter.	Negative	Sterile subsoil/streambed.

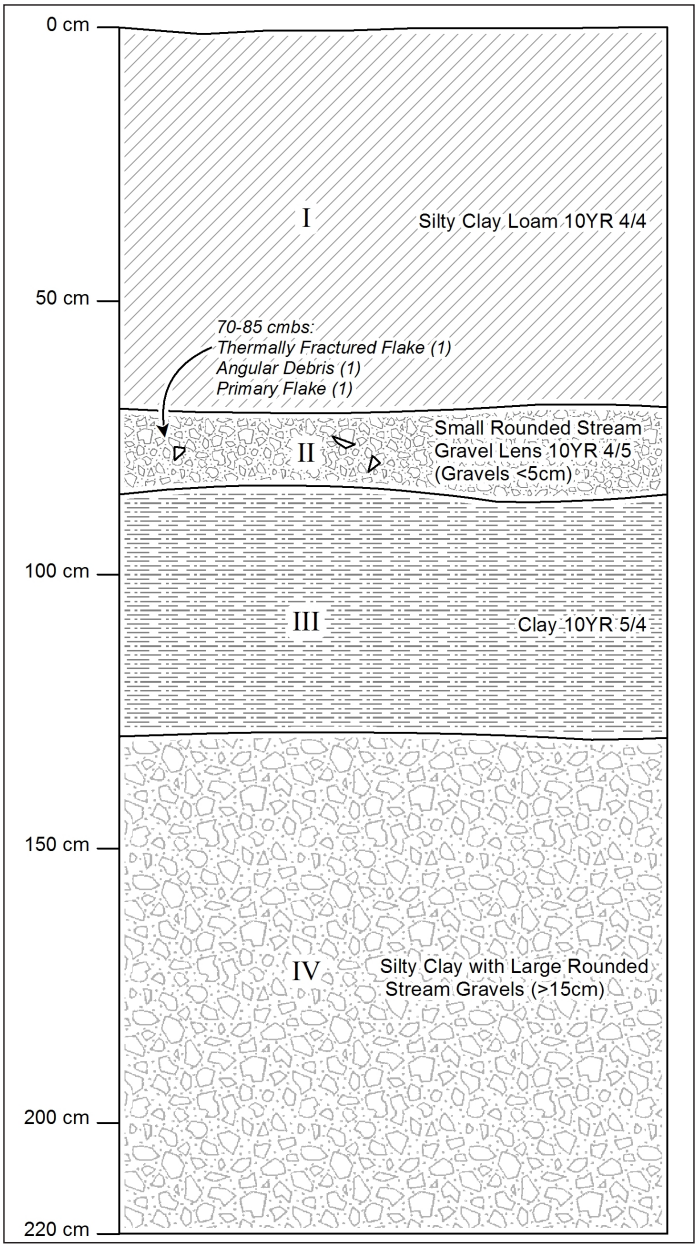

Figure 4-12. BHT-2 section profile.

Figure 4-13. Photographic Profile of Backhoe Trench 2

Table 4-3. Profile of Backhoe Trench 3.

Backhoe Trench 3	Length: 4 meters			Maximum Depth: 173 centimeters
Location: On floodplain in the north/center of study area, east of Third Creek				
Soil Zone	Depth Range (cmbs)	Soil Description	Positive?	Comment
1	0–45	10YR 3/2 silty clay loam topsoil	Negative	
2	45–62	10YR 3/4 gravelly silty clay loam with 5% pea gravels throughout	Negative	gravel lens
3	62–75	10YR 3/4 gravel lens with 80% chert gravels	Negative	gravel lens
4	75–140	10YR 5/4 mottled cherty clay with slight sandy inclusions and pea gravels	Negative	
5	140–175+	7.5YR 5/6 dense, gravelly clay with large (5 cm+ diameter) cobbles and pebbles throughout, increasing with density with depth.	Negative	Sterile subsoil

Figure 4-14. Photographic Profile of Backhoe Trench 3.

Table 4-4. Profile of Backhoe Trench 4.

Backhoe Trench 4	Length: 3.9 meters			Maximum Depth: 260 centimeters
Location: On floodplain in the north/center of study area, east of Third Creek				
Soil Zone	Depth Range (cmbs)	Soil Description	Positive?	Comment
1	0–55	10YR 3/2 silty clay loam topsoil	Negative	
2	55–65	10YR 5/3 silty clay with slight mottling and 20-30% chert pea gravels and occasional cobbles	Negative	gravel lens
3	65–90	10YR 6/4 silty clay with occasional sofe CaCO3 concentrations. Little to no gravels.	Negative	
4	90–130	10YR 7/4 silty clay with occasional soft CaCO3 concentrations. Approximately 3% stream-rolled gravels.	Negative	
5	130–200	10YR 6/6 sandy, silty clay with slight mottling.	Negative	
6	200–260+	10YR 5/6 slightly silty clay with mottling and stream-rounded gravels and cobbles throughout; increasing with depth.	Negative	Sterile subsoil/relict streambed(?)

Figure 4-15. Photographic Profile of Backhoe Trench 4.

Figure 4-16. Artifacts recovered from the screens in Backhoe Trench 2.

corner approximately 30 meters southwest of a push pile at the foot of the massive hill, Backhoe Trench 5 encountered an upper layer of topsoil followed by 100–140 centimeters of intermixed, dense gravels and carbonate-rich clays that are either stream-rolled or are evidence of disturbance (more likely the latter; **Table 4-5; Figures 4-17–4-18**). Beneath this layer, soils transitioned to a third layer of gravels between 180 and 210 centimeters that were much larger and very loosely packed within the soil column. At or very near the base of this layer, archeologists recovered three burned rock cobbles (fractured during excavation), two flakes, and a single indeterminate piece of lithic shatter that could be naturally-occurring (**Figure 4-19**). The artifacts, though found in the screen, came from a bucket sweep excavated at the base of this gravel zone. Immediately beneath this layer, soils transitioned to a uniform, dense silt that extended below three meters with no other artifacts or features observed.

In an effort to identify a potential artifact-rich zone that could be widened for possible 50 x 50-centimeter test unit excavation, archeologists excavated Backhoe Trench 6 perpendicular to (and emanating northward from) the approximate location of the finds in Trench 5 (see Figure 4-9). Despite their immediate proximity to one another, Trench 6 encountered dramatically different and markedly more highly disturbed sediments than Trench 5. Crews abandoned the trench at approximately 100 centimeters' depth in clearly modified soils (**Figure 4-20; Table 4-6**).

Archeologists then moved to the opposite side of Trench 5 and excavated Trench 7 (see Figure 4-9; **Figures 4-21–4-23; Table 4-7**). Trench 7 was closer in composition to Trench 5 but again was distinct, further suggesting an overall poor subsurface integrity in this portion of the landform. Like in Trench 5, Trench 7 did contain prehistoric lithic artifacts (three secondary flakes; **Figure 4-24**). These flakes are each small (<3 cm), composed of dark brown, black, and pinkish-tan chert. They, again, were located in an apparent high-energy gravel lens. Numerous pock-marks and abrasions on their surfaces attest to the energy of their redeposition. No evidence of features or any potential for intact preservation was encountered within this trench in that artifact-bearing lens or within the subsequent soil layers that continued through the terminus at 245 centimeters in clearly sterile, dense subsoil clay.

Table 4-5. Profile of Backhoe Trench 5.

Backhoe Trench 5	Length: 3.9 meters		Maximum Depth: 305 centimeters	
Location: On floodplain in the northeastern corner of the study. South of a catchment pond/tank and push pile.				
Soil Zone	Depth Range (cmbs)	Soil Description	Positive?	Comment
1	0–40	10YR 4/2 silty clay topsoil loam	Negative	
2	40–100	10YR 5/4 silty clay with CaCO3 inclusions and gravels at 80 cmbs.	Negative	gravel lens
3	100–180	10YR 7/4 silty clay with CaCO3 threads and gravels (10%)	Negative	
4	180–210	10YR 8/4 silty clay with abundant loose, stream-rounded gravels and cobbles.	Positive	3 FCR cobbles, 2 flakes, 1 shatter fragment at base (possibly extending into Level 5).
5	210–305+	10YR 7/4 silt with minimal clay inclusions	Positive	See above. Terminated at maximum depth of impact.

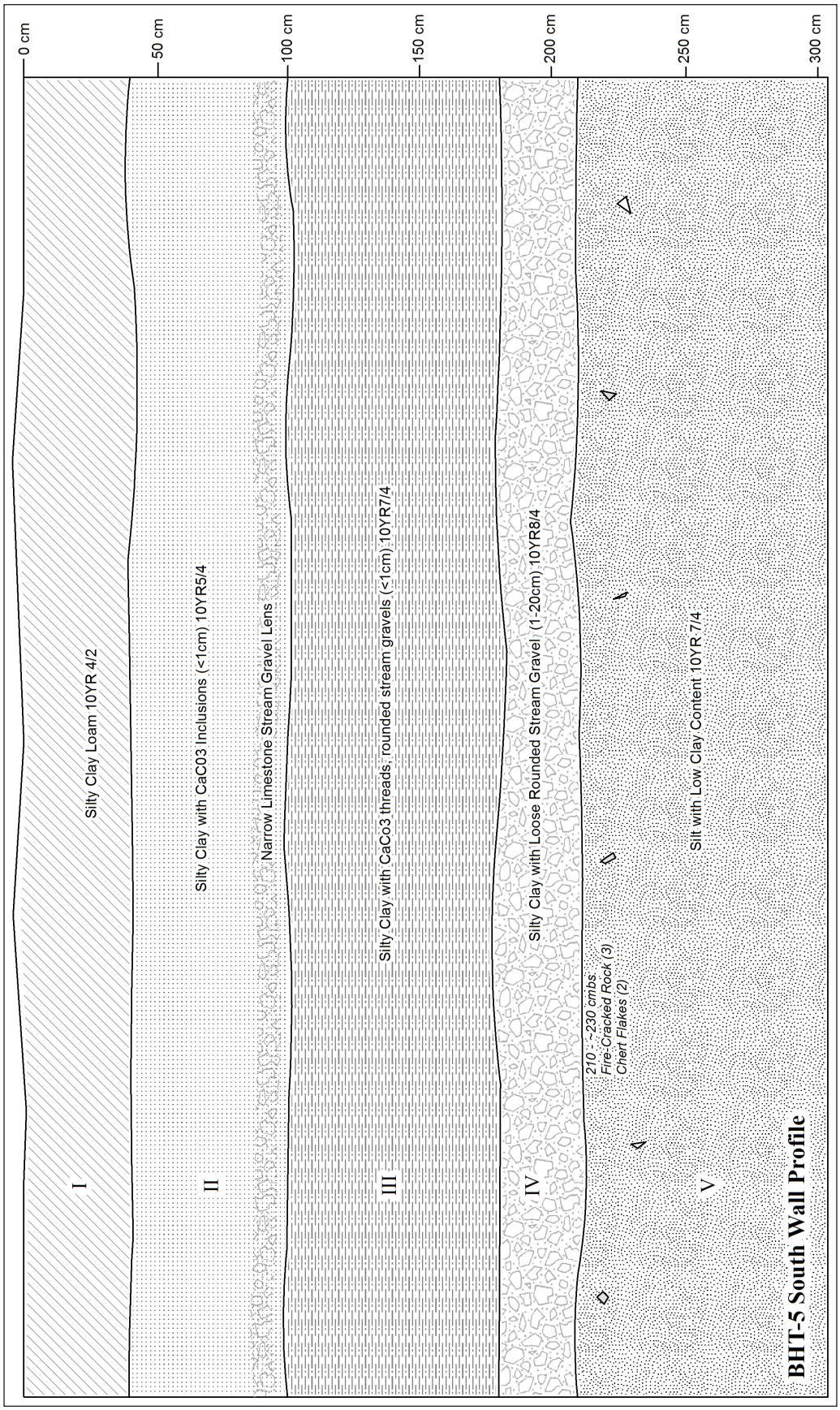

Figure 4-17. Backhoe Trench 5 profile.

Figure 4-18. Photographic Profile of Backhoe Trench 5.

Figure 4-19. FCR (broken) and chert flakes from Backhoe Trench 5.

Figure 4-20. Photographic Profile of Backhoe Trench 6.

Table 4-6. Profile of Backhoe Trench 6.

Backhoe Trench 6	Length: 2.5 meters			Maximum Depth: ~100 centimeters
Location: On floodplain in the northeastern corner of the study. South of a catchment pond/tank and push pile. Perpendicular and adjacent to Trench 5, extending to its north; opposite Trench 7. Abandoned due to evidence of disturbance.				
Soil Zone	Depth Range (cmbs)	Soil Description	Positive?	Comment
1	0–40	10YR 4/2 silty clay topsoil loam	Negative	
2	40–100	10YR 7/4 heavily mottled, dense, gravelly and cobbley clay. Appears disturbed.	Negative	Trench abandoned citing indication of severe disturbance immediately adjacent to Trench 5.

Figure 4-21. Archeologists examining base and profile of Backhoe Trench 7 and screening backdirt from excavation. Backhoe Trench 6 is visible toward the left side of the photo.

Table 4-7. Profile of Backhoe Trench 7.

Backhoe Trench 7		Length: 2.5 meters		Maximum Depth: 245 centimeters
Location: On floodplain in the northeastern corner of the study. South of a catchment pond/tank and push pile. Perpendicular and adjacent to Trench 5, extending to its south; opposite Trench 6.				
Soil Zone	Depth Range (cmbs)	Soil Description	Positive?	Comment
1	0–45	10YR 4/3 silty clay loam topsoil	Negative	
2	45–110	10YR 4/3 clay loam; dense gravel lense with unconsolidated, varied-sized gravels and cobbles throughout.	Negative	Disturbance
3	110–130	10YR 3/4 dark brown loamy clay with few gravels	Negative	
4	130–145	10YR 4/3 clay with abundant pea gravels throughout.	Positive	Gravel lens. 3 secondary flakes.
5	145–190	10YR 3/4 dense, uniform silty clay	Negative	
6	190–245+	7.5YR 4/3 mottled, dense clay, increasing in density with depth.	Negative	Sterile subsoil.

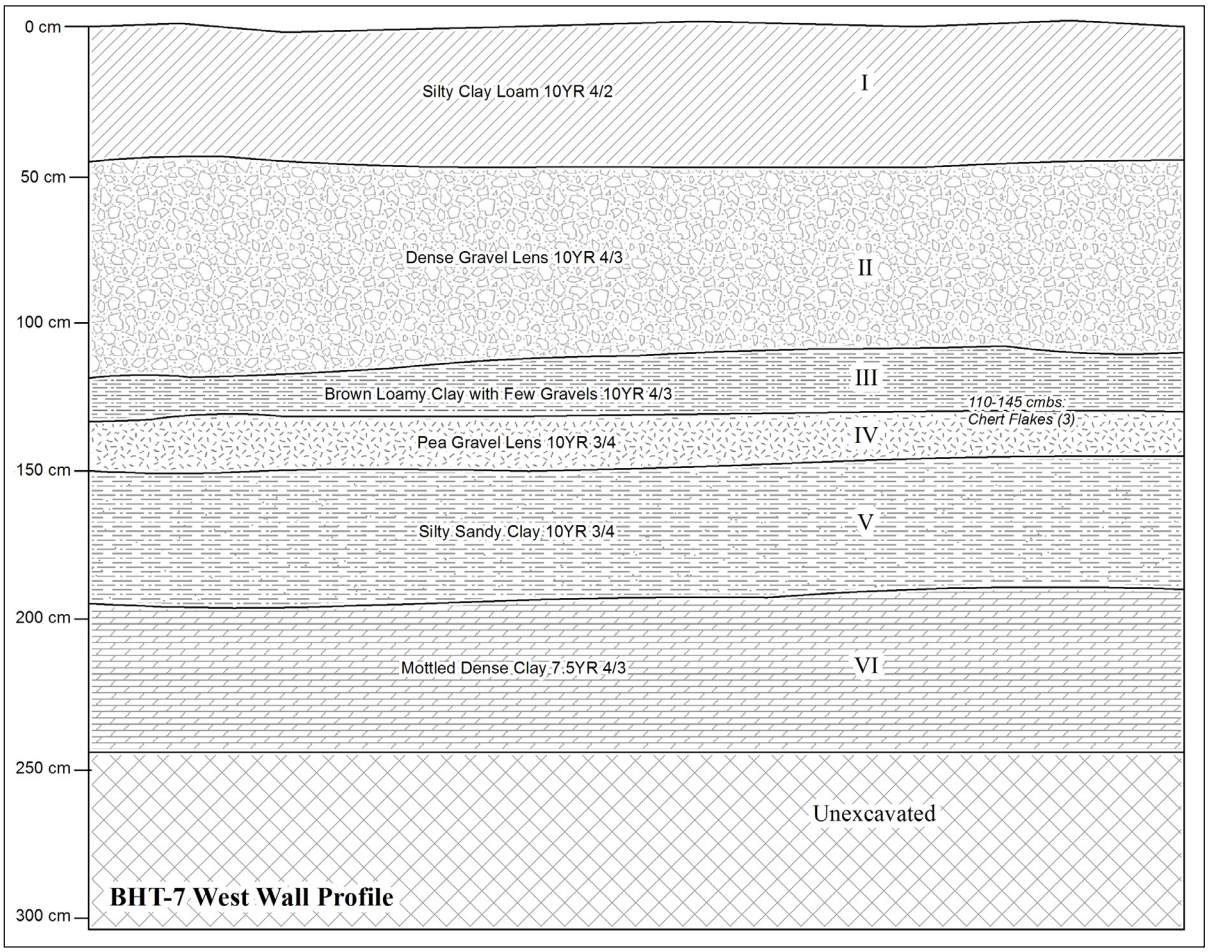

Figure 4-22. Backhoe Trench 7 profile.

Figure 4-23. Photographic profile of Backhoe Trench 7.

Figure 4-24. Secondary flakes recovered from the screens in Backhoe Trench 7.

With a tally of six lithic flakes and three pieces of burned rock, the artifacts encountered within Backhoe Trenches 5 and 7 were the highest yield of the trenching effort. Being found closely together, this would suggest some potential for additional artifacts. With that said, these finds were separated vertically by nearly a meter, lacked any indication of intact features, and were both limited to gravel lenses that were either high-energy secondary deposits or were the result of extensive, deep previous disturbance. AmaTerra reviewed a series of historic-age aerial photographs to investigate the possibility of such extensive disturbance and found none in photos dating back to 1963 (**Figure 4-25**). The land was used as an agricultural field until very recently. It is possible, though that activities associated with constructing the landfill that may have eluded aerial photography resulted in the disturbance that is suggested in the soil profiles in Trenches 5-7. Alternatively, the highly-varied sedimentation in this location could be gravel bars deposited from an earlier location of the adjacent tributary channel. Regardless, the artifacts observed are not considered in primary context and are not likely to yield any potential for intact preservation. Accordingly, survey continued farther south with Trenches 8 and 9.

Moving away from the northern corner and Trenches 5-7, archeologists noted, upon surface inspection atop a buried tributary limestone cutbank on the east side of the remote control airplane field, several burned rock fragments on a slope leading down from a bulldozed two-track road (see Figure 4-9 and **Figure 4-26**). The fragments were diffuse (3-4 fragments in a 30-meter-diameter area) and not accompanied by any other prehistoric or historic artifacts. One shovel test (Test 18) was excavated at that location, which encountered very shallow bedrock and no artifacts. The scatter is considered an isolate of poor integrity and minimal research value and was not investigated further.

Moving progressively farther south, archeologists encountered more even, uniform clays than elsewhere, but continued to observe punctuations of gravel lenses/beds in each soil profile of Trenches 8 and 9, indicating periods of low- and high-energy flood deposition (see Figure 4-9; **Figures 4-27, 4-28**, and **4-29**). Trench 8 contained homogenous sterile soils with some small stream gravels at two meters in depth (**Table 4-8**; see Figure 4-28) while Trench 9 contained a 60-cm thick lens of large stream gravels from 20 to 180 cmbs (**Table 4-9**; see Figure 4-29). Both trenches terminated below 200 centimeters in clearly sterile subsoil with no artifacts or features observed in the trench walls/base or screens.

In each positive trench (Trenches 2, 5, and 7), artifacts were recovered from gravel lenses of varying vertical provenience. These lenses suggest that the artifacts originated from another location and were carried to their find locations in higher-energy flooding episodes. Being secondary deposition, there is very little potential that intact, well-preserved archeological deposits are present in association with these finds. This conclusion is supported by the archeologists' observations from the 2008 survey on this same landform (Butler 2009), where crews documented a low density of diffuse artifacts, mixed at varying depths within several trenches with no apparent features or integrity. Accordingly, AmaTerra could conclude from trenching alone that the components of Site 41KR501 within the proposed expansion area were not well preserved or in sufficient density to warrant designation as a Historic Property and/or SAL. Additional excavations by 50 x 50-cm test units or broader shovel testing would

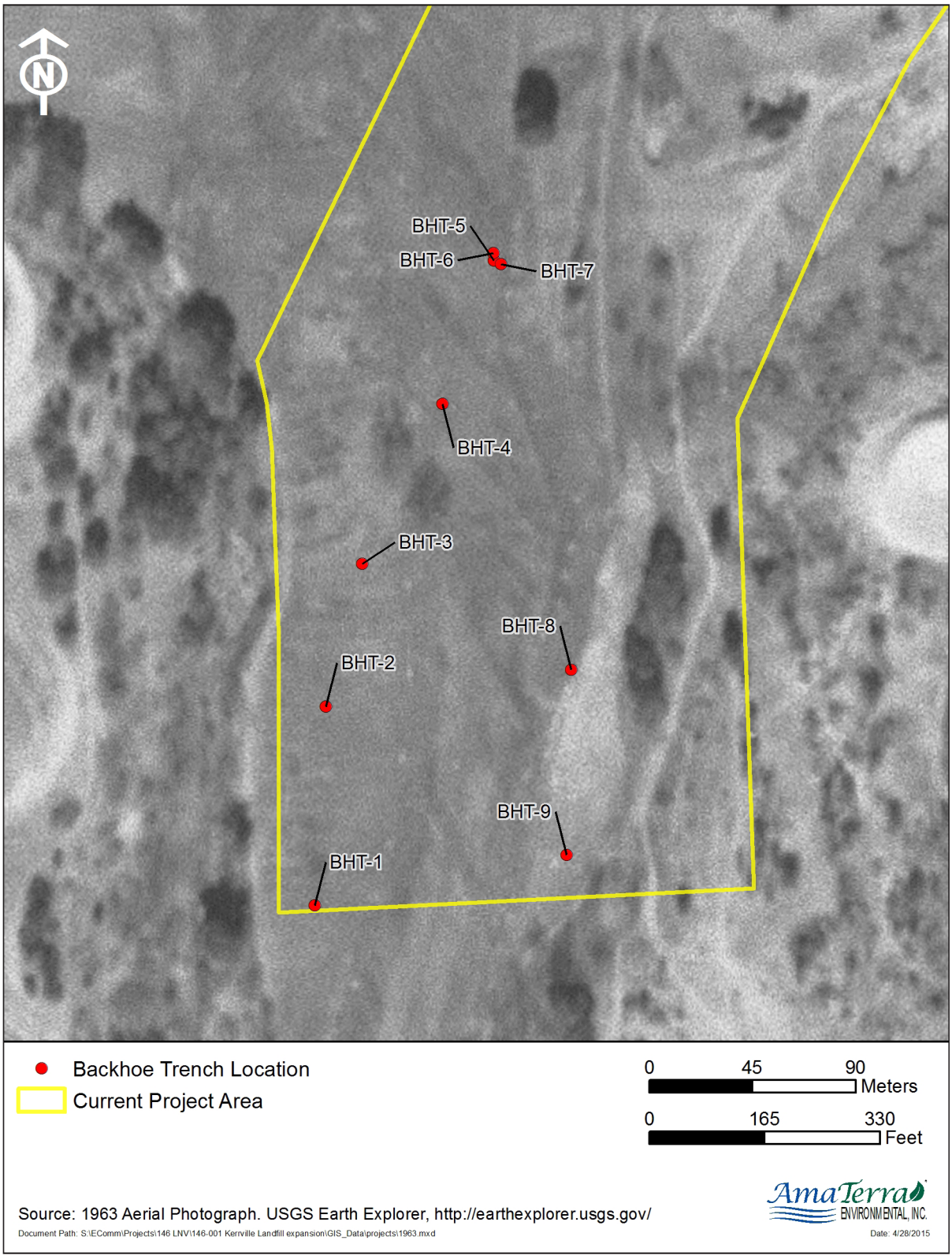

Figure 4-25. 1963 aerial photograph overlaid with the current investigations in the vicinity.

Figure 4-26. AmaTerra archeological technician excavating shovel test 18 among a small scattering of FCR on site 41KR501.

Table 4-8. Profile of Backhoe Trench 8.

Backhoe Trench 8		Length: 3 meters		Maximum Depth: 245 centimeters
Location: On eastern side of floodplain, south of the RC plane control area.				
Soil Zone	Depth Range (cmbs)	Soil Description	Positive?	Comment
1	0–45	10YR 4/5 silty clay topsoil	Negative	
2	45–180	10YR 7/6 sandy, uniform clay	Negative	
3	180–220	10YR 6/4 silty clay with abundant stream-rolled gravels and cobbles throughout.	Negative	Gravel lens.
4	220–240+	10YR 4/4 dense clay.	Negative	Sterile subsoil.

Figure 4-27. Backhoe Trench 8 excavation area adjacent to drainage channel at the base of the hill.

Figure 4-28. Trench 8 photographic profile.

Table 4-9. Profile of Backhoe Trench 9.

Backhoe Trench 9		Length: 3 meters		Maximum Depth: 210 centimeters
Location: On eastern side of floodplain, near the southern terminus of the study area.				
Soil Zone	Depth Range (cmbs)	Soil Description	Positive?	Comment
1	0–20	10YR 5/3 silty loam topsoil	Negative	
2	20–180	10YR 6/6 gravelly, silty loam with gravels and cobbles ranging from 2-20 cm diameter.	Negative	Gravel lens.
3	180–220	10YR 4/6 highly mottled, dense, clay loam.	Negative	Sterile subsoil.

not likely have yielded a significant amount of additional data beyond that generated through trenching and would not likely have changed the interpretations and conclusions that have been presented here.

Figure 4-29. Photographic profile of Backhoe Trench 9.

4.2 Non-Archeological Cultural Resources

In addition to archeological resources, cultural resource specialists also evaluated the potential for the proposed expansion project to indirectly effect non-archeological cultural resources as well. No historic-age structures were observed within the expansion area or within the directly adjacent parcels. All structures are modern-aged and primarily related to the landfill's operations. Accordingly, the proposed project will have no adverse indirect effects to Historic Properties.

Chapter 5

Summary and Recommendations

From April 14-16, 2015, cultural resource specialists from AmaTerra Environmental, Inc. investigated the City of Kerrville's proposed expansions to their existing City Landfill for compliance with Section 106 and the ACT. Working under Antiquities Permit 7238, archeologists conducted intensive areal survey of the project's Big Hill Expansion Area (41.5 acres) and limited testing at Site 41KR501 within the Western Expansion Area.

As a result of the intensive survey, previously recorded site 41KR673 was expanded from 1.3 acres to 15 acres. The site was previously recorded as an Archaic to Late Prehistoric-aged surface lithic scatter. No intact deposits or features were documented. Because there is no potential for future research, and because of its shallow, sparse nature, site 41KR673 is recommended as ineligible for listing in the NRHP or as a SAL.

Site 41KR501 was first recorded in 1991 by Bryant Saner, Jr. as potentially containing deeply buried intact deposits based on the presence of disturbed burned rock midden features in the southeastern portion of the soccer fields, immediately adjacent to the current Western Expansion Area. However, surface inspection and extensive shovel testing and trenching within the site in EComm's 2008 and AmaTerra's 2015 investigations encountered no intact deposits. Only sparse and scattered remnants of this site are present. Where they are observed, artifacts are primarily limited to gravel lenses of higher energy, secondary deposition, and are not *in situ*. Saner's (1991) investigations covered a much larger area than what could be affected by the proposed landfill expansion and intact deposits may be found elsewhere within the recorded boundary. Within the currently-proposed project footprint, however, there is very little intact site preservation and minimal overall research potential. Accordingly, those components of Site 41KR501 within the proposed expansion footprint are recommended as not eligible for listing in the NRHP or as a SAL.

Lacking standing historic-age resources, this project has minimal potential to directly or indirectly affect non-archeological Historic Properties. In accordance with 36 CFR 800 and 13 TAC 26, AmaTerra recommends that the project proceed with a finding of no adverse effects to Historic Properties or SALs and no further work needed.

No artifacts were collected as part of this survey, but all field photographs, forms, and notes will be curated and permanently housed at TARL in Austin, Texas.

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APPENDIX A
SHOVEL TEST DATA

Shovel test	Northing	Easting	Depth	Color	Texture	Disturbances/Notes	Cultural Material	Country	Date
ST-1	3321147	489776	0-10	10YR4/4	si cl w/ degraded bedrock	in Oak tree stand		Kerr	4/7/2015
			10-20	10YR4/4	si cl w/ degraded bedrock	in Oak tree stand		Kerr	4/7/2015
ST-2	3321254	489828	0-5	10YR4/4	top soil/bedrock	On slope in Cedar trees		Kerr	4/7/2015
ST-3	3321311	489886	0-5	10YR4/4	top soil/bedrock	on slope shallow soil to bedrock		Kerr	4/7/2015
ST-4	3321414	489855	0-20	10YR4/4	si cl w/ degraded bedrock	On top of hill flat area moderate soils	1 Flake	Kerr	4/7/2015
			20-40	10YR4/4	Si w/ gravel			Kerr	4/7/2015
			40-50	10YR4/4	decayed bedrock			Kerr	4/7/2015
ST-5	3321473	489923	0-5	10YR4/4	top soil/bedrock	possible dozing, surface clearing		Kerr	4/7/2015
ST-6	3321408	489972	0-5	10YR4/4	top soil/bedrock	very rocky surface w/ deadfall		Kerr	4/7/2015
ST-7	3321314	489952	0-10	10YR4/4	top soil/bedrock	shall fill area		Kerr	4/7/2015
ST-8	3321276	489998	0-10	10YR4/4	Si w/ degraded bedrock	on flat area before drop off		Kerr	4/7/2015
			10-20	10YR4/4	Si w/ degraded bedrock		1 Flake	Kerr	4/7/2015
			20-30	10YR4/4	Si w/ degraded bedrock			Kerr	4/7/2015
ST-9	3321201	489992	0-20	10YR4/4	Si w/ degraded bedrock	In small Cedar stand		Kerr	4/7/2015
			20-30	10YR4/4	Si w/ degraded bedrock			Kerr	4/7/2015
ST-10	3321277	490071	0-20	10YR4/2	CL	Toe slope possibly disturbed		Kerr	4/7/2015
			20-40	10YR4/2	CL w/ degraded bedrock			Kerr	4/7/2015
ST-11	3321351	490172	0-20	10YR4/4	Si w/ degraded bedrock	next to two track, probably disturbed		Kerr	4/7/2015
			20-30	10YR4/4				Kerr	4/7/2015
ST-12	3321427	490152	0-5	10YR4/4	top soil/bedrock	Up slope from road		Kerr	4/7/2015
ST-13	3321466	490214	0-5	10YR4/4	top soil/bedrock	on small slope		Kerr	4/7/2015
ST-14	3321559	490137	0-5	10YR4/4	top soil/bedrock	on low slope in cedar trees		Kerr	4/7/2015
ST-15	3321494	490122	0-5	10YR4/4	top soil/bedrock	Undulating land form in trees		Kerr	4/7/2015
ST-16	3321429	490026	0-20	10YR4/4	Si w/ degraded bedrock	Flood fill		Kerr	4/7/2015
ST-17	3321367	490057	0-20	10YR4/4	Si w/ degraded bedrock	on small terrace		Kerr	4/7/2015
ST-18	3321343	489562	0-20	10YR4/4	Si Lo			Kerr	
			20-40	10YR4/4	Si w/ degraded bedrock	on down slope from road to open RC field		Kerr	4/8/2015
			40-50	10YR4/4					