

*APPENDIX F*  
*CULTURAL RESOURCE COORDINATION*

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A Proposal for the Texas Preservation Trust Fund:  
Archaeological Analysis and Assessment  
of the  
General Edward Burleson  
Log Cabin Site



*Submitted to:*  
The Texas Historical Commission  
PO Box 12276  
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## **Introduction and Definition of the Problem**

In 1848 General Edward Burleson constructed a log cabin on the edge of the Edwards Escarpment overlooking the San Marcos Springs. This structure stood until 1917 when it fell into ruins. In 1964 Paul Rodgers, owner of Aquarena Springs, commissioned a replica which was built from original materials remaining on the site as well as materials obtained from three other contemporary structures. Today, Southwest Texas State University owns the land and building, but the replica is in need of repair. In December 1999 Volz & Associates submitted an architectural assessment of the historic buildings at Aquarena Springs to Southwest Texas State University in order to provide guidance to SWT in regard to the continuing use and interpretation of the Burleson cabin replica and the other historic buildings at Aquarena Springs (*John Volz, 1999 IMS-CAP Survey of Aquarena Center for Southwest Texas State University, San Marcos, Texas*. Volz & Associates, Inc. Austin). The following proposal only considers the Burleson cabin replica and the original Burleson cabin site.

Volz (1999:5, 8) suggests a general strategy with a number of alternative options in regard to the Burleson cabin. Volz (1999: 8) suggests that the general strategy should begin with the preparation of a master plan that integrates the preservation strategies of the Burleson cabin with the goals of the Texas River Center. Furthermore Volz (1999:8) suggests that a Historic Site/Structures Report be prepared that includes a historical analysis, archaeological investigations, measured drawings, architectural analysis, documentation and condition analysis of existing building fabric, and recommendations for future preservation. In regards to future preservation, Volz (1999:5) suggested four options. The first option is to preserve the replica and interpret it as a 1960s facsimile of the original house. The second option is to remove the 1960 replica and provide interpretive signs adjacent to the existing monument, erected in 1932 by the Daughters of the Republic of Texas (DRT). The third option is to remove the replica and interpret the site based on archaeological and historical research. The final option is to remove the replica and accurately reconstruct the original cabin, outbuildings, and landscape. The following proposal is designed to assist Southwest Texas State University in deciding which option is the most reasonable.

## **A Brief History of Edward Burleson**

Edward Burleson was both a soldier and statesman (Figure 1). Burleson was born December 15, 1798 in Buncombe County, North Carolina and died at 53 years old on December 26, 1851 in Austin, Texas (*Handbook of Texas*; Helen Burleson Kelso 2000). On April 4, 1831, he served as a private in the War of 1812 in Alabama's Perkin's Regiment and fought against the Cherokees. This began his career as a military man and Indian fighter. In 1817 he was appointed to the rank of captain in the Howard County, Missouri militia, and in 1821 commissioned as colonel in Saline County, Missouri. He was also a colonel of militia in Hardeman County, Tennessee from 1823 to 1830. On April 25, 1816, he married Sarah Griffin Owen in Madison County, Missouri Territory. He and Sarah had nine children.

Figure 1. Edward Burleson circa 1850.

Burleson came to Texas on May 1, 1830. He applied for land in March 1831, and was granted a league of land in Bastrop County in Stephen F. Austin's second colony on April 4, 1831. At San Felipe de Austin on August 11, 1832, he became a member of the ayuntamiento and helped govern Austin, Bexar, Goliad, and Guadalupe counties. He was elected lieutenant colonel of the Austin Municipality militia on December 7, 1832 and elected in 1832 as a delegate to the Second Convention in Mina.

As the Texas revolution began, Burleson was elected a lieutenant colonel in General Stephen F. Austin's army on October 10, 1835, and on November 24, 1835 he replaced Austin as General of the army. Later that fall on November 26, 1835 he fought in the Grass Fight. Burleson was commissioned as commander-in-chief of the volunteer army by the provisional government on December 1, 1835, and on December 6 began the house-to-house battle to take San Antonio with Benjamin R. Milam. By December 14, 1835 Burleson reported to the provisional governor, Henry Smith, that San Antonio de Bexar was secured, but Milam had died in the battle. In late December of 1835, the volunteer army dissolved, but Burleson raised a company and moved to Gonzales in

February of 1836. On March 10, during the siege of the Alamo, Burleson was elected colonel of the First Regiment of the infantry, and he commanded this regiment in the Battle of San Jacinto on April 21, 1836. At the conclusion of the battle, Mexican General Juan N. Almonte surrendered to Burleson.

From July to December 1836, Burleson served as a colonel in the frontier rangers. In 1837 he surveyed and laid out roads near Bastrop, La Grange, and other areas in Texas. On June 12, 1837 he was commissioned as brigadier general of Republic of Texas militia, established by the First Congress. He served in the House of Representatives between September 1837 to May 1838, and during this period was on the Committee on Post Offices and Post Roads, Committee on Military affairs, and he chaired the Committee on Indian Affairs. In the new Republic of Texas regular army he was colonel of the First Regiment, and on April 4, 1838 defeated Mexican insurrectionists under the command of Vicente Cordova. He continued to work as a surveyor, and in the spring of 1838 he laid out the town of Waterloo (now Austin). In 1838 Burleson was elected to the Republic of Texas Senate, but resigned at the request of President Mirabeau Lamar to take command of the Frontier Regiment on January 19, 1839. Later in the spring of 1839 Burleson discovered that the Cherokees and other groups had become allies with Mexico, and in July of that year Burleson defeated Chief Bowl of the Cherokees.

On Christmas day of 1839, Burleson again fought and defeated the Cherokees at Pecan Bayou. During the battle Chief Bowl's son, John, and Chief Egg were killed. Burleson send Chief Bowl's hat to Sam Houston, and Houston was outraged. Burleson, however, continued to fight Indians, and he defeated the Comanche at Plum Creek, near Lockhart, on August 12, 1840. This marked a turning point, for the worst, in Anglo-Comanche relations.

In 1841 Burleson was elected Vice President of the Republic of Texas. Sam Houston was the President. In the spring and fall of 1842 Mexican armies invaded Texas, and in both instances Burleson amassed volunteer armies to fight. But in both cases, President Sam Houston replaced Burleson with General Alexander Sommervell. In 1844 Burleson ran against Anson Jones for President of the Republic of Texas, but was defeated. At about the same time Burleson began to buy land in then southern Travis County. In December of 1845 he was elected as senator to the first State Legislature of

Texas and was unanimously elected president pro tem. In 1847 Burleson, William Lindsey, and Dr. Eli T. Merriman surveyed and laid out the town of San Marcos, and in 1848 Burleson introduced a bill to create Hays County from the southern portion of Travis County where he had purchased land. He and Lindsey donated land for the courthouse and town square. In that same year he moved his family from Bastrop to Hays County. In 1848 Burleson chaired the Committee on Military Affairs and received a grant for \$1,250,000 for Indian depredations. During the same interval Burleson continued to develop his business interests in San Marcos, and in 1849 Burleson built the dam that created Spring Lake and constructed a mill that was powered by the waters from the dam.

While serving as State Senator from the Twenty-first District and while still president pro tem, Edward Burleson died in Austin of pneumonia on December 26, 1851. He was buried in Austin on land that was to become the State Cemetery. In 1854 the land was purchased for the State Cemetery, and it was established in his honor.

### **History of Site and Condition of Log Cabin**

In 1831 Juan Martin de Veramendi, a native of San Antonio and ninth Governor of Coahuila and Texas under Mexican rule, was granted two leagues of land north of San Antonio in the area that is now San Marcos. In 1833 he died of cholera in Saltillo, Mexico, and his holdings were dispersed to his heirs. After his death one of his daughters, Maria Antonia de Veramendi Garza, and son-in-law, Rafael L. Garza, began selling the land they had inherited. In 1840 they sold a tract of land described as

*The full & undivided half of six hundred and forty acres of land to be selected by said N. Lewis out of the League of land inherited by the aforesaid Maria Josefa Veramendi upon the head waters and western bank of the river St. Marks\_it being the Western League of two Leagues of land upon head waters and & including the head spring of the river St. Marks formerly granted to Juan Martin Veramendi (Hays County Deed and Records, Book A, Page 10).*

In 1844 Nathaniel Lewis sold this land to Edward Burleson (Hays County Deed Records, Book A, Page 176), and it was upon this tract that Edward Burleson and two

sons built a log cabin in 1848. Burleson lived in this cabin until he died. A variety of people lived in this house until 1910 when it was abandoned (*Historical Survey Group to Have Medallion on Burleson Homestead*; San Marcos Record, May 19, 1966; Tula Wyatt Collection, San Marcos Public Library).

A number of old photographs and Augusta Koch's Birds-Eye-View map are available that document the condition and location of the building. The Birds-Eye-View map illustrates a single cabin on the edge of the escarpment above the San Marcos springs (Figure 2). Two photographs show the log cabin on the crest of the ridge overlooking the springs (Figures 3 and 4). In both photographs most of the vegetation on the ridge crest has been removed, where today the amount of vegetation is much thicker and tall trees are present. Figure 3 shows the cabin, an outbuilding under a tree to the left of the house, and the limestone bedrock ledge where the hotel was built. Figure 4, taken in 1907, shows the cabin from a spot further upstream and this photograph also pictures the outbuilding more clearly.

Figure 2. Birds-Eye-View of San Marcos and the springs (Augusta Koch 1881).

Figure 3. Photograph showing Burleson's cabin, outbuilding hidden behind a tree, and ledge where hotel was built (unknown date).

Figure 4. Photograph showing Burleson's cabin and single outbuilding to the northeast (1907).

Figure 5. Current view of the springhead, hotel, and ridge with the replica cabin. Note the two large trees on the cleared ridge in Figure 4 are visible in this photo behind the hotel.

Five photographs were taken close enough to the structure to show a fair amount of detail, and these can be arranged in approximate chronological order using the condition of the structure, and known dates. The first photograph, Figure 6, on a post card postmarked 1908, is one of the few that show the cabin's south and west sides. The outbuilding was present and its position in relation to the cabin is due north of the west

wall and perpendicular to the cabins long axis. The second (Figure 7), a xerox of a photograph, shows that the porch was enclosed on the northwest side. Note the board propping the wall.

Figure 6. Photograph of Burleson's cabin and outbuilding in 1908 (Tula Wyatt Collection, San Marcos Public Library).

The third photograph show the north and east sides, and clearly illustrates the original chimney before it collapsed (Figure 8). Most of the wooden siding had fallen off the east wall of the northern crib, and at least one of the logs on the north wall, east of the chimney, had dislodged. It also appears that the western porch was still enclosed. Either bedrock or a low stonewall may be present on the eastern side of the cabin. The cabin clearly was abandoned at the time this photograph was taken. Figure 7 was published in the *San Antonio Light* newspaper on March 12, 1911. The third photograph (Figure 9) has a group of people standing on the east side, and shows that the two crib doors appear to have been enclosed as windows. The dogtrot breezeway is enclosed, although the door is missing, and most of the wooden siding has fallen off.

Figure 7. West side of Burleson cabin showing enclosed room on northwest side.

Figure 8. Photograph of Burleson log cabin looking southwest showing fireplace detail and modifications (Aquarena Springs Hotel, SWT-*San Antonio Light* 3/12/1911).

Figure 9. Photograph of Burleson log cabin looking northwest showing modifications, (Tula Wyatt Collection, San Marcos Public Library).

In an article dated April 11, 1915 printed in the *San Antonio Express* newspaper, a photograph shows the cabin in near ruin (Figure 10). The roof and chimney have collapsed, doors are definitely missing, the west porch appears to have collapsed, and

more logs have fallen out of the north wall, east of the chimney. Figures 8 and 10 were taken from very near the same position, and along with Figure 9, they clearly show the accelerated decay that occurred between 1911 and 1915.

In 1917 the structure collapsed in a rainstorm and became a “mass of debris” (*Historical Survey Group to Have Medallion on Burleson Homestead*, May 19, 1966; *San Marcos Record*; Tula Wyatt Collection, San Marcos Public Library). During the 1920s various individuals called attention to the poor condition of the cabin and attempted to motivate the community to do something appropriate for the site (*Gen. Edward Burleson*; April 13, 1928; *Kyle News*; Tula Wyatt Collection, San Marcos Public Library). In 1932 the Daughters of the Republic of Texas (DRT) responded to this plea and erected a monument at the site. The monument was carved on Texas gray granite and mounted in stones collected from the original fireplace (*Burleson Homestead Marker Was Dedicated Here Last Thursday*, by Renick F. Ansell; *San Marcos Record*, July 8, 1932; Tula Wyatt Collection, San Marcos Public Library).

Figure 10. Photograph of Burleson log cabin looking southwest showing the deteriorated condition in 1915.

Little more was done at the site until Paul Rodgers, then owner of Aquarena Springs, began to build a replica “as authentically as possible” of the log cabin on its “original site” in 1964 (*General Edward Burleson*, Anonymous; unpublished manuscript on file, Tula Wyatt Collection, San Marcos Public Library.). Rodgers consulted Mrs. William A. Wyatt, Sr., as she had published a story in 1915 that included plans, a description of the structure, and pictures dating back to 1895 showing how logs fit together, window design, doors, flooring and chimney (ibid). Rodgers hired a builder by the name of Jack Warner, and they selected three log cabin structures from which material was used to build the replica. They searched for logs and materials from the same period, and with the assistance of Coke Stevenson, Jr., they recovered logs for walls from Governor Coke Stevenson’s log home in Llano County, as well as the Burnham home in Burnet County. Roof boards and rafters came from the Stringtown Stage Coach Stop owned by James P. Matthews (Figure 11). Jack Warner built the “old log replica”

with two rooms, a dogtrot breezeway, and a wide porch across the west side. Original chimney stones were reused to replace the first chimney and fireplace. The replica was completed in 1966 (ibid), and the DRT held an Open House. On April 21, 1967 the Hays County Historical Survey Committee placed Historical Marker on the replica cabin (ibid).

Figure 11. Old Stagecoach Inn on Hunter Road was torn down last week to be used in remaking the Burleson cabin, *San Marcos Record*, April 9, 1964

### **Current Condition of the Site**

Today the 1964 replica sits near the edge of the escarpment. Compared to the historic photographs the 1964 replica appears to be nearer the eastern edge of the escarpment than the original cabin. The DRT monument is south of the standing cabin. Immediately west of the cabin crushed limestone gravel is scattered and limestone blocks are protruding above the surface (Figures 12 and 13). Further west is a Sky Ride building where construction would have severely impacted subsurface deposits and archaeological remains. A recent mock archaeological excavation (sand box) facility has been placed to the north and west of the cabin (see Figure 13). On the west edge of the ridge is a modern clay and ceramic dump (Figure 14).

### **Proposed Investigation**

Archaeological investigations are proposed at the General Burleson cabin site to determine the original location of the cabin and to assist in developing accurate information for future interpretations of the site. Two stages are planned, and matching funds are requested only for the second stage.

Figure 12. Log cabin replica built in the 1960s.

Figure 13. Gravel and mock excavation sand box.

Figure 14. Clay and ceramic dump with log cabin replica in background.

Stage 1 consisted of the fieldwork, and Stage 2 will include the analysis and reporting of the investigation results. During the summer of 2000 we hosted the Southwest Texas State University Texas Archaeological Field School at the Burleson Cabin Site under Antiquities Permit No. 2406. The excavation strategy was designed to identify the original location of the cabin by searching for the foundation stones and/or builder's trenches for the original structure. We assumed it was possible that the existing replica cabin was placed on the original foundation, and if this was correct then the mock excavation sand box is probably on the location of the outbuilding shown in the historic photographs. Archaeological investigations were used to assess this scenario.

The excavation used standard excavation field techniques. All material was screened through quarter-inch hardware mesh, and all materials and artifacts collected. As this is a historic site where the unit of measurement was in feet and inches, these units were used on this excavation. Site maps with features and excavation units were prepared, level forms completed, photographs taken, and field notes recorded.

For Stage 2, no work has begun on the analysis of materials and report preparation, but the analysis will include all metal artifacts and objects, all ceramic and glass, all bone and other materials using standardized typologies and methods. The analysis will be aimed at determining the chronological periods represented, identify surviving architectural features, and identifying and mapping activities that occurred at this site. An unusual feature, carved in bedrock, was discovered (Figure 15), but its function is unclear. Additional historic research will be focused on the length of occupation and the individuals inhabiting the site, the decay and collapse of the original cabin, the construction of the replica, and use of the site during the Aquarena Springs era. All artifacts will be cleaned and labeled, and curated at the Center for Archaeological Studies on the SWT Campus. A report will be prepared and published through the Center for Archaeological Studies. Information from the report will be used to further the interpretive potential of this historic site.



Figure 15. Feature 4 consisting of carved limestone bedrock recorded at the General Burleson Cabin Site.

## Proposal for Excavations at Spring Lake, 2001

Center for Archaeological Studies

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### Previous Archaeological Research

Six archaeological sites are recorded in the vicinity of the Texas River Center (Figure 1). These are 41HY37, 41HY147, 41HY160, 41HY161, 41HY165, and 41HY306 (Shiner 1981, 1983, Garber et al. 1983, Garber and Orloff 1984, Ford and Lyle 1998, Goelz 1999, Arnn et al. 1999, Lyle et al. 2000). According to current construction plans, only 41HY160 will be directly impacted by the Texas River Center. Archaeological research in the surrounding area will be discussed as it pertains to the archaeological resources at 41HY160.

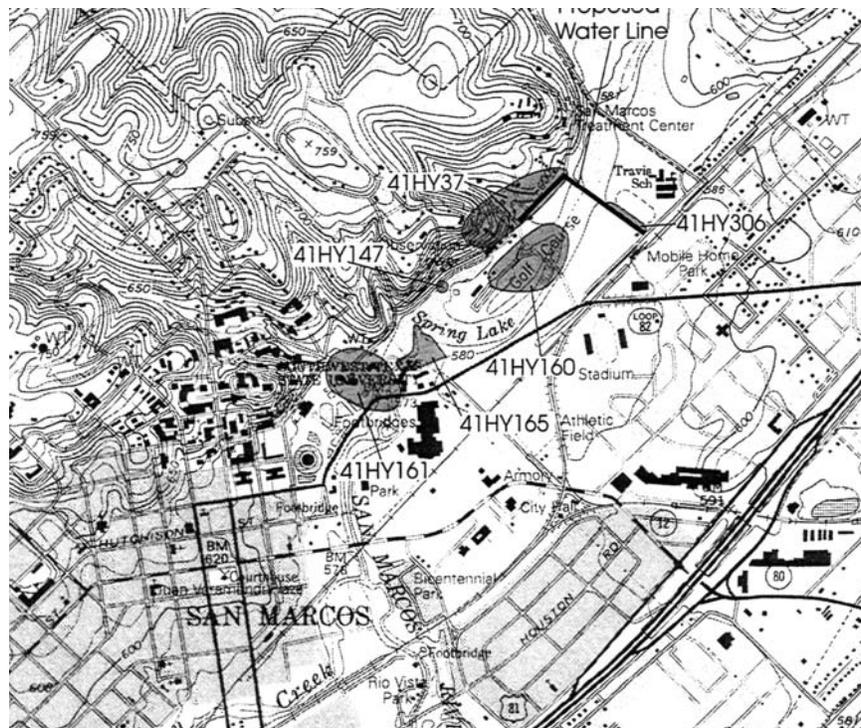


Figure 1. Map of Spring Lake and recorded archaeological sites

In 1978 Shiner (1979, 1981, 1983) began underwater investigations at site 41HY161 (the Ice House Site) below the dam at Spring Lake. This site appeared to be disturbed and contained a mixture of prehistoric (mostly Archaic) and historic artifacts. In 1979 Shiner shifted his attention to the underwater excavation of Site 41HY147 (the Terrace Locality) in Spring Lake adjacent to a large springhead. A mid-nineteenth century dam forms Spring Lake at Aquarena Springs and it flooded the once-dry alluvial terrace deposits.

In his underwater excavations at 41HY147, Shiner recognized three strata on an eroded slope at the base of the escarpment. The top stratum was approximately 20-30 cm thick and consisted of a gray matrix with shouldered and notched Archaic projectile points. The middle stratum was a 10-20 cm

thick red sandy deposit with shouldered and lanceolate projectile points. The lowest layer was 30-40 cm thick red clay with Paleoindian lanceolate projectile points and many of the large faunal remains. The faunal remains recovered by Shiner included mammoth and mastodon teeth, and bison bone. Shiner's underwater excavations at 41HY147 and 41HY161 produced abundant evidence of Archaic and Paleoindian, including Clovis, use of the area, but the remains were not found in sedimentary contexts that could be used to reconstruct detailed views of these past occupants' life-ways. Nevertheless, Shiner (1983) proposed that the Paleoindian inhabitants of 41HY147 probably were semi-sedentary and stayed at the springs for long periods of time. Shiner (1983) based this hypothesis on the apparent large number of Paleoindian projectile points and bones found in his excavations in contrast to well-known kill-sites in the Plains with fewer points. Plus he suggested that the presence of large springs with constant water temperatures would allow "edible flora and fauna [to] be available year-round" and the "green foliage near the temperate water would attract large fauna during the dry or cold seasons" (Shiner 1983:5-6). Johnson and Holliday (1983) contested this hypothesis, and suggested that the abundance of projectile points was related to the abundant supplies of Cretaceous cherts on the Edwards Plateau rather than a semi-sedentary mobility pattern.

In 1982 Southwest Texas State University (SWT) field schools began to investigate sites near San Marcos and these field schools have investigated sites 41HY37, 41HY160, 41HY161, and 41HY165 at Aquarena Springs. Garber et al. (1983) report on the 1982 SWT field school at Site 41HY160. Site 41HY160 is on the peninsula between Spring Lake and Sink Creek at the Aquarena Springs golf course. Thirty-four square meters were excavated in the vicinity of T-Box 6. The deepest excavation unit (XU1) extended to a depth of 2.4 meters below the surface. Intact Late Prehistoric to Early Archaic occupations were exposed. Garber et al. (1983) recovered over 35,600 lithic artifacts, including 504 lithic tools and 53 diagnostic projectile points. Late Prehistoric projectile points such as Perdiz, Scallorn, Clifton, and Alba were found between 0-20 cm below the surface (bs), points characteristic of the Transitional Archaic Period (Darl, Fairland, and Edgewood) were recovered between 20-40cm bs, Late Archaic projectile points (Ensor, Frio, Marshall, and Castroville) were excavated between 30-50 cm bs, early Late Archaic points (Pedernales) occurred primarily between 50-70 cm bs, and Nolan and Early Stemmed points representing the Middle and Early Archaic intervals were found between 70-190 cm bs. Faunal remains consisted of bison, deer, and antelope. The thirteen documented features included two burned rock middens, five stone hearths, three stone alignments, one posthole, one trash pit, and a special activity area possibly associated with the production of ceramics. One stone alignment and an adjacent posthole might be the remains of a structure. The SWT field school returned to 41HY160 in 1983, but these excavations have not been analyzed or reported.

In 1984 41HY165 was recorded and briefly tested. Excavations were renewed in 1996, and continued through 1998. Jennifer Giesecke (1998), then a BA student at SWT, analyzed the faunal remains for a class project and currently Chris Ringstaff is using this material for his MA Thesis (Ringstaff in prep), otherwise the excavations at this site have not been reported.

In 1990 and 1991, Paul Takac, a graduate student at SMU, continued Shiner's underwater excavations at Site 41HY147 (Takac 1990, 1991a, 1991b). His project was eventually abandoned because of the difficulty and costs involved in careful underwater excavations. He does document a

total of 46 Paleoindian projectile points were collected by Shiner and himself at 41HY147, and most are Late Paleoindian in age. Also in 1991 the SWT field schools returned to 41HY160 under the direction of David Driver. Three units were excavated in the T-Box 6 area, three units were excavated in the vicinity of the swimming pool at Aquarena Springs, and a fourth unit was excavated north of the Anthropology Field Laboratory. Most of the upper deposits near the swimming pool were believed to be mixed (James Garber, personal communication 1999), but some of the lower deposits appeared to be intact. In 1998 under the direction of Kathy Brown the SWT field school excavated six units at 41HY160 in the vicinity of the Aquarena Springs offices. Intact deposits were found immediately below the present surface in two of the units. Neither the 1991, 1993, nor the 1998 excavations have been analyzed and reported. In 1997 Ramsey (1997) conducted a pedestrian survey and shovel-testing project at Aquarena Springs. She excavated 10 shovel tests on the east side (left bank) of Sink Creek and north of the entrance road immediately east of the escarpment. All but one shovel test produced prehistoric artifacts.

In 1997 Ford and Lyle (1998) conducted a limited shovel testing and backhoe testing operation at 41HY161 in the parking lot constructed for Joe's Crab Shack on the right bank of Spring Lake immediately upstream from the dam. These investigations demonstrated the presence of extensive disturbed deposits. In 1998 Lyle et al. (2000) excavated backhoe trenches, shovel tests, and excavation units along the route of a water pipeline that went through 41HY161. The entire length was monitored during construction. The route extended from the banks of the San Marcos River immediately downstream of the Ice-House Dam and ran adjacent to the Aquatic Biology Building and continued west from this building. Test units west of the Aquatic Biology Building documented eight stratigraphic units and recovered a Late Archaic (Williams) component in Zone 7 stratified above a Late Paleoindian (probably Angostura) component in the lower portion of Zone 7. Below the Angostura component was a buried soil in Zone 8. Organic matter from this soil was submitted for radiocarbon dating and the resulting estimate of  $1060 \pm 70$  BP (Beta-132889,  $\delta^{13}\text{C} = -20.1 \text{ ‰}$ ) reflects a serious contamination problem with modern organic matter. Dense subsurface roots from nearby bald cypress trees are the likely contaminant.

In 1999 Prewitt & Associates conducted a geological assessment of seventeen 30-foot (9 meter) cores (Goelz 1999). The primary result of this work was to provide an outline of the late Quaternary geological history of the valley and the potential for prehistoric occupations. Goelz (1999:5-6) identifies two stratigraphic units (I and II) and four depositional facies (I<sub>g</sub> and II [my labels], and II<sub>a</sub> and II<sub>b</sub>).

Stratigraphic Unit I unconformably overlies Cretaceous bedrock (Person Formation of the Edwards Group). This unit is divided into a thick gravel facies (I<sub>g</sub>) and a thin discontinuous loam facies (II). The gravel facies represents deposition by a high-energy fluvial system such as reflected by a stream channel floor or a point bar. It was present in the lower portion of Cores 4, 7, 8, 14, and 15, but unit designations are not clearly marked on the remainder of the core descriptions. The loam facies (II) was present in only Cores 15 and 19. This facies is an organic-rich fine-grained deposit that probably reflects the occurrence of a "backswamp" or marsh environment. A radiocarbon assay of  $11,470 \pm 100$  BP (Beta-132062,  $\delta^{13}\text{C} = -26.7 \text{ ‰}$ ; calibrated age 13,444 years BP) from 8.5 meters below ground surface in Core 15 supports the argument that most of the alluvial deposits in the valley accumulated during a temporal span that could potentially contain cultural materials.

Stratigraphic Unit II consists of two facies. Unit *IIa* consists of fine-grained floodplain deposits, and Unit *IIb* represents the accumulation of coarse-grained poorly-sorted colluvial deposits simultaneously accumulating at the base of the escarpment and interfingering with the alluvial deposits of Unit *IIa*. A buried soil was observed in Core 3 and Core 9 at approximately 2 meters below surface. A radiocarbon date from Core 3 (3660±50 BP, Beta-132061,  $\delta^{13}\text{C} = -21.7\text{‰}$ ; calibrated age with multiple intercepts of 3979, 3936, 3933 years BP) is used to suggest that this soil formed during a brief period of surface stability during the Late Archaic period.

These investigations demonstrate the great potential for human occupation in these deposits. Evidence for prehistoric occupation began at least by the Clovis period at approximately 11,500 BP, and extends through the Late Prehistoric period. Historic documents record the use of the springs by Spanish and Native American groups such as Apache and Tonkawa in the eighteenth and nineteenth centuries (Foster 1995; Himmel 1999).

### **Research Questions**

A number of major questions were developed for the investigations at the Texas River Center. Not all these issues will be addressed by the current project, but the full set is presented here.

1. What economic changes occurred during the prehistoric period. The only nearby site that can compare to 41HY160 is Wilson-Leonard (41WM235) in southern Williamson County (Collins 1998). Both sites have evidence of quasi-continuous occupation from the Early Paleoindian through the Late Prehistoric periods. The faunal record at Wilson-Leonard (Baker 1998, Balinsky 1998) suggests that dramatic changes in prehistoric faunal exploitation occurred during the same periods of occupation as represented at 41HY160, and that these changes were related to major environmental shifts. Giesecke (1998) tentatively identifies shifts between deer and bison at 41HY165, but these results must be checked. The use of plant foods can also be expected to change, but too little is known about what type of plants were used and how these were processed.
2. How has the local and regional environment changed? How have environmental changes influenced the exploitation of plants and animals in the area? Was the resource base stable during this 12,000 year period or did the prehistoric inhabitants respond to regional fluctuations in the plant and animal populations (Dillehay 1974, Bousman 1998)? Have the changes been great enough to alter the manners in which prehistoric Native Americans have changed their economic, mobility or technological exploitation patterns?
3. How have prehistoric technological strategies responded to changes in economic exploitation patterns? A shift from formal and curated lithic tools to a greater use of informal expedient tool using strategies is evident in the flake tools at Wilson-Leonard (Perillman and Bousman 1998). Are changes in cooking technology a response to economic changes and availability of foodstuffs (Wandsnider 1997)? Are similar shifts present at 41HY160? Did the prehistoric inhabitants alter their technological strategies to match the exploitation patterns?
4. How did changes in hunter-gatherer mobility influence technological patterns? According to Shiner (1983) we should expect to encounter evidence for semi-sedentary mobility, even in the Paleoindian period. McKinney (1981) and others have remarked on the intensive exploitation and occupation of spring related sites along the Balcones escarpment, but does this occupation intensity

translate to sedentary mobility patterns? Did shifts in mobility patterns influence the use of curated and expedient tools? How are nonlocal raw materials incorporated into the technological system? Are different resources from differing areas used in specific periods?

5. Two possible structures have been recovered from the SWT excavations at 41HY160 and nearby site of 41HY163 (Garber 1984; Garber et al 1983, Garber 1987). Other investigations in Texas demonstrate the construction of habitation structures and four types have been identified (Lintz et al 1995). Ethnoarchaeological investigations of hunter-gatherer sites demonstrate the unorganized nature of sites occupied by highly mobile foragers and the more highly organized sites occupied by semi-sedentary collectors (Binford 1986; Fisher and Strickland 1989; O'Connell 1987; Yellen 1976). Both groups are known to construct habitations, but artifact distributions differ between these different hunter-gatherer adaptations. Recent intrasite spatial analysis of Late Archaic occupations at 41MV120 in Maverick County suggests a highly repetitive but informal use of space as would be expected on forager sites (Vierra 1998). Intrasite analysis of artifact distributions can be used to shed light on hunter-gatherer mobility patterns. If additional structures can be identified, then their use in detailed intrasite analyses of hunter-gatherer camps would be extremely informative. If so, then how does site structure relate to mobility patterns? Does the internal structure of prehistoric occupations at the spring support the argument for semi-sedentary occupation.

6. How has the nature of sediment accumulation affected the presence of archaeological evidence at 41HY160? Did erosion and differ facies deposition inhibit the preservation of archaeological remains in specific periods. Could these different patterns of erosion and deposition account for the cultural historical record preserved at 41HY160?

### **Current Investigations**

Preliminary test excavations for the Texas River Center in January 2001 demonstrated that intact archaeological deposits were present at 41HY160 on the south side of the swimming pool and in the pecan grove. Areas to the east and north of the swimming pool have disturbed deposits to depths of 1.5-1.8 meters. Six 1x1 meter units (1-6) were excavated (Figure 2). Preliminary geological coring demonstrates that valley sediments were flushed and eroded in the Late Pleistocene, ca. 12,000 BP. A channel was carved in bedrock and runs northeast to southwest. A thin layer of organic sediments was found directly over bedrock in the channel. Approximately 1 meter of small to medium stream-rolled gravels fills the bedrock channel and a thicker (ca. 20-30cm) organic deposit caps the gravel layer. This organic layer is correlated with the organic layer documented by Goelz (1999) and dated to 11,470 BP. Above the organic layer is a layer of non-stratified silts and clays. These attain a thickness of approximately 7 meters and they a capped by the surface soil.

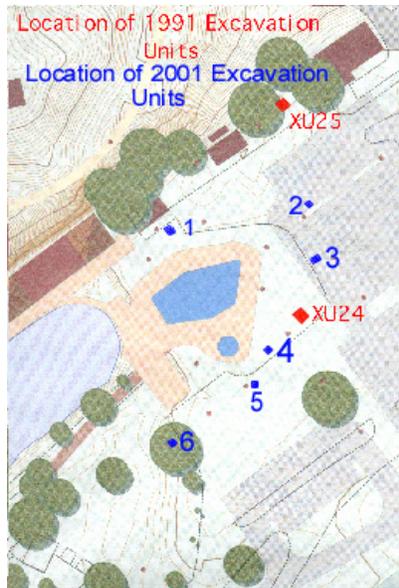


Figure 2. Distribution of 1991 test units at swimming pool.

Units 1-3 were excavated in disturbed deposits and encountered no intact deposits. Unit 1 encountered a tree stump with a cement border between 1.6-1.8 meters below the surface (bs). Unit 2, placed in the parking lot, excavated through gravelly fill until 1.6 meters bs where a buried road surface was encountered. Unit 3 was excavated through fill and Units 4-6 had varying amounts of fill sediments near the surface and intact deposits below (Table 1). The distribution of projectile points (Table 2) demonstrates that the deposits date to the Late Prehistoric and Late Archaic intervals (Collins 1995).

Table 1. Soil horizon designations and Feature distributions in Units 4, 5, & 6.

Level	Unit 4	Unit 5	Unit 6
1	fill	fill	fill
2	fill	fill	fill/A
3	fill	fill	A
4	fill	fill	AB-Fea. 1
5	fill	fill/A	AB-Fea. 1
6	fill	A	Bw1
7	fill/A	Bw1	Bw1-Fea. 6
8	A-Fea. 3	Bw1-Fea. 2	Bw1
9	AB-Fea. 4	Bw1-Fea. 4&5	Bw2
10	AB-Fea. 4	Bw1-Fea. 4&5	Bw2
11	Bw-Fea. 9	Bw1	Bw3
12	Bw	Bw2	Bw3
13	Bw	Bw2-Fea. 8	Bw3
14	Bw-Fea. 11	Bw2-Fea. 10	Bw3
15	Bw-Fea. 12	Bk	Bw3
16	Bk	Bk	-

Table 2. Distribution of diagnostic projectile points in Units 4, 5, &6.

Level	Unit 4	Unit 5	Unit 6
1			
2			
3			
4			
5		Perdiz	
6			
7			
8		Untypable	Pedernales
9	Pedernales		Marshall
10	Marshall	Untypable	
11	Pedernales, Travis	Pedernales	
12	Pedernales	Marshall-like	Untypable
13	Untypable		Pedernales
14			
15			Untyped
16		Untypable	-

The vertical distribution of flakes and fauna show that each unit peaks in the Late Archaic period dominated by Pedernales and Marshall projectile point forms. The peak is nearer the surface in Unit 6. This Late Archaic occupation clearly contains abundant fauna and visual inspection shows that the fauna is well preserved and has a number of identifiable elements, especially in Unit 6.

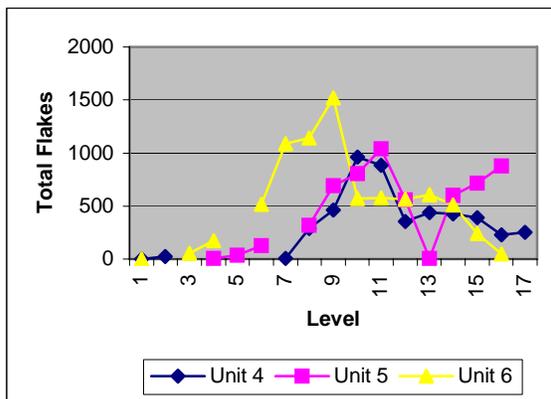


Figure 3. Vertical distribution of flakes in Units 4-6.

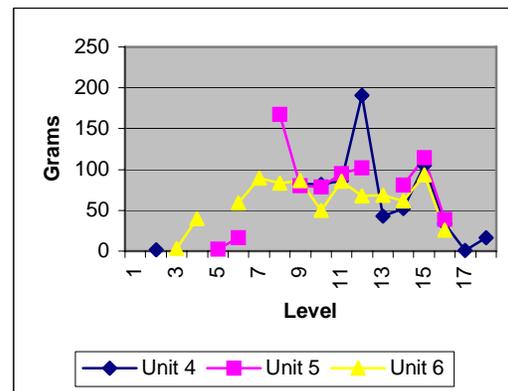


Figure 4. Vertical distribution of fauna by weight in Units 4-6.

### Proposed Research

The Center for Archaeological Studies at Southwest Texas State University proposes to excavate a block of 1x1 meter units at Unit 6. This work will be conducted by the SWT Texas Field School during the first summer semester of 2001. The investigations will be under the direction of Britt Bousman and Kat Brown. The purpose of these investigations is to obtain a statistically reliable sample of Late Archaic faunal remains in a controlled context. This will directly address the first research question above. At present, we do not know how many units will be excavated. The number depends on the number of students enrolled in the field school. However, we eventually would like to excavate between 25-50 1x1 meter units. Units will be excavated in arbitrary 10-cm levels as the stratigraphy is not distinct enough for stratigraphic excavation. Approximately 10 levels will be excavated in each unit, although this number may be modified as conditions warrant.

The units will be contiguous and adjoining. Field notes, level forms, feature forms, stratigraphic profiles, and special samples will be collected and recorded. This number of units should provide a reliable sample of fauna remains. Clear, the projected number of stone artifacts will not provide a sample size limitation. This material will be analyzed as part of the Texas River Center Archaeological Project.

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