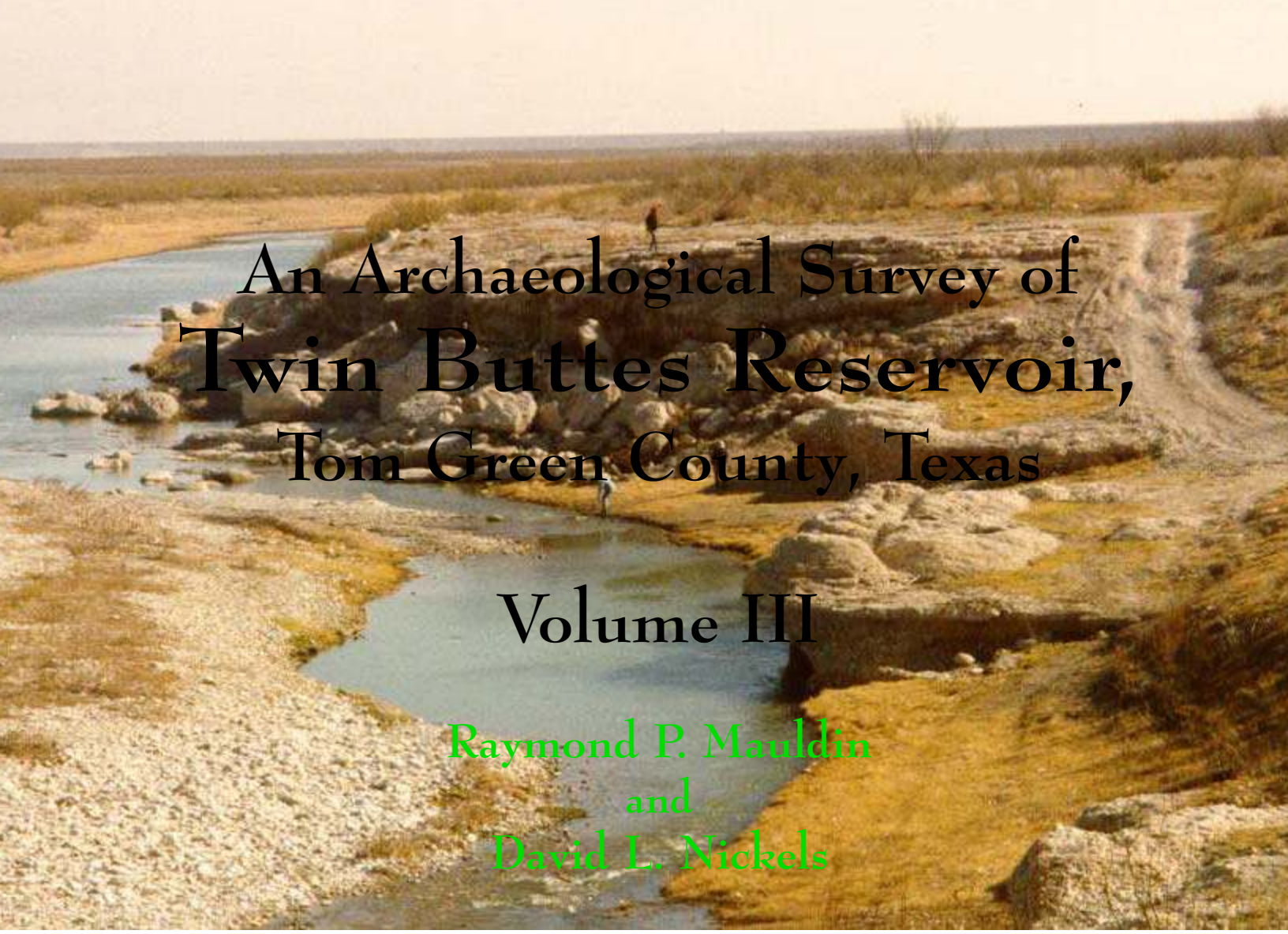

An Archaeological Survey of Twin Buttes Reservoir, Tom Green County, Texas

Volume III

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and
David L. Nickels

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Center for Archaeological Research
The University of Texas at San Antonio
Archaeological Survey Report, No. 300
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Principal Investigators

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The University of Texas at San Antonio
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The following information is provided in accordance with the General Rules of Practice and Procedure, Chapter 41.11 (Investigative Reports), Texas Antiquities Committee:

1. Type of investigation: Class III archaeological survey

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3. County: Tom Green

4. Principal investigator(s): Robert J. Hard and C. Britt Bousman

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An Archaeological Survey of Twin Buttes Reservoir
Tom Green County, Texas

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Appendix B:
Twin Buttes Archaeological Project

Shovel and Auger Test Data

The following definitions, explanations and codes were used during the analysis of cultural material recovered from shovel and auger tests:

Artifact Type

1. Flakes. All utilized flakes and/or debris which cannot be classified as a core, tool, or ground stone. Flakes and debris do not necessarily have to have a clearly distinguishable ventral and dorsal surface — pieces often referred to as "chunks" or "angular debris" are of this type.

2. Cores. Cores are defined as any parent block from which flakes have been removed. This category does not, however, include tools. Cores must have at least three negative bulbs and cannot have a positive bulb; if a positive bulb is present in this classification, it is a flake and not a core. "Flake cores" were not a category for the purposes of this analysis.

3. Tested Cobbles. A tested cobble must have one or two negative bulbs present; no positive bulb.

4. Bifaces. This type includes any item on which both faces have flake scars that cover at least 1/3 of the face and have been removed in a systematic manner. This class includes points, preforms, and blanks. Pieces elsewhere called "bifacial cores" were considered as cores for the purposes of this analysis, and functional use was not considered.

5. Unifaces. This type includes any item on which only one face has systematically removed flakes that cover at least 1/3 of that face. In some cases, unifacial retouch may be accompanied by use and retouch; in this case the piece was still classified as a uniface.

6. Retouched/Utilized Flakes. This type includes any item on which flakes have been systematically removed from an edge, but which does not qualify as a biface or uniface.

7. Other. This includes any specimen not covered above such as ground stone, hammerstone, etc. Their identity would be specified in the comments section.

Maximum Length

This is the maximum length of an artifact, recorded in 1-cm units. All artifacts are subject to this category (0 to 1 cm = 1; 1 to 2 cm = 2; 2 to 3 cm = 3....etc.).

Maximum Thickness

This is the maximum thickness of an artifact, recorded in 1-cm units as shown above for Maximum Length.

Cortex

This is the percentage of cortex on the dorsal surface (including the platform) of all items with the exception of cores, tested cobbles, and the "other" artifact type (see notes below). The following groupings were used:

0% = No Cortex	Code as 0
1-25% Cortex	Code as 12
26-50% Cortex	Code as 38
51-75% Cortex	Code as 62
76-99% Cortex	Code as 88
100% Cortex	Code as 100

On Cores, tested cobbles, and "other" types the following codes were used:

No Cortex	Code as 0
Less than 51% Cortex	Code as 25
More than 50% Cortex	Code as 75

Material Color

The vast majority of the material was coded as 1, which is either gray, brown, or blue-gray. Codes 2 and 4 are white and/or pale white. Code 3 is either pinkish or red; often heat-treated. Code 9 is any other color.

Fire Cracked Rock

If present, the type of rock is noted.

Mussel Shell

Only presence or absence is noted.

Other/Remarks

The presence or absence of other cultural material, and/or remarks is noted.

Table B-1. Shovel and auger test data

Site 41TG	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
106	1	0-10	1	3	1	0	1			
106	1	0-10	1	1	1	0	1			
106	1	0-10	1	3	1	12	1			
106	1	40-50	6	2	1	12	1			
106	1	40-50	1	4	1	0	1			
106	1	40-50	1	2	1	12	1			
106	1	40-50	1	2	1	12	1			
106	1	40-50	1	2	1	0	1			
106	1	50-60	1	2	1	12	1			
106	1	50-60	6	4	1	12	1			
106	2	0-10	2	4	2	0	1			
106	2	0-10	1	2	1	0	1			
106	2	0-10	6	4	1	38	1			
106	2	0-10	1	2	1	0	1			
106	2	0-10	1	2	1	0	1			
106	2	0-10	1	2	1	0	1			
106	2	0-10	1	2	1	0	3			
106	2	10-20	2	7	3	12	1			7 Flake scars
106	2	10-20	1	2	1	0	1			
106	2	10-20	1	1	1	0	1			
106	2	10-20	1	2	1	38	2			
106	2	20-30	1	1	1	0	1			
106	2	40-50	1	4	1	0	1			
106	2	40-50	1	2	1	0	2			
106	3	0-10	1	2	1	0	3			
106	3	0-10	1	2	1	0	1			
106	3	0-10	1	2	1	0	1			
106	3	0-10	-	-	-	-	-			3 Burned bone fragments
106	4	0-10	1	2	1	0	1			Overshot flake
106	4	10-20	1	2	1	12	1			
106	4	10-20	1	2	1	12	1			
106	4	20-30	1	3	1	0	1			
106	4	20-30	1	1	1	12	1			
106	4	20-30	1	2	1	12	1			
106	4	30-40	1	3	1	0	1			
106	4	30-40	1	2	1	0	1			
106	4	30-40	1	3	1	0	1			
106	4	40-50	1	2	1	0	1			
106	4	40-50	1	1	1	12	4			
106	5	0-10	1	3	1	12	1			
106	5	0-10	6	3	1	0	1			
106	5	0-10	1	2	1	0	1			
106	5	0-10	1	2	1	0	1			
106	5	0-10	1	2	1	0	1			
106	5	0-10	1	2	1	38	1			
106	5	0-10	1	1	1	0	2			
106	5	10-20	1	2	1	0	1	Limestone		

Table B-1. continued…

Site 41TG	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
106	5	10-20	1	2	1	0	1			
106	5	20-30	1	1	1	0	1			
106	5	20-30	1	2	1	0	1			
106	5	20-30	1	2	1	0	1			
106	5	20-30	1	2	1	0	1			
106	5	40-50	1	3	2	12	2			
106	5	40-50	1	2	1	0	1			
106	5	40-50	1	2	1	12	1			
106	5	40-50	1	1	1	0	2			
106	5	40-50	1	3	1	38	1			
106	5	40-50	1	2	1	0	2			
106	5	50-60	1	2	1	0	2			
109	3	0-10	-	-	-	-	-	Chert		
109	3	0-10	1	3	1	12	1			
109	3	0-10	1	2	1	0	1			
109	5	10-20	1	2	1	0	1			
109	5	10-20	1	2	1	0	1			
109	8	10-20	1	2	1	38	1			
109	9	10-20	6	1	2	0	1			
110	1	0-10	1	2	1	0	1	Limestone		Clear glass bottle sherd
117	1	0-10	1	3	1	62	1			
117	3	0-10	1	3	1	0	1			
117	5	0-10	1	3	1	88	1			
159	3	30-40	1	2	1	88	1			
159	4	0-10	1	3	1	0	1			
244	1	0-10	1	3	1	88	1			
244	1	0-10	1	2	1	12	1			
244	1	0-10	1	2	1	100	1			
244	1	0-10	1	2	1	0	1			
244	1	0-10	-	-	-	-	-	Chert		
244	1	0-10	1	4	1	62	1			
244	1	0-10	1	4	3	62	1			
244	1	0-10	1	3	1	12	1			
244	1	10-20	1	2	1	0	1			
244	1	10-20	1	1	1	0	1			
244	1	10-20	1	2	1	88	1			
244	1	10-20	-	-	-	-	-			Chert
244	2	0-10	1	4	1	0	1			Blade
244	2	0-10	1	2	1	88	1			
244	2	0-10	6	5	1	12	4			
244	2	0-10	1	1	1	0	1			
244	2	0-10	1	2	1	12	1			
244	5	0-7	1	4	1	0	1			
244	7	10-20	1	1	1	0	1			
244	7	10-20	-	-	-	-	-			Chert potlid
244	10	20-30	1	2	1	12	4			
244	13	0-10	1	4	1	38	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
244	13	0-10	1	3	1	12	1			
244	13	0-10	1	3	2	38	1			
244	13	0-10	1	2	1	0	1			
244	13	0-10	1	3	1	12	1			
244	13	0-10	1	1	1	0	1			
244	13	0-10	1	2	1	0	1			
246	1	0-10	1	5	1	0	1			
246	2	10-20	1	4	1	88	1			
247	1	0-10	1	3	1	0	1			
247	1	0-10	2	4	2	38	1			
247	1	0-10	1	1	1	0	1			
247	1	0-10	1	2	1	0	1			
247	2	10-20	6	4	2	0	1			
247	2	10-20	1	2	1	88	1			
247	3	0-10	1	3	1	0	1			
247	5	0-10	1	2	1	0	1			
247	5	0-10	1	2	1	0	1			
247	5	0-10	1	2	1	0	1			
247	6	0-10	1	5	1	12	1			
247	6	0-10	1	3	1	0	1			
247	6	0-10	1	2	1	0	1			
247	8	0-10	1	2	1	0	1			
247	8	0-10	1	2	1	0	2			
247	8	0-10	1	2	1	12	1			
247	8	0-10	1	2	1	0	1			
247	8	0-10	1	3	1	0	1			
247	8	0-10	1	2	1	0	1			
247	9	0-10	1	4	1	0	1			
247	9	0-10	1	2	1	0	1			
247	9	0-10	1	3	1	12	1			
247	9	0-10	1	3	1	0	1			
247	9	0-10	1	2	1	0	1			
250	3	0-10	1	3	1	62	1			
250	5	0-10	1	6	2	12	1			
250	5	0-10	6	3	1	0	1			
252	2	10-20	1	2	1	0	1			
252	10	10-20	1	3	1	0	1			
252	10	10-20	1	3	1	88	1			
252	11	10-20	-	-	-	-	-	Chert		
253	1	0-10	1	3	1	12	1			
253	1	40-50	6	4	1	12	1			
253	2	20-30	-	-	-	-	-	Sandstone		
253	3	0-10	1	2	1	0	1			
253	3	0-10	1	2	1	0	1			
253	3	0-10	-	-	-	-	-	Limestone		
253	3	10-20	1	1	1	0	1			
253	3	20-30	1	2	1	0	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
253	3	20-30	1	5	1	100	1			
253	3	30-40	4	3	1	0	4			
253	3	30-40	1	1	1	0	1			
253	3	30-40	1	2	1	12	1			
253	3	30-40	1	2	1	12	4			
253	3	30-40	1	1	1	100	1			
253	3	30-40	1	2	1	0	1			
253	4	45	6	3	1	0	3			
253	4	0-10	1	3	2	100	1			
253	4	0-10	1	2	1	0	1			
253	4	10-20	1	2	1	12	1			
253	4	10-20	1	3	1	100	1			
253	4	10-20	1	3	2	100	1			
253	4	10-20	1	1	1	0	1			
253	4	10-20	1	2	1	12	3			
253	5	30-40	1	5	1	0	1			
253	5	30-40	1	3	1	0	1			
253	5	30-40	1	2	1	12	1			
253	5	30-40	1	2	1	0	1			
253	6	0-10	6	4	1	12	1			
253	6	0-10	1	4	1	12	1			
253	6	10-20	1	4	1	12	1			
253	6	20-30	1	3	2	0	1			
253	7	0-10	1	2	1	0	1			
253	7	0-10	1	3	1	0	1			
253	7	10-20	1	2	1	0	1			
253	7	10-20	6	6	2	12	1			
253	7	20-30	-	-	-	-	-	Limestone		
253	8	0-10	1	4	1	0	1			
253	8	0-10	1	5	2	88	1			
253	8	10-20	1	4	1	0	1			
253	8	20-30	1	2	1	0	1			
253	8	20-30	1	2	1	0	1			
253	8	20-30	1	2	1	0	1			
253	8	20-30	1	2	1	0	1			
253	8	20-30	1	3	1	0	1			
253	9	0-10	1	4	1	0	1			
253	10	0-10	6	3	1	0	1			
253	10	0-10	-	-	-	-	-	Limestone		
253	10	10-20	-	-	-	-	-	Limestone		
253	10	20-30	1	2	1	0	1			
253	10	20-30	1	1	1	12	3			
362	4	0-10	1	4	1	38	4			
362	4	0-10	1	2	1	12	1			
364	3	0-10	1	2	1	100	1			
364	3	0-10	1	3	1	0	1			
364	3	0-10	1	1	1	0	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
364	5	0-10	1	1	1	12	1			
365	2	0-10	1	2	1	0	1			
366	4	0-10	1	3	1	88	4			
367	1	30-40	1	1	1	12	1			
367	1	30-40	1	2	1	0	1			
367	2	30-40	1	4	2	0	1			
367	4	30-40	1	3	1	38	4			
367	4	30-40	1	2	1	12	3			
367	4	30-40	-	-	-	-	-	Limestone		
367	4	30-40	-	-	-	-	-	Sandstone		
372	1	20-30	7	-	-	-	-			Yellow ochre
372	1	30-40	-	-	-	-	-	Limestone		
372	2	0-10	1	1	1	0	1			
372	2	10-20	-	-	-	-	-		X	
372	5	40-50	1	2	1	100	4			
372	9	0-10	1	2	1	0	1			
372	9	0-10	1	2	1	0	1			
372	9	0-10	1	1	1	0	1			
373	3	20-25	2	5	1	0	1			Retouched medial frag
373	3	20-25	1	6	1	0	1			Distal fragment
373	3	20-25	1	2	1	0	1			Medial fragment
373	6	20-30	-	-	-	-	-			Charcoal
373	6	30-40	-	-	-	-	-			Charcoal
374	2	40-50	1	1	1	0	1			
377	1	10-20	-	-	-	-	-	Limestone		
377	1	20-30	-	-	-	-	-			Charcoal
377	1	20-30	1	2	1	0	1			
377	1	20-30	1	2	1	12	1			
377	1	20-30	1	1	1	0	1			
377	1	20-30	1	1	1	0	3			
377	1	30-40	-	-	-	-	-	Limestone		
377	3	60-70	1	1	1	0	1			
377	8	0-10	3	4	4	75	4			2 Flake scars
377	8	0-10	1	1	1	0	1			
378	1	0-10	1	3	1	100	1			
378	1	0-10	1	2	1	12	1			
378	1	0-10	1	2	1	88	1			
378	6	0-10	6	5	2	38	1			
378	6	0-10	1	3	1	12	1			
378	6	0-10	1	3	1	12	1			
378	6	0-10	1	3	1	12	1			
378	6	0-10	1	2	1	12	1			
378	6	0-10	1	3	1	12	1			
378	6	0-10	1	2	1	0	1			
378	6	0-10	1	1	1	0	1			Burned
378	6	0-10	1	2	1	100	3			
378	6	0-10	1	1	1	12	3			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
378	6	0-10	1	1	1	0	1			
378	6	0-10	1	1	1	12	1			
378	6	0-10	1	1	1	0	1			
378	6	0-10	1	1	1	0	1			
378	6	0-10	1	1	1	0	1			
378	6	0-10	1	1	1	0	1			
378	6	0-10	1	2	1	0	1			
378	6	0-10	1	2	1	0	1			
378	6	0-10	1	2	1	0	1			
378	6	0-10	1	1	1	0	1			
378	6	0-10	1	1	1	0	1			
378	6	0-10	1	1	1	0	1			
378	6	0-10	1	1	1	0	1			
378	8	0-10	-	-	-	-	-	Limestone		
380	2	50-70	7	-	-	-	-			Burned clay sample
380	3	50-60	-	-	-	-	-			Charcoal
380	7	0-10	1	3	1	0	1			
380	7	10-20	-	-	-	-	-			Charcoal
380	7	10-20	-	-	-	-	-	Sandstone		
380	8	0-10	1	8	2	0	1			
380	8	0-10	1	2	1	0	1			
380	8	40-50	-	-	-	-	-			Charcoal
381	6	0-10	-	-	-	-	-	Limestone		
382	1	0-10	1	1	1	0	1			
382	1	0-10	1	2	1	0	1			
382	1	0-10	-	-	-	-	-	Limestone		
382	1	20-30	-	-	-	-	-			2 Bone fragments
382	5	0-10	-	-	-	-	-	Sandstone		
382	5	20-30	1	2	1	0	1			
382	6	0-10	1	2	1	0	1			
382	6	40-50	1	3	1	0	1			
382	17	20-30	-	-	-	-	-	Limestone		
382	18	20-30	1	1	1	0	1			
382	18	20-30	1	1	1	0	1			
382	18	20-30	1	1	1	88	1			
382	18	20-30	1	3	1	88	1			
382	18	20-30	-	-	-	-	-	Sandstone		
382	18	20-30	-	-	-	-	-	Limestone		
382	18	30-40	7	-	-	-	-		X	
382	19	30-40	1	2	1	0	1			
382	19	30-40	1	1	1	0	1			
382	19	30-40	-	-	-	-	-	Limestone		
382	19	30-40	-	-	-	-	-	Sandstone		
382	20	20-30	1	2	1	0	1			
382	20	30-40	-	-	-	-	-	Limestone		
384	2	0-10	1	2	1	0	1			
384	2	10-20	-	-	-	-	-	Limestone		

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
384	3	10-20	-	-	-	-	-	Sandstone		
384	3	10-20	-	-	-	-	-		X	
384	3	20-30	-	-	-	-	-		X	
384	4	0-10	1	3	1	0	1			
384	5	0-10	1	4	1	0	1			
384	5	0-10	1	1	1	12	3			
384	5	0-10	1	1	1	0	1			
384	5	0-10	-	-	-	-	-	Limestone		
384	5	0-10	-	-	-	-	-		X	
384	5	0-10	-	-	-	-	-	Limestone		
384	5	10-20	1	1	1	0	1			
384	5	10-20	-	-	-	-	-		X	
384	5	20-30	7	-	-	-	-			Pecan shell
384	6	0-10	1	5	1	100	1			
384	6	0-10	1	2	1	0	1			
384	6	20-30	-	-	-	-	-	Sandstone		
384	6	20-30	7	-	-	-	-			Sandstone metate frag
384	6	30-40	-	-	-	-	-	Limestone		
384	6	40-50	1	6	2	88	1			
384	6	40-50	1	4	1	0	1			
384	6	40-50	1	4	1	0	1			Refit
384	6	40-50	1	3	1	0	1			Refit
384	6	40-50	1	2	1	100	1			
384	6	40-50	-	-	-	-	-	Limestone		
384	7	10-20	1	1	1	0	1			
384	7	10-20	1	2	1	100	1			
384	7	10-20	-	-	-	-	-		X	
384	7	10-20	-	-	-	-	-	Limestone		
384	7	20-30	1	1	1	88	1			Burned
384	8	0-10	1	4	1	88	3			
384	8	10-20	-	-	-	-	-	Limestone		
384	9	40-50	-	-	-	-	-		X	
384	9	40-50	-	-	-	-	-			Charcoal
384	10	0-10	1	6	2	0	1			
384	10	0-10	1	2	1	12	1			
384	10	0-10	1	2	1	0	1			Burned
384	10	0-10	1	1	1	0	1			Burned
384	10	0-10	1	3	1	12	1			Coarse grained
384	10	10-20	-	-	-	-	-		X	
384	11	0-10	-	-	-	-	-		X	
384	11	0-10	2	7	2	75	1			4 Flake scars
384	11	0-10	-	-	-	-	-	Limestone		
384	11	0-10	1	3	1	88	1			
384	11	0-10	1	4	1	12	1			
384	11	10-20	1	2	1	0	1			
384	11	10-20	1	2	1	0	1			
384	11	20-30	-	-	-	-	-	Limestone		

Table B-1. continued…

Site 41TG	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
384	11	20-30	1	2	1	0	1			
384	11	20-30	1	1	1	0	1			
384	11	30-40	1	4	1	12	1			
384	11	30-40	1	1	1	0	4			
384	11	30-40	1	4	1	88	1			
384	12	0-10	6	8	2	12	1			
384	12	20-30	1	2	1	0	1			
384	12	20-30	-	-	-	-	-		X	
384	12	20-30	-	-	-	-	-	Limestone		
386	4	0-10	6	3	1	0	1			
386	4	0-10	1	3	1	88	1			
387	2	10-20	1	3	2	12	1			
388	4	30-40	-	-	-	-	-		X	
388	4	30-40	-	-	-	-	-			Charcoal
388	4	30-40	-	-	-	-	-			Charcoal
388	6	0-10	-	-	-	-	-	Limestone		
388	6	50-60	-	-	-	-	-		X	
388	6	60-70	1	1	1	0	1			
388	6	60-70	-	-	-	-	-	Limestone		
388	6	60-70	-	-	-	-	-		X	
388	7	0-10	1	7	1	38	1			
388	7	0-10	1	9	3	12	1			
388	7	0-10	2	10	3	25	1			5 Flake scars
388	7	0-10	-	-	-	-	-		X	
388	7	0-10	1	2	1	38	1			
388	7	0-10	-	-	-	-	-	Limestone		
388	8	0-10	1	4	1	0	1			
388	8	0-10	1	3	1	0	1			
388	8	0-10	1	3	1	0	1			
388	8	0-10	1	2	1	12	1			
388	8	0-10	1	2	1	0	1			
388	8	0-10	-	-	-	-	-	Sandstone		
388	8	10-20	-	-	-	-	-	Limestone		
388	8	10-20	-	-	-	-	-	Sandstone		
388	8	20-30	1	2	1	0	1			
388	8	20-30	1	2	1	0	1			
388	8	20-30	1	3	1	0	1			
388	8	20-30	1	1	1	0	1			
388	8	20-30	-	-	-	-	-	Limestone		
388	8	30-40	-	-	-	-	-	Limestone		
388	9	20-30	1	1	1	0	1			
388	9	30-40	1	2	1	100	4			
388	9	60-70	1	2	1	0	1			
388	11	0-10	-	-	-	-	-		X	
388	11	10-20	6	5	1	0	1			
388	12	0-10	1	2	1	0	1			
388	12	0-10	1	2	1	0	1			

Table B-1. continued…

Site 41TG	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
388	12	0-10	1	2	1	12	1			
388	12	0-10	1	2	1	12	1			
388	13	0-10	1	2	1	0	1			
388	13	30-40	1	2	1	0	1			
388	13	30-40	1	2	1	0	1			
388	14	10-20	1	2	1	0	1			
388	14	30-40	1	3	1	38	2			
388	14	50-60	1	4	1	0	1			
388	AUGER	100-120	7	-	-	-	-		X	
388	Auger	60-80	-	-	-	-	-			Charcoal
389	1	0-10	1	1	1	0	1			
389	1	10-20	1	2	1	0	1			
389	1	10-20	1	1	1	0	1			
389	2	0-10	1	2	1	88	1			
389	2	0-10	1	2	1	0	1			
389	2	0-10	1	2	1	0	3			
389	2	0-10	1	3	1	12	3			
389	2	0-10	1	2	1	12	1			
389	2	0-10	1	1	1	0	1			
389	2	0-10	1	1	1	0	1			
389	2	0-10	1	1	1	0	1			
389	2	0-10	1	2	1	0	1			
389	2	0-10	1	1	1	0	1			
389	2	0-10	1	1	1	0	9			
389	2	0-10	-	-	-	-	-	Limestone		
389	2	0-10	7	-	-	-	-			Clear glass sherd
389	2	10-20	-	-	-	-	-	Limestone		
389	2	10-20	1	3	1	0	9			
389	2	10-20	1	2	1	0	3			
389	2	10-20	1	3	1	12	1			
389	2	10-20	1	2	1	0	1			
389	2	10-20	1	2	1	0	1			
389	2	10-20	-	-	-	-	-	Chert		
389	2	10-20	1	2	1	0	1			
389	2	10-20	1	2	1	0	1			
389	2	10-20	1	2	1	100	1			
389	2	10-20	1	2	1	12	12			
389	2	10-20	1	1	1	0	1			
389	2	10-20	1	2	1	12	1			
389	2	10-20	1	2	1	88	1			
389	2	10-20	1	1	1	12	1			
389	2	20-30	1	3	1	0	2	Sandstone		
389	2	20-30	1	2	1	12	1			
389	2	20-30	1	2	1	0	1			
389	2	30-40	1	4	1	88	1			
389	2	30-40	1	2	1	12	1			
389	2	30-40	1	2	1	0	1			

Table B-1. continued…

Site 41TG	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
389	2	30-40	1	1	1	0	1			
389	2	30-40	1	1	1	0	1			
389	2	40-50	1	2	1	0	1			
389	2	40-50	1	2	1	0	1			
389	3	0-10	1	3	1	100	1			
389	3	0-10	1	5	1	12	1			
389	3	0-10	1	2	1	12	1			
389	3	0-10	1	4	1	0	1			Blade
389	3	0-10	1	1	1	0	1			
389	3	0-10	1	2	1	12	1			
389	3	0-10	1	2	1	88	1			
389	3	0-10	1	2	1	0	1			
389	3	0-10	1	2	1	0	1			
389	3	0-10	1	3	1	0	1			
389	3	0-10	1	2	1	0	1			
389	3	0-10	1	2	1	0	3			
389	3	0-10	1	2	1	12	1			
389	3	0-10	1	1	1	88	3			
389	3	0-10	1	2	1	0	1			
389	3	0-10	1	2	1	0	1			
389	3	0-10	1	1	1	0	1			
389	3	0-10	1	2	1	0	3			
389	3	0-10	1	2	1	12	1			
389	3	0-10	1	2	1	0	1			
389	3	0-10	1	2	1	0	1			
389	3	0-10	1	2	1	12	1			
389	3	0-10	1	2	1	0	1			
389	3	0-10	1	2	1	0	1			
389	3	0-10	1	2	1	88	1			
389	3	0-10	1	2	1	0	1			
389	3	0-10	1	1	1	0	1			
389	3	0-10	-	-	-	-	-	Chert		
389	3	10-20	1	4	1	0	1			
389	3	10-20	1	4	1	88	1			
389	3	10-20	1	2	1	0	1			
389	3	10-20	1	3	1	100	3			
389	3	10-20	1	2	1	12	1			
389	3	10-20	1	2	1	0	1			
389	3	10-20	1	2	1	100	3			
389	3	10-20	1	1	1	12	1			
389	3	20-30	6	5	1	12	1			
389	3	20-30	1	2	1	38	1			
389	3	20-30	1	2	1	0	1			
389	3	20-30	1	2	1	0	1			
389	3	30-40	1	1	1	0	1			
389	4	0-10	1	3	1	12	1			
389	4	0-10	1	3	1	0	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
389	4	0-10	1	3	1	0	1			
389	4	0-10	-	-	-	-	-	Sandstone		
389	4	10-20	1	2	1	0	1			
389	4	10-20	1	2	1	12	1			
389	4	10-20	1	1	1	0	2			
389	4	20-30	1	3	1	0	1			
389	4	20-30	1	2	1	0	1			
389	4	20-30	1	2	1	0	1	Sandstone		
389	4	20-30	1	2	1	0	3			
389	4	20-30	1	1	1	0	9			Color is black
389	4	20-30	1	1	1	0	1			
389	5	0-10	6	1	5	88	1			
389	5	30-40	1	2	1	0	1			
389	6	0-10	1	5	2	12	1			
389	6	0-10	1	1	1	12	1			
389	6	0-10	1	1	1	0	1			
389	6	0-10	1	1	1	0	1			
389	AUGER	0-20	1	2	1	100	1			
389	AUGER	0-20	1	2	1	1	1			
389	AUGER	0-20	-	-	-	-	-		X	
389	AUGER	0-20	-	-	-	-	-			Chert potlid
391	1	0-10	1	3	1	0	1			
391	1	0-10	1	2	1	0	1			
391	3	0-10	1	1	1	0	1			
391	5	10-20	1	3	1	0	1			
391	9	0-10	1	3	1	100	1			
391	9	10-20	1	1	1	88	1			
391	9	10-20	1	2	1	88	1			
391	9	10-20	1	2	1	12	1			
393	6	0-10	1	3	1	0	1			
394	1	73	7	-	-	-	-			Ochre
394	1	60-70	-	-	-	-	-	Limestone		
395	2	0-10	1	3	1	0	1			
396	3	0-10	1	3	1	0	1			
399	3	0-10	1	3	1	88	1			
399	3	0-10	1	4	1	62	1			
399	3	0-10	1	2	1	0	1			
399	3	0-10	1	2	1	88	1			
399	3	0-10	-	-	-	-	-	Chert		
399	4	0-10	1	3	1	100	1			
399	4	10-20	1	2	1	100	1			
399	4	20-30	1	2	1	0	1			
399	5	0-10	1	3	1	12	1			
399	6	0-10	1	3	1	0	1			
399	7	20-30	1	1	1	0	1			
399	9	0-10	1	5	2	12	1			
399	9	0-10	1	2	1	38	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
399	9	0-10	1	1	1	10	1			
399	9	0-10	-	-	-	-	-	Chert		
399	9	10-20	1	3	1	88	1			
400	1	0-10	1	4	1	88	1			
403	3	60-70	1	5	1	88	1			
404	3	0-10	1	5	1	38	2			
405	2	0-10	1	2	1	0	1			
405	3	20-30	1	3	1	0	1			
405	3	20-30	1	1	1	0	1			
405	3	30-40	1	3	1	0	1			
405	5	0-10	1	2	1	12	1			
405	6	20-30	1	1	1	0	1			
405	7	0-10	1	2	1	0	1			
405	7	0-10	1	2	1	12	1			
405	7	0-10	1	2	1	0	1			
405	7	0-10	1	2	1	12	1			
405	7	0-10	1	3	1	0	1			
405	7	0-10	1	2	1	0	1			
405	7	0-10	1	2	1	0	1			
405	7	0-10	1	2	1	0	1			
405	7	0-10	1	1	1	0	1			
405	8	30-40	1	4	1	12	1			
405	12	10-20	1	3	1	0	4			
406	1	30-40	1	1	1	12	1			
406	1	30-40	-	-	-	-	-	Limestone		
406	2	0-10	1	4	1	0	1			
406	2	0-10	1	2	1	0	1			
406	2	0-10	1	1	1	0	1			
406	2	0-10	1	2	1	0	1			
406	2	0-10	1	1	1	0	1			
406	2	0-10	1	2	1	0	1			
406	2	0-10	1	1	1	0	1			
406	3	0-10	1	3	1	0	1			
406	3	0-10	1	2	1	0	1			
406	3	0-10	1	1	1	0	1			
406	3	20-30	1	5	1	88	1			
406	3	20-30	1	4	1	0	3			
406	4	10-20	1	2	1	0	3			
408	3	0-10	6	3	1	0	1			
408	3	0-10	1	3	1	62	1			
408	3	0-10	1	3	1	0	1			
408	3	0-10	1	2	1	38	1			
408	3	0-10	1	3	1	12	1			
408	3	0-10	6	3	1	0	1			
409	1	0-10	1	7	2	38	1			
409	1	0-10	5	3	1	0	1			Fragment
409	1	0-10	1	3	1	88	3			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
409	1	0-10	1	2	1	0	1			
409	1	0-10	1	2	1	0	1			
409	1	0-10	1	1	1	0	1			
409	1	0-10	1	2	1	12	1			
409	1	0-10	1	2	1	0	1			
409	1	0-10	1	2	1	0	1			
409	1	0-10	1	2	1	12	1			
409	1	0-10	1	2	1	12	1			
409	1	0-10	1	2	1	12	1			
409	1	0-10	1	2	1	0	3			
409	1	0-10	7	-	-	-	-			Ceramic
409	1	0-10	-	-	-	-	-	Limestone		
409	1	0-10	-	-	-	-	-	Chert		
409	1	10-20	1	2	1	88	1			
409	1	10-20	1	4	1	62	1			
409	1	10-20	1	4	1	88	1			
409	1	10-20	1	5	1	0	1			
409	1	10-20	1	3	1	38	3			
409	1	10-20	1	2	1	12	1			
409	1	10-20	1	3	1	0	1			
409	1	10-20	1	2	1	0	1			
409	1	10-20	1	1	1	0	1			
409	1	10-20	1	2	1	0	1			
409	1	10-20	1	2	1	88	1			
409	1	10-20	1	2	1	12	3			
409	1	10-20	1	2	1	0	1			
409	1	10-20	1	2	1	0	1			
409	1	10-20	1	2	1	0	1			
409	1	10-20	1	2	1	0	1			
409	1	10-20	1	2	1	0	1			
409	1	10-20	1	2	1	0	1			
409	1	10-20	1	1	1	0	1			
409	1	10-20	1	2	1	88	3			
409	1	10-20	1	2	1	0	1			
409	1	10-20	1	1	1	0	1			
409	1	10-20	-	-	-	-	-	Limestone		
409	1	20-30	2	5	3	62	1			
409	1	20-30	1	2	1	0	1			
409	1	20-30	1	2	1	0	1			
409	1	20-30	1	2	1	0	1			
409	1	20-30	1	2	1	0	1			
409	1	20-30	1	2	1	12	1			
409	1	20-30	1	2	1	12	3			
409	1	20-30	1	2	1	0	1			
409	1	20-30	-	-	-	-	-	Limestone		
409	1	30-40	1	5	3	88	1			
409	1	30-40	1	4	1	0	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
409	1	30-40	1	1	1	0	1			
409	1	30-40	1	2	1	0	1			
409	1	30-40	1	3	1	0	1			
409	1	30-40	1	3	1	0	1			
409	1	30-40	1	2	1	0	1			
409	1	30-40	1	3	1	0	1			
409	1	30-40	1	2	1	0	1			
409	1	30-40	7	-	-	-	-			3 Metate fragments
409	1	40-50	1	3	1	0	1			
409	1	40-50	1	2	1	0	1			
409	1	40-50	1	2	1	0	1			
409	1	40-50	1	2	1	0	1			
409	1	40-50	1	2	1	88	1			
409	1	40-50	-	-	-	-	-	Limestone		
409	1	50-60	1	7	1	38	1			
409	1	50-60	1	5	2	12	1			
409	1	50-60	1	3	1	0	1			
409	1	50-60	1	4	1	12	1			
409	1	50-60	1	4	1	12	1			
409	1	50-60	1	3	1	0	1			
409	1	50-60	1	2	1	0	1			
409	1	50-60	1	2	1	0	3			
409	1	50-60	1	2	1	0	1			
409	1	50-60	1	2	1	0	1			
409	1	50-60	1	2	1	0	1			
409	1	50-60	1	2	1	0	1			
409	1	50-60	1	1	1	0	1			
409	1	50-60	1	1	1	0	1			
409	1	50-60	1	2	1	0	1			
409	1	50-60	1	2	1	0	1			
409	1	50-60	1	2	1	12	1			
409	1	50-60	-	-	-	-	-	Sandstone		
409	1	50-60	-	-	-	-	-	Limestone		
409	1	50-60	-	-	-	-	-	Chert		
409	1	60-70	1	6	1	38	1			
409	1	60-70	1	6	1	88	1			
409	1	60-70	1	3	1	62	1			
409	1	60-70	1	2	1	0	1			
409	1	60-70	1	2	1	0	1			
409	1	60-70	1	3	1	0	1			
409	1	60-70	1	2	1	0	1			
409	1	60-70	1	2	1	0	1			
409	1	60-70	1	1	1	100	1			
409	2	0-10	1	3	1	12	1			Bone & clear glass
409	2	0-10	1	2	1	0	1	Chert & Limestone		
409	2	0-10	1	3	1	0	1			
409	2	0-10	1	2	1	0	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
409	2	0-10	1	2	1	0	1			
409	2	0-10	1	2	1	0	1			
409	2	0-10	1	2	12	0	1			
409	2	10-20	1	2	1	0	1	Chert		
409	2	10-20	1	2	1	0	1			
409	2	10-20	1	2	1	0	1			
409	2	10-20	1	2	1	0	1			
409	2	10-20	1	2	1	0	1			
409	2	20-30	6	3	1	0	1			
409	2	20-30	1	3	1	12	1			
409	2	20-30	1	4	1	62	1			
409	2	20-30	1	2	1	0	1			
409	2	20-30	1	2	1	0	1			
409	2	20-30	1	2	1	0	1			
409	2	30-40	1	6	2	12	1	Limestone		
409	2	30-40	1	2	1	0	1			
409	2	30-40	1	4	1	0	1			
409	2	30-40	1	3	1	0	1			
409	2	30-40	1	3	1	0	1			
409	2	40-50	1	2	1	0	1			
409	2	40-50	1	3	1	0	1			
409	2	40-50	1	5	1	0	1			
409	2	40-50	1	2	1	0	1			
409	2	40-50	1	2	1	0	1			
409	2	50-60	1	4	1	0	1	Chert		
409	2	50-60	1	4	1	0	1			
409	2	50-60	1	2	1	0	1			
409	2	60-70	1	2	1	12	1	Chert & Limestone		
409	2	60-70	1	3	1	12	1			
409	2	60-70	1	2	1	0	1			
409	2	60-70	1	2	1	0	1			
409	2	60-70	1	2	1	0	1			
409	3	20-30	1	2	1	0	1			
409	3	20-30	1	2	1	0	1			
409	3	50-60	1	2	1	100	1			
409	Auger	0-20	2	6	4	25	1			
409	Auger	0-20	-	-	-	-	-	Chert		
409	Auger	0-20	1	4	1	12	1			
409	Auger	0-20	1	4	1	0	1			
409	Auger	0-20	1	3	1	0	1			
409	Auger	0-20	1	3	1	0	1			
409	Auger	0-20	1	3	1	0	1			
409	Auger	120-140	1	3	1	0	1			
410	1	40-50	-	-	-	-	-	Limestone		
410	2	30-40	7	-	-	-	-			Charcoal
410	2	30-40	1	3	1	88	1			
410	3	30-40	1	4	1	0	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
410	3	30-40	1	2	1	12	2			
410	3	30-40	1	2	1	0	1			
410	3	40-50	-	-	-	-	-	Limestone		
411	1	0-10	1	5	2	12	1			
411	1	10-20	1	3	1	0	1			
411	1	10-20	-	-	-	-	-	Sandstone		
411	1	20-30	1	7	2	0	1			
411	1	20-30	1	4	1	12	1			
411	1	30-40	1	5	2	12	3			
411	1	30-40	-	-	-	-	-	Limestone		
411	1	30-40	1	2	1	0	1			
411	1	30-40	1	1	1	0	1			
411	1	30-40	1	2	1	0	1			
411	1	30-40	1	2	1	0	1			
411	1	30-40	1	2	1	0	1			
411	1	30-40	1	1	1	0	1			
411	1	30-40	1	2	1	0	1			
411	1	60-70	1	8	2	12	1			
411	2	30-40	2	4	2	12	1	Limestone & Chert		10 and 35 fragments
411	2	30-40	1	5	2	12	1			
411	2	30-40	4	4	1	0	1			
411	2	30-40	1	4	1	0	1			
411	2	30-40	1	4	2	12	1			
411	2	30-40	1	2	1	0	1			
411	2	30-40	1	3	1	0	1			
411	2	30-40	1	2	1	12	1			
411	2	30-40	1	4	2	0	1			
411	2	30-40	1	4	3	12	1			
411	2	30-40	1	2	1	0	1			
411	2	30-40	1	2	1	12	1			
411	2	30-40	1	2	1	0	1			
411	2	30-40	1	2	1	0	1			
411	2	30-40	1	2	1	12	1			
411	2	30-40	1	2	1	0	1			
411	2	30-40	1	2	1	0	1			
411	2	30-40	1	1	1	0	1			
411	3	0-10	-	-	-	-	-	Limestone		
411	3	10-20	1	3	1	0	1		X	
411	3	10-20	1	2	1	12	1	Limestone & Other		23 & 18 fragments
411	3	10-20	6	5	1	12	1			
411	3	10-20	1	4	1	0	1			
411	3	10-20	1	2	1	12	3			
411	3	10-20	1	4	1	12	1			
411	3	10-20	1	3	1	0	1			
411	3	10-20	1	2	1	0	1			
411	3	10-20	1	3	1	88	1			
411	3	10-20	1	3	1	0	2			

Table B-1. continued…

Site 41TG	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
411	3	10-20	1	3	1	12	1			
411	3	10-20	1	2	1	0	2			
411	3	10-20	1	2	1	0	1			
411	3	10-20	1	2	1	0	2			
411	3	10-20	1	2	1	0	1			
411	3	10-20	1	2	1	0	1			
411	3	10-20	1	2	1	0	1			
411	3	10-20	1	2	1	0	1			
411	3	10-20	1	2	1	0	1			
411	3	10-20	1	2	1	0	3			
411	3	10-20	1	2	1	0	1			
411	3	10-20	1	2	1	0	1			
411	3	10-20	1	2	1	0	1			
411	3	10-20	1	7	3	62	1			
411	3	10-20	1	9	4	38	1			
411	3	20-30	1	2	1	0	1			
411	3	20-30	1	2	1	0	1			
411	3	20-30	1	2	1	0	1			
411	3	20-30	1	2	1	0	1			
411	3	20-30	1	2	1	0	1			
411	3	20-30	1	2	1	0	1			
411	3	20-30	1	2	1	0	1			
411	3	20-30	1	2	1	0	1			
411	3	20-30	1	1	1	0	1			
411	3	20-30	1	1	1	0	1			
411	3	20-30	1	1	1	0	1			
411	3	20-30	-	-	-	-	-	Limestone		
412	2	0-10	1	2	1	0	1			
412	3	10-20	1	5	1	0	1	Limestone		
412	3	10-20	1	3	1	12	1			
412	3	10-20	1	3	1	12	1			
412	3	10-20	1	2	1	0	1			
412	3	10-20	1	1	1	38	1			
412	3	10-20	1	2	1	0	1			
412	4	0-10	6	6	1	0	1			
412	4	0-10	4	6	2	0	1	Sandstone		
412	4	0-10	1	2	1	0	1			
412	5	0-10	1	4	2	12	1			
412	6	0-10	1	2	1	0	1			
412	6	0-10	1	2	1	0	1			
412	6	0-10	1	2	1	0	1			
414	1	0-10	1	4	1	12	1			
414	1	0-10	1	5	2	100	1			
414	1	0-10	1	4	1	62	1			
414	1	0-10	1	3	1	62	1			
414	1	0-10	1	3	1	100	1			
414	1	0-10	1	2	1	0	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
414	1	0-10	1	3	1	0	1			
414	1	0-10	1	2	1	12	1			
414	1	0-10	1	2	1	0	1			
414	1	0-10	1	2	1	0	1			
414	1	0-10	1	1	1	0	1			
414	1	0-10	1	2	1	0	1			
414	1	0-10	1	2	1	0	1			
414	1	0-10	1	2	1	0	1			
414	1	0-10	1	2	1	0	1			
414	1	0-10	1	2	1	0	1			
414	1	0-10	1	2	1	0	1			
414	1	0-10	1	2	1	0	1			
414	1	0-10	1	1	1	0	1			
414	1	0-10	1	2	1	100	1			
414	1	0-10	1	2	1	0	1			
414	1	0-10	1	1	1	0	1			
414	1	10-20	1	2	1	100	1			
414	1	10-20	1	2	1	0	1			
414	1	10-20	1	2	1	0	1			
414	1	10-20	1	2	1	0	1			
414	2	0-10	1	5	1	12	1	Limestone, Chert	X	
414	2	0-10	1	4	2	12	1			
414	2	0-10	6	5	2	12	1			
414	2	0-10	1	4	1	12	1			
414	2	0-10	1	3	2	88	1			
414	2	0-10	6	3	1	0	1			
414	2	0-10	1	3	1	0	1			
414	2	0-10	6	3	1	62	1			
414	2	0-10	1	3	1	0	1			
414	2	0-10	1	2	1	0	1			
414	2	0-10	1	3	1	38	1			
414	2	0-10	1	3	1	0	1			
414	2	0-10	1	2	1	0	1			
414	2	0-10	1	2	1	0	1			
414	2	0-10	1	2	1	12	1			
414	2	0-10	1	2	1	0	1			
414	2	0-10	6	3	1	0	1			
414	2	0-10	1	2	1	0	1			
414	2	0-10	1	2	1	0	1			
414	2	0-10	1	2	1	12	1			
414	2	0-10	1	2	1	0	1			
414	2	0-10	1	2	1	0	1			
414	2	0-10	1	2	1	0	1			
414	2	0-10	6	3	1	0	1			Blade
414	2	0-10	4	2	1	0	1			Distal end
414	2	0-10	1	2	1	0	1			
414	2	0-10	1	1	1	0	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
414	2	0-10	1	2	1	0	1			
414	2	0-10	1	2	1	38	1			
414	2	0-10	1	2	1	0	1			
414	2	0-10	1	2	1	0	3			
414	2	0-10	1	2	1	0	1			
414	2	0-10	1	2	1	0	1			
414	2	0-10	1	2	1	0	1			
414	2	10-20	1	5	2	0	1			
414	2	10-20	1	2	1	0	1			
414	2	10-20	1	2	1	0	1			
414	2	10-20	6	3	1	88	1			
414	2	10-20	1	2	1	0	1			
414	2	10-20	1	3	1	88	1			
414	2	10-20	1	2	1	0	1			
414	2	10-20	1	3	1	0	1			
414	2	10-20	1	2	1	0	1			
414	2	10-20	6	3	1	0	1			
414	2	10-20	1	2	1	0	3			
414	2	10-20	1	2	1	0	1			
414	2	10-20	1	2	1	0	1			
414	2	10-20	1	2	1	0	1			
414	2	10-20	1	2	1	0	1			
414	2	10-20	1	2	1	0	1			
414	2	10-20	1	2	1	0	1			
414	2	10-20	1	3	1	0	3			
414	2	10-20	1	2	1	0	1			
414	2	10-20	1	2	1	0	1			
414	2	10-20	1	2	1	0	1			
414	2	10-20	1	2	1	0	1			
414	2	10-20	1	2	1	0	1			
414	2	10-20	1	2	1	12	1			
414	2	10-20	1	2	1	38	1			
414	2	10-20	1	3	1	12	3			
414	2	20-30	6	3	1	0	1	Limestone		
414	2	20-30	1	4	1	12	1			
414	2	20-30	1	5	2	12	1			
414	2	20-30	1	2	1	12	1			
414	2	20-30	1	2	1	0	3			
414	2	20-30	1	2	1	0	1			
414	2	20-30	1	2	1	0	1			
414	3	0-10	1	4	1	12	1	Chert		
414	3	0-10	6	6	2	12	1			
414	3	0-10	1	3	1	12	1			
414	3	0-10	1	3	1	88	1			
414	3	0-10	1	3	1	12	1			
414	3	0-10	6	3	1	0	1			
414	3	0-10	1	2	1	0	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
414	3	0-10	1	1	1	88	1			
414	3	0-10	1	2	1	0	1			
414	3	0-10	1	2	1	0	1			
414	3	0-10	1	2	1	0	1			
414	3	0-10	1	2	1	0	1			
414	3	0-10	1	2	1	0	1			
414	3	0-10	1	2	1	0	1			
414	3	0-10	1	2	1	0	1			
414	3	0-10	1	2	1	0	1			
414	3	0-10	1	2	1	0	1			
414	3	0-10	1	2	1	0	1			
414	3	0-10	1	2	1	0	3			
414	3	10-20	1	4	1	12	1			
414	3	10-20	1	2	1	0	1			
414	3	10-20	1	2	1	0	1			
414	3	10-20	1	2	1	0	1			
414	3	10-20	1	1	1	12	1			
414	3	10-20	1	2	1	0	1			
414	3	10-20	1	2	1	0	1			
414	3	10-20	1	2	1	0	1			
414	3	10-20	1	2	1	0	1			
414	3	10-20	1	2	1	0	1			
414	3	10-20	1	2	1	0	1			
414	3	10-20	1	3	1	0	1			
414	3	10-20	1	2	1	0	3			
414	3	20-30	1	2	1	0	1	Limestone		
414	3	20-30	1	3	1	0	1			
414	3	20-30	1	3	1	0	3			
414	3	20-30	6	7	4	12	1			
414	3	20-30	1	5	1	0	1			
414	3	20-30	1	4	1	12	1			
414	3	20-30	1	2	1	0	1			
414	3	30-40	1	2	1	0	3			
414	3	30-40	1	3	1	0	1			
414	3	30-40	1	2	1	0	1			
414	3	30-40	1	2	1	0	1			
414	3	30-40	1	2	1	0	1			
414	3	30-40	1	2	1	0	1			
414	3	30-40	1	2	1	12	1			
414	3	40-50	1	4	1	0	1			
416	2	10-20	1	5	1	88	1			
416	4	10-20	1	5	2	88	1			
416	4	20-30	1	2	1	0	2	Chert		
417	1	30-40	1	6	2	88	1			
418	2	10-20	1	1	1	0	1			
418	2		1	2	1	62	1			
419	1	0-10	1	3	1	0	2			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
419	2	0-10	1	3	1	100	1			
419	2	0-10	1	2	1	0	1			
419	2	10-20	1	2	1	0	1	Chert		
419	6	0-10	1	4	1	88	1			
419	9	0-10	1	3	1	0	2	Chert		
419	9	0-10	1	5	2	38	2			
419	9	0-10	1	2	1	0	1			
419	9	0-10	6	3	1	88	1			
419	9	0-10	1	3	1	0	1			
419	9	0-10	5	5	2	88	1			
419	9	0-10	2	7	3	25	1			
419	9	0-10	6	4	2	62	1			
424	1	10-20	4	2	1	0	1			
424	2	10-20	1	2	1	88	3			
424	2	50-60	1	5	2	0	1			
424	2	50-60	1	4	2	38	1			
424	3	50-60	6	3	1	0	1			
424	7	0-10	-	-	-	-	-	Limestone & Other		
424	7	60-70	-	-	-	-	-	Sandstone		
424	8	10-20	-	-	-	-	-	Limestone		
424	13	0-10	6	5	2	12	1			Finely flaked
424	13	0-10	1	2	1	12	1			
424	14	0-10	-	-	-	-	-	Limestone & Chert		
426	1	50-60	1	4	1	0	1			
426	1	50-60	1	2	1	0	1			
426	1	50-60	-	-	-	-	-		X	Bird bone fragments
426	2	0-10	-	-	-	-	-		X	Bone fragments, Charcoal
426	2	10-20	7	-	-	-	-			Charcoal
426	4	0-10	-	-	-	-	-	Limestone	X	
426	5	20-30	1	2	1	0	1			
426	5	20-30	1	2	1	0	1			
426	6	0-10	1	2	1	0	3			
426	6	0-10	7	-	-	-	-		X	
426	6	0-10	1	1	1	0	1			
426	6	0-10	1	2	1	0	1			
426	6	0-10	1	1	1	0	1			
426	6	0-10	1	2	1	0	3			
426	7	0-10	1	3	1	0	1	Limestone & Chert		Charcoal
426	7	0-10	1	3	1	0	1			
426	7	0-10	1	1	1	0	1			
426	7	30-40	1	2	1	100	1			
427	2	0-10	1	3	1	12	1			
427	2	0-10	1	4	1	12	1			
427	2	0-10	1	2	1	0	1			
427	2	0-10	1	2	1	0	1			
427	2	0-10	1	2	1	12	1			
427	2	0-10	1	1	1	0	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
427	2	0-10	1	2	1	12	1			
427	2	0-10	1	2	1	0	1			
427	2	0-10	1	2	1	12	1			
427	2	0-10	1	2	1	0	1			
427	2	0-10	-	-	-	-	-	Limestone		
427	2	0-10	-	-	-	-	-	Sandstone		
427	3	0-10	1	3	1	12	1			
427	3	0-10	1	2	1	0	1			
427	3	0-10	1	2	1	0	1			
427	3	0-10	1	2	1	0	1			
427	3	0-10	-	-	-	-	-	Chert		
427	3	10-20	1	2	1	100	1			
427	4	0-10	1	2	1	0	1			
427	4	0-10	1	1	1	0	1			
427	4	0-10	1	1	1	0	1			
427	4	10-20	1	3	1	0	4			
427	4	10-20	7	-	-	-	-		X	
427	4	20-30	1	4	1	0	1			
427	5	0-10	-	-	-	-	-	Limestone		
427	5	10-20	-	-	-	-	-	Chert		
427	5	10-20	-	-	-	-	-	Limestone		
427	5	10-20	-	-	-	-	-		X	
427	5	10-20	-	-	-	-	-	Sandstone		
427	5	10-20	1	2	1	0	1			
427	5	30-40	1	6	1	88	1			
427	5	30-40	1	2	1	12	1			
427	5	30-40	1	2	1	0	3			
427	5	30-40	-	-	-	-	-			Chert potlid
427	5	30-40	-	-	-	-	-	Limestone		
427	5	40-48	1	4	1	12	1			
427	5	40-48	1	2	1	0	4			
427	5	40-48	6	4	1	12	1			
427	5	40-48	1	4	1	0	1			Blade
427	5	40-48	1	2	1	88	1			
427	5	40-48	1	2	1	0	1			
427	5	40-48	1	2	1	0	1			
427	5	40-48	1	2	1	12	1			
427	5	40-48	1	2	1	0	1			
427	5	40-48	1	2	1	12	4			
427	5	40-48	1	2	1	0	1			
427	5	40-48	1	2	1	0	1			
427	5	40-48	-	-	-	-	-		X	
427	6	0-10	6	5	1	88	1			
427	6	0-10	6	5	2	38	1			
427	6	0-10	1	5	1	12	1			
427	6	0-10	1	4	2	12	1			
427	6	0-10	1	4	2	12	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
427	6	0-10	1	3	1	100	1			
427	6	0-10	1	3	1	88	1			
427	6	0-10	6	3	1	0	1			
427	6	0-10	6	4	1	12	1			
427	6	0-10	1	2	1	12	3			
427	6	0-10	1	2	1	0	1			
427	6	0-10	1	2	1	88	1			
427	6	0-10	1	2	1	0	1			
427	6	0-10	1	1	1	0	1			
427	6	0-10	1	2	1	0	1			
427	6	0-10	1	1	1	0	1			
427	6	0-10	1	1	1	0	1			
427	6	0-10	-	-	-	-	-	Limestone		
427	6	0-10	-	-	-	-	-	Chert		
427	6	10-20	6	5	2	12	1			
427	6	10-20	6	7	1	88	1			
427	6	10-20	1	3	1	0	1			
427	6	10-20	1	4	1	12	1			
427	6	10-20	1	3	1	100	4			
427	6	10-20	6	3	1	12	1			
427	6	10-20	1	3	1	12	1			
427	6	10-20	7	-	-	-	-		X	
427	6	10-20	-	-	-	-	-	Limestone		
427	6	10-20	-	-	-	-	-	Sandstone		
427	7	0-10	6	3	1	0	1			
427	7	0-10	7	-	-	-	-		X	
427	7	0-10	1	1	1	12	1			
427	8	0-10	-	-	-	-	-	Limestone		
427	8	0-10	4	6	3	0	1			
427	8	0-10	-	-	-	-	-	Chert		
427	8	0-10	1	3	1	0	1			
427	8	0-10	1	3	1	12	1			
427	8	0-10	1	2	1	0	1			
427	8	0-10	1	2	1	12	1			
427	8	0-10	1	3	1	0	1			
427	8	0-10	1	3	1	0	1			
427	8	0-10	1	2	1	12	1			
427	8	0-10	1	2	1	0	1			
427	8	0-10	1	3	1	0	3			
427	8	0-10	1	2	1	0	1			
427	8	0-10	1	2	1	0	1			
427	8	0-10	1	1	3	12	1			
427	8	0-10	1	2	1	0	1			
427	8	0-10	1	1	1	0	1			
427	8	0-10	1	2	1	0	1			
427	8	0-10	1	1	1	0	1			
427	8	0-10	1	1	1	12	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
427	8	0-10	1	2	1	38	1			
427	8	0-10	1	2	1	62	3			
427	8	0-10	1	2	1	0	1			
427	8	0-10	1	2	1	100	1			
427	8	0-10	1	2	1	12	1			
427	8	0-10	1	2	1	0	4			
427	8	0-10	1	3	1	100	4			
427	8	0-10	1	2	1	0	1			
427	8	0-10	1	2	1	12	1			
427	8	0-10	1	1	1	12	1			
427	8	0-10	1	2	1	0	1			
427	8	0-10	1	2	1	12	3			
427	8	0-10	1	1	1	12	1			
427	8	0-10	1	2	1	38	1			
427	8	0-10	1	1	1	100	4			
427	8	0-10	1	1	1	100	1			
427	8	0-10	1	1	1	0	1			
427	8	0-10	1	1	1	0	1			
427	8	0-10	1	2	1	0	1			
427	8	0-10	1	2	1	0	1			
427	8	0-10	1	2	1	0	1			
427	8	0-10	1	2	1	0	1			
427	8	0-10	1	1	1	0	1			
427	8	0-10	1	1	1	0	1			
427	8	0-10	1	1	1	0	1			
427	8	0-10	1	2	1	0	1			
427	8	0-10	1	1	1	0	1			
427	8	0-10	1	1	1	0	1			
427	8	0-10	1	1	1	38	1			
427	8	0-10	1	2	1	0	1			
427	8	0-10	1	1	1	0	1			
427	8	0-10	1	1	1	0	1			
427	8	0-10	1	1	1	0	1			
427	8	0-10	1	1	1	0	1			
427	8	0-10	1	1	1	38	1			
427	8	10-20	6	3	1	0	1			
427	8	10-20	1	2	1	0	1			
427	8	10-20	1	1	1	0	1			
427	8	10-20	1	1	1	0	1			
427	8	10-20	1	1	1	0	4			
427	8	10-20	1	2	1	38	1			
427	8	10-20	7	-	-	-	-		X	
427	8	10-20	-	-	-	-	-	Limestone		
427	9	0-10	1	2	1	88	1			
427	9	0-10	1	3	1	0	1			
427	9	0-10	-	-	-	-	-	Limestone		
427	9	40-50	1	1	1	0	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
427	10	0-10	-	-	-	-	-	Limestone		
429	2	0-10	6	4	1	12	1			
429	2	0-10	1	4	1	12	1			
429	2	20-30	-	-	-	-	-	Limestone		
429	2	40-50	1	2	1	0	1			
429	2	50-60	1	2	1	12	1			
429	2	50-60	1	2	1	100	1			
429	2	60-70	1	1	1	12	9			
429	3	0-10	1	2	1	0	1			
429	3	0-10	1	1	1	0	1			
429	5	0-10	-	-	-	-	-			Charcoal
429	5	10-20	6	4	1	62	1			Spokeshave?
429	5	10-20	1	5	2	12	1			
429	6	10-20	-	-	-	-	-			Charcoal
429	6	10-20	6	3	1	0	1			Burin
429	6	10-20	1	1	1	12	1			
429	6	10-20	1	2	1	0	1			
429	7	30-40	1	5	1	0	1			
429	7	40-50	1	2	1	88	1			
429	7	50-60	7	-	-	-	-		X	
430	2	10-20	1	3	1	12	1			
431	1	-	-	-	-	-	-	Limestone		
432	1	0-10	1	2	1	0	1			
433	1	40-50	1	3	1	0	1			Blade
433	2	20-30	-	-	-	-	-	Limestone		
436	1	0-10	1	4	1	0	1			
436	1	0-10	1	2	1	12	1			
436	1	10-20	1	4	1	0	1	Sandstone		
436	2	20-30	1	3	1	0	1			
436	2	20-30	1	2	1	0	1			
437	1	0-10	1	2	1	0	1	Chert		
437	1	10-20	1	5	2	38	1			
437	1	30-40	1	2	1	0	1			Flaked edge
437	1	30-40	1	2	1	0	1			
437	2	0-10	1	4	1	0	1			
437	2	10-20	6	3	1	12	1			
437	2	10-20	1	2	1	88	1			
437	2	30-40	1	3	1	0	1			
437	2	40-50	3	8	2	88	1			
437	2	40-50	1	3	1	0	1			
437	2	40-50	1	5	1	12	1			
437	3	10-20	4	6	2	0	1			Crudely worked
437	3	10-20	1	2	1	0	1			
437	3	10-20	1	2	1	12	1			
437	3	20-30	1	2	1	0	1	Limestone		
437	3	30-40	-	-	-	-	-			Flaked clear glass
437	3	30-40	1	2	1	0	1			

Table B-1. continued…

Site 41TG	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
437	4	20-30	1	2	1	0	1			
437	4	20-30	1	2	1	0	1			
437	4	30-40	1	2	1	0	1			
437	6	0-10	1	3	1	0	1			
437	6	0-10	1	2	1	0	1			
437	6	0-10	1	2	1	0	1			
437	6	0-10	1	1	1	0	1			
437	6	10-20	1	2	1	0	1			
438	1	20-30	6	4	1	0	1			
438	1	30-40	1	2	1	0	1			
438	1	30-40	1	2	1	0	1			
438	1	30-40	1	2	1	0	1			
438	1	30-40	1	1	1	0	1			
438	1	30-40	1	2	1	12	1			
438	1	30-40	1	1	1	0	1			
438	1	30-40	1	1	1	0	1			
438	1	50-60	1	2	1	0	1			
438	1	60-70	1	4	1	12	1			
438	3	0-10	1	2	1	0	1			
438	4	10-20	1	3	1	0	3			
438	4	10-20	1	2	1	12	1			
438	4	10-20	1	1	1	0	1			
438	4	10-20	3	8	4	75	1			
438	4	30-40	1	2	1	0	1			
438	4	50-60	1	2	1	0	1			
438	5	60-70	3	8	3	75	1			
438	6	20-30	1	2	1	0	1			
438	6	30-40	1	2	1	0	1			
438	6	30-40	1	2	1	0	1			
438	6	30-40	1	2	1	0	1			
438	6	30-40	1	1	1	0	1			
439	3	0-10	1	2	1	0	1			
439	3	20-30	1	3	1	12	1			
441	1	0-10	1	2	1	0	1			
441	1	0-10	1	2	1	88	1			
441	1	0-10	1	2	1	12	1			
441	1	0-10	1	3	1	88	1			
441	1	20-30	1	2	1	12	1			
441	2	10-20	1	2	1	0	1			
441	.	30-40	-	-	-	-	-	Limestone		
444	1	0-10	1	3	1	12	1			
447	1	0-10	4	6	2	12	1			Heat-treated preform
447	1	10-20	1	3	1	0	1			
447	1	10-20	1	2	1	0	1			
447	2	10-20	1	2	1	0	-	Sandstone		
447	2	30-40	1	3	1	0	1			
447	3	0-10	1	3	1	88	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
447	3	0-10	1	4	1	0	1			
447	3	0-10	1	3	1	12	1			
447	4	0-10	1	2	1	0	-	Chert		
447	4	0-10	1	2	1	0	1			
447	4	0-10	1	2	1	0	1			
447	4	10-20	-	-	-	-	-	Sandstone		
447	5	0-10	6	4	1	0	1	Chert & Limestone		
447	5	0-10	6	5	1	0	1			
447	5	0-10	1	3	1	0	1			
447	5	0-10	1	2	1	12	1			
447	5	0-10	1	2	1	0	1			
447	5	0-10	1	2	1	0	1			
447	5	0-10	1	2	1	0	1			
447	5	0-10	1	2	1	0	1			
447	5	0-10	1	2	1	0	1			
447	5	0-10	1	3	1	0	1			
447	5	10-20	1	2	1	0	1	Limestone		
447	5	10-20	1	2	1	0	1			
447	5	10-20	1	2	1	0	1			
447	5	10-20	1	2	1	0	1			
447	5	10-20	1	2	1	0	1			
447	5	10-20	6	4	1	12	1			
447	5	10-20	1	3	1	12	1			
447	5	10-20	1	3	1	0	1	Limestone		
447	5	10-20	1	2	1	12	1			
447	5	20-30	1	1	1	0	1			
447	5	20-30	1	2	1	0	1			
447	5	20-30	1	2	1	0	1			
447	5	20-30	1	2	1	0	1			
447	5	20-30	1	2	1	0	1			
447	5	20-30	1	3	1	0	1			
447	5	20-30	1	3	1	88	1			
447	5	20-30	1	3	1	100	1			
447	5	20-30	1	4	1	0	3			
447	5	30-40	6	5	2	0	1	Limestone		
447	5	30-40	1	2	1	0	1			
447	5	30-40	6	5	2	0	1			
447	5	40-50	1	5	2	12	1	Chert		
447	5	40-50	6	3	1	12	1			
447	5	40-50	1	2	1	88	1			
447	5	40-50	1	2	1	0	1			
447	5	40-50	1	2	1	0	1			
447	5	40-50	1	2	1	0	1			
447	5	40-50	1	2	1	0	1			
447	5	40-50	1	2	1	12	1			
447	5	40-50	1	2	1	62	1			
447	5	40-50	1	2	1	88	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
447	5	50-60	1	3	1	12	1	Limestone		
447	5	50-60	1	3	1	12	1			
447	5	50-60	1	2	1	0	2			
447	5	50-60	1	2	1	12	1			
447	6	0-10	-	-	-	-	-	Sandstone		
447	6	0-10	-	-	-	-	-		X	
447	6	0-10	1	2	1	0	1			
447	6	0-10	1	2	1	0	1			
447	6	0-10	1	2	1	38	3			
447	6	0-10	1	2	1	0	3			
447	6	0-10	1	3	1	0	1			
447	6	10-20	1	2	1	0	1			
447	6	20-30	1	2	1	0	1			
447	6	20-30	1	2	1	0	1			
447	6	20-30	1	2	1	0	1			
447	6	30-40	1	2	1	0	2			
447	6	30-40	1	2	1	0	2			
447	8	0-10	1	3	1	0	1			
447	9	0-10	6	3	1	0	1			
447	9	0-10	1	2	1	0	1			
447	10	0-10	6	3	1	0	1			
447	11	0-10	1	4	2	0	1	Limestone		
447	11	0-10	6	5	2	88	1			
447	11	0-10	1	2	1	38	1			
447	11	0-10	1	2	1	0	1			
447	11	0-10	1	2	1	0	1			
447	13	0-10	1	3	1	0	1	Limestone		
447	13	0-10	1	3	1	0	1			
447	13	0-10	1	3	1	0	1			
447	13	0-10	1	3	1	88	1			
447	13	0-10	1	3	2	81	1			
447	13	0-10	1	2	1	0	1			
447	13	0-10	1	2	1	0	1			
447	13	20-30	1	3	1	0	3			
447	13	20-30	1	3	1	0	1			
447	13	20-30	1	2	1	0	1			
447	13	20-30	1	2	1	0	3			
447	13	20-30	-	-	-	-	-	Limestone		
447	13	30-40	1	3	1	0	1			
447	13	30-40	1	3	1	0	1			
447	13	30-40	1	2	1	0	1			
447	13	30-40	1	3	1	0	1			
447	13	30-40	1	1	1	0	1			
447	13	30-40	1	2	1	0	1			
447	13	30-40	1	1	1	0	3			
447	13	30-40	-	-	-	-	-	Limestone		
447	13	40-50	1	4	1	0	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
447	13	50-60	1	3	1	0	1			
447	13	60-70	1	2	1	12	1			
447	13	60-70	4	6	1	0	1			Finely flaked knife
447	Auger	100-110	1	2	1	0	1			
447	Auger	120-140	-	-	-	-	-	Limestone		
447	Auger	140-160	1	2	1	0	1			
447	Auger	20-40	1	2	1	0	1			
447	Auger	20-40	1	2	1	0	1			
447	AUGER	20-40	1	2	1	12	1			
449	1	0-10	1	3	1	0	1			
449	1	0-10	1	3	1	0	1			
449	1	0-10	1	3	1	0	1			
449	1	0-10	1	2	1	0	1			
449	1	0-10	2	5	4	25	1			
449	1	0-10	-	-	-	-	-			Purple bottle glass sherd
449	1	10-20	1	6	2	88	1			
449	2	0-10	1	5	1	0	1			Brown bottle glass
449	2	10-20	1	3	1	12	1	Sandstone		
449	2	30-40	-	-	-	-	-	Limestone		
449	2	30-40	1	3	1	0	1			
449	2	30-40	1	1	1	0	1			
449	2	30-40	1	2	1	0	1			
449	2	30-40	1	2	1	0	1			
449	2	30-40	1	2	1	0	1			
449	2	30-40	1	2	1	0	1			
449	2	30-40	1	2	1	0	1			
449	2	40-50	1	2	1	62	1			
449	2	50-60	1	3	1	0	1			
449	2	50-60	1	4	1	0	1			
449	2	60-70	1	2	1	0	1			
449	3	0-10	1	5	2	12	1			
449	3	0-10	6	5	1	0	1			
449	3	0-10	1	2	1	0	1			
449	3	0-10	1	2	1	0	1			
449	3	0-10	1	2	1	0	1			
449	3	20-30	1	2	1	0	1			
449	3	30-40	1	2	1	0	1			
449	3	40-50	1	3	1	0	1			
449	Auger	120-140	1	2	1	0	1			
449	Auger	120-140	-	-	-	-	-	Limestone		
449	AUGER	20-40	-	-	-	-	-	Limestone		
449	AUGER	20-40	-	-	-	-	-	Sandstone		
449	AUGER	20-40	1	2	1	0	1			Burned
449	AUGER	20-40	1	2	1	0	1			Burned
449	AUGER	20-40	1	2	1	0	1			Burned
449	AUGER	80-100	-	-	-	-	-	Limestone		
451	1	0-10	6	6	2	38	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
451	6	0-10	1	2	1	0	1			
453	1	10-20	1	2	1	0	1			
453	1	10-20	1	2	1	0	1			
453	1	10-20	1	2	1	0	1			
453	1	10-20	1	2	1	0	3			
453	2	30-40	1	2	1	0	1			
453	2	30-40	1	2	1	0	1			
453	3	0-10	6	2	1	0	1			
454	4	60-70	1	3	1	0	1		X	Charcoal
455	1	0-10	-	-	-	-	-			5 Rusted Metal Frags
455	1	20-30	1	3	1	12	1			
455	1	20-30	1	2	1	0	1			
455	1	20-30	1	2	1	0	1			
455	5	20-30	1	1	1	12	1			
455	5	20-30	7	-	-	-	-			3 Metal fragments
456	11	0-10	1	3	2	61	1			
456	11	0-10	2	6	3	12	1			5 Flake scars
457	2	50-60	1	2	1	0	1			
457	2	50-60	1	2	1	0	1			
457	2	50-60	-	-	-	-	-	Limestone		
461	1	10-20	1	1	1	0	1			
461	1	10-20	1	3	1	12	1			
461	8	0-10	-	-	-	-	-			Fossilized Tooth Frag
461	8	0-10	1	2	1	0	1			
461	AUGER1	0-10	1	3	1	12	1			
462	4	0-10	1	2	1	0	1			
462	4	10-20	-	-	-	-	-	Limestone		Hearth feature
462	5	0-10	1	4	1	12	1	Limestone		
462	7	0-10	1	2	1	0	1			
464	5	20-30	1	2	1	0	1			
464	7	44	1	2	1	0	1			
464	7	44	5	8	2	0	1			
464	7	0-10	-	-	-	-	-	Sandstone		
464	7	30-40	1	4	1	0	1			
464	7	30-40	1	4	1	0	1			
464	7	50-60	1	5	1	12	1			Blade
464	7	50-60	1	3	1	0	1			Blade
464	7	50-60	1	2	1	0	1			
464	7	50-60	1	2	1	12	1			
464	7	50-60	1	2	1	0	1			
464	7	50-60	1	2	1	12	1			
464	7	50-60	1	2	1	12	1			
464	7	60-70	1	2	1	0	1			
464	7	60-70	1	1	1	0	3			
464	8	40-50	1	2	1	12	1			
464	8	40-50	1	2	1	0	1			
464	8	40-50	1	1	1	0	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
464	8	50-60	1	2	1	12	1			
464	8	50-60	1	2	1	0	1			
464	8	50-60	2	13	3	75	1			
464	9	40-50	2	7	4	25	1			Burned
464	9	40-50	1	2	1	0	1			
464	9	40-50	1	1	1	0	1			
467	3	20-30	1	2	1	0	1			
467	3	20-30	1	1	1	0	1			
467	3	20-30	4	8	3	25	1			
467	3	30-40	1	1	1	0	1			
467	3	30-40	1	2	1	0	1			
467	4	0-10	1	4	1	12	1			
467	4	0-10	1	1	1	0	1			
467	4	0-10	1	2	1	100	3			
467	4	0-10	1	1	1	0	1			
467	4	0-10	1	2	1	0	1			
467	4	0-10	1	2	1	0	1			
467	4	0-10	7	-	-	-	-			Clear glass sherd
467	4	10-20	1	2	1	0	1			
467	5	0-10	1	2	1	0	1			
467	5	0-10	-	-	-	-	-	Limestone		
467	6	0-10	1	3	1	12	1			
467	6	0-10	1	1	1	0	1			
467	6	0-10	1	2	1	38	2			
467	7	0-10	1	3	2	38	1			
467	10	0-10	1	3	1	38	1			
467	10	0-10	1	1	1	0	1			
467	10	0-10	1	2	1	0	1			
467	10	10-20	6	6	1	88	4			
468	3	10-20	-	-	-	-	-			Burned bone
471	2	10-20	1	2	1	0	1			
471	2	10-20	1	2	1	0	1			
471	3	10-20	1	2	1	0	1			
472	1	0-10	-	-	-	-	-	Sandstone		
472	1	50-60	1	2	1	0	1			
472	1	50-60	4	3	1	0	1			
472	1	50-60	1	3	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	3	1	0	1			
472	1	50-60	1	3	1	0	1			
472	1	50-60	1	1	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			

Table B-1. continued…

Site 41TG	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
472	1	50-60	1	4	1	0	1			
472	1	50-60	1	1	1	12	1			
472	1	50-60	1	2	1	12	1			
472	1	50-60	1	3	1	0	1			
472	1	50-60	1	3	1	0	1			
472	1	50-60	6	3	1	12	1			
472	1	50-60	1	3	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	1			
472	1	50-60	1	2	1	0	2			
472	1	60-70	1	2	1	0	1			
472	1	60-70	1	2	1	0	1			
472	1	60-70	1	2	1	0	1			
472	1	60-70	1	2	1	0	1			
472	1	60-70	1	2	1	0	1			
472	1	60-70	1	2	1	0	1			
472	2	0-10	1	2	1	100	1			
472	2	0-10	1	3	1	0	1			
472	2	0-10	1	2	1	12	1			
472	2	0-10	1	2	1	0	1			
472	2	0-10	1	2	1	0	1			
472	2	0-10	1	1	1	0	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
472	2	0-10	1	1	1	0	1			
472	2	0-10	7	-	-	-	-			3 Whiteware ceramics
472	2	10-20	-	-	-	-	-	Limestone		
472	2	10-20	1	2	1	0	1			
472	2	10-20	1	1	1	0	1			
472	2	10-20	1	2	1	0	1			
472	2	10-20	7	-	-	-	-			Ochre?
472	2	20-30	1	2	1	12	1			
472	2	20-30	7	-	-	-	-			2 Whiteware ceramics
472	3	0-10	1	3	1	0	1	Limestone & Chert		
472	3	10-20	1	2	1	0	1			
472	3	10-20	1	2	1	0	1	Limestone		
472	3	10-20	1	2	1	0	1			
472	3	10-20	1	1	1	0	1			
472	3	10-20	1	2	1	0	1			
472	3	10-20	1	1	1	0	1			
472	3	10-20	1	2	1	0	1			
472	3	10-20	1	2	1	12	1			
472	3	10-20	1	1	1	0	1			
472	3	10-20	1	2	1	0	1			
472	3	10-20	1	2	1	0	1			
472	3	10-20	1	2	1	0	1			
472	3	10-20	1	2	1	0	1			
472	3	10-20	1	2	1	0	1			
472	3	10-20	1	1	1	0	1			
472	3	20-30	1	2	1	0	1	Limestone		
472	3	20-30	1	2	1	0	1			
472	3	30-40	1	2	1	0	1			
472	3	30-40	1	2	1	0	1			
472	3	30-40	1	2	1	0	1			
472	3	50-60	1	2	1	0	1			
472	3	60-70	1	3	1	88	1			
472	3	60-70	1	2	1	0	1			
472	4	10-20	1	3	1	38	1			
472	AUGER	60-80	1	2	1	0	1			
474	2	20-30	1	5	2	12	1			
474	6	0-10	1	2	1	0	1			
474	6	0-10	1	7	2	62	1			
478	5	0-10	3	5	4	88	1			
478	5	0-10	6	4	2	0	1			
478	5	0-10	1	3	1	38	1			
478	5	0-10	1	2	1	0	1			
478	8	0-10	6	4	1	62	1			
478	10	0-10	1	2	1	0	1			
478	11	0-10	1	4	1	12	1			
479	2	0-10	1	1	1	12	1			
480	1	0-10	1	3	1	88	1			

Table B-1. continued…

Site 41TG	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
480	2	30-40	1	3	1	12	1			
481	1	0-10	1	4	1	0	1			
481	2	0-10	1	3	1	0	1			
481	2	0-10	1	2	1	0	1	Chert		
481	2	20-30	1	4	2	12	1			
481	2	30-40	2	8	3	0	1			5 Flake scars
481	2	30-40	1	6	2	0	1			
481	3	10-20	1	1	1	0	1			
481	3	10-20	-	-	-	-	-	Chert		
482	1	0-10	1	2	1	0	1			
482	1	10-20	1	2	1	0	1			
482	1	10-20	1	2	1	0	1			
485	1	10-20	1	2	1	0	1			
485	7	0-10	6	5	1	0	1			
485	9	0-10	1	6	2	88	1			
485	10	20-30	1	2	1	0	1			
485	11	0-10	1	2	1	0	1			
485	11	10-20	1	2	1	38	1			
485	12	0-10	1	5	1	88	1			
485	13	10-20	6	3	1	0	1			Burin
486	2	0-10	1	3	1	38	1			
486	2	30-40	1	2	1	12	1			
486	3	0-10	1	6	2	0	1			
486	4	0-10	6	3	1	0	1			
486	4	0-10	1	2	1	0	1			
486	4	0-10	1	2	1	0	1			
486	4	0-10	1	2	1	62	1			
486	4	0-10	1	3	1	38	1			
486	5	0-10	1	2	1	0	1			
486	5	0-10	1	2	1	0	1			
487	2	20-30	3	6	4	75	1	Limestone		
487	3	10-20	1	2	1	0	1			
487	3	10-20	1	3	1	0	4			
487	4	20-30	1	2	1	0	1			
487	4	30-40	1	3	1	12	1			
487	4	30-40	1	2	1	38	1			
487	4	30-40	1	2	1	0	2			
487	4	30-40	1	2	1	12	1			
488	3	0-10	1	5	1	12	1			
488	6	0-10	1	2	1	0	1			
488	7	10-20	2	5	3	38	1			3 Flake scars
489	1	0-10	1	3	1	0	1			
489	1	0-10	1	3	1	0	1			
489	2	0-10	1	2	1	0	1			
489	2	0-10	1	2	1	0	4			
489	3	0-10	1	5	2	100	1	Limestone & Chert	X	
489	3	0-10	1	2	1	0	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
489	3	0-10	1	3	1	12	1			
489	3	0-10	1	3	1	0	1			
489	3	0-10	1	3	1	0	1			
489	3	0-10	1	3	1	0	1			
489	3	0-10	1	2	1	0	1			
489	4	0-10	1	3	1	0	1			
489	4	0-10	1	3	1	0	1			
489	5	0-10	6	5	2	38	1			
489	5	0-10	1	3	1	88	1			
489	5	0-10	1	3	1	88	1			
489	5	0-10	1	1	1	0	1			
489	5	0-10	1	2	1	38	1			
489	8	0-10	1	3	1	0	2			
489	9	0-10	6	4	1	0	1			
489	9	0-10	1	2	1	12	2			
489	9	0-10	1	3	1	0	1			
489	9	0-10	1	2	1	0	2			
489	9	0-10	1	2	1	0	1			
489	9	10-20	1	3	1	0	1			
489	9	10-20	1	2	1	0	2			
489	9	20-30	1	3	1	100	1	Limestone		
489	9	20-30	1	3	1	0	1			
489	9	20-30	1	2	1	0	1			
489	9	20-30	1	2	1	0	2			
489	10	0-10	1	2	1	0	1			
489	10	10-20	6	4	1	62	1			
489	11	0-10	1	2	1	0	3			
489	13	0-10	-	-	-	-	-	Limestone		
489	13	10-20	-	-	-	-	-	Limestone		
489	14	0-10	1	3	1	12	1			
489	14	10-20	-	-	-	-	-	Limestone		
489	15	20-30	1	2	1	88	2			
489	16	0-10	1	2	1	0	1			
489	16	0-10	1	3	1	38	1			
489	16	0-10	1	2	1	0	1			
489	16	0-10	1	2	1	38	1			
489	16	0-10	1	2	1	0	1			
489	16	0-10	1	2	1	38	1			
489	16	10-20	1	3	1	38	1	Limestone		
489	16	10-20	1	2	1	0	1			
489	16	10-20	1	1	1	0	1			
489	16	10-20	1	2	1	0	1			
489	16	10-20	1	2	1	38	2			
489	16	10-20	1	2	1	0	1			
489	16	20-30	1	2	1	38	1	Sandstone		
489	16	20-30	1	2	1	62	1			
489	16	20-30	1	2	1	12	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
491	1	30-40	1	2	1	0	1			
492	2	0-10	1	5	2	88	1			
492	2	40-50	1	3	1	62	2			
492	3	30-40	1	2	1	0	1			
495	3	0-10	6	5	2	0	1			
495	3	0-10	1	3	1	12	1			
496	1	10-20	1	3	1	88	1			
496	1	20-30	1	3	1	12	1			
496	2	10-20	6	3	1	62	1			
496	3	0-10	1	7	3	88	1			
496	3	0-10	1	3	1	0	1			
496	3	0-10	1	3	2	88	1			
496	3	0-10	1	3	1	0	1			
496	3	10-20	1	2	1	88	1			
496	3	10-20	1	2	1	88	1			
497	1	0-10	1	3	2	88	1			
497	5	0-10	1	3	1	62	1			
499	1	50-60	-	-	-	-	-	Sandstone		Charcoal
500	2	0-10	1	2	1	0	1			
500	2	10-20	1	2	1	0	1			
500	2	20-30	1	3	1	12	1			
500	2	30-40	1	3	1	0	1			
500	2	30-40	1	3	1	38	1			
500	2	30-40	1	3	1	0	1			
500	2	30-40	1	1	1	0	1			
500	2	30-40	1	1	1	0	1			
500	2	30-40	1	2	1	0	3			
500	2	30-40	1	1	1	0	1			
500	3	0-10	-	-	-	-	-		X	
500	3	10-20	1	1	1	0	1			
500	3	10-20	-	-	-	-	-	Limestone		
500	3	10-20	1	6	2	88	1			
500	3	40-50	-	-	-	-	-	Sandstone		
500	5	10-20	6	6	1	12	1			Finely flaked
500	5	10-20	1	3	1	0	1			
500	5	10-20	1	3	1	0	1			
500	5	10-20	1	1	1	12	1			
500	5	10-20	1	2	1	12	1			
500	5	10-20	1	2	1	12	1			
500	5	10-20	1	2	1	0	1			
500	5	20-30	1	2	1	0	1			
500	5	20-30	1	2	1	0	1			
500	5	40-50	1	2	1	0	1			
500	6	0-10	1	3	1	12	2			
500	6	10-20	1	2	1	0	1			
500	AUGER1	0-20	1	5	1	12	1			
504	1	20-30	1	5	2	38	1	Limestone		

Table B-1. continued…

Site 41TG	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
504	1	20-30	1	5	3	12	1			
504	1	20-30	1	4	1	0	1			
504	1	20-30	1	3	1	0	1			
504	1	20-30	1	3	1	0	1			
504	1	20-30	1	2	1	0	1			
504	1	20-30	1	2	1	0	1			
504	1	20-30	1	2	1	0	1			
504	1	20-30	1	2	1	0	1			
504	1	20-30	1	2	1	0	1			
504	1	20-30	1	2	1	0	1			
504	1	20-30	1	2	1	0	1			
504	1	20-30	1	2	1	0	1			
504	1	20-30	1	2	1	0	1			
504	1	20-30	1	2	1	0	1			
504	1	20-30	1	2	1	0	1			
504	1	20-30	1	2	1	0	3			
504	1	20-30	1	2	1	0	3			
504	1	20-30	1	2	1	12	1			
504	1	20-30	1	2	1	0	1			
504	1	20-30	2	8	4	25	1			6 Flake scars
504	1	20-30	2	6	3	0	1			10 Flake scars
504	1	20-30	-	-	-	-	-	Limestone & Chert		
504	1	40-50	1	3	1	0	1			
504	1	50-60	1	3	1	0	1	Chert		
504	3	0-10	1	4	2	62	1			
504	3	0-10	1	3	1	12	1			
504	3	0-10	1	1	1	0	1			
504	3	0-10	1	2	1	0	1			
504	3	0-10	1	2	1	0	1			
504	3	10-20	1	6	3	38	1			
504	3	10-20	1	1	1	0	1			
504	3	20-30	1	3	1	12	1			
504	6	0-10	7	-	-	-	-			Whiteware sherd
504	7	0-10	1	1	1	0	1			
504	7	0-10	1	1	1	12	4			
504	8	0-10	1	4	2	12	9			
504	8	0-10	1	3	2	0	1			
504	8	0-10	1	2	1	0	1			
504	8	0-10	6	4	1	12	1			
504	8	0-10	1	2	1	0	1			
504	8	0-10	1	3	1	12	1			
504	8	0-10	1	2	1	0	1			
504	8	10-20	1	2	1	12	1			
504	8	10-20	1	2	1	0	1			
504	9	0-10	4	3	2	0	1			Fragment
504	9	0-10	7	-	-	-	-			.22 caliber cartridge
504	9	30-40	1	2	1	0	1			

Table B-1. continued…

Site 41TG	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
506	1	0-10	1	2	1	0	1			
506	1	10-20	-	-	-	-	-			3 Deer bone fragments
506	1	10-20	1	3	1	0	1			
506	1	10-20	1	2	1	12	1			
506	1	10-20	1	2	1	0	1			
506	1	10-20	1	2	1	0	1			
506	1	10-20	1	2	1	62	1			
506	1	10-20	1	1	1	0	1			
506	1	20-30	1	2	1	12	3	Limestone & Chert		
506	1	20-30	1	2	1	0	1			
506	1	20-30	1	2	1	0	1			
506	1	20-30	-	-	-	-	-			Bone fragment
506	1	30-40	1	2	1	0	1			Blade
506	1	30-40	1	2	1	0	1	Chert		
506	1	30-40	1	2	1	0	1			
506	1	30-40	1	2	1	0	1			
506	1	50-60	1	3	1	38	1			
506	1	50-60	1	2	1	38	1			
506	2	10-20	-	-	-	-	-	Limestone		
506	2	20-30	6	3	1	0	1	Limestone		
506	2	30-40	1	3	1	0	1	Limestone		
506	6	50-60	3	8	4	75	1			
506	8	0-10	1	4	3	12	1			
506	8	0-10	1	5	1	12	1			
506	8	10-20	4	5	1	0	4			
506	8	10-20	1	5	1	38	1			
506	8	20-30	1	2	1	0	1			
506	8	30-40	1	4	1	0	1			
506	8	30-40	1	3	1	0	1			
506	8	30-40	4	2	1	0	1			
506	8	30-40	1	3	1	12	3			
506	8	30-40	1	2	1	100	3			
506	8	30-40	1	2	1	0	3			
506	8	30-40	1	2	1	0	1			
506	8	30-40	1	2	1	12	1			
506	8	30-40	1	2	1	12	1			
506	8	30-40	1	2	1	12	3			
506	8	30-40	1	1	1	100	3			
506	8	30-40	-	-	-	-	-		X	
506	8	40-50	1	4	1	12	4			
506	8	40-50	1	4	1	12	4			
506	8	40-50	1	2	1	0	1			
506	8	40-50	1	2	1	12	1			
506	8	40-50	1	3	1	88	1			
506	8	40-50	1	3	1	0	1			
506	8	40-50	1	2	1	0	3			
506	8	40-50	1	2	1	0	1			

Table B-1. continued…

Site 41TG	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
506	8	40-50	1	2	1	0	1			
506	8	40-50	1	2	1	88	2			
506	8	40-50	1	2	1	0	4			
506	8	40-50	1	2	1	0	1			
506	8	40-50	1	2	1	0	3			
506	8	40-50	1	2	1	0	1			
506	8	40-50	1	1	1	0	2			
506	8	40-50	1	1	1	0	3			
506	8	40-50	-	-	-	-	-	Limestone		
506	8	40-50	-	-	-	-	-		X	
506	8	50-60	2	11	3	12	1			
506	8	50-60	1	4	1	0	1			
506	8	50-60	1	3	1	0	1			
506	8	50-60	6	2	1	0	1			Spokeshave
506	8	50-60	1	2	1	0	1			
506	8	50-60	1	2	1	0	1			
506	8	50-60	-	-	-	-	-		X	
506	8	60-70	1	4	1	0	1			
506	8	60-70	1	2	1	12	1			
506	8	60-70	1	3	1	12	1			
506	8	60-70	6	3	1	12	1			
506	8	60-70	1	2	1	12	1			
506	8	60-70	1	2	1	0	1			
506	8	60-70	1	2	1	0	1			
506	8	60-70	-	-	-	-	-	Chert		
506	9	10-20	1	2	1	0	1			
506	9	30-40	4	8	2	25	1			Crudely worked
506	9	30-40	1	3	1	0	1			
506	9	30-40	1	3	1	0	1			
506	9	30-40	1	2	1	62	1			
506	10	20-30	1	2	1	0	1		X	
506	10	20-30	1	2	1	0	1			
506	10	20-30	1	2	1	0	1			
506	10	30-40	1	2	1	0	1		X	
506	10	30-40	1	2	1	0	1			
506	11	10-20	1	2	1	0	1			
506	12	20-30	1	2	1	0	1			
506	12	20-30	1	2	1	0	1			
506	12	20-30	1	2	1	12	1			
506	13	0-10	1	4	1	0	1	Limestone		
506	13	0-10	1	2	1	0	3			
506	13	10-20	1	3	1	88	1	Chert & Limestone		
506	13	10-20	1	2	1	0	1			
506	13	10-20	1	4	2	12	3			
506	13	20-30	1	6	1	12	1	Chert & Limestone		
506	13	20-30	1	3	1	0	1			
506	13	20-30	1	4	1	0	3			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
506	13	20-30	1	2	1	0	1			
506	13	20-30	1	2	1	0	1			
506	13	20-30	1	2	1	12	1			
506	13	30-40	1	2	1	0	1	Chert & Sandstone		
506	13	30-40	1	2	1	0	1			
506	13	30-40	1	2	1	12	1			
506	13	40-50	1	2	1	0	1	Limestone		
506	13	50-60	1	3	1	12	1			
506	15	10-20	1	4	2	88	1		X	
506	15	20-30	-	-	-	-	-	Chert	X	
506	16	20-30	1	6	1	0	1			
506	16	40-50	1	3	1	0	1			
506	16	40-50	1	2	1	0	1			
506	17	0-10	1	3	1	0	1			
506	17	0-10	1	2	1	12	2			
506	18	10-20	1	3	1	0	1	Chert		
506	18	10-20	1	2	1	0	1			
506	18	10-20	1	2	1	0	1			
506	18	10-20	1	2	1	0	1			
506	18	10-20	1	2	1	12	1			
506	18	20-30	1	2	1	0	1	Limestone		
506	18	20-30	1	2	1	0	1			
506	18	20-30	1	2	1	12	1			
506	18	30-40	1	2	1	0	1	Limestone		12 Large cobbles
506	18	30-40	1	2	1	0	1			
506	18	50-60	1	2	1	0	1			
506	Auger	40-50	1	4	2	0	1			
509	1	0-10	1	6	1	0	1			
509	1	0-10	1	4	1	0	1			
509	1	0-10	1	3	1	0	1			
509	1	0-10	1	4	1	0	1			
509	1	0-10	1	3	1	0	1			
509	1	0-10	1	3	1	62	1			
509	1	0-10	1	3	1	0	1			
509	1	0-10	1	2	1	0	1			
509	1	0-10	1	2	1	0	1			
509	1	0-10	1	2	1	0	1			
509	1	0-10	1	2	1	0	1			
509	1	0-10	1	2	1	0	1			
509	1	0-10	1	1	1	0	1			
509	1	0-10	1	2	1	0	1			
509	1	0-10	1	2	1	0	1			
509	1	0-10	1	2	1	0	1			
509	1	0-10	1	2	1	0	1			
509	1	10-20	-	-	-	-	-	Chert & Limestone	X	Burned Bone
509	1	10-20	1	4	1	0	1	Chert		
509	1	30-40	1	4	1	12	1		X	

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
509	1	40-50	1	4	1	0	1	Chert & Limestone		
509	1	50-60	-	-	-	-	-	Sandstone		
509	2	20-30	-	-	-	-	-	Limestone		Charcoal
509	2	40-50	-	-	-	-	-	Limestone		
509	3	0-10	1	4	1	12	1			
509	3	0-10	1	2	1	0	1			
509	3	30-40	1	4	3	62	1			
509	4	0-10	1	1	2	0	1	Limestone		
509	4	0-10	6	4	1	12	1	Chert & Limestone	X	Charred pecan shell
509	4	0-10	1	3	1	12	1			
509	4	0-10	1	4	1	12	1			
509	4	10-20	1	5	1	0	1	Limestone		
509	4	20-30	1	3	1	0	1	Limestone		
509	4	20-30	1	6	2	88	1			
509	4	30-40	-	-	-	-	-	Chert & Limestone	X	
509	4	40-50	7					Limestone		Not Collected
509	5	0-10	1	5	1	38	1			
509	5	0-10	1	3	1	0	1			
509	5	0-10	4	2	1	0	1			
509	5	0-10	1	2	1	0	3			
509	5	0-10	1	4	2	12	3			
509	5	0-10	1	1	1	0	1			
509	5	0-10	1	2	1	0	1			
509	5	0-10	1	2	1	0	1			
509	5	0-10	-	-	-	-	-	Limestone		
509	5	0-10	-	-	-	-	-	Sandstone		
509	5	0-10	7	-	-	-	-		X	
509	5	0-10	7	-	-	-	-			Bone
509	5	10-20	-	-	-	-	-	Limestone		
509	5	10-20	1	3	1	12	-			
509	5	10-20	1	1	1	0	1			
509	5	10-20	1	2	1	0	1			
509	5	20-30	1	2	1	0	1			
509	6	30-40	-	-	-	-	-	Limestone		
509	6	30-40	1	2	1	0	1			
510	1	40-50	1	3	1	0	1			
510	6	20-30	1	2	1	0	2			
510	6	50-60	1	3	1	0	1			
511	2	10-20	1	2	1	0	1		X	
511	7	0-10	1	2	1	38	1			
512	1	0-10	1	4	2	0	1			
512	1	0-10	4	5	1	0	1			Preform fragment
512	1	0-10	1	2	1	100	3			
512	1	0-10	1	2	1	0	3			
512	2	0-10	1	3	1	0	1			
512	2	0-10	1	3	1	0	1			
512	2	0-10	1	4	2	12	1			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
513	1	20-30	4	4	1	0	2	Limestone		
513	1	30-40	4	8	2	12	2			
513	2	0-10	1	4	1	0	1			
513	2	0-10	1	2	1	0	1			
513	2	0-10	1	2	1	0	1			
513	2	0-10	1	2	1	0	1			
513	2	0-10	1	2	1	0	1			
513	2	0-10	1	2	1	0	1			
513	2	0-10	1	2	1	0	1			
513	2	0-10	1	1	1	0	1			
513	2	0-10	1	1	1	0	1			
513	2	0-10	1	1	1	0	1			
513	2	0-10	1	1	1	0	1			
513	2	0-10	1	2	1	12	2			
513	2	0-10	1	2	1	38	1			
513	2	0-10	1	1	1	0	1			
513	2	10-20	1	2	1	0	1			
513	2	10-20	1	2	1	0	1			
513	2	10-20	1	2	1	0	1			
513	2	10-20	1	3	1	0	1			
513	3	0-10	1	2	1	0	1			
513	3	0-10	1	3	1	12	1			
513	3	10-20	1	6	2	38	1			
513	4	0-10	1	4	3	12	1			
513	4	0-10	1	3	1	0	1			
513	4	0-10	1	2	1	0	1			
513	5	0-10	6	3	1	0	1			
516	1	40-50	4	9	2	25	1			Crudely flaked
516	1	40-50	1	4	1	0	1			
516	1	40-50	1	3	1	38	1			
516	1	40-50	1	2	1	0	1			
516	1	50-60	1	2	1	0	1			
516	3	10-20	1	2	1	0	1			
516	4	20-30	1	2	1	12	1			
516	4	20-30	1	2	1	0	1			
516	4	20-30	1	2	1	0	1			
516	5	10-20	1	2	1	12	1			
516	5	10-20	1	2	1	0	1			
516	5	10-20	1	2	1	0	3			
516	6	20-30	4	3	1	0	2			Distal end
516	7	0-10	1	3	1	0	1			Printed whiteware sherd
516	7	0-10	1	2	1	0	1	Limestone		
516	7	0-10	1	1	1	0	1			
516	7	0-10	1	2	1	12	1			
516	7	0-10	1	3	1	12	1			
516	7	10-20	1	2	1	0	1		X	Rusted metal fragment
516	7	40-50	1	3	1	0	3			

Table B-1. continued…

Site 41TG_	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
516	7	40-50	1	2	1	0	1			
516	7	40-50	1	2	1	88	1			
516	8	0-10	-	-	-	-	-			Purple & clear glass
516	9	10-20	1	5	2	88	1			
517	2	0-10	1	2	1	0	1			
517	3	0-10	1	2	1	12	1			
518	1	20-30	1	2	1	12	1			
524	1	0-10	1	2	1	12	1			
524	1	0-10	1	2	1	100	1			
524	3	10-20	1	3	1	100	1			
524	7	0-10	1	3	1	100	1			
524	7	0-10	1	2	1	88	1			
524	7	0-10	1	2	1	0	1			
524	8	0-10	6	5	1	12	1			
524	19	20-30	1	4	1	38	1			
524	19	20-30	1	3	1	12	1			
524	19	20-30	1	3	1	12	1			
524	22	0-10	3	6	2	25	1			
524	22	0-10	1	1	1	0	1			
524	22	0-10	1	2	1	100	1			
524	22	0-10	1	2	1	88	1			
524	22	0-10	1	3	1	12	1			
525	2	0-10	1	2	1	0	1			Brown beer bottle glass
525	2	20-30	1	2	1	0	1		X	
525	2	20-30	1	3	1	0	1			
525	2	30-40	1	3	1	0	1			
525	2	30-40	1	3	1	12	1			
525	3	40-50	1	2	1	0	1			
525	5	30-40	4	6	2	0	1			Crudely worked
525	5	30-40	1	3	1	88	1			
525	5	30-40	1	3	1	62	1			
525	5	30-40	1	2	1	88	1			
525	5	30-40	1	3	1	88	1			
525	5	30-40	1	2	1	62	1			
525	5	30-40	1	2	1	0	1			
526	2	0-10	1	1	1	12	1			
526	2	30-40	1	3	1	62	1			
526	2	40-50	1	3	1	12	1			
526	5	50-60	1	3	1	0	1			
526	7	10-20	1	6	2	38	1			
526	7	10-20	1	2	1	100	4			
526	7	10-20	1	2	1	0	1			
526	14	10-20	1	3	1	100	1			
526	14	10-20	1	2	1	0	-			
526	14	20-30	1	2	1	12	1			
526	16	20-30	1	2	1	100	1			
526	16	20-30	1	4	1	12	1			

Table B-1. continued…

Site 41TG	Shovel Test #	Depth cm	Artifact Type	Max. Length	Max. Thickness	Cortex %	Material Color	Fire Cracked Rock	Mussel Shell	Other / Remarks
526	16	20-30	1	1	1	12	1			
526	17	40-50	1	2	1	0	1			
531	1	0-10	1	2	1	88	1			
531	1	0-10	1	2	1	88	1			
531	1	0-10	1	2	1	0	1			
531	1	20-30	1	3	1	0	1			
531	1	20-30	1	2	1	12	1			
531	1	20-30	1	2	1	12	1			
531	1	20-30	1	4	1	12	1			
531	1	40-50	6	5	1	0	2			
531	2	0-10	1	2	1	0	1	Chert		
531	2	0-10	1	2	1	0	1			
531	2	0-10	1	2	1	0	2			
531	2	0-10	1	1	1	0	1			
531	4	10-20	6	3	1	0	1			
532	1	0-10	1	2	1	0	1			
532	1	0-10	1	2	1	12	1			
532	1	0-10	1	2	1	0	1			
532	2	0-10	1	2	1	0	4			
532	2	0-10	1	3	1	38	3			
532	2	0-10	1	2	1	0	3			
533	3	10-20	1	2	1	12	1			
533	3	10-20	1	3	1	38	1			
534	3	0-10	1	3	1	0	1			
534	3	20-30	1	2	1	0	1			
534	6	10-20	1	2	1	0	1	Limestone		
534	6	30-40	-	-	-	-	-	Limestone		
535	2	0-10	1	3	1	0	1			
540	3	0-10	1	4	1	12	1			

Appendix C:
Twin Buttes Archaeological Project

Excavation Summary

Introduction

In addition to shovel testing, four previously unrecorded sites were selected for further testing. Two 1-m^2 test units were excavated at 41TG378 to evaluate the integrity of an early Paleoindian component; one unit each at 41TG389 and 41TG410 to evaluate the integrity of possible Late Archaic components; and one unit at 41TG443 to investigate the remains of a probable historic dugout. This appendix provides the results of those investigations. For a detailed description of each site and the results of preliminary shovel testing and surface observations, the reader is referred to Appendices A, B, and D for more information about the three prehistoric sites, and to Chapter 11 for more information about 41TG443.

Methods

All test excavation units were 1 m^2 except for the single unit at 41TG443 (Historic component) which was excavated in feet and inches. Excavation was accomplished with trowels, picks and brushes in arbitrary 10 cm intervals in the prehistoric components, but by stratigraphic levels in the historic component. All sediments were screened through ¼-inch wire mesh. Cultural material other than special samples were placed in paper bags labeled with the site number, provenience, date, and name of excavator(s). Charcoal samples were placed in aluminum foil, and flotation samples were placed in plastic bags. Photographs using color print and slide film were taken. Photographs were recorded on standard photo logs in the field. In addition to photographing general excavation activities, particular attention was given to features, profiles, and plan views.

Artifacts collected in the field were brought to the Center for Archaeological Research (CAR) laboratory on the UTSA campus. Processing of cultural material recovered began with washing and sorting into categories. Individual lithics were sorted by a size chart and counted. The data were entered on a spreadsheet to facilitate distribution analysis. Spreadsheets were designed to sum the various types of artifacts and to calculate relative percentages.

Acid-free labels were placed in all artifact archival-quality bags for curation. Each bag was labeled with a provenience. Stone tools were labeled with permanent ink and covered by a clear coat of acrylic. Artifact bags were separated by class and stored in acid-free boxes. Boxes were labeled with standard labels.

A single flotation sample of 15 liters of sediments was collected from Feature 1, 41TG389 and transported back to San Antonio for processing at the CAR lab. The sediments were poured into plastic buckets, clean water added, and the mixture gently stirred by hand to bring the light fraction to the water's surface. The floated material was then gently skimmed off the surface or poured through a tightly woven chiffon cloth fitted into a fine wire mesh kitchen

colander. The cloth with the light fraction on it was then removed and allowed to dry indoors. After drying, the light fraction was poured from the chiffon cloth through graduated nesting screen sizes of 2 mm, 1 mm, and 0.5 mm respectively. A catchment pan was placed on the very bottom to catch any remains finer than 0.5 mm. Any examination of the processed light fractions was done under sterile conditions. The light fraction was then placed in paper letter envelopes and sent to Dr. Philip Dering of Texas A&M University.

All fire-cracked rock from Feature 1, 41TG389 was collected, brought back to the lab, and was discarded after analysis. No wood charcoal samples were recovered from any of the unit excavations.

Field notes, forms, photographs, and drawings were placed in labeled notebooks. Photographs, slides, and negatives were placed in archival-quality sleeves. All notebooks were stored in acid-free boxes. A copy of the site report and all computer disks pertaining to the investigation of the excavations are stored in an archival box and curated with the field notes and documents. Artifacts, notes, documents, and photographs are permanently housed at the Center for Archaeological Research on The University of Texas at San Antonio campus.

CAR collected 11 core samples from fire-cracked sandstone cobbles in a single feature using a portable rock drill. The cores were oriented according to established paleomagnetic techniques by means of a compass mounted on a goniometer. The elevation of each sample relative to the unit datum was recorded and all samples were identified on a planview map. All samples were analyzed in the Paleomagnetic Laboratory, Department of Geological Sciences, The University of Texas at Austin. All samples were subjected to progressive thermal demagnetization in 50°C steps from 150°C to 500°C. The characteristic directions of magnetization were obtained after inspection of the data in orthogonal vector projections and principal component analysis (e.g., Butler 1992).

Samples for magnetic susceptibility studies were collected in four vertical profiles from three excavation units. For each sample column, a 10-cm vertical face of the unit wall was scraped horizontally with a clean trowel to provide a fresh exposure and avoid possible contamination in the open unit. A tape measure was placed vertically on the trench wall and a >2 cm^3 sample of sediment was taken with a trowel every 3 cm down the face of the unit. The trowel was wiped clean after each sample was taken in order to obtain uncontaminated samples. Samples were collected in plastic bags which were labeled with provenience information. In the laboratory, the samples were placed in 2-cm^3 plastic cubes for measurement in a Bartington (MS2) Magnetic Susceptibility Meter.

Sites Excavated

41TG378

Discussion

A Clovis point base with probable associated debitage, and possibly associated hearth features were found on the surface during the initial survey. Limited shovel testing indicated the potential for buried, intact deposits and thus two 1-m^2 units were excavated at the site. In addition to the two test units, soil susceptibility samples were collected and processed at the Paleomagnetism Laboratory, The University of Texas at Austin (see Appendix J).

Results and Analysis

Test Unit 1 was placed at N992 E991, near the discovery of a Clovis point base on the surface (Figure A-20), and was excavated to a depth of 1.1 m. No prehistoric artifacts were recovered. The recovery of modern glass and a

fishing weight in the upper 20 cm provided evidence of recent disturbance. The results of a vertical soil susceptibility column analysis taken from the north wall provided no indication of a buried occupation surface.

Test Unit 2 was placed upslope from Test Unit 1, at N1028 E1012. One incomplete flake, one utilized flake, and an indeterminate piece of chert debitage were found in the upper 10 cm. However, modern glass found in the same level provided evidence of recent disturbance. Although two additional incomplete flakes and an indeterminate piece of chert were found between 10–20 cm below the surface, they were lying just above sloping bedrock. Excavation was terminated 15–40 cm below the surface on the sloping sandstone bedrock.

Because of the apparent disturbed nature of the flakes found in Unit 2, the absence of cultural material in Unit 1, the lack of evidence for a buried soil in the magnetic susceptibility results (Appendix J), and the geomorphological investigations which indicate that the site is located on a deflated hill slope (see Appendix I), no further work is recommended.

41TG389

Discussion

During the shovel testing phase a Late Archaic-like dart point was recovered from Shovel Test 1 between 0–10 cm below the surface, and all six shovel tests contained artifacts between 0–30 cm. Fire-cracked rock was found in Shovel Test 3 and it also yielded a higher density of flakes relative to the other shovel tests (see Appendix B), thus a single 1-m^2 test unit (N988 E985) was placed nearby (Figure A-31). Archaeomagnetic samples were collected from a fire-cracked rock feature, and soil susceptibility column samples were collected from the east and west walls of the unit.

Results and Analysis

Vertical Distribution of Cultural Remains

A single, complete, ovate-shaped biface measuring 52.61 mm long, 30.50 mm wide, and 12.43 mm thick was found between 30–40 cm below the surface, just above sloping bedrock. It was made from a cobble of fine-grained chert with a few inclusions, and had been heat-treated. It showed evidence of having been reduced to a middle stage of reduction. In addition to the biface, a total of 684 flakes, and two potlids, were also recovered from the single excavation unit. The raw data from the analysis of flakes can be found in Table C-1. Table C-1 provides a summary of mean flake length by depth compared with the Holocene eolian undifferentiated soils recorded by Nordt (see Appendix I).

Table C-1. Vertical distribution of flakes and soils from 41TG389

Depth (cm bs)	∞ Flake Length (mm)	Soil Description
0-6	**19.45** (n=101)	Fine sandy loam, friable, moderate, medium subangular blocky
6-10	18.41 (n=238)	Same
10-20	17.24 (n=196)	Same, with carbonate clasts
20-30	**14.63** (n=98)	Same, with carbonate clasts
30-40	**16.20** (n=20)	Sandy clay loam, firm, moderate, medium, coarse subangular blocky
40-50	**15.02** (n=24)	Same
50-60	**18.09** (n=7)	Carbonate cemented channel gravels at 59 cm

Vertical movement of artifacts through layered sediment and soil packages due to size sorting can be problematic in sandy soils (e.g., Stevenson 1991; Vierra 1998). Basically, larger artifacts tend to remain relatively in place, while smaller artifacts tend to move downward commensurate with their decreasing size. Thus, when examined vertically we would expect that larger artifacts represent an occupation zone, with the increasingly smaller artifacts working their way downward below the occupation zone. At other sites in south and central Texas, Vierra (1998), Nickels et al. (1998:91–92), and Nickels (2000) have examined the vertical movement of artifacts through soil horizons, and they have successfully correlated the data with occupation levels.

Table C-1 suggests the presence of human occupation between 0–6 cm below the surface, within the friable sandy loam. The decreasing mean flake length to 30 cm below the surface implies size sorting. Nordt (Appendix I) has identified a clear, smooth lower boundary to the friable sandy loam about 29 cm below the surface, with a transition to a firm, sandy clay loam, and the increase in mean flake length to 16.2 mm between 30–40 cm corroborates the implication of a possible occupation surface. Finally, although the numbers are much smaller, the increased mean length in the table also suggest a possible occupation zone between 50–60 cm.

Feature 1

Feature 1 was a cluster of fire-cracked sandstone cobbles found between 6–17 cm below the surface, concentrated in the southeastern portion of the unit. Chert debitage and a few mussel shell fragments were found in association, but no charcoal. Eleven core samples drilled and analyzed indicated that the feature was not *in situ*; presumably the rocks represent discard from a perhaps larger feature to the southeast.

The limited data available from both the shovel tests and single excavation unit indicate that the site still maintains a high degree of integrity and with additional investigations there is a high probability of finding buried, intact cultural features and discrete zones which have the potential to provide valuable information on site formation processes, subsistence, and settlement patterns.

41TG410

Discussion

During initial testing, a Frio (Late Archaic) dart point was found in Shovel Test 3 between 40–50 cm below the surface (see Appendix F), and a single radiocarbon assay obtained from charcoal found between 30–40 cm below the surface in Shovel Test 2 yielded a date of 460±40 BP (see Appendix H). A single 1-m^2 test unit (N997 E992) was placed adjacent to the shovel test (Figure A-53) to investigate the possibility of intact features and other cultural material in association with the point. The 1-m^2 test unit was excavated to 1 m below the surface.

Results and Analysis

A total of ten flakes were recovered from the unit, but no fire-cracked rock or other cultural material. All of the flakes were made from chert and none exhibited evidence of heat treating; their attributes are shown in Table C-2. The sample size is extremely small and thus any attempted analysis is problematic. However, the number of flakes with multi-faceted platforms, no cortex, and multiple dorsal scars suggests that middle to late stage bifacial reduction activities were occurring at the site. The presence of a rejuvenation flake and an expedient, utilized flake suggest at least a short-term domestic occupation during which some food processing may have occurred. The continuum of recovered flakes between 30–90 cm did not provide a firm indication of distinct, stratified occupation levels, but does suggest that the site may have been occupied either continuously or intermittently for an extended period of time.

Table C-2. Attributes of flakes recovered from 41TG410

Depth (cm bs)	Complete?	Length (mm)	Thickness (mm)	# Platform Facets	Cortex %	# Dorsal Scars	Comments
10-20	No	11.53	3.26	3	100	0	
30-40	No	8.81	5.29	0	0	9	
30-40	No	15.79	3.40	0	90	1	
30-40	No	9.42	1.75	1	0	2	Rejuvination
40-50	No	17.32	5.20	0	90	1	
40-50	Yes	24.06	3.56	4	10	2	
40-50	No	31.36	6.13	1	1	4	Utilized
50-60	No	16.59	2.01	0	0	1	
60-70	Yes	28.71	5.24	4	0	3	
80-90	Yes	25.73	2.52	2	0	3	

The limited data available from both the shovel tests and single excavation unit indicate that the site still maintains a high degree of integrity and with additional investigations there is a high probability of finding buried, intact cultural features and discrete zones which have the potential to provide valuable information on site formation processes, subsistence, and settlement patterns.

41TG443

Discussion

A noticeable rectangular depression with a rock alignment in front on the southern portion of the site suggested a possible cellar or dugout had been excavated into the shallow sediments just off the edge of the limestone shelf. A single shovel test within the depression revealed what appeared to be a wooden floor or a collapsed roof of a possible dugout structure. A single 1-m^2 test unit was placed near the rock alignment at what was surmised to be the entryway on the southern end of the structure (Figure 11-9). The unit was excavated to two inches below the wood layer, into sterile silty loam.

Results and Analysis

Artifacts collected from the single excavation unit include: From level 1 (0–4 inches), two clear glass sherds that probably date after the 1930s (Kendrick 1967:24; Munsey 1970:55); from Level 3 (5–6 inches), one small whiteware sherd, and a metal wire handle that may have been attached to a pail, and; from Level 4 (6–7 inches), five heavily corroded and unidentifiable metal fragments.

Based on the thickness and paste, the ceramic sherd appears to be whiteware from either a plate or saucer. The whiteware attributes along with a flowing blue pattern date its usage ca. 1880–1900 (Blake and Freeman 1998:18). Based on its context with other artifacts and within the probable dugout at the site, but without a maker's mark or more of the pattern on the sherd, this time frame is presumed (see Chapter 11).

The research value of this site is considered high. This site may represent one of the earliest historic occupations in the San Angelo/Twin Buttes area. The presence of a dugout that may still have an intact floor is rare. The presence of flaked glass is uncommon, but appears to be a recurring theme, with flaked glass found also at 41TG437 and 41TG445. Without further testing and the recovery of diagnostic stone tools or means of absolute dating, the possibility that the lithic assemblage at the site may be historic or protohistoric cannot be ruled out.

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Appendix D:
Twin Buttes Archaeological Project

Surface Observation Data

This appendix presents information on the surface observation area (SOA) procedure. As discussed in Chapter 9, Volume 1, the goal of the SOA effort was to generate quantitative data on artifacts during the essentially non-collection survey. A series of elements were noted on each of the surface items. The attributes had to be sufficiently general such that a variety of different individuals with different backgrounds in chipped stone analysis and different levels of training could consistently record the attributes. In addition, the process had to be done quickly, maximizing the number of items recorded and the number of areas that could be investigated. Consequently, common reduction terms such as "biface thinning flake" and "preform" were avoided as the application of a specific set of criteria to several thousand flakes would have taken significant time and a substantial amount of inconsistency would certainly be introduced during the recording procedure. The attributes which were eventually selected were pared down from a more detailed list after evaluating initial tests for consistency of recording between individuals. The attributes selected included artifact types defined primarily by morphological attributes (e.g., flake, biface, uniface, retouched and/or utilized flake), maximum length and width of the artifact in 1 cm intervals, percentage of cortex on chipped stone items in ordinal groups (i.e., 0%, 1–25%, 26–50%, 51–75%, 76–99%, 100%), and material type. Forms and definitions of specific attributes used during the surface observation are presented in Appendix K.

Site and Area Selection

Sites were selected for inclusion in the sample based on both surface density and location. As our concern was generating quantitative data, those sites which were essentially defined in cutbanks or those sites noted as having few surface artifacts were generally not included in the sample. In addition, we wanted to acquire data from throughout the project area. We recorded artifacts from a total of 131 separate surface observation areas from 97 different sites. As demonstrated in Chapter 9, Figure 9-1, Volume 1, the sites blanket all areas of Twin Buttes Reservoir.

Once a site was selected as a candidate for one or more surface observation areas, a quick inspection of the surface was made with special attention to areas of differential density and exposure. Based on this inspection, one or more areas were arbitrarily selected for observation. In areas of high density, the usual procedure was to establish a circle with a three meter radius as the collection area. With lower densities, areas of various sizes and configurations were established. The boundaries of these areas were then mapped using a GPS unit. In several cases (e.g., 41TG465), the entire site was inventoried.

Once established, closely spaced transects were slowly made across the area by two to three person crews. All artifacts within a SOA were identified by the use of pin flags. Red pin flags were used for all debitage, and all tools and cores were marked with yellow pin flags. Artifacts were then recorded using the form and definitions outlined in Appendix K. Note that Dr. Raymond Mauldin recorded all tools and cores, in order to reduce the potential impact of different recorders on this category.

Table Explanation

The following table presents information on the 131 separate SOA's. A total of 18 different columns are presented. Each of these fields is discussed below. Definitions for cores, bifaces, unifaces, tested cobbles, and utilized/retouched flakes can be found in Appendix K.

41TG#: State of Texas archaeological trinomial number.

SOA #: Number assigned to each SOA within the site.

Exposure (Exp.) Level: The exposure designation was made in the field by Dr. Raymond Mauldin. A designation of 1 suggests that the surface was not exposed, being characterized either by vegetation that obscured artifacts or by what appeared to be some buildup of sediment. A designation of 2 was assigned to those areas that had both little or no vegetation and evidence of some erosion. These cases frequently were shorelines consisting of extensive gravel deposits, exposed conglomerate, ridge tops with little deposition, and areas with bedrock exposed on the surface.

Tert. Flakes: Number of flakes without cortex observed within the SOA.

Secon. Flakes: Number of flakes with more than 1% and less than 50% cortex observed in the SOA.

Prim. Flakes: Number of flakes with more than 50% cortex observed in the SOA.

Cores with: Number of cores with cortex present in the SOA.

Tested Cobbles: Number of tested cobbles observed in the SOA.

Uniface with: Number of unifaces with cortex present.

Utilized with: Number of utilized or retouched flakes with cortex observed in the SOA.

Cores without: Number of cores without cortex present in the SOA.

Biface with: Number of bifaces with cortex observed in the SOA.

Utilized without: Number of utilized or retouched flakes without cortex observed in the SOA.

Biface without: Number of bifaces without cortex observed in the SOA.

Uniface without: Number of unifaces without cortex present

Metate Frag.: Number of metates, including any metate fragments, observed in the SOA.

Mano: Number of manos, including any fragments, observed in the SOA.

Hammer Stone: Number of hammer stones observed in SOA.

Table D-1. Surface Observation Area (SOA) Data

41TG #	SOA #	Exp. Level	Tert. Flakes	Secon. Flakes	Prim. Flakes	Cores with	Tested Cobbles	Uniface with	Utilized with	Cores without	Biface with	Utilized without	Biface without	Uniface without	Metate Frag.	Mano	Hammer Stone
106	1	2	331	47	30	13	1	0	3	4	2	3	0	2	0	0	0
109	1	2	2183	215	51	15	0	3	7	3	3	12	4	0	0	0	0
110	1	1	75	38	7	5	2	2	5	1	0	5	1	1	0	0	0
110	2	1	113	63	23	7	1	1	6	2	0	3	3	0	0	0	0
160	1	1	29	29	19	5	3	0	1	0	0	0	0	0	0	0	0
244	1	2	163	65	30	12	3	0	4	0	3	4	2	0	0	0	0
244	2	1	40	23	13	6	0	0	1	1	1	0	0	0	0	0	0
244	3	1	6	5	4	8	0	0	0	0	0	0	0	0	0	0	0
245	1	1	96	21	24	17	4	1	3	2	0	1	0	0	0	0	0
246	1	1	17	7	4	11	0	1	3	1	0	1	1	1	0	0	0
246	2	2	248	56	11	3	0	3	5	0	0	1	1	2	0	0	0
246	3	1	22	7	4	10	4	2	1	0	1	1	2	3	0	0	0
247	1	2	1050	122	50	21	0	1	1	4	1	7	2	4	0	0	0
247	2	1	27	13	7	1	0	1	1	0	1	0	1	0	0	0	0
247	3	2	25	17	11	2	3	0	0	0	1	0	1	1	0	0	0
250	1	1	10	4	7	4	0	0	0	0	2	0	0	0	0	0	0
251	1	1	20	7	4	3	2	1	0	0	0	0	0	0	0	0	0
252	1	1	44	19	13	6	2	0	1	0	1	3	0	0	0	0	0
252	2	1	41	7	2	0	0	2	1	1	0	0	2	0	0	0	0
253	1	1	269	45	14	6	1	4	1	1	2	1	1	0	0	0	0
359	1	1	11	33	17	4	6	1	5	0	0	0	0	0	0	0	0
359	2	1	3	6	5	0	1	0	0	0	0	0	0	0	0	0	0
361	1	1	20	20	22	16	8	0	3	1	1	1	0	0	0	0	0
361	2	1	9	19	8	8	6	0	5	0	2	1	1	0	0	0	0
362	1	1	3	8	5	7	3	0	0	0	0	0	1	0	0	0	0
362	2	1	3	15	3	4	0	0	1	1	1	0	0	0	0	0	0
365	1	2	73	43	9	5	1	2	3	0	0	1	0	1	0	0	0
367	1	1	68	26	11	1	0	3	0	1	0	1	1	0	0	0	0
368	1	1	52	31	8	3	1	1	3	1	0	2	0	2	0	0	0
372	1	1	33	26	14	4	1	2	3	0	0	5	1	1	0	0	0
373	1	1	40	2	4	1	0	0	0	0	0	0	0	0	0	0	0
374	1	1	8	1	1	1	0	0	0	0	0	0	0	0	1	0	0
375	1	1	11	8	1	0	0	1	0	0	0	0	0	0	1	0	0

Table D-1. continued…

41TG #	SOA #	Exp. Level	Tert. Flakes	Secon. Flakes	Prim. Flakes	Cores with	Tested Cobbles	Uniface with	Utilized with	Cores without	Biface with	Utilized without	Biface without	Uniface without	Metate Frag.	Mano	Hammer Stone
378	1	1	19	8	5	1	1	0	0	0	0	1	1	0	0	0	0
378	2	1	55	36	11	8	0	0	6	5	0	2	0	0	0	0	0
385	1	2	7	29	16	6	8	0	1	1	1	0	1	1	0	0	0
385	2	2	8	23	5	2	1	0	0	0	0	0	2	0	0	0	0
385	3	2	16	16	3	0	0	0	0	0	0	0	0	0	0	0	0
385	4	2	35	39	8	4	4	0	1	0	0	1	1	0	0	0	0
386	1	1	8	7	11	2	1	0	1	0	0	0	0	0	0	0	0
388	1	1	101	51	24	12	5	3	8	0	2	6	2	1	0	0	0
388	2	1	63	30	19	5	3	1	5	4	0	3	1	0	0	0	0
389	1	1	203	111	32	13	3	3	8	0	1	9	1	0	0	0	0
389	2	1	67	56	16	10	1	2	7	0	0	9	1	1	0	0	0
391	1	2	55	33	9	3	0	0	0	0	0	1	4	1	0	0	0
392	1	1	29	30	31	16	5	2	2	0	0	0	0	0	0	0	0
395	1	1	23	33	10	3	0	2	1	1	1	1	3	3	0	0	0
397	1	1	20	39	38	11	7	0	3	1	3	2	4	0	0	0	0
397	2	2	29	44	28	9	1	0	5	0	2	0	1	0	0	0	0
400	1	2	52	62	22	11	0	2	9	1	1	2	6	0	0	0	0
404	1	1	28	43	19	11	1	0	1	0	2	1	1	0	0	0	0
404	2	1	37	50	26	10	1	0	2	1	0	3	3	0	0	0	0
405	1	2	142	51	22	1	0	1	7	1	0	7	3	3	0	0	0
405	2	2	204	94	56	7	1	6	9	0	3	8	2	1	0	0	0
408	1	1	74	65	38	8	3	2	2	0	0	1	1	0	0	0	0
409	1	2	52	8	2	0	0	0	0	0	0	0	0	0	0	0	0
409	2	2	208	48	16	0	0	0	0	0	0	0	1	0	0	0	0
411	1	2	101	16	8	1	0	0	1	1	1	2	1	0	0	0	0
411	2	2	198	39	18	2	0	0	4	0	2	4	1	0	0	0	0
412	1	1	102	24	19	4	1	0	1	0	2	4	0	0	0	0	0
412	2	1	62	21	14	2	2	2	1	2	1	8	1	0	1	0	0
414	1	2	511	84	37	2	0	6	14	0	3	4	2	1	0	0	1
419	1	1	65	47	20	5	2	0	3	1	0	3	2	1	0	0	0
420	1	1	6	9	1	1	0	0	1	0	0	1	0	0	0	0	0
421	1	1	8	4	2	0	0	0	0	0	0	0	0	0	0	0	0
423	1	1	23	34	36	7	2	0	4	0	3	2	1	0	0	0	0

Table D-1. continued…

41TG #	SOA #	Exp. Level	Tert. Flakes	Secon. Flakes	Prim. Flakes	Cores with	Tested Cobbles	Uniface with	Utilized with	Cores without	Biface with	Utilized without	Biface without	Uniface without	Metate Frag.	Mano	Hammer Stone
424	1	1	10	3	0	0	0	0	0	0	0	0	0	0	0	0	0
424	2	1	74	24	10	4	0	3	1	0	0	0	0	0	1	1	0
424	3	1	215	80	14	4	3	0	8	2	0	6	1	1	0	1	0
424	4	1	110	54	5	7	3	0	3	0	0	6	1	0	0	0	0
427	1	2	786	109	31	10	1	3	7	2	3	9	1	2	0	0	0
430	1	1	130	49	16	9	4	1	6	0	2	4	2	0	0	0	0
437	1	2	93	41	9	3	0	1	2	0	2	0	0	0	0	0	0
441	1	2	23	12	5	1	2	0	0	0	0	0	3	0	0	0	0
443	1	1	18	20	1	5	0	0	1	1	1	0	0	0	0	0	0
447	1	1	158	32	12	4	0	2	2	1	1	7	1	1	0	0	0
448	1	1	19	38	21	4	4	1	7	0	0	1	0	0	0	0	0
449	1	1	264	55	27	0	0	0	6	0	2	1	5	1	0	0	0
456	1	1	49	58	32	13	6	2	6	1	1	1	0	0	0	0	0
456	2	2	33	44	16	7	2	2	5	0	1	2	0	4	0	0	0
461	1	1	10	13	4	2	7	0	6	1	3	1	1	0	0	0	0
461	2	2	47	54	10	5	1	2	5	2	1	7	1	0	0	0	0
464	1	1	35	57	16	6	2	7	5	1	1	0	0	0	3	0	1
465	1	1	73	5	4	4	0	0	4	1	1	0	1	1	0	0	0
466	1	1	60	29	13	7	4	1	1	0	0	0	0	0	0	0	0
467	1	1	105	32	15	5	1	1	3	1	0	1	3	0	0	0	0
467	2	1	65	24	4	0	1	0	4	0	1	2	1	0	0	0	0
468	1	1	138	125	61	9	2	3	10	0	1	6	2	0	2	0	2
471	1	1	82	42	12	3	0	2	3	0	0	1	1	1	0	0	0
472	1	1	37	25	14	12	0	1	8	2	0	2	0	2	0	0	0
474	1	1	54	22	5	3	1	0	0	0	0	0	3	0	0	0	0
478	1	1	50	26	6	2	0	2	2	0	0	0	0	0	0	0	0
479	1	1	50	26	8	5	1	1	1	0	0	0	0	0	0	0	0
482	1	2	44	33	10	3	1	0	0	1	1	0	0	1	0	0	0
483	1	2	9	13	3	2	0	1	1	0	0	0	0	0	0	0	0
485	1	2	184	34	17	3	0	1	0	1	1	0	3	0	0	0	0
489	1	1	83	47	15	0	0	0	2	3	1	1	4	0	0	0	0
491	1	1	56	19	4	1	0	0	1	0	1	0	0	0	0	0	0
495	1	1	32	36	32	5	1	0	3	1	0	0	1	0	0	0	0

Table D-1. continued…

41TG #	SOA #	Exp. Level	Tert. Flakes	Secon. Flakes	Prim. Flakes	Cores with	Tested Cobbles	Uniface with	Utilized with	Cores without	Biface with	Utilized without	Biface without	Uniface without	Metate Frag.	Mano	Hammer Stone
496	1	1	41	35	15	1	7	0	2	0	2	0	1	0	0	0	0
497	1	1	15	11	6	0	1	1	1	0	0	0	0	0	0	0	0
500	1	1	112	44	18	4	1	0	1	1	0	0	1	0	0	0	0
500	2	1	60	23	10	1	0	0	1	0	0	0	0	1	0	0	0
500	3	1	87	39	25	2	0	1	3	0	0	1	2	0	0	0	0
504	1	2	302	34	11	2	0	0	0	1	0	0	0	0	0	0	0
504	2	2	188	12	2	0	0	0	0	0	0	2	1	0	0	0	0
506	1	1	151	34	20	2	0	0	3	2	4	1	5	1	0	0	0
507	1	1	14	15	5	4	5	0	1	0	1	0	0	0	0	0	0
508	1	1	7	3	0	0	2	0	0	0	0	0	1	0	0	0	0
509	1	1	9	4	6	0	0	0	0	0	0	0	0	0	0	0	0
511	1	1	25	8	6	3	0	0	0	0	1	0	2	0	0	0	0
512	1	1	331	51	9	11	0	2	1	3	2	2	0	1	0	0	0
513	1	1	140	11	2	1	0	0	0	1	0	0	5	0	0	0	0
514	1	1	22	9	4	5	0	0	2	0	0	1	0	1	0	0	0
515	1	2	51	33	19	6	3	0	0	0	3	1	0	0	0	0	0
518	1	2	101	28	12	2	0	1	4	1	1	6	1	1	0	0	0
518	2	2	135	52	19	4	1	0	8	3	0	12	2	1	0	0	0
519	1	2	360	63	18	0	0	1	2	0	0	3	2	1	0	0	0
520	1	1	4	4	9	5	0	0	0	0	0	0	0	0	0	0	0
522	1	1	4	11	2	2	0	0	2	0	0	2	0	0	0	0	0
523	1	2	22	12	5	2	1	1	0	0	0	0	0	0	0	0	0
523	2	2	15	22	14	1	1	0	0	0	0	2	2	0	0	0	0
524	1	1	14	11	17	10	4	1	6	0	0	1	1	1	0	0	0
525	1	1	22	13	5	6	0	0	1	1	0	0	1	0	0	0	0
526	1	1	48	25	8	6	1	1	5	1	0	1	3	2	0	0	0
527	1	2	6	6	7	1	0	0	1	0	0	1	0	1	0	0	0
528	1	1	11	9	6	3	0	0	2	0	0	1	1	1	0	0	0
530	1	1	30	24	15	9	3	0	3	0	0	1	1	0	0	0	0
531	1	1	110	63	20	7	1	1	3	1	3	2	5	0	0	0	0
533	1	1	172	48	12	2	0	1	4	1	1	4	4	0	0	0	0
535	1	1	56	17	15	2	1	0	1	2	0	1	0	0	0	0	0

Appendix E:
Twin Buttes Archaeological Project

Data on all Bifaces Observed and/or Collected

Table E-1 provides data on 294 bifaces observed and/or collected on the Twin Buttes survey. Ten different columns are present.

41TG#: State of Texas archaeological site trinomial. Isolated items are designated as 0.

Complete Length: 1 = length measurement is complete; 0 = length measurement is partial.

Length cm.: Maximum length in cm.

Complete Width: 1 = width measurement is complete; 0 = width measurement is partial.

Width cm.: Maximum width in cm.

Complete Thickness: 1 = thickness measurement is complete; 0 = thickness measurement is partial.

Thickness cm.: Maximum thickness in cm.

Biface Shape: 0 = irregular; 1 = round to oval in outline; 3 = diamond shaped; 4 = leaf shaped; 5 = other; 8 = projectile point.

Cortex Present: 0 = no cortex; 1 = less than 50% cortex cover; 2 = more than 50% cortex cover.

Material Types: The vast majority of the material was coded as 1 – which is either gray, brown, or blue-gray. Codes 2 and 4 are white and/or pale white. Code 3 is either pinkish or red; often heat-treated. Code 9 is any other color.

Table E-1. Data on Bifaces Observed and/or Collected During the Twin Buttes Survey

41TG #	Complete Length	Length cm.	Complete Width	Width cm.	Complete Thickness	Thickness cm.	Biface Shape	Cortex Present	Material Types
0	0	3.111	0	3.788	1	1.022	0	0	2
0	1	8.667	1	5.891	1	1.233	0	1	1
0	1	4.010	0	2.730	1	.669	3	0	1
0	1	4.726	1	2.308	1	.722	4	0	1
0	0	3.522	0	2.175	1	.648	8	0	1
0	1	4.229	0	2.998	1	.633	8	0	9
0	1	4.710	1	3.244	1	.617	8	0	9
0	0	4.744	1	3.683	1	1.023	8	0	9
0	1	5.578	1	3.061	1	.748	8	0	9
0	0	4.518	1	4.304	1	.760	8	0	1
106	1	6.010	1	3.820	1	1.910	4	1	1
106	1	6.460	1	4.150	1	1.540	4	2	1
109	0	3.350	1	3.860	1	.700	0	0	9
109	0	3.930	1	3.970	1	1.700	0	0	1
109	1	4.950	1	3.510	1	.820	1	1	3
109	1	5.980	1	4.380	1	1.270	1	1	1
109	1	7.140	1	3.980	1	1.790	4	1	1
109	1	2.640	1	2.000	1	.610	8	0	3
110	0	3.013	0	2.360	0	.560	0	0	1
110	0	3.040	0	6.470	1	2.900	0	0	1
110	0	4.750	1	4.030	1	1.860	0	0	1
110	1	2.960	1	1.290	1	.380	8	0	9
244	0	4.060	1	3.030	1	.720	0	0	1
244	1	6.310	1	3.900	1	1.090	1	2	1
244	1	6.926	1	4.135	1	2.078	4	0	9
244	1	2.890	1	1.620	1	.030	8	0	1
244	1	12.210	1	4.830	1	2.530	4	1	1
246	0	2.060	1	2.810	1	.590	0	0	1
246	0	2.560	1	2.960	1	.720	0	0	1
246	0	4.050	1	2.180	1	1.080	0	0	1
246	1	7.880	1	4.160	1	1.640	4	0	1
246	0	2.981	1	2.179	1	.610	8	0	1
247	0	8.390	0	6.100	0	1.500	0	1	1
247	0	1.990	0	1.905	1	.582	8	0	1
247	1	3.760	1	2.576	1	.784	8	0	1
247	0	4.190	1	3.250	1	.970	0	0	1
247	1	6.910	1	4.620	1	2.610	1	2	1
247	0	7.810	1	5.250	1	1.380	0	1	1
247	1	4.250	1	3.150	1	.760	5	0	1
250	1	7.190	1	4.190	1	1.360	4	1	1
250	1	9.120	1	4.660	1	1.160	4	1	1
252	0	2.646	1	2.067	1	.544	5	0	1
252	0	3.977	1	2.585	1	.604	8	0	1
252	1	5.250	1	3.460	1	1.020	4	0	1
252	1	6.060	1	3.510	1	.710	4	0	1
252	1	6.150	1	4.590	1	2.110	5	1	9
253	0	2.460	1	2.580	1	.630	0	0	4
253	1	5.280	1	4.790	1	1.490	1	1	1
253	1	6.100	1	4.250	1	1.770	1	1	1
253	1	4.824	1	2.599	1	.659	8	0	1
362	0	4.440	1	3.440	1	.664	0	0	1

Table E-1. continued…

41TG #	Complete Length	Length cm.	Complete Width	Width cm.	Complete Thickness	Thickness cm.	Biface Shape	Cortex Present	Material Types
362	0	2.393	0	2.235	1	.783	8	0	1
364	0	3.197	1	3.661	1	.723	8	0	1
365	0	3.570	1	3.230	1	.712	8	0	1
367	0	2.800	1	2.810	1	.640	0	0	1
367	0	1.550	0	1.870	1	.504	8	0	9
367	0	1.976	0	2.501	0	.485	8	0	1
367	0	3.130	1	3.610	1	.645	8	0	1
369	0	3.170	0	1.713	1	.377	0	0	1
370	0	4.490	1	2.320	1	.834	0	0	1
372	0	3.250	1	7.480	1	2.360	0	0	1
373	0	3.996	0	2.995	1	.636	0	0	1
378	0	4.636	1	3.514	1	.806	0	0	1
378	0	5.110	1	3.490	1	1.150	0	0	1
378	0	4.373	1	2.442	1	.744	5	1	1
378	0	3.409	1	2.559	1	.734	8	0	1
381	1	5.063	1	2.729	1	.711	8	0	1
382	1	5.626	1	2.703	1	.835	1	0	1
382	1	7.047	1	3.211	1	.659	8	0	1
385	0	3.660	1	5.230	1	1.960	0	0	1
385	0	4.690	1	4.760	1	2.020	0	1	1
385	1	6.300	1	2.970	1	1.650	4	0	1
385	1	6.550	1	5.090	1	1.090	4	0	1
388	0	4.020	1	4.920	1	.990	0	0	1
388	0	7.500	1	6.020	1	1.910	0	0	1
388	0	7.500	1	7.550	1	2.250	0	1	1
388	1	5.920	1	6.020	1	2.290	1	0	1
388	1	9.250	1	8.340	1	3.420	1	1	4
388	1	4.542	1	3.072	1	.505	8	0	1
389	0	5.700	1	3.990	1	1.140	0	0	1
389	1	7.890	1	4.900	1	1.880	1	1	1
389	0	.862	0	1.521	1	.386	8	0	1
389	0	3.530	0	2.482	1	.557	8	0	1
390	0	3.543	1	3.031	1	.417	8	0	1
391	0	3.210	1	3.110	1	1.010	0	0	1
391	0	5.100	1	3.250	1	.690	0	0	1
391	1	7.480	1	3.790	1	1.070	4	0	9
391	0	3.371	1	2.569	1	.609	8	0	1
395	1	9.320	1	8.410	1	2.580	1	0	1
395	1	8.190	1	6.220	1	2.520	4	0	9
395	1	11.640	1	7.800	1	2.430	4	1	1
395	0	.830	0	.930	1	.120	8	0	9
397	0	4.000	1	6.300	1	1.890	0	0	1
397	0	4.440	1	4.690	1	1.950	0	1	1
397	0	4.930	1	8.310	1	1.860	0	1	2
397	0	5.430	1	4.130	1	1.640	0	0	1
397	0	6.930	0	4.980	1	2.290	0	0	1
397	1	12.660	1	10.210	1	1.960	0	0	4
397	1	13.260	1	9.360	1	2.350	1	1	1
397	1	7.350	1	5.220	1	2.660	4	1	1
397	1	9.920	1	4.530	1	2.360	4	1	1
400	0	2.770	0	5.640	1	1.810	0	0	1

Table E-1. continued…

41TG #	Complete Length	Length cm.	Complete Width	Width cm.	Complete Thickness	Thickness cm.	Biface Shape	Cortex Present	Material Types
400	0	3.170	1	3.370	1	.735	0	0	1
400	1	5.350	1	4.220	1	1.400	1	0	1
400	1	6.840	1	3.310	1	1.800	1	0	2
400	1	3.090	1	1.800	1	.710	4	0	1
400	1	5.740	1	3.110	1	1.490	4	0	1
400	1	11.140	1	4.970	1	2.820	4	1	1
404	1	5.760	1	3.010	1	1.780	0	0	1
404	1	5.560	1	4.690	1	2.950	1	1	1
404	1	8.710	1	5.350	1	2.790	1	0	9
404	1	8.820	1	6.780	1	2.730	1	1	1
404	1	4.850	1	3.810	1	.880	4	0	2
404	1	9.550	1	4.830	1	2.230	4	0	1
404	1	4.077	1	2.317	1	.554	8	0	1
405	0	1.750	0	2.520	1	.710	0	0	1
405	0	3.510	1	2.910	1	.580	0	0	1
405	0	3.670	0	3.810	1	.900	0	0	1
405	1	5.250	1	3.410	1	2.050	1	1	1
405	1	8.240	1	5.850	1	2.290	1	1	9
405	1	5.690	1	4.080	1	1.990	4	0	1
405	1	8.360	1	7.110	1	1.900	5	1	1
405	0	1.341	0	1.836	1	.750	8	0	1
405	0	2.400	1	2.510	1	.250	8	0	1
408	0	3.330	1	2.400	1	.380	0	0	1
409	0	1.300	0	1.990	1	.640	8	0	1
410	1	5.043	1	3.206	1	.548	8	0	1
411	0	1.980	1	2.110	1	.270	0	0	1
411	0	3.870	1	4.520	1	1.250	0	1	1
411	0	4.170	1	4.700	1	2.330	0	1	1
411	0	7.850	1	4.330	1	2.390	4	1	1
412	0	5.240	1	5.380	1	2.060	0	1	1
412	0	5.710	1	4.160	1	1.090	1	1	1
412	1	6.350	1	3.890	1	1.620	1	1	1
412	1	4.210	1	2.880	1	1.330	4	0	1
412	0	2.760	1	2.876	1	.713	8	0	1
412	0	3.072	1	2.609	1	.707	8	0	1
412	0	3.097	1	2.851	1	.643	8	0	1
413	0	3.458	1	2.399	1	.755	8	0	1
414	0	3.370	1	2.710	1	1.120	0	1	1
414	0	4.480	0	3.310	1	1.650	0	2	2
418	0	3.270	1	2.947	1	.646	8	0	1
419	1	7.100	1	5.370	1	1.100	0	0	1
419	0	6.400	1	5.830	1	2.780	1	0	9
423	0	5.960	1	4.370	1	2.250	0	1	1
423	1	6.840	1	5.310	1	1.170	4	1	1
423	1	7.660	1	4.890	1	3.970	4	0	1
423	1	8.230	1	5.220	1	2.050	4	2	1
424	0	3.870	1	2.900	1	.700	0	0	1
424	0	1.210	1	.590	1	.180	8	0	1
424	0	2.809	0	1.296	1	.020	8	0	1
424	1	4.690	1	4.065	1	.681	8	0	1
424	0	5.899	1	3.562	1	.850	8	0	1

Table E-1. continued…

41TG #	Complete Length	Length cm.	Complete Width	Width cm.	Complete Thickness	Thickness cm.	Biface Shape	Cortex Present	Material Types
427	0	3.230	1	4.210	1	1.070	0	1	1
427	0	6.290	1	3.840	1	1.280	0	1	1
427	1	6.220	1	5.240	1	2.260	1	1	1
427	1	7.270	1	5.880	1	2.230	1	0	1
427	0	2.620	1	1.860	1	.458	8	0	9
427	0	2.686	1	2.327	1	.642	8	0	1
427	1	3.310	0	1.888	1	.524	8	0	9
429	1	9.693	1	5.862	1	1.273	1	0	1
430	0	2.620	0	5.100	1	1.020	0	0	1
430	1	4.970	1	4.760	1	1.100	1	1	1
430	1	6.420	1	3.550	1	2.050	4	1	1
430	1	4.280	1	4.790	1	.750	5	0	1
437	0	4.460	1	4.510	1	1.310	0	1	1
437	1	8.240	1	3.250	1	2.050	4	1	1
440	1	5.722	1	3.338	1	.965	8	0	1
441	0	3.360	0	5.190	1	2.050	0	0	1
441	0	6.630	1	3.760	1	1.020	0	0	1
441	1	6.660	1	5.130	1	1.080	5	0	1
443	0	4.360	1	3.820	1	1.870	0	1	1
447	0	2.810	1	4.980	1	1.280	0	1	1
447	0	5.340	0	5.170	1	1.280	0	0	1
447	0	5.763	1	2.501	1	.646	4	0	1
449	0	3.020	1	5.950	1	1.260	0	0	1
449	0	4.680	1	4.730	1	1.990	0	0	1
449	0	5.080	1	4.480	1	2.020	0	1	1
449	0	5.390	1	5.450	1	.510	0	0	1
449	1	4.690	1	4.330	1	1.360	1	1	1
449	1	4.310	1	4.290	1	.990	3	0	1
449	1	8.080	1	4.780	1	1.350	4	0	1
456	0	3.570	0	7.200	1	1.710	0	1	1
456	0	5.690	1	5.650	1	1.830	0	1	1
461	0	4.500	1	4.550	1	2.090	0	1	1
461	0	4.500	1	4.670	1	1.520	0	0	1
461	0	5.500	1	4.610	1	1.330	0	0	1
461	0	6.500	1	5.970	1	2.440	0	1	1
461	0	6.500	1	6.300	1	1.160	0	2	1
461	0	7.500	1	6.680	1	2.490	0	1	1
464	1	9.720	1	4.750	1	2.270	4	1	1
465	0	5.490	1	3.200	1	1.580	0	1	1
465	1	5.450	1	3.210	1	1.370	4	0	1
467	0	2.620	1	4.600	1	1.800	0	1	1
467	0	3.410	0	2.760	1	.750	0	0	1
467	0	3.950	1	2.470	1	.770	0	0	1
471	1	5.460	1	2.900	1	1.250	4	0	1
474	0	5.360	1	3.270	1	1.160	0	0	1
474	0	5.830	1	4.320	1	1.050	0	0	1
474	1	5.390	1	3.690	1	.940	4	0	1
481	1	4.003	0	2.597	1	.709	8	0	1
482	1	7.350	1	5.860	1	2.180	4	2	1
485	0	4.130	0	2.430	1	.810	0	0	1
485	0	4.770	0	2.950	1	.570	0	0	1

Table E-1. continued…

41TG #	Complete Length	Length cm.	Complete Width	Width cm.	Complete Thickness	Thickness cm.	Biface Shape	Cortex Present	Material Types
485	1	5.190	1	4.860	1	1.520	1	1	9
485	1	3.737	1	3.408	1	.591	4	0	1
485	0	2.430	0	1.190	1	.450	8	0	1
486	0	1.953	1	2.979	1	.689	0	0	1
488	1	4.279	1	1.728	1	.759	8	0	1
489	0	2.830	0	3.400	1	.660	0	0	1
489	0	3.930	0	3.800	1	.910	0	1	9
489	1	4.730	1	3.810	1	.580	4	0	1
489	1	5.400	1	3.590	1	1.200	4	0	1
489	1	5.850	1	4.510	1	1.820	5	0	1
489	1	3.770	1	2.407	1	.803	8	0	1
489	0	4.207	1	2.491	1	.709	8	0	1
491	1	6.400	1	3.200	1	1.330	0	1	1
495	1	11.950	1	5.010	1	2.970	4	0	1
496	0	2.650	1	.870	1	.480	0	0	1
496	0	5.600	1	4.740	1	1.400	0	1	1
496	1	6.180	1	5.430	1	1.670	1	1	1
497	1	5.876	1	3.343	1	.808	8	0	1
500	0	2.160	1	2.010	1	.340	0	0	9
500	0	2.990	1	2.280	1	.850	0	0	1
500	1	6.600	1	6.160	1	1.350	1	0	1
504	1	5.060	1	3.493	1	.572	3	0	2
504	0	1.120	0	.500	0	.790	8	0	1
504	0	2.810	1	2.561	1	.816	8	0	9
506	0	1.630	1	1.570	1	.420	0	0	1
506	0	1.990	0	2.110	1	.250	0	0	9
506	0	2.740	1	4.640	1	.950	0	1	1
506	0	2.940	1	3.110	1	.710	0	0	9
506	0	3.070	1	1.910	1	.620	0	0	3
506	0	3.370	0	5.280	1	.960	0	0	1
506	0	4.490	1	3.350	1	1.100	0	1	1
506	1	7.180	1	3.980	1	1.270	1	2	1
506	1	4.940	1	5.040	1	1.220	5	1	1
506	0	2.688	1	1.667	1	.717	8	0	9
506	0	2.962	1	2.124	1	.347	8	0	2
507	1	7.110	1	5.490	1	1.220	1	1	1
508	1	6.380	1	4.080	1	1.080	4	0	1
511	0	3.190	1	2.940	1	.600	0	0	1
511	0	4.650	1	2.440	1	1.690	0	0	1
511	1	5.710	1	4.830	1	1.660	1	1	9
512	0	3.590	1	4.690	1	2.770	0	1	1
512	1	5.250	1	4.290	1	1.160	5	1	9
512	0	5.717	1	3.493	1	.877	8	0	1
513	0	3.510	1	3.140	1	.480	0	0	1
513	0	3.800	1	2.820	1	1.430	0	0	1
513	1	5.500	1	2.540	1	.960	5	0	1
513	1	5.500	1	4.340	1	1.220	5	0	1
515	0	5.540	1	4.570	1	1.860	0	1	1
515	1	9.340	1	5.690	1	1.880	4	1	1
515	1	5.970	1	6.200	1	1.170	5	1	1
517	0	2.656	0	3.332	1	.696	8	0	1

Table E-1. continued…

41TG #	Complete Length	Length cm.	Complete Width	Width cm.	Complete Thickness	Thickness cm.	Biface Shape	Cortex Present	Material Types
517	0	2.950	1	4.401	1	.914	8	0	9
518	0	2.145	1	2.134	1	.548	0	0	1
518	0	2.880	1	2.890	1	.390	0	0	1
518	0	3.600	1	3.950	1	1.110	0	0	2
518	1	5.440	1	4.220	1	1.250	5	1	2
519	0	3.080	1	6.590	1	1.480	0	0	2
523	1	8.250	1	7.250	1	2.320	4	0	1
523	0	1.920	0	1.584	1	.612	8	0	1
523	0	2.879	1	2.633	1	.816	8	0	1
524	0	2.110	1	1.940	1	.720	0	0	1
524	1	5.675	1	2.950	1	.745	8	0	1
525	0	3.110	1	5.560	1	.820	0	0	1
525	0	3.303	0	2.584	1	.690	8	0	1
526	0	2.380	1	2.350	1	.800	0	0	9
526	0	4.580	1	7.460	1	1.700	0	0	9
526	1	4.090	1	3.090	1	.450	3	0	1
526	0	2.242	1	3.891	1	.784	8	0	9
528	0	3.670	1	5.100	1	1.340	0	0	1
530	0	2.450	1	1.800	1	.350	8	0	1
530	0	2.665	1	2.010	1	.615	8	0	1
531	1	3.190	1	2.570	1	.720	0	0	1
531	0	3.480	1	4.400	1	.780	0	1	1
531	0	3.500	1	6.060	1	1.660	0	0	9
531	0	3.730	0	1.550	1	.740	0	0	1
531	0	3.980	1	4.030	1	1.560	0	1	2
531	0	4.190	0	2.460	1	.450	0	0	1
531	0	4.370	1	4.260	1	1.560	0	1	1
531	1	5.960	1	3.700	1	1.600	1	0	1
531	0	2.062	0	3.663	1	.735	8	0	1
533	0	2.370	1	2.330	1	.590	0	0	1
533	0	6.510	1	3.910	1	1.050	0	0	1
533	1	5.610	1	3.240	1	.490	4	0	9
533	1	8.640	1	3.890	1	1.970	4	1	1
533	1	6.550	1	2.750	1	.820	5	0	9
534	0	4.060	0	3.642	1	.721	0	0	2
534	0	3.948	0	2.865	1	.568	3	0	1
534	0	1.706	1	2.509	1	.525	8	0	1
534	0	3.346	0	2.970	1	.777	8	0	1
535	0	4.712	1	1.604	1	.740	4	0	1

Appendix F:
Twin Buttes Archaeological Project

Unique Items

Chipped stone Unique Items (UIs) discussed in the text are illustrated on the following pages. The diagnostics are arranged in chronological order, from Paleoindian through Late Prehistoric, followed by non-diagnostic tools.

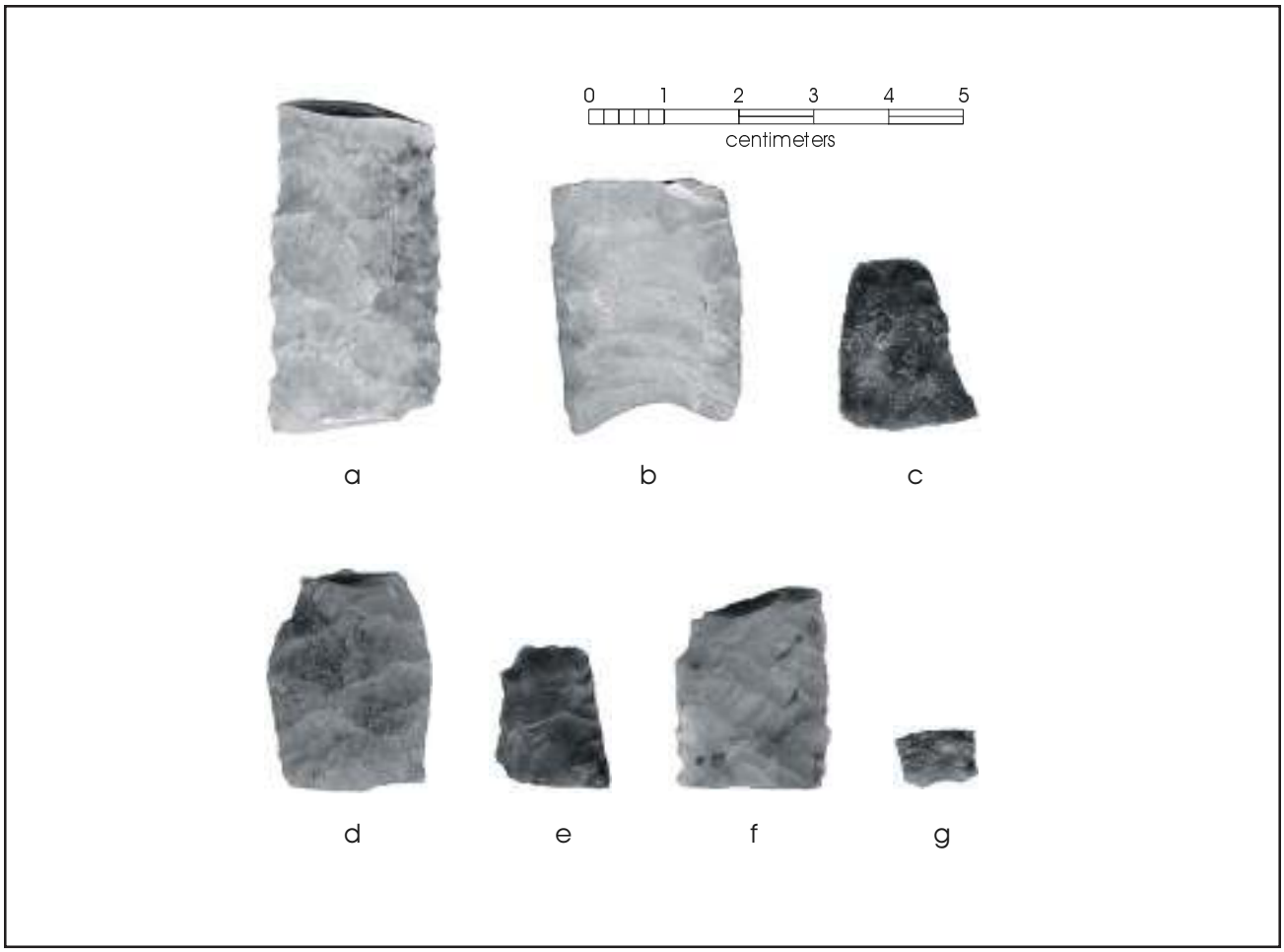

Figure F-1. *Paleoindian points: (a) 41TG370, UI-7, Lanceolate; (b) 41TG378, UI-12, Clovis; (c) 41TG109, UI-66, Angostura; (d) 41TG246, UI-35, Angostura-like; (e) 41TG523, UI-67, Late Paleo-like; (f) 41TG252, UI-60, Plainview-like; (g) 41TG534, UI-303, Barber or Golondrina-like.*

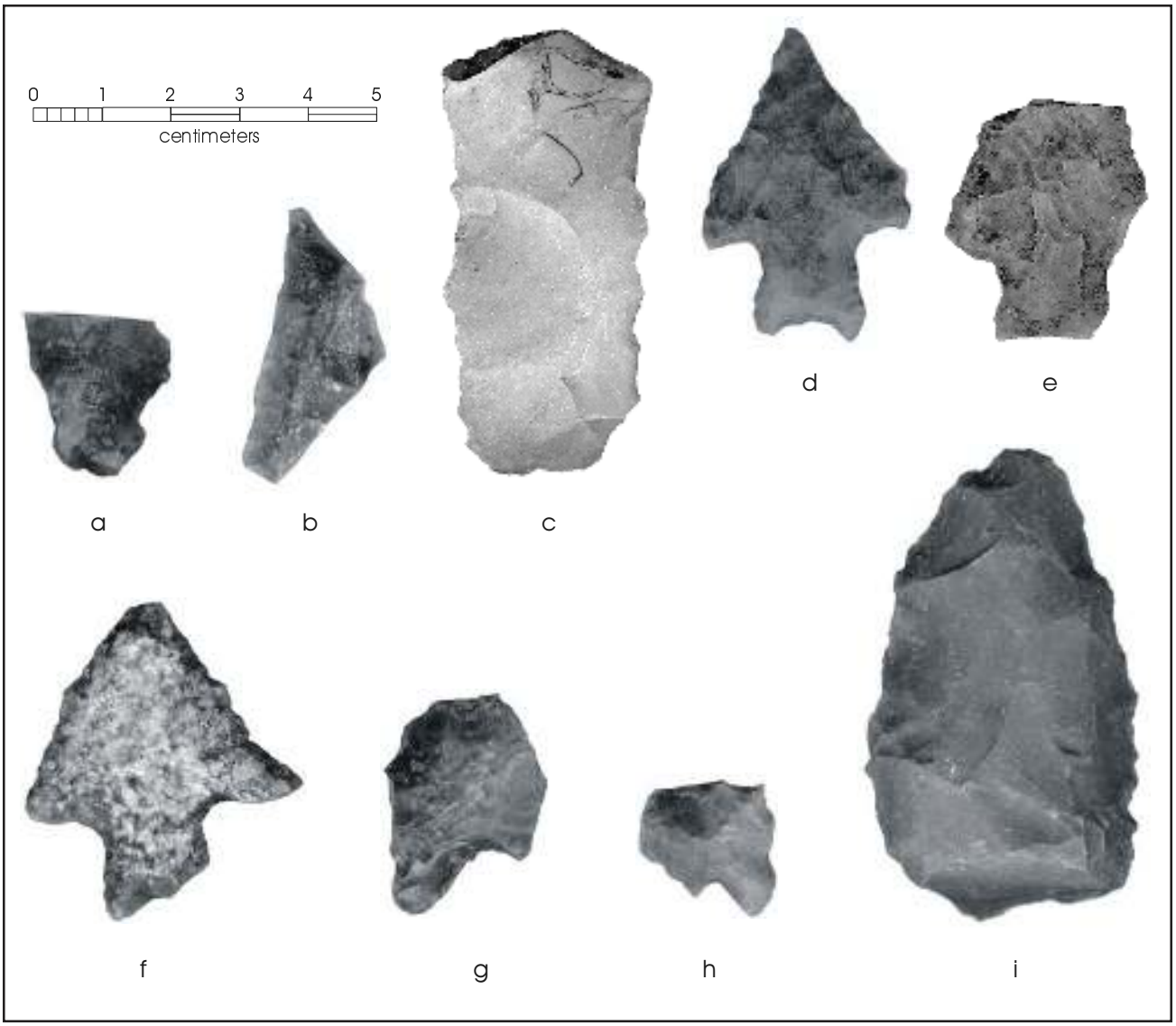

Figure F-2. *Early Archaic points and tools: (a) 41TG362, UI-41, Uvalde-like; (b) 41TG373, UI-10, Early Triangular; (c) 41TG388, UI-20, Guadalupe Adze; (d) 41TG388, UI-70, Uvalde; (e) 41TG390, UI-21, Bandy-like; (f) 41TG424, UI-29, Martindale or Bandy; (g) 41TG449, UI-56, Baker-like; (h) 41TG247, UI-57, Martindale-like; (i) 41TG244, UI-319, Guadalupe Adze.*

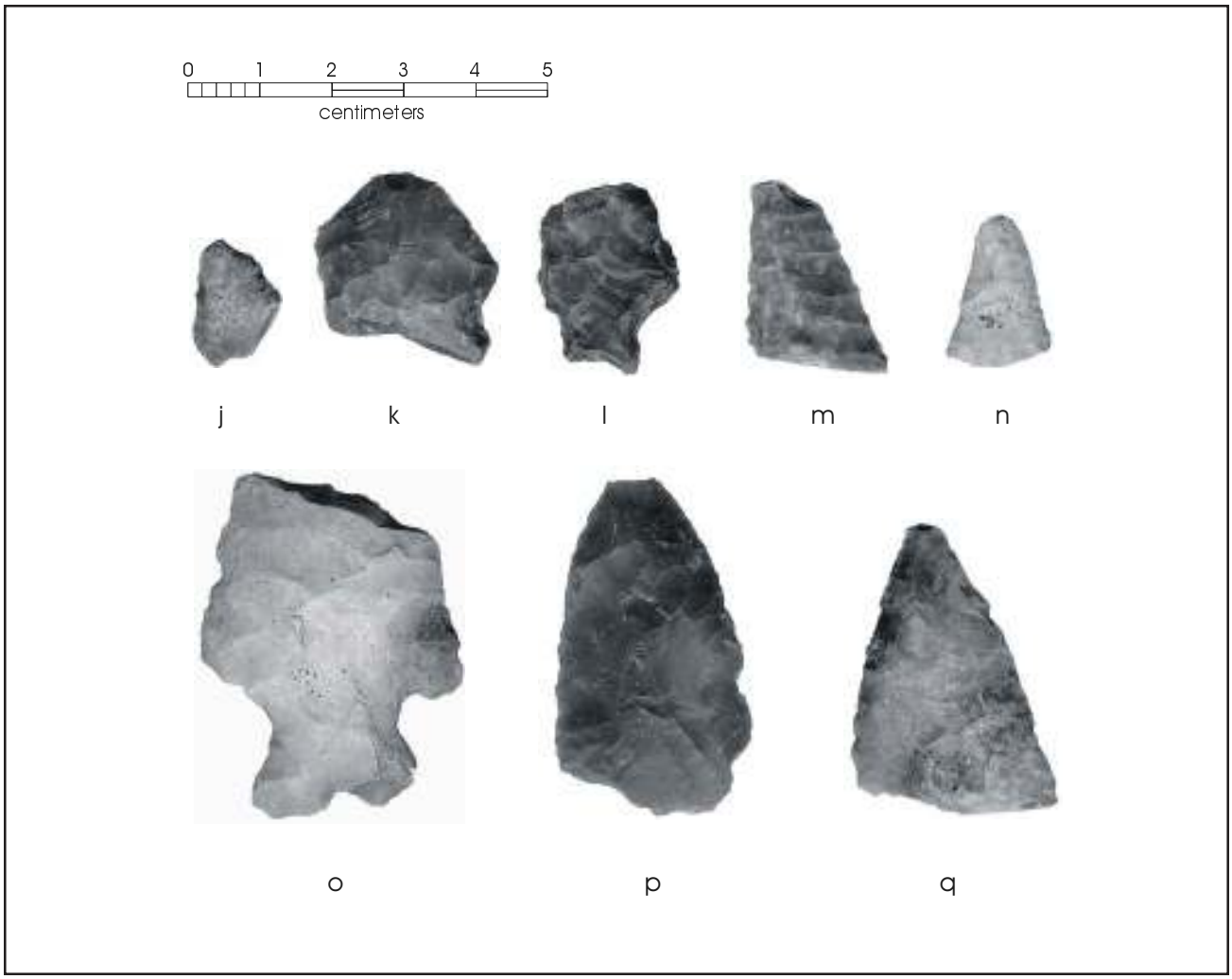

Figure F-2 (continued). *Early Archaic points and tools: (j) 41TG534, UI-308, Early Triangular-like; (k) 41TG523, UI-64, Gower-like; (l) 41TG530, UI-58, Val Verde; (m) 41TG369, UI-6, point medial fragment; (n) 41TG504, UI-305, Early Triangular [possibly Late Archaic Tortugas]; (o) 41TG529, UI-322, Martindale [possibly Late Archaic Frio]; (p) isolated find, UI-23, Early Triangular [possibly Late Archaic Tortugas]; (q) 41TG526, UI-47, morphologically Early Archaic.*

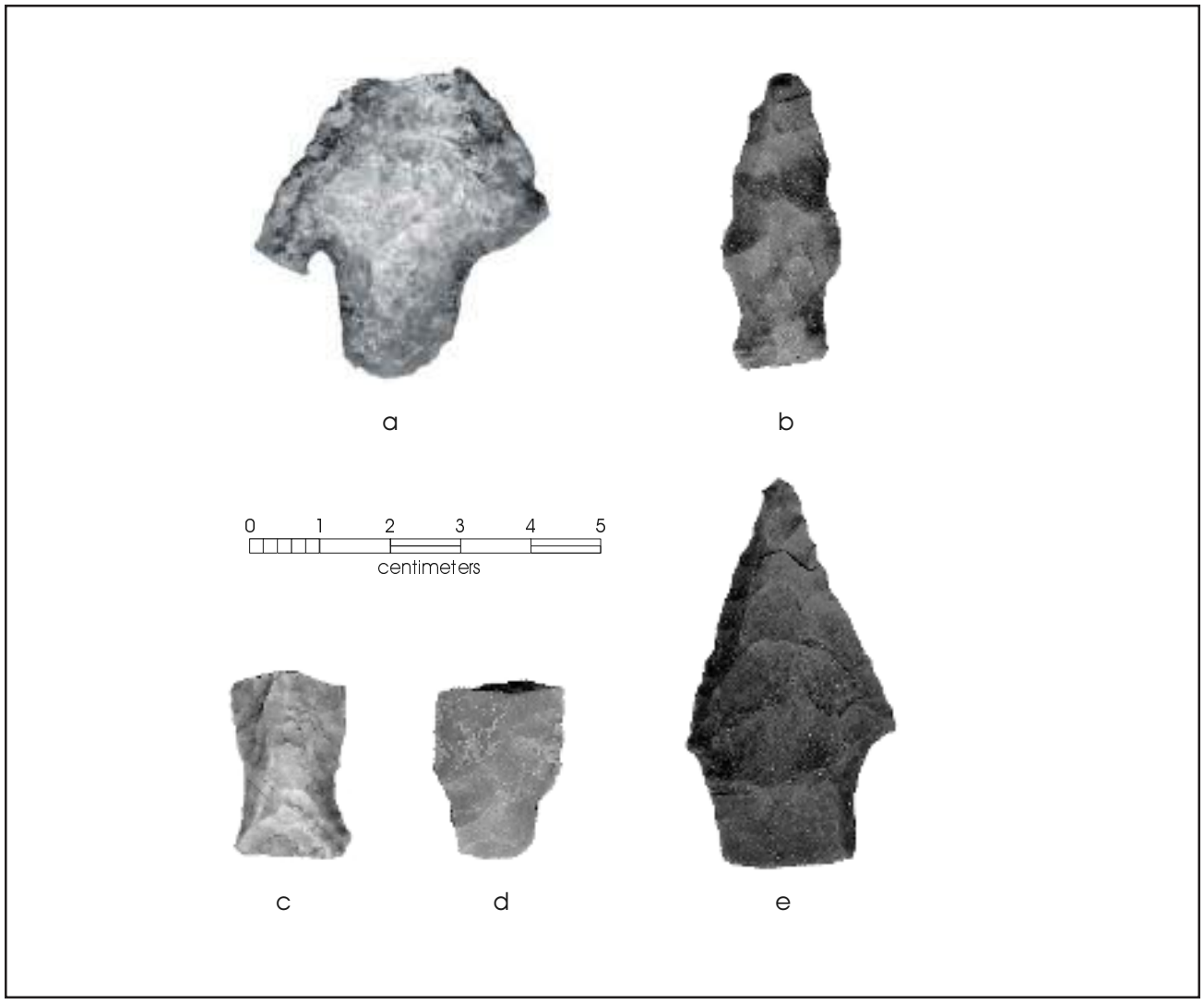

Figure F-3. *Middle Archaic points: (a) 41TG364, UI-39, Andice; (b) 41TG488, UI-37, Pandale; (c) 41TG506, UI-302, Pandale; (d) 41TG530, UI-63, Pandale; (e) isolated find, UI-34, Nolan.*

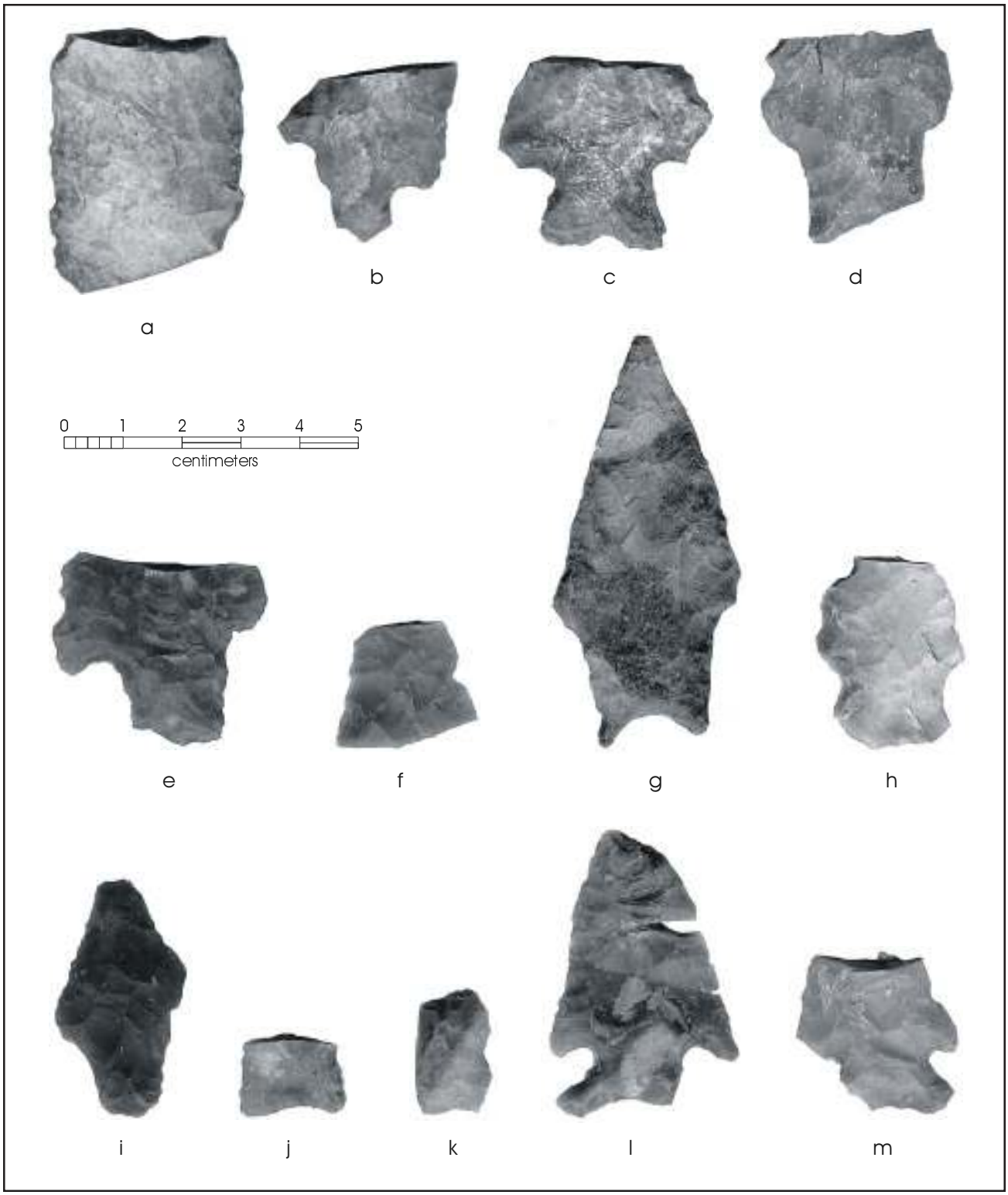

Figure F-4. *Late Archaic points: (a) 41TG362, UI-1, Marcos/Marshall-like; (b) 41TG418, UI-26, Frio-like; (c) 41TG105, UI-40, Marshall; (d) 41TG365, UI-2, Marcos-Marshall-like; (e) 41TG367, UI-3, Marshall or Williams-like; (f) 41TG367, UI-5, morphologically Late Archaic; (g) 41TG382, UI-18, Pedernales; (h) 41TG391, UI-22, Trinity-like; (i) 41TG404, UI-49, Langtry; (j) 41TG405, UI-50, Marshall-like; (k) 41TG409, UI-65, Marcos-like; (l) 41TG410, UI-45, Frio-like; (m) 41TG412, UI-24, Ensor or Frio.*

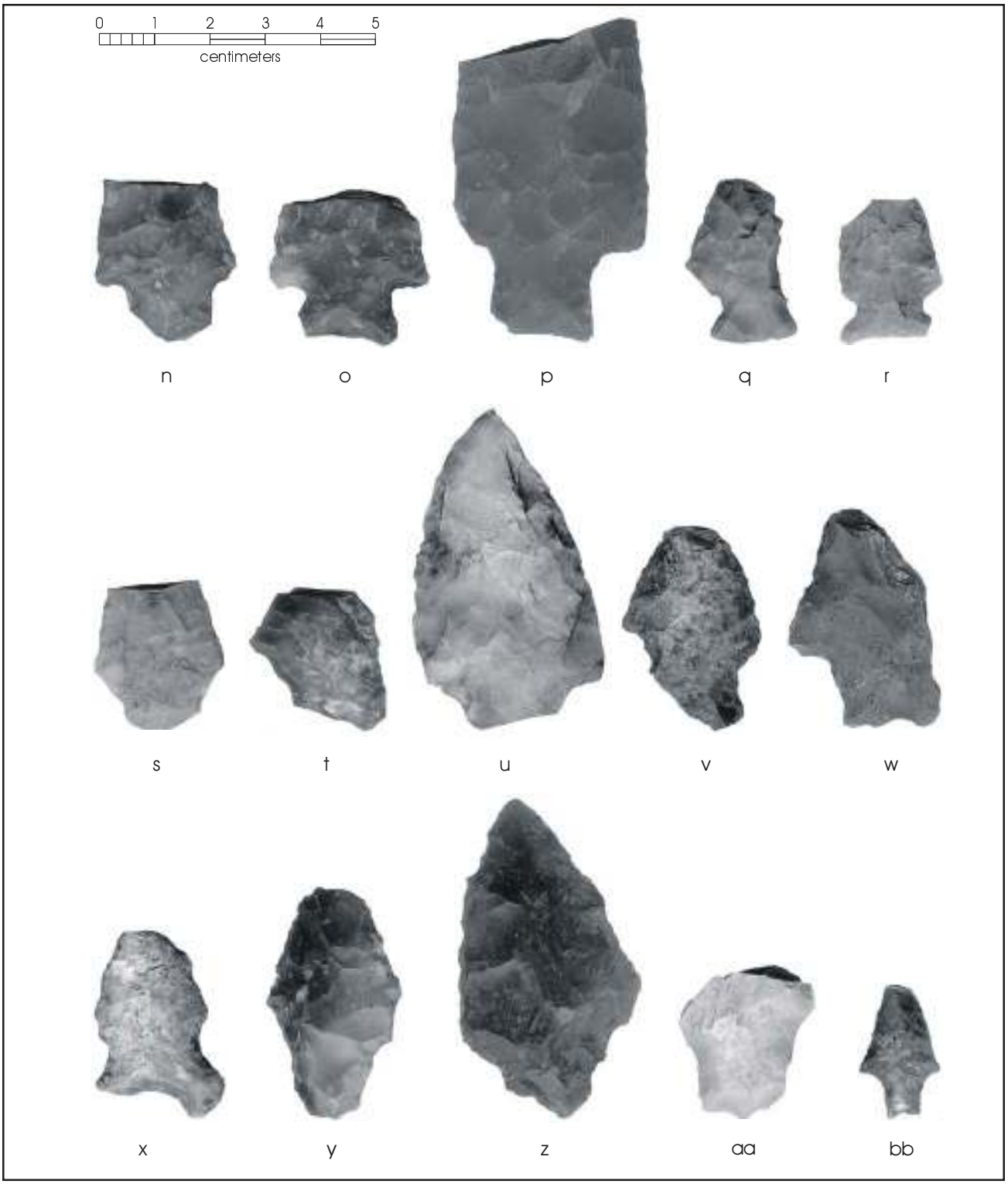

Figure F-5. *Late Archaic points (continued): (n) 41TG412, UI-25, morphologically Late Archaic; (o) 41TG412, UI-68, Marshall; (p) 41TG424, UI-72, Marshall-like; (q) 41TG427, UI-28, Ensor-like; (r) 41TG427, UI-53, Fairland; (s) 41TG427, UI-54, morphologically Late Archaic; (t) 41TG110, UI-32, Frio-like; (u) 41TG440, UI-31, Marshall or Williams-like; (v) 41TG247, UI-71, Frio-like; (w) 41TG481, UI-36, morphologically Late Archaic; (x) 41TG489, UI-38, Frio-like; (y) 41TG489, UI-52, Langtry; (z) 41TG497, UI-48, morphologically Late Archaic; (aa) 41TG504, UI-306, Bulverde-like; (bb) 41TG512, UI-310, Langtry.*

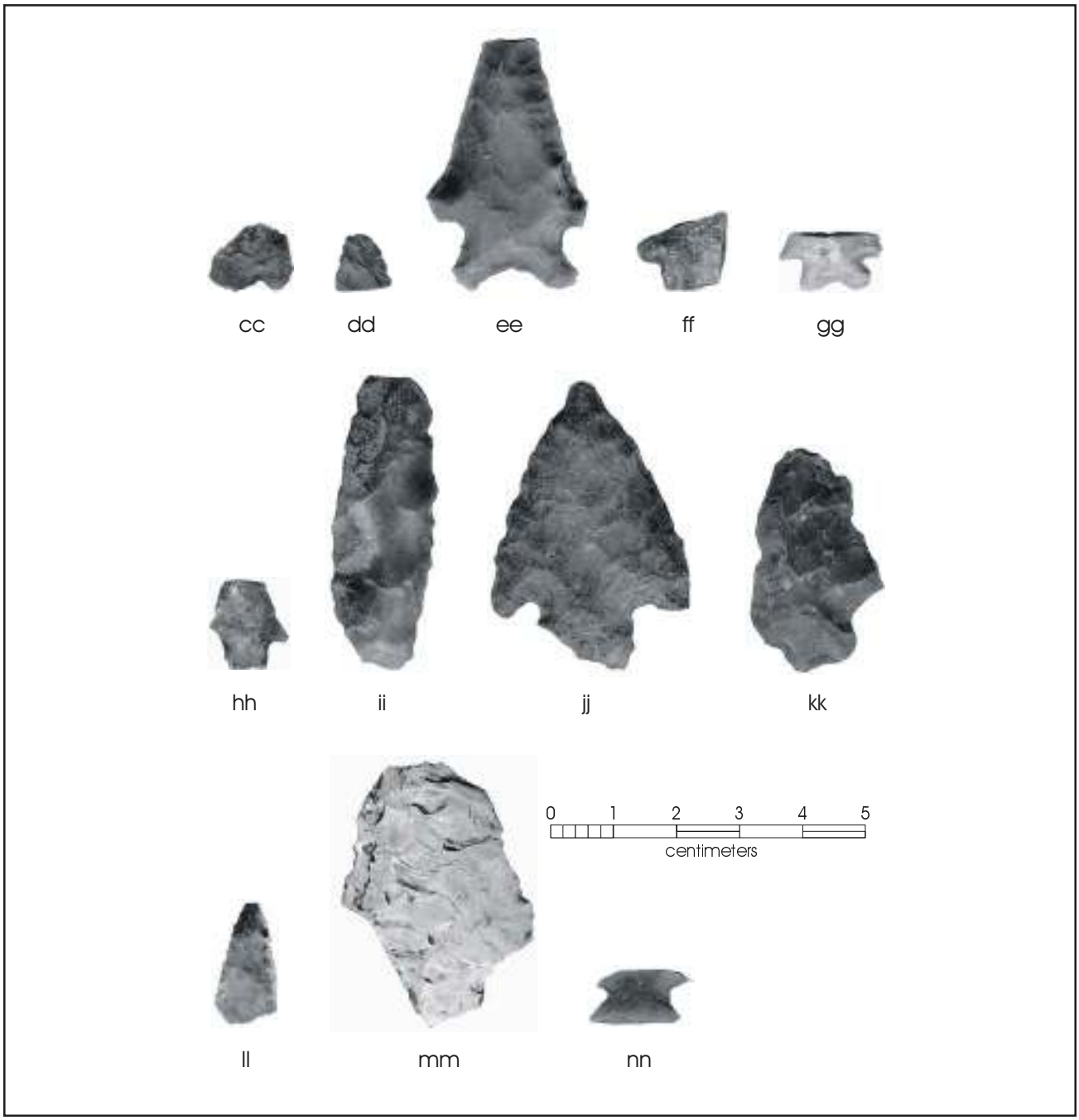

Figure F-6. *Late Archaic points (continued): (cc) 41TG517, UI-312, Marcos or Williams-like; (dd) 41TG518, UI-46, morphologically Late Archaic; (ee) 41TG252, UI-323, Frio; (ff) 41TG525, UI-316, morphologically Late Archaic, burinated; (gg) 41TG526, UI-317, Frio-like; (hh) 41TG534, UI-304, Marcos or Marshall-like; (ii) 41TG535, UI-61, Pedernales-like; (jj) isolated find, UI-19, Marshall or Williams-like; (kk) isolated find, UI-33, morphologically Late Archaic; (ll) isolated find, UI-314, Tortugas-like; (mm) isolated find, UI-324, morphologically Late Archaic; (nn) 41TG389, UI-69, Ensor or Ellis [possibly Late Prehistoric Scallorn].*

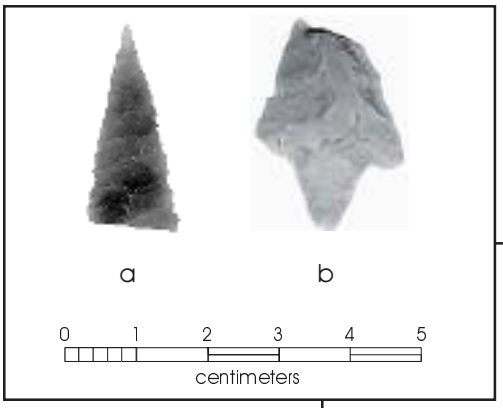

Figure F-7. *Late Prehistoric points: (a) 41TG424, UI-30, arrow point preform; (b) 41TG506, UI-301, Perdiz.*

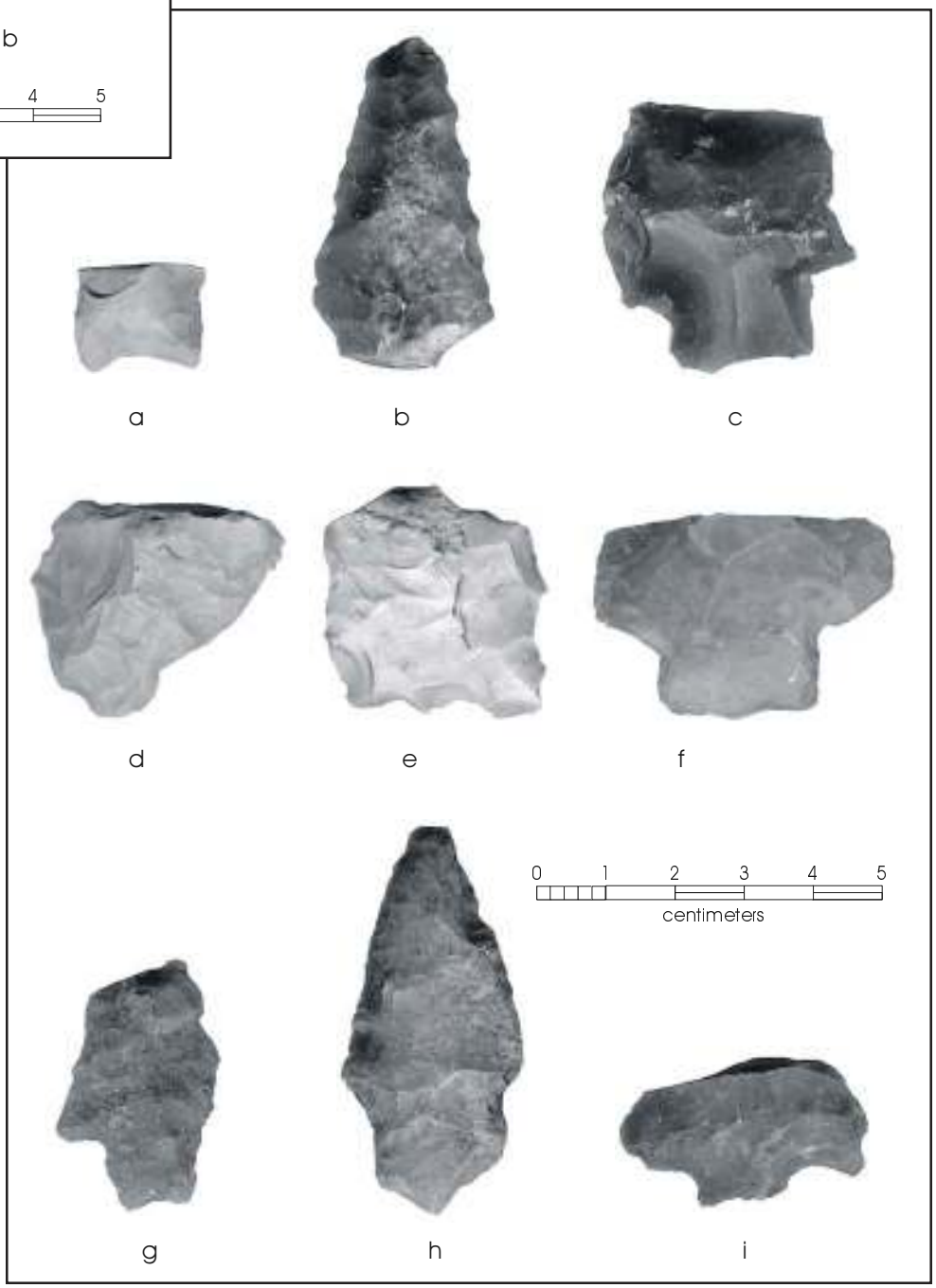

Figure F-8. *Untypeable points: (a) 41TG367, UI-4, point base; (b) 41TG253, UI-75, point fragment; (c) 41TG377, UI-11, dart point preform base; (d) isolated find, UI-311, point fragment; (e) 41TG534, UI-307, point base; (f) 41TG517, UI-313, dart point base; (g) 41TG389, UI-44, dart point fragment; (h) 41TG524, UI-73, dart point fragment (possible Pedernales); (i) 41TG531, UI-62, dart point fragment.*

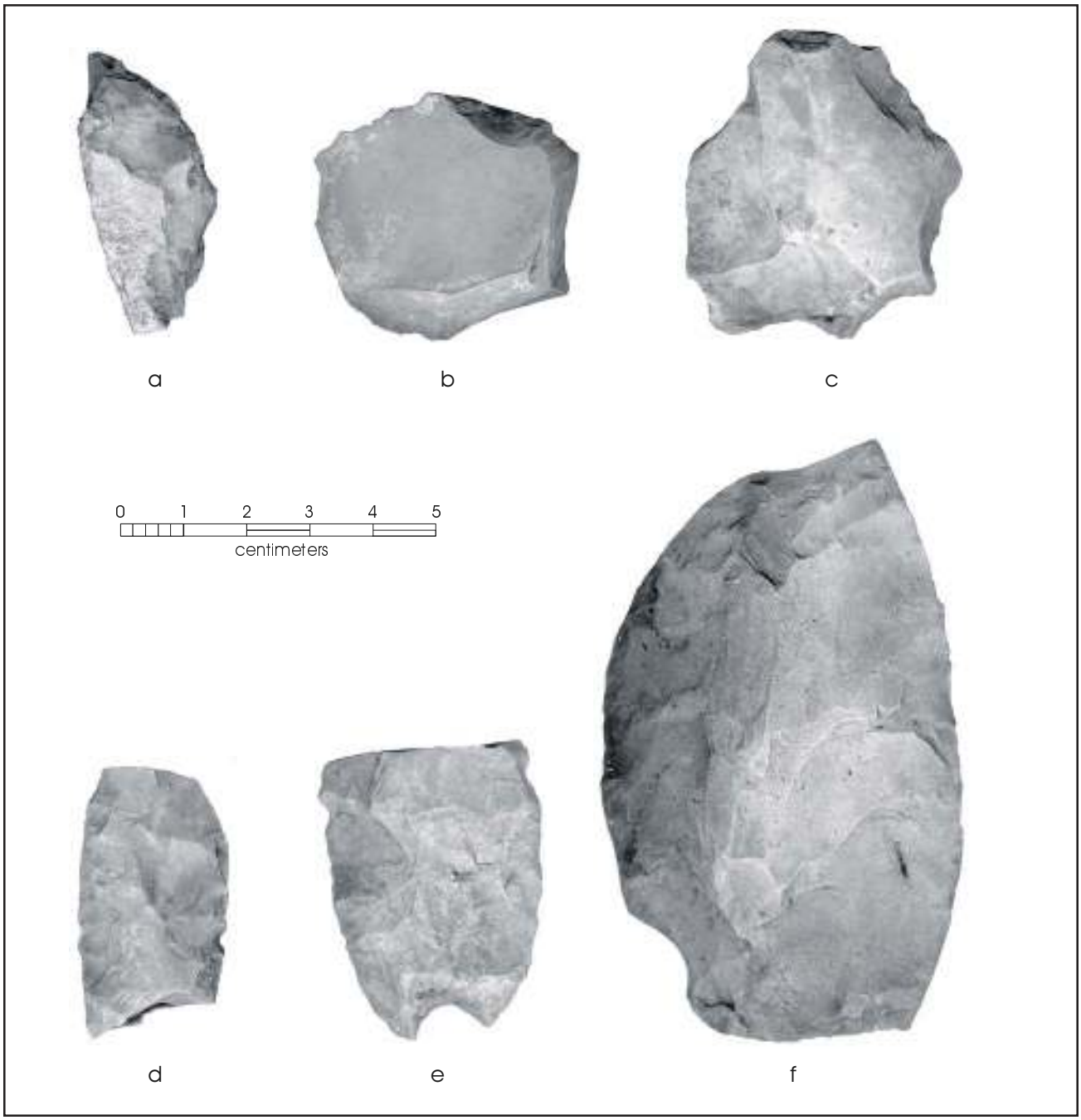

Figure F-9. *Bifaces: (a–e) 41TG378, UIs 13, 14, 17, 43, and 59, respectively; (f) 41TG429, UI-55.*

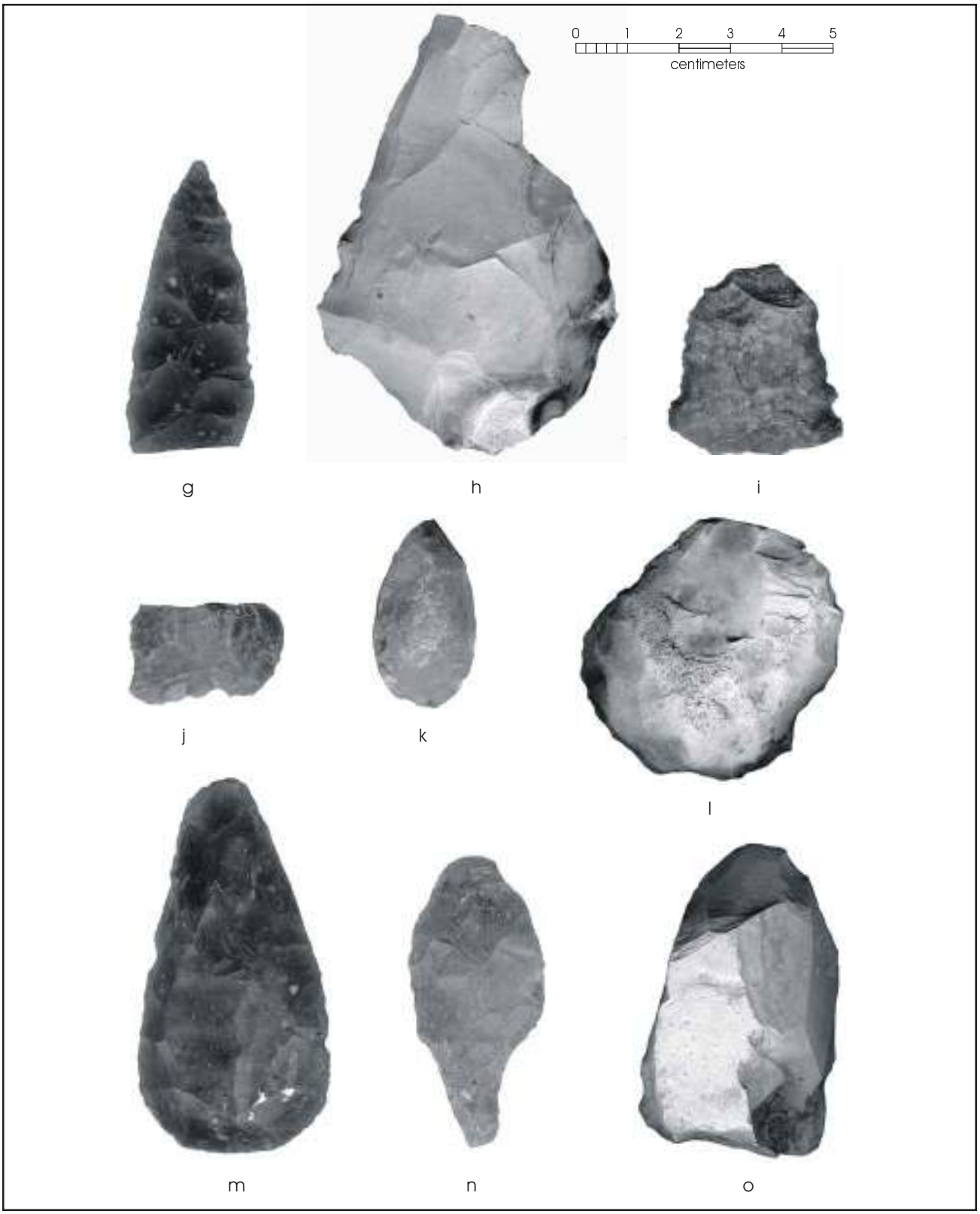

Figure F-10. *Bifaces (continued): (g) 41TG447, UI-74; (h) isolated find, UI-309; (i) 41TG485, UI-320; (j) 41TG486, UI-321; (k) 41TG378, UI-15, made from quartz; (l) 41TG420, UI-27, scraper; (m) 41TG252, UI-325, scraper; (n) 41TG382, UI-326, burin; (o) 41TG378, UI-16, core tool/gouge.*

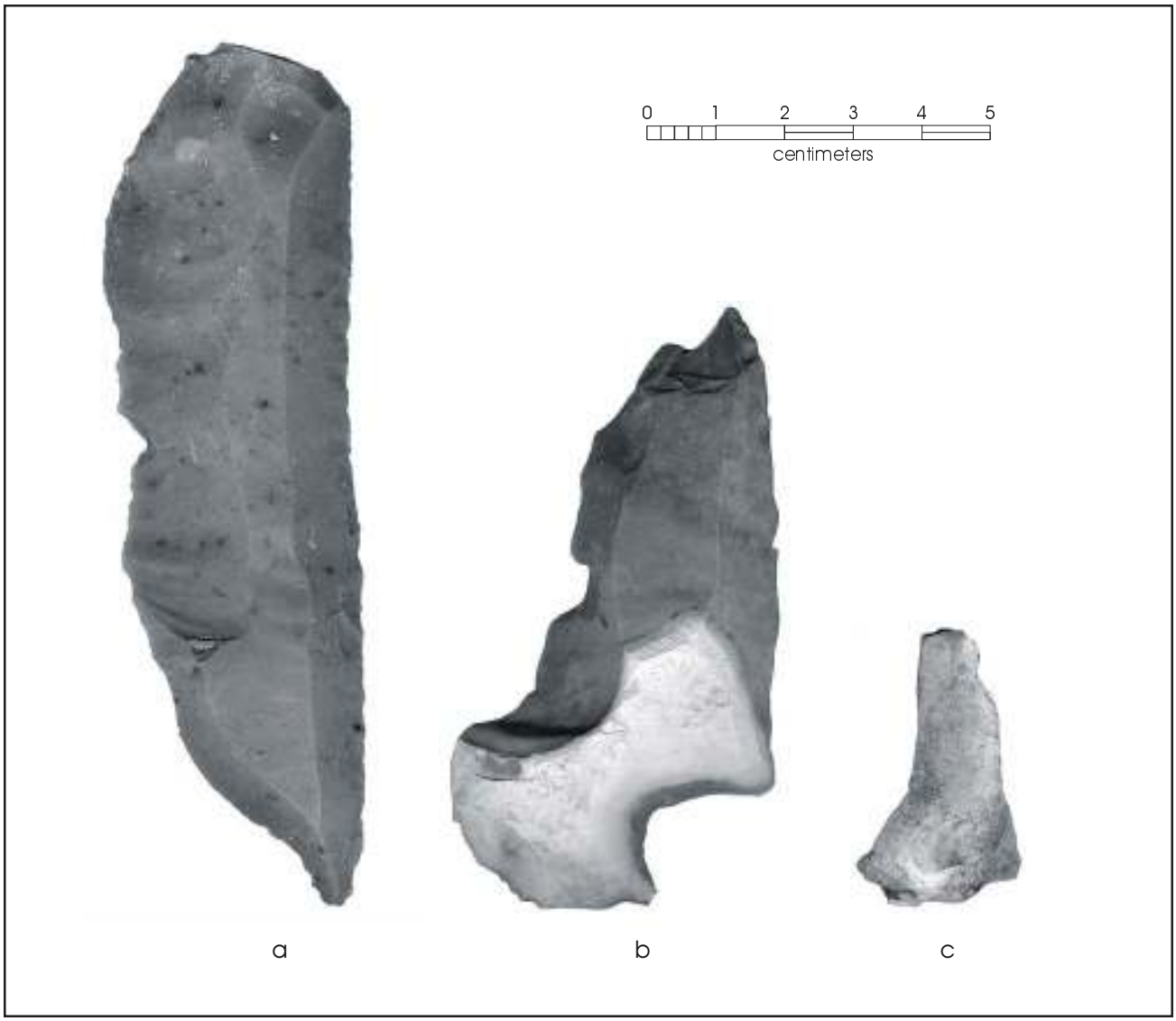

Figure F-11. *Unifaces: (a) 41TG513, UI-76, knife; (b) 41TG372, UI-9, flake tool; (c) 41TG378, UI-42, flake tool.*

Appendix G:
Twin Buttes Archaeological Project

Isolated Finds

This appendix provides individual summaries for all 393 isolated finds. The appendix consists of a table (Table G-1) with isolate information and a map (Figure G-1) showing the distribution of the isolated finds.

Table G-1 provides the UTM northing and easting for each isolate, maximum artifact length in cm, cortex percentage, and artifact type. The codes in the artifact type field are as follows: 1 = flake, 2 = core or tested cobble, 4 = biface, 5 = uniface, 6 = retouched/utilized item, 10 = projectile point. Note that projectile points were collected, so no attributes were recorded for the eight specimens in this table. Note that in a small number of cases, data are missing for a given attribute.

Figure G-1 is a map which provides distributional information.

Table G-1. Data for Isolated Finds

UTM Northing	UTM Easting	Length (cm)	Cortex (%)	Artifact Type
3460162	356860	.	.	10
3461440	356893	8.50	20.00	2
3461922	357078	11.50	60.00	2
3462467	357751	1.50	.00	6
3462563	357122	7.50	20.00	1
3462765	357613	7.50	60.00	2
3462772	357632	4.50	20.00	6
3463392	358167	.	.	10
3463821	357539	3.50	20.00	1
3463979	357561	6.50	20.00	1
3464001	357560	3.50	20.00	1
3464019	359482	2.50	10.00	6
3464045	357546	4.50	.00	4
3464112	359808	2.50	10.00	1
3464141	357556	7.50	.00	1
3464247	356070	5.50	70.00	2
3464256	359831	5.50	20.00	6
3464297	358219	4.50	40.00	1
3464338	358226	4.50	50.00	5
3465073	359057	4.50	10.00	6
3465074	359061	3.50	.00	1
3465079	359044	2.50	10.00	6
3465189	359137	3.50	30.00	1
3465208	359132	1.50	.	1
3465354	359229	6.50	10.00	4
3465404	359222	9.50	20.00	2
3465497	358364	7.50	10.00	5
3465500	358374	4.50	10.00	5
3465513	358345	4.50	.00	1
3465523	358975	7.50	50.00	1
3465524	358977	2.50	20.00	1
3465553	358177	5.50	10.00	1
3465559	359399	7.50	20.00	2
3465560	359400	5.50	40.00	5
3465566	359415	4.50	30.00	4
3465588	358982	5.50	.00	5
3465592	359097	2.50	.00	6
3465599	358217	9.50	10.00	1
3465601	358945	6.50	10.00	5
3465622	358235	8.50	30.00	1
3465650	358202	4.50	60.00	1
3465682	358172	10.50	10.00	4
3465878	358523	3.50	60.00	1
3466013	359010	2.50	10.00	1
3466014	359007	7.50	40.00	1
3466015	359008	3.50	.00	5
3466021	358959	5.50	.00	6
3466022	358967	3.50	.00	6
3466030	358631	2.50	50.00	1
3466031	358987	4.50	20.00	5
3466153	358212	4.50	10.00	1
3466181	358986	2.50	10.00	5

Table G-1. continued…

UTM Northing	UTM Easting	Length (cm)	Cortex (%)	Artifact Type
3466227	358995	4.50	10.00	1
3466794	352031	8.50	80.00	1
3466800	351185	2.50	50.00	1
3466827	351165	11.50	30.00	2
3466832	351154	7.50	90.00	1
3466836	351148	15.50	80.00	2
3466850	349632	8.50	.	6
3466936	352169	2.50	.00	5
3466958	351223	2.50	40.00	1
3467003	351066	5.50	50.00	2
3467092	351226	1.50	30.00	1
3467093	351195	6.50	50.00	5
3467094	351217	4.50	50.00	1
3467099	351217	10.50	.	2
3467102	351237	5.50	10.00	1
3467103	350949	3.50	.00	1
3467115	351220	6.50	10.00	1
3467149	351207	7.50	.	2
3467242	351103	4.50	50.00	1
3467243	351103	2.50	.	1
3467277	350709	2.50	.	6
3467283	351716	11.50	70.00	2
3467295	351280	8.50	10.00	6
3467295	351280	8.50	10.00	6
3467298	350734	4.50	10.00	1
3467372	351350	8.50	40.00	1
3467372	351350	8.50	40.00	1
3467376	350947	4.50	60.00	2
3467378	350959	6.50	20.00	1
3467380	350961	4.50	.00	1
3467388	351352	4.50	10.00	1
3467388	351352	4.50	10.00	1
3467389	350974	7.50	50.00	2
3467396	351341	4.50	.00	1
3467396	351341	4.50	.00	1
3467398	351313	2.50	.	1
3467398	351313	2.50	.	1
3467405	351652	12.50	70.00	2
3467460	350226	4.50	.00	1
3467465	350088	4.50	.00	1
3467477	351251	5.50	20.00	6
3467502	350226	4.50	.00	1
3467513	350695	4.50	.00	1
3467514	350695	3.50	.00	1
3467536	349646	3.50	.00	1
3467537	349637	4.50	.00	2
3467555	350289	3.50	.00	4
3467567	353926	1.50	10.00	1
3467568	353931	1.50	.	1
3467601	349670	5.50	.	1
3467636	351737	5.50	20.00	1
3467641	351738	3.50	.	1

Table G-1. continued…

UTM Northing	UTM Easting	Length (cm)	Cortex (%)	Artifact Type
3467681	351213	.	.00	1
3467682	351248	6.50	20.00	1
3467704	351769	9.50	.00	4
3467790	352543	4.50	30.00	1
3467809	352580	3.50	30.00	1
3467815	351953	5.50	.	6
3467817	352842	3.50	.00	1
3467819	351976	3.50	.	6
3467834	349019	3.50	.	1
3467840	352572	9.50	10.00	2
3467842	348887	1.50	.00	1
3467845	348887	2.50	10.00	1
3467855	352471	7.50	.00	4
3467872	348923	6.50	10.00	1
3467881	353678	1.50	.	1
3467930	352591	5.50	.00	1
3467947	352606	5.50	40.00	1
3467975	352243	4.50	20.00	1
3467986	352281	3.50	.00	1
3467987	352282	4.50	.00	1
3467989	352278	2.50	.00	1
3467989	352278	1.50	.	1
3467989	352283	6.50	10.00	1
3467989	352283	5.50	.00	5
3467996	352627	12.50	20.00	2
3467998	352627	4.50	40.00	1
3468007	353599	4.50	.00	6
3468035	352604	16.50	20.00	2
3468038	353575	5.50	.00	1
3468060	352457	7.50	.	6
3468077	352607	7.50	20.00	2
3468082	352607	8.50	10.00	2
3468095	352462	1.50	.	1
3468102	352463	9.50	50.00	2
3468107	353534	2.50	70.00	1
3468157	352484	8.50	10.00	1
3468185	350883	3.50	30.00	1
3468186	350883	6.50	10.00	1
3468275	352446	7.50	70.00	5
3468401	354348	4.50	.	6
3468402	353457	6.50	.00	5
3468528	352486	4.50	.00	1
3468529	352488	5.50	.00	1
3468730	352486	9.50	20.00	5
3468749	353769	5.50	20.00	4
3468969	352567	5.50	50.00	1
3469021	353000	7.50	10.00	1
3469268	354216	2.50	.00	5
3469270	354072	1.50	.00	1
3469286	354083	2.50	.00	6
3469293	354082	2.50	.00	6
3469324	354104	2.50	.	1

Table G-1. continued…

UTM Northing	UTM Easting	Length (cm)	Cortex (%)	Artifact Type
3469695	354341	2.50	10.00	1
3469817	349623	.	.00	5
3469819	349666	4.50	50.00	1
3469825	350154	3.50	10.00	1
3469830	350148	4.50	.00	1
3469833	350152	2.50	.00	1
3469857	352993	5.50	40.00	2
3469865	350012	3.50	10.00	1
3469880	350111	6.50	20.00	1
3469884	349272	2.50	20.00	1
3469892	354221	.	.	10
3469907	349977	.	.00	5
3469961	348147	4.50	20.00	1
3469962	350262	5.50	20.00	1
3469963	350260	2.50	.	1
3469994	348124	3.50	.00	1
3470106	348193	7.50	.00	6
3470173	356026	2.50	20.00	1
3470183	356014	3.50	.00	5
3470205	356030	1.50	.00	4
3470271	348256	6.50	.00	5
3470273	355697	4.50	10.00	4
3470277	355699	2.50	.00	1
3470282	355691	2.50	10.00	1
3470284	355693	2.50	.00	1
3470337	350715	5.50	20.00	6
3470526	356120	6.50	70.00	2
3470597	351008	6.50	20.00	1
3470676	352075	6.50	20.00	4
3470700	353770	1.50	10.00	1
3470702	353768	4.50	50.00	1
3470716	353617	7.50	10.00	2
3470717	353616	2.50	.00	1
3470721	350671	7.50	20.00	1
3470742	353700	4.50	40.00	2
3470780	350783	9.50	10.00	2
3470789	349741	5.50	.00	1
3470802	349719	3.50	20.00	1
3470818	352674	9.50	.	2
3470827	352225	4.50	20.00	1
3470856	352944	5.50	40.00	1
3470875	353075	4.50	.00	6
3470941	350060	1.50	10.00	1
3470971	350060	4.50	10.00	1
3471076	356942	10.50	40.00	2
3471089	356854	2.50	.00	4
3471277	348955	6.50	.00	1
3471299	356839	.	.	10
3471433	350579	5.50	.00	1
3471598	354618	7.50	10.00	1
3471810	354447	4.50	.	1
3471814	354401	9.50	60.00	5

Table G-1. continued…

UTM Northing	UTM Easting	Length (cm)	Cortex (%)	Artifact Type
3471821	354406	6.50	.00	4
3471899	352552	7.50	.00	1
3471903	352550	11.50	.00	4
3471932	351983	4.50	20.00	1
3471941	350037	4.50	80.00	1
3471941	350040	4.50	90.00	1
3471950	351988	3.50	50.00	1
3471956	350023	6.50	80.00	1
3471966	346666	3.50	.00	1
3471967	350929	3.50	50.00	1
3472068	351539	6.50	.00	2
3472078	352287	4.50	10.00	1
3472116	351536	6.50	.00	2
3472171	348383	1.50	.00	1
3472192	347317	7.50	.00	6
3472321	347592	2.50	20.00	1
3472333	347533	6.50	20.00	6
3472333	347592	3.50	.00	2
3472338	347580	3.50	.00	1
3472352	347577	3.50	.00	1
3472382	347537	2.50	30.00	2
3472384	347573	6.50	10.00	1
3472388	347545	5.50	.00	1
3472390	347541	4.50	70.00	2
3472400	347539	4.50	.00	1
3472453	354197	4.50	50.00	1
3472473	346665	9.50	30.00	2
3472497	352509	5.50	.00	2
3472552	354092	5.50	.00	1
3472565	352138	6.50	20.00	2
3472586	352520	11.50	20.00	2
3472799	352113	7.50	40.00	6
3472844	353577	6.50	.00	4
3472847	353107	3.50	.00	1
3472851	352472	2.50	.00	1
3472855	352474	2.50	.00	1
3472858	353203	4.50	.00	1
3472873	353147	1.50	.00	1
3472876	353552	5.50	.00	1
3472880	353595	3.50	.00	1
3472903	343059	2.50	.00	1
3472903	343059	4.50	.00	1
3472903	353059	8.50	40.00	1
3472932	352520	8.50	30.00	1
3472940	352214	2.50	.00	1
3472951	352430	4.50	.00	1
3473058	346735	3.50	10.00	1
3473058	346735	2.50	.	1
3473089	346949	3.50	.	1
3473114	346954	5.50	.	1
3473125	347025	12.50	10.00	2
3473134	346752	10.50	70.00	6

Table G-1. continued…

UTM Northing	UTM Easting	Length (cm)	Cortex (%)	Artifact Type
3473136	352685	9.50	10.00	2
3473150	352684	5.50	10.00	1
3473173	346736	2.50	20.00	1
3473177	346739	2.50	20.00	1
3473222	346741	3.50	10.00	1
3473222	346742	1.50	.	1
3473222	346743	1.50	.	1
3473233	352695	6.50	30.00	1
3473253	346743	4.50	20.00	1
3473263	352679	6.50	.00	1
3473338	346750	2.50	.	1
3473365	352680	6.50	10.00	1
3473374	346963	6.50	90.00	2
3473395	354210	3.50	.	6
3473411	346731	2.50	10.00	1
3473415	354212	8.50	.	1
3473421	354197	5.50	10.00	6
3473423	346913	5.50	20.00	1
3473423	346961	6.50	.	1
3473430	346722	6.50	10.00	1
3473433	354184	4.50	20.00	1
3473434	354188	2.50	.00	1
3473449	354185	4.50	.00	6
3473452	346827	8.50	20.00	2
3473453	354190	8.50	10.00	1
3473500	346771	3.50	.00	4
3473515	352107	7.50	10.00	1
3473515	354438	7.50	10.00	1
3473518	354418	6.50	.	2
3473566	352411	2.50	.00	1
3473651	353282	6.50	10.00	1
3473653	353062	3.50	40.00	1
3473719	354134	3.50	10.00	6
3473727	353401	6.50	50.00	4
3473731	346742	1.50	.00	1
3473744	354422	.	.	10
3473838	352619	3.50	.00	1
3473857	352599	4.50	10.00	1
3473915	353599	3.50	.00	1
3473920	353742	3.50	.00	5
3473930	352060	.	.	10
3473943	352044	.	.	10
3473984	353699	5.50	.00	1
3473988	353637	4.50	.00	1
3473994	353098	3.50	.00	1
3474003	354176	7.50	50.00	5
3474009	353945	3.50	20.00	1
3474019	352018	5.50	10.00	6
3474025	353091	1.50	50.00	1
3474025	354158	4.50	50.00	1
3474026	353246	4.50	.00	1
3474026	353668	3.50	20.00	1

Table G-1. continued…

UTM Northing	UTM Easting	Length (cm)	Cortex (%)	Artifact Type
3474027	354137	3.50	10.00	1
3474035	354135	6.50	40.00	1
3474047	353627	1.50	.00	1
3474047	353627	2.50	.00	1
3474048	352180	1.50	50.00	1
3474048	352180	3.50	50.00	1
3474050	353566	2.50	50.00	1
3474059	353076	7.50	.00	2
3474061	352088	3.50	.00	1
3474073	352176	4.50	50.00	1
3474080	352283	1.50	.00	1
3474084	352217	3.50	20.00	2
3474092	353539	2.50	.00	1
3474093	352271	3.50	.00	1
3474094	352397	3.50	20.00	1
3474097	352569	14.50	10.00	1
3474101	351969	6.50	.00	1
3474105	352049	4.50	.00	1
3474123	352486	5.50	10.00	5
3474126	351946	3.50	.00	1
3474126	353200	3.50	.00	1
3474152	352990	3.50	10.00	1
3474160	351843	2.50	.00	5
3474161	353029	2.50	.00	1
3474167	353499	1.50	.00	1
3474170	352347	5.50	.00	5
3474195	353262	5.50	10.00	2
3474197	352418	1.50	.00	1
3474199	351893	1.50	.00	1
3474206	351862	1.50	.00	1
3474227	351757	3.50	.00	1
3474260	351765	6.50	10.00	6
3474267	353002	6.50	10.00	1
3474274	352962	2.50	.00	1
3474276	353033	17.50	60.00	2
3474286	351742	2.50	10.00	1
3474286	353177	3.50	.00	1
3474288	352985	2.50	20.00	1
3474299	353159	2.50	.00	1
3474323	357421	2.50	20.00	1
3474344	351873	4.50	50.00	1
3474345	353090	5.50	.00	1
3474349	352862	2.50	30.00	1
3474350	351850	8.50	10.00	1
3474354	352895	9.50	.00	2
3474356	353404	4.50	20.00	1
3474369	352515	1.50	.00	1
3474379	352587	2.50	.00	1
3474408	352337	5.50	10.00	1
3474416	351578	2.50	50.00	2
3474416	353014	4.50	.	1
3474416	353014	5.50	.	1

Table G-1. continued…

UTM Northing	UTM Easting	Length (cm)	Cortex (%)	Artifact Type
3474416	353014	9.50	.	1
3474423	352328	2.50	.00	1
3474434	352908	7.50	10.00	5
3474461	351666	2.50	10.00	1
3474492	351598	1.50	.00	1
3474492	351598	1.50	10.00	1
3474511	353436	2.50	.00	1
3474523	351520	3.50	.00	1
3474557	353573	5.50	20.00	1
3474579	352889	99.00	20.00	2
3474591	351530	4.50	.00	1
3474595	353525	1.50	.	1
3474602	353528	4.50	.	1
3474610	351931	8.50	80.00	2
3474644	351650	3.50	.00	1
3474686	351603	1.50	.00	1
3474721	351520	2.50	.00	1
3474746	353455	5.50	10.00	1
3474755	351625	2.50	.00	1
3474755	353319	4.50	.	1
3474759	353327	4.50	50.00	6
3474759	353330	2.50	.	1
3474763	353332	3.50	10.00	1
3474765	352647	.	.	10
3474797	351622	5.50	.00	1
3474818	351824	8.50	.00	2
3474822	351889	5.50	10.00	4
3475828	353620	9.50	30.00	6

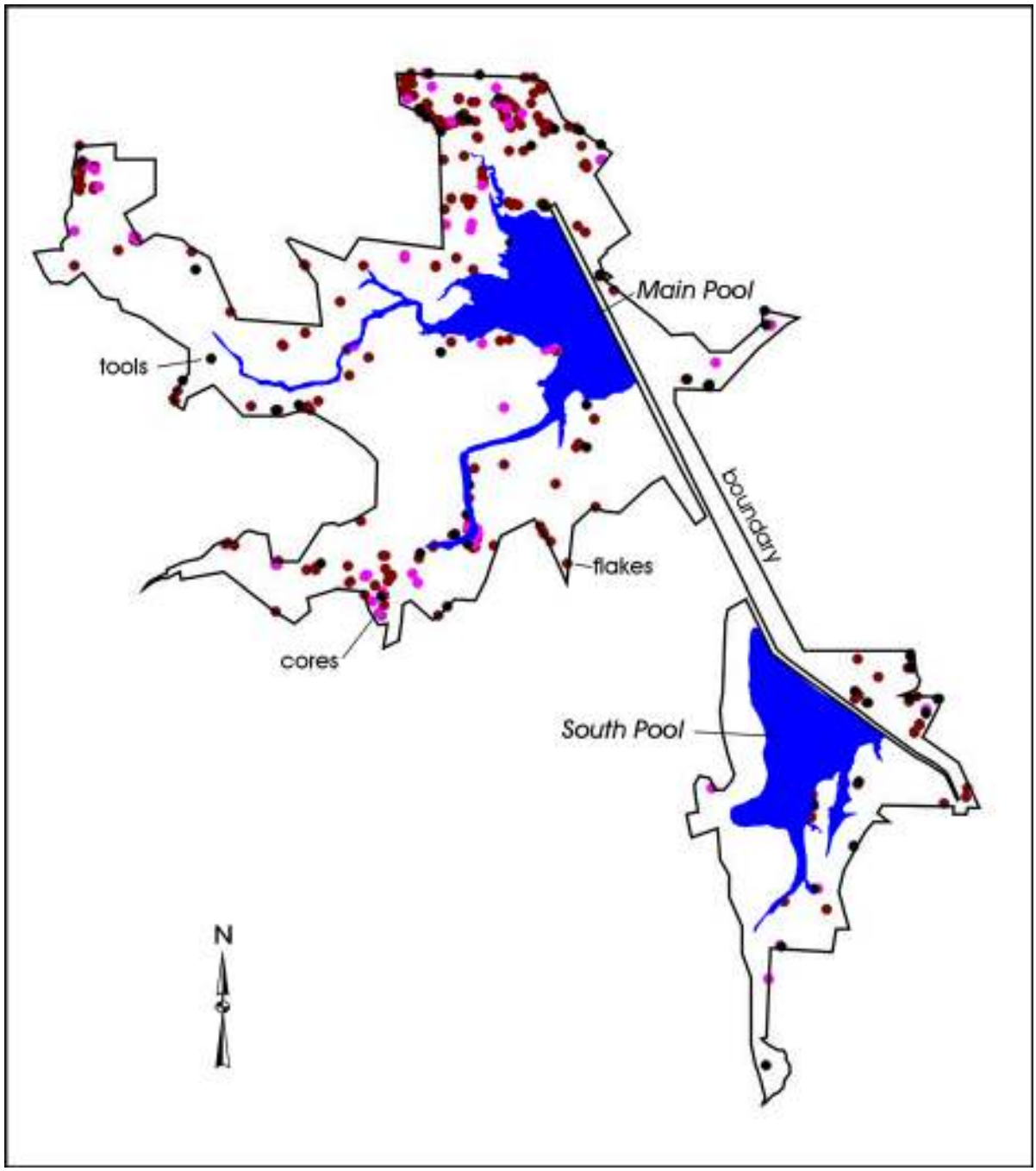

Figure G-1. *Distribution of Isolated Finds recorded during Twin Buttes Archaeological Project.*

Appendix H:
Twin Buttes Archaeological Project

Radiocarbon Results

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REPORT OF RADIOCARBON DATING ANALYSES

Dr. Raymond Mauldin — Report Date: December 4, 1999

University of Texas at San Antonio — Material Received: November 4, 1999

Sample Data	Measured Radiocarbon Age	$^{13}C / ^{12}C$ Ratio	Conventional Radiocarbon Age (*)
Beta-136034	480 +/- 40 BP	-26.7 o/oo	460 +/- 40 BP
SAMPLE #: FS#52-9 ANALYSIS: Standard-AMS MATERIAL/PRETREATMENT:(charred material): acid/alkali/acid			
Beta-136035	870 +/- 40 BP	-25.4 o/oo	870 +/- 40 BP
SAMPLE #: FS#152-2 ANALYSIS: Standard-AMS MATERIAL/PRETREATMENT:(charred material): acid/alkali/acid			

NOTE: It is important to read the calendar calibration information and to use the calendar calibrated results (reported separately) when interpreting these results in AD/BC terms.

Dates are reported as RCYBP (radiocarbon years before present, "present" = 1950A.D.). By international convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & calculated using the Libby C14 half life (5568 years). Quoted errors represent 1 standard deviation statistics (68% probability) & are based on combined measurements of the sample, background, and modern reference standards.

Measured C13/C12 ratios were calculated relative to the PDB-1 international standard and the RCYBP ages were normalized to -25 per mil. If the ratio and age are accompanied by an (*), then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibration to calendar years should be calculated using the Conventional C14 age.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-26.7:lab. mult=1)

Laboratory number: **Beta-136034**

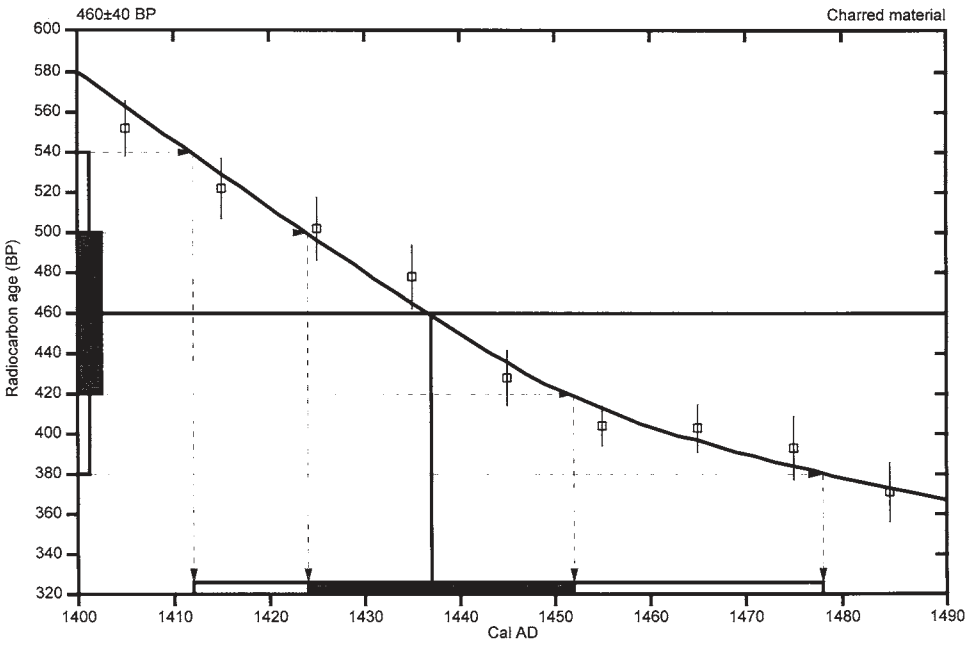
Conventional radiocarbon age: **460±40 BP**

2 Sigma calibrated result: (95% probability) **Cal AD 1410 to 1480 (Cal BP 540 to 470)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal AD 1435 (Cal BP 515)

1 Sigma calibrated result: (68% probability) Cal AD 1425 to 1450 (Cal BP 525 to 500)



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Stuiver, M., et. al., 1998, Radiocarbon 40(3), p1041-1083
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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-25.4:lab. mult=1)

Laboratory number: **Beta-136035**

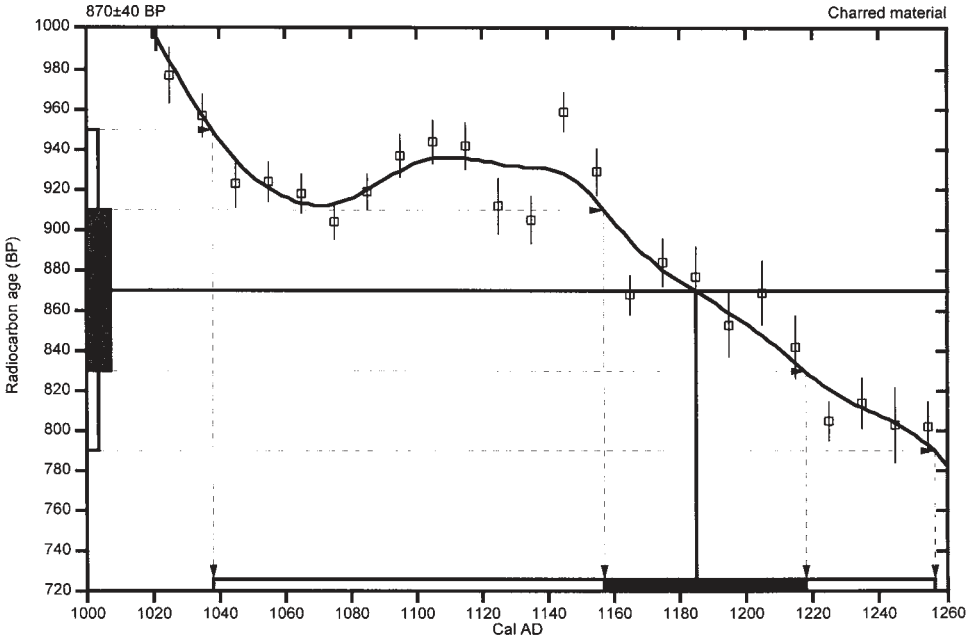
Conventional radiocarbon age: **870±40 BP**

2 Sigma calibrated result: (95% probability) **Cal AD 1040 to 1255 (Cal BP 910 to 695)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal AD 1185 (Cal BP 765)

1 Sigma calibrated result: (68% probability) Cal AD 1155 to 1220 (Cal BP 795 to 730)



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REPORT OF RADIOCARBON DATING ANALYSES

Dr. Raymond Mauldin/Lee Nordt — Report Date: December 23, 1999

University of Texas at San Antonio — Material Received: November 15, 1999

Sample Data	Measured Radiocarbon Age	$^{13}C / ^{12}C$ Ratio	Conventional Radiocarbon Age (*)
Beta-136274	9220 +/- 70 BP	-22.1 o/oo	9260 +/- 70 BP
SAMPLE #: BHT2BK1b2 ANALYSIS: Standard-AMS MATERIAL/PRETREATMENT:(organic sediment): acid washes			
Beta-136276	3200 +/- 50 BP	-15.0 o/oo	3360 +/- 50 BP
SAMPLE #: BHT6AKb1 ANALYSIS: Standard-AMS MATERIAL/PRETREATMENT:(organic sediment): acid washes			
Beta-136277	780 +/- 60 BP	-17.5 o/oo	910 +/- 60 BP
SAMPLE #: CB1bC2b2 ANALYSIS: radiometric-standard MATERIAL/PRETREATMENT:(organic sediment): acid washes COMMENT: low carbon sediment requiring special handling			
Beta-136278	5740 +/- 70 BP	-23.6 o/oo	5760 +/- 70 BP
SAMPLE #: CB2acB2 ANALYSIS: Standard-AMS MATERIAL/PRETREATMENT:(organic sediment): acid washes			
Beta-136279	3360 +/- 60 BP	-18.8 o/oo	3460 +/- 60 BP
SAMPLE #: CB5C5b2 ANALYSIS: Standard-AMS MATERIAL/PRETREATMENT:(organic sediment): acid washes			

Dates are reported as RCYBP (radiocarbon years before present, "present" = 1950A.D.). By international convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & calculated using the Libby C14 half life (5568 years). Quoted errors represent 1 standard deviation statistics (68% probability) & are based on combined measurements of the sample, background, and modern reference standards.

Measured C13/C12 ratios were calculated relative to the PDB-1 international standard and the RCYBP ages were normalized to -25 per mil. If the ratio and age are accompanied by an (*), then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibration to calendar years should be calculated using the Conventional C14 age.

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REPORT OF RADIOCARBON DATING ANALYSES

Dr. Raymond Mauldin/Lee Nordt

Sample Data	Measured Radiocarbon Age	$^{13}C / ^{12}C$ Ratio	Conventional Radiocarbon Age (*)
Beta-136280	3340 +/- 50 BP	-18.4 o/oo	3440 +/- 50 BP

SAMPLE #: CB7Cb2
ANALYSIS: Standard-AMS
MATERIAL/PRETREATMENT:(organic sediment): acid washes

NOTE: It is important to read the calendar calibration information and to use the calendar calibrated results (reported separately) when interpreting these results in AD/BC terms.

NOTE: Sample BHT4Ab2 was submitted but not analyzed.

Dates are reported as RCYBP (radiocarbon years before present, "present" = 1950A.D.). By international convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & calculated using the Libby C14 half life (5568 years). Quoted errors represent 1 standard deviation statistics (68% probability) & are based on combined measurements of the sample, background, and modern reference standards.

Measured C13/C12 ratios were calculated relative to the PDB-1 international standard and the RCYBP ages were normalized to -25 per mil. If the ratio and age are accompanied by an (*), then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibration to calendar years should be calculated using the Conventional C14 age.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-22.1:lab. mult=1)

Laboratory number: **Beta-136274**

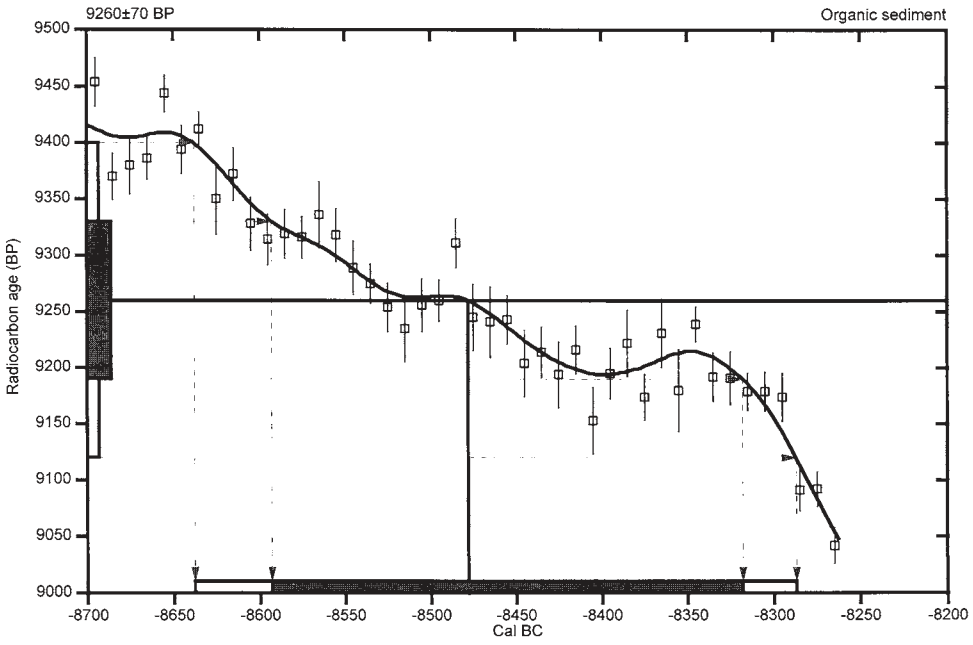
Conventional radiocarbon age: **9260±70 BP**

2 Sigma calibrated result: (95% probability) **Cal BC 8640 to 8285 (Cal BP 10590 to 10235)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal BC 8480 (Cal BP 10430)

1 Sigma calibrated result: (68% probability) Cal BC 8595 to 8320 (Cal BP 10545 to 10270)



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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-15:lab. mult=1)

Laboratory number: **Beta-136276**

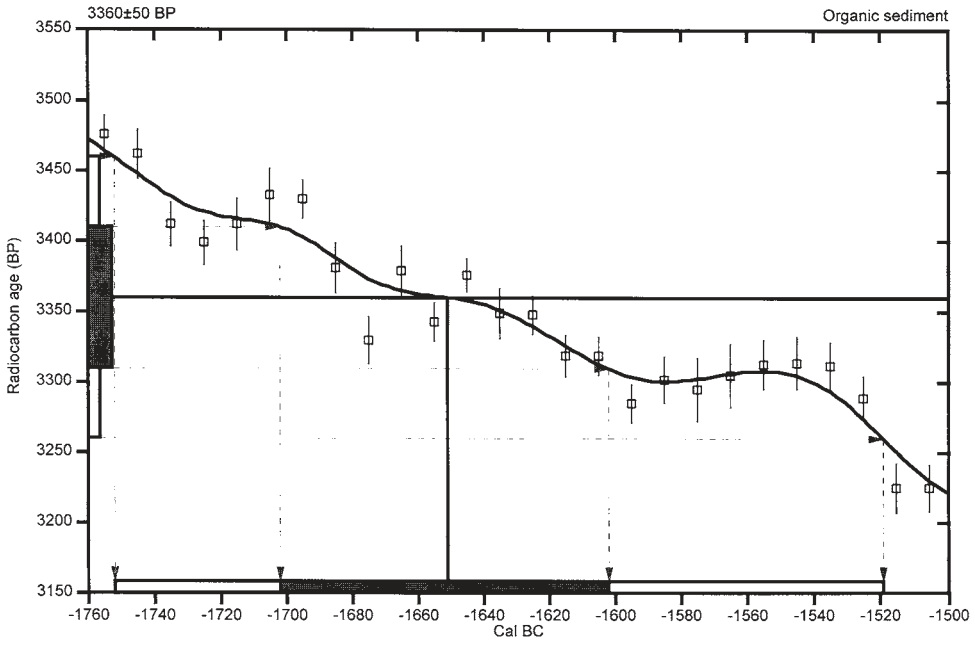
Conventional radiocarbon age: **3360±50 BP**

2 Sigma calibrated result: (95% probability) **Cal BC 1750 to 1520 (Cal BP 3700 to 3470)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal BC 1650 (Cal BP 3600)

1 Sigma calibrated result: (68% probability) Cal BC 1700 to 1600 (Cal BP 3650 to 3550)



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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-17.5:lab. mult=1)

Laboratory number: **Beta-136277**

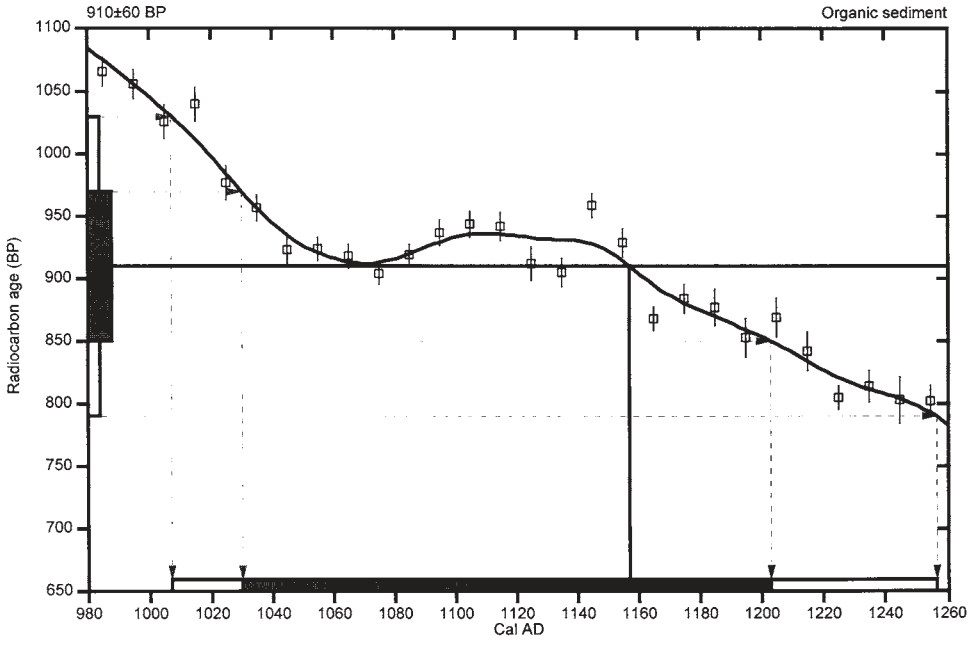
Conventional radiocarbon age: **910±60 BP**

2 Sigma calibrated result: (95% probability) **Cal AD 1005 to 1255 (Cal BP 945 to 695)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal AD 1155 (Cal BP 795)

1 Sigma calibrated result: (68% probability) Cal AD 1030 to 1205 (Cal BP 920 to 745)



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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-23.6:lab. mult=1)

Laboratory number: **Beta-136278**

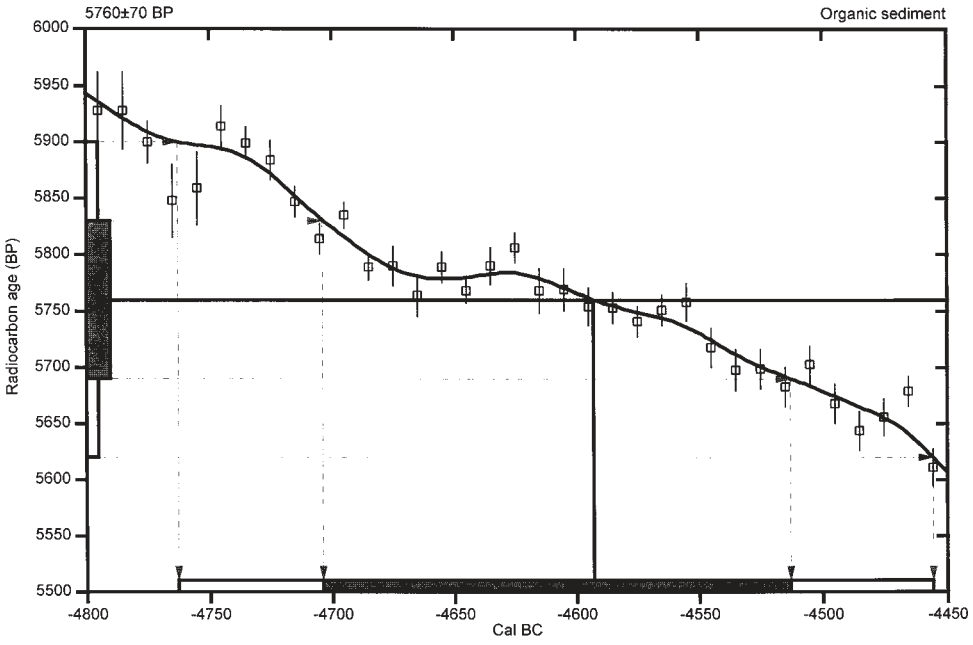
Conventional radiocarbon age: **5760±70 BP**

2 Sigma calibrated result: (95% probability) **Cal BC 4765 to 4455 (Cal BP 6715 to 6405)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal BC 4595 (Cal BP 6545)

1 Sigma calibrated result: (68% probability) Cal BC 4705 to 4515 (Cal BP 6655 to 6465)



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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-18.8:lab. mult=1)

Laboratory number: **Beta-136279**

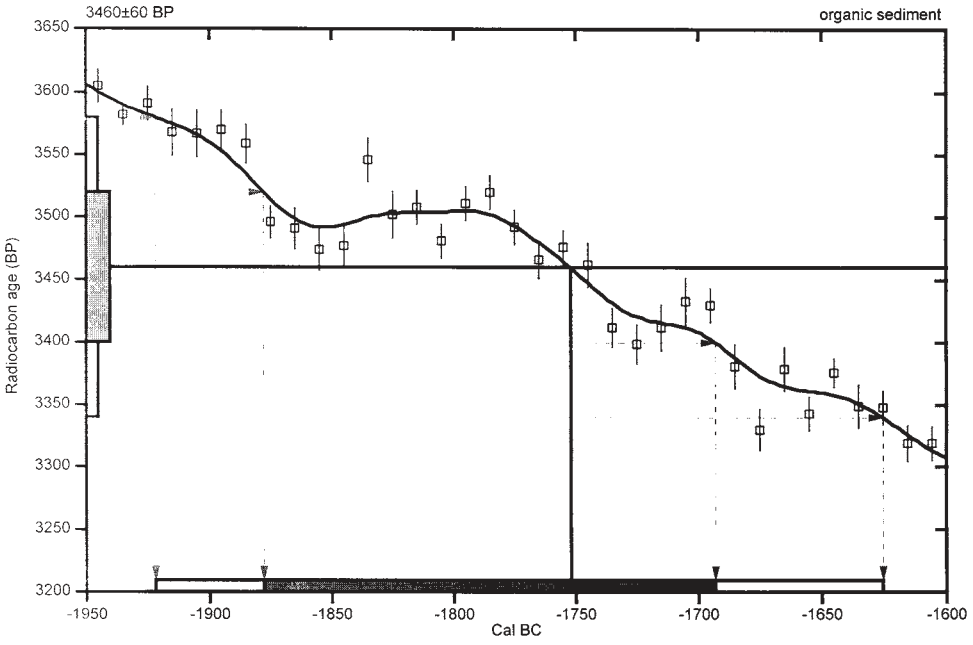
Conventional radiocarbon age: **3460±60 BP**

2 Sigma calibrated result: (95% probability) **Cal BC 1920 to 1625 (Cal BP 3870 to 3575)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal BC 1750 (Cal BP 3700)

1 Sigma calibrated result: (68% probability) Cal BC 1880 to 1695 (Cal BP 3830 to 3645)



References:

Database used

INTCAL98

Calibration Database

Editorial Comment

Stuiver, M., van der Plicht, H., 1998, Radiocarbon 40(3), pxii-xiii

INTCAL98 Radiocarbon Age Calibration

Stuiver, M., et. al., 1998, Radiocarbon 40(3), p1041-1083

Mathematics

A Simplified Approach to Calibrating C14 Dates

Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2), p317-322

Beta Analytic Radiocarbon Dating Laboratory

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-18.4:lab. mult=1)

Laboratory number: **Beta-136280**

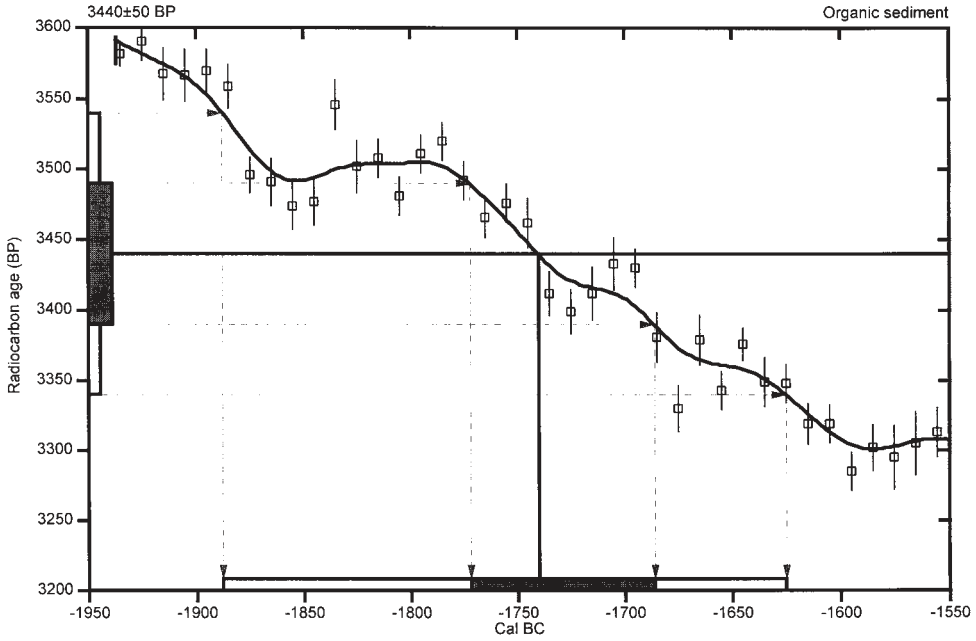
Conventional radiocarbon age: **3440±50 BP**

2 Sigma calibrated result: (95% probability) **Cal BC 1890 to 1625 (Cal BP 3840 to 3575)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal BC 1740 (Cal BP 3690)

1 Sigma calibrated result: (68% probability) Cal BC 1770 to 1685 (Cal BP 3720 to 3635)



References:

Database used
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INTCAL98 Radiocarbon Age Calibration
Stuiver, M., et. al., 1998, Radiocarbon 40(3), p1041-1083
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REPORT OF RADIOCARBON DATING ANALYSES

Dr. Raymond Mauldin

University of Texas at San Antonio

Report Date: January 19, 2000

Material Received: Auth. Dec. 23, 1999

Sample Data	Measured Radiocarbon Age	$^{13}C / ^{12}C$ Ratio	Conventional Radiocarbon Age (*)
Beta-136275	7240 +/- 40 BP	-19.0 o/oo	7340 +/- 40 BP

SAMPLE #: BHT4Ab2
ANALYSIS: Standard-AMS
MATERIAL/PRETREATMENT:(organic sediment): acid washes

NOTE: It is important to read the calendar calibration information and to use the calendar calibrated results (reported separately) when interpreting these results in AD/BC terms.

Dates are reported as RCYBP (radiocarbon years before present, "present" = 1950A.D.). By international convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & calculated using the Libby C14 half life (5568 years). Quoted errors represent 1 standard deviation statistics (68% probability) & are based on combined measurements of the sample, background, and modern reference standards.

Measured C13/C12 ratios were calculated relative to the PDB-1 international standard and the RCYBP ages were normalized to -25 per mil. If the ratio and age are accompanied by an (*), then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibration to calendar years should be calculated using the Conventional C14 age.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-19:lab. mult=1)

Laboratory number: **Beta-136275**

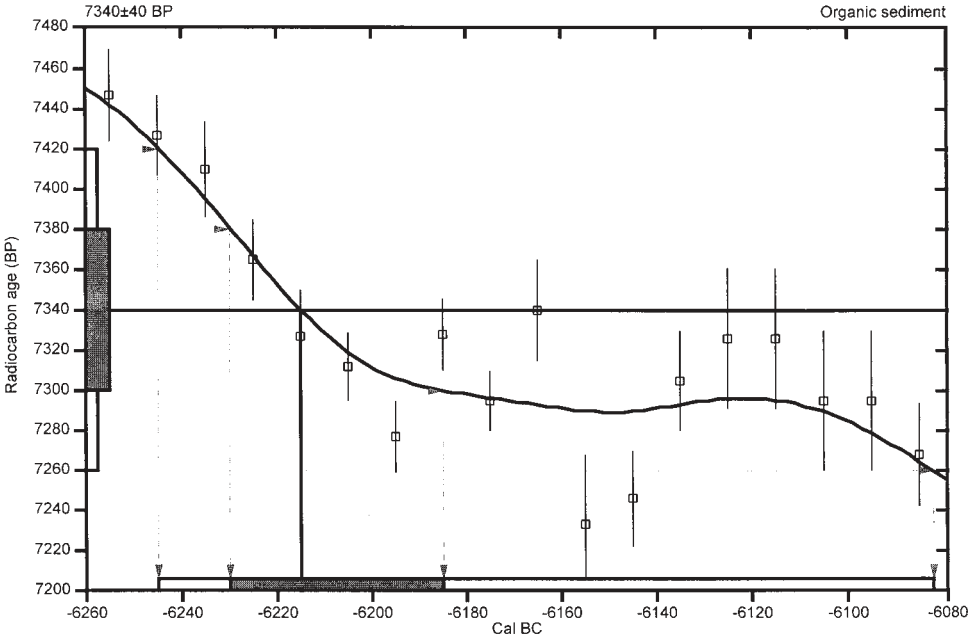
Conventional radiocarbon age: **7340±40 BP**

2 Sigma calibrated result: (95% probability) **Cal BC 6245 to 6080 (Cal BP 8195 to 8030)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal BC 6215 (Cal BP 8165)

1 Sigma calibrated result: (68% probability) Cal BC 6230 to 6185 (Cal BP 8180 to 8135)



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INTCAL98

Calibration Database

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INTCAL98 Radiocarbon Age Calibration

Stuiver, M., et. al., 1998, Radiocarbon 40(3), p1041-1083

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Appendix I:
Twin Buttes Archaeological Project

Soil-Stratigraphic Descriptions

Middle Concho River

CB1a; Modern alluvium (MO) over Late Holocene alluvium (LH); Holocene flood terrace (6 m); calcareous throughout.

A/C1 0-18 cm; very dark grayish brown (10YR 3/2) silt loam; weak coarse subangular blocky; hard; common fine worm casts; clear smooth.

A/C1 18-43 cm; very dark grayish brown (10YR 3.5/2) silt loam; weak coarse subangular blocky; hard; few laminated clasts; common fine worm casts; clear smooth. Hearth charcoal radiocarbon age of 870±40 B.P. in lower part.

Ab 43-67 cm; very dark grayish brown (10YR 3/2) silt loam; moderate medium prismatic; hard; 1% carbonate filaments; common fine biocasts; gradual smooth.

Bw1b 67-100 cm; very dark grayish brown (10YR 3.5/2) silt loam; moderate coarse prismatic; hard; 1% carbonate filaments; few fine biocasts; hearth at upper contact; gradual smooth.

Bw2b 100-151 cm; brown (10YR 4/3) silt loam; weak coarse prismatic; hard; 1% carbonate filaments; few fine biocasts; gradual smooth.

Bw3b 221- 268 cm; brown (10YR 4/3) silt loam; weak coarse prismatic; hard; 1% carbonate filaments; few fine biocasts; gradual smooth.

Bw4b 268-322 cm; brown (10YR 4/3) silt loam; weak coarse prismatic; hard; few fine biocasts; dispersed charcoal sample; gradual smooth.

Bw5b 322-348 cm; brown (10YR 4/3, 5/3) silt loam; weak coarse prismatic; hard; few fine biocasts; clear smooth.

Bw6b 348-364 cm; brown (10YR 3.5/3) silt loam; weak coarse prismatic; slightly hard; few fine biocasts; gradual smooth.

Bw1b 364-418 cm; brown (10YR 3.5/3) silty clay loam; 10% brown (10YR 5/3); weak coarse prismatic; slightly hard; few fine biocasts; clear smooth.

Bw2b 418-452 cm; brown (10YR 3.5/3) silty clay loam; 10% brown (10YR 5/3); weak coarse prismatic; slightly hard; few fine biocasts; few fine clay clasts; clear smooth.

Bw3b 452- 483 cm; brown (10YR 4/3) silty clay loam; 20% brown (10YR 5/3); weak coarse prismatic; slightly hard; few fine biocasts; few fine clay clasts; gradual smooth.

Bkb 483-520 cm; brown (10YR 4/3) silty clay loam; 15% brown (10YR 5/3); weak coarse prismatic; very hard; 1% carbonate nodules, 0.5 to 1.5 cm, white, very hard; few fine biocasts; few fine clay clasts; gradual smooth.

BCkb 520-593 cm; brown (10YR 4/3, 5/3) and pale brown (10YR 6/3) silty clay loam; 15% brown (10YR 5/3); weak coarse prismatic; very hard; common faint laminations; 2% carbonate nodules, 0.5 to 1.5 cm, white, very hard; 1% carbonate filaments; few fine biocasts; few fine clay clasts; gradual smooth.

BCb 593-634 cm; bedded dark grayish brown (10YR 3.5/2) and brown (10YR 4/3) clay loam, and pale brown (10YR 6/3) silt loam, 2 to 10 cm thick; common faint laminations; massive; hard; 1% carbonate filaments.

CB1b; Modern alluvium (MO); modern floodplain (4 m); calcareous throughout.

A/C1 0-17 cm; dark brown (10YR 3/3) sandy clay loam; moderate fine subangular blocky; friable; common fine biocasts; common uncoated sand particles; gradual smooth.

A/C2 17-35 cm; very dark grayish brown (10YR 3/2) sandy clay loam; moderate medium subangular blocky; friable; common fine biocasts; common uncoated sand particles; gradual smooth.

Ab1 35-66 cm; very dark gray (10YR 3/1) loam; moderate medium subangular blocky; friable; gradual smooth.

Cb1 66-89 cm; very dark grayish brown (10YR 3/2) clay loam with 3 (0.5 cm) yellowish brown (10YR 5/4) beds; massive to weak coarse subangular blocky; slightly hard; clear smooth.

Ab2 89-119 cm; very dark gray (10YR 3/1) clay loam; 10% dark grayish brown (10YR 4/2); weak coarse subangular blocky; hard; gradual smooth.

C1b2 119-146 cm; dark grayish brown (10YR 4/2) sandy clay loam; 20% pale brown (10YR 6/3); massive; hard; faint bedding planes; gravel line in middle and bottom, 0.5 to 1 cm, subrounded, grain supported; abrupt smooth.

C2b2 146-212 cm; multiple beds 3 to 10 cm of very dark grayish brown (10YR 3/2) clay loam and pale brown loam (10YR 6/3) with 40% pebbles, 0.2 to 0.5 cm, subrounded; abrupt smooth. Bulk humate radiocarbon age of 910±60 B.P. in lower part.

C1b2 212-247 cm; 80% pebbles, 0.4 to 1 cm in upper half and 1 to 4 cm in lower half, moderately well sorted, subrounded, grain supported; abrupt smooth.

C2b2 247-394 cm; multiple light tan cross beds 10 to 50 cm thick, 50 to 80% pebbles, mostly subrounded, moderately sorted, 0.2 to 1 cm and 2 to 7 cm diameter.

Cb2 394-425 cm; dark brown (10YR 3/3); upper 10 cm massive clay loam with few fine pebbles, lower part 60% pebbles, 0.5 to 4 cm, mostly subrounded, moderately sorted, matrix supported.

CB2a; Latest Pleistocene alluvium (LP2); latest Pleistocene terrace (8-9 m); calcareous throughout; approximately upper 1 m truncated.

Bk 0-34 cm; brown (10YR 5.5/3) clay loam; moderate medium subangular blocky; hard; 5% carbonate nodules, 0.5 to 1.5 cm, white, slightly hard; 20% pebbles, 0.3 to 2 cm, subrounded, matrix supported, moderately sorted; gradual smooth.

BC 34-54 cm; brown (7.5YR 5/4) clay loam; 30% light brownish gray (10YR 6/2); moderate coarse angular blocky; hard; common disseminated carbonate; clear smooth.

BC 54-85 cm; brown (7.5YR 5.5/4) clay loam; moderate medium angular blocky; hard; 3% carbonate nodules, 0.5 cm, white, slightly hard; clear smooth.

Bkg 85-133 cm; light brownish gray (2.5Y 6/2) clay; moderate medium angular blocky; hard; 30% carbonate nodules, 0.5 to 2 cm, white, slightly hard to hard; gradual smooth.

BCg1 133-151 cm; light gray (2.5Y 7/2) clay loam; weak coarse angular blocky; firm; 1% pebbles, 1 cm, subrounded; clear smooth.

BCg2 151-191 cm; light gray (2.5Y 7.5/2) sandy clay loam; weak coarse angular blocky; firm; common medium distinct light olive brown (2.5Y 5/6) soft iron masses; clear smooth.

Cg 191-201 cm; light gray (2.5Y 7.5/2) clay loam; massive; very firm; 1% carbonate nodules, 0.2 to 0.5 cm, white, slightly hard; abrupt wavy. Bulk humate radiocarbon sample of 5760±70 B.P.

C1 201-301 cm; 70% pebbles, 1 to 8 cm, subrounded, grain supported, moderate sorted; tan loamy matrix with few iron stains; clear wavy.

C2 301-581 cm; 70% pebbles, multiple beds and cross beds, 1 to 8 cm and 0.2 to 0.5 cm, subrounded, grain supported, moderate sorted; occasional bedrock rip up clasts and cobbles up to 15 cm in lower half.

CB2b; Latest Pleistocene alluvium (LP2); latest Pleistocene terrace (8-9 m); calcareous throughout; approximately upper 1 m truncated.

BA 0-19 cm; brown (10YR 5/4) clay loam; moderate medium prismatic to moderate medium subangular blocky; very hard; 2% pebbles, 0.2 to 0.4 cm, subrounded to angular, matrix supported, moderately well sorted; gradual smooth.

Bk1 19 -39 cm; brown (10YR 5/4) clay loam; moderate medium prismatic to moderate medium angular blocky; very hard; 2% pebbles, 0.2 to 0.4 cm, subrounded to angular, matrix supported, moderately well sorted; 2% carbonate nodules, 1 cm, white, slightly hard to hard; gradual smooth.

Bk2 39-51 cm; brown (10YR 5/4) clay loam; moderate medium angular blocky; very hard; 5% carbonate nodules, 1 cm, white, slightly hard to hard; 3 % carbonate filaments; clear smooth.

B/Ck 51-70 cm; reddish brown (5YR 5/4) clay loam; common medium distinct yellowish brown (10YR 5/6) soft iron masses; faintly bedded; firm; 3% carbonate nodules, 1 cm, white, slightly hard to hard; 3% carbonate filaments; abrupt smooth.

Ck 70-98 cm; reddish brown (5YR 5/4) loam; common medium distinct yellowish brown (10YR 5/6) soft iron masses; massive; firm; 1% carbonate nodules, 0.5 cm, white, slightly hard to hard; 3% carbonate filaments; abrupt smooth.

C1 98-200 cm; 60% pebbles, 0.2 to 2 cm, subrounded, moderate sorted, grain supported and dipping; tan loamy matrix; abrupt wavy.

C2 200-500 cm; 70% pebbles, 1 to 15 cm, subrounded, moderate sorted, grain supported; tan loamy alluvium.

CB2c; Early Holocene alluvium (EH); Holocene flood terrace (6.0 m); calcareous throughout.

C 0-3 cm; very dark gray (10YR 3/1) loam; moderate medium platy; hard; abrupt wavy. (lake deposit)

A1 3-24 cm; very dark gray (10YR 3/2.5) clay loam; few fine distinct brown (7.5YR 4/4) iron pore linings; weak medium angular blocky; very hard; gradual smooth.

A2 24-53 cm; very dark grayish brown (10YR 3/2) clay loam; weak medium prismatic; very hard; gradual smooth.

Bw 53-91 cm; brown (10YR 3.5/3) clay loam; weak medium prismatic; very hard; gradual smooth.

Bk1 91-119 cm; brown (7.5YR 4/4) clay loam; weak medium prismatic to weak medium angular blocky; very hard; 1% carbonate filaments; 5% pebbles, 0.2 to 0.4 cm, subrounded, matrix supported, moderately well sorted; gradual smooth.

Bk2 119-185 cm; brown (7.5YR 4/4.5) clay loam; weak medium prismatic to weak medium angular blocky; very hard; 1% carbonate filaments; 1% pebbles, 0.5 to 1 cm, subrounded, matrix supported and 5% pebbles, 0.2 to 0.4 cm, subrounded, matrix supported, moderately well sorted; clear smooth.

Bk3 185-239 cm; brown (7.5YR 4/3) clay loam; weak coarse subangular blocky; firm; 2% carbonate filaments; 5% pebbles, 0.3 to 1 cm; subrounded, matrix supported, moderately well sorted; clear wavy.

C 239-275 cm; light brown (7.5YR 6/4) loam; 40% pebbles, 0.5 to 3 cm, subrounded, grain supported.

CB3 Early Holocene alluvium (EH); truncated Holocene flood terrace (6 m); calcareous throughout.

Bk1 0-80 cm; 70% pebbles, 0.2 to 0.6 cm and 1 to 6 cm, moderately sorted; grain supported, subrounded; 1 to 3 mm thick discontinuous carbonate pendants; brown (10YR 5/3) clay loam matrix; abrupt wavy.

Bk2 80-112 cm; brown (7.5YR 4/4) clay loam; 20% brown (7.5YR 5/3); weak coarse prismatic; very firm; 3% carbonate nodules, 0.5 to 1.5 cm, white, soft to hard; few biocasts.

Bw1 112-130 cm; brown (7.5YR 4/3) and light brown (7.5YR 6/3) clay loam; weak coarse prismatic; very firm; gradual smooth.

Bw2 130-160 cm; brown (7.5YR 4/3, 5/4) clay loam; weak coarse prismatic; firm; common fine distinct iron manganese root pores; gradual smooth.

BC 160-220 cm; pale brown (10YR 6/3) clay loam; 3% pebbles, 0.5 to 1 cm, subrounded, matrix supported; clear smooth.

C1 220-235 cm; light brown (7.5YR 6/4) clay loam; 15% pebbles, 1 to 3 cm, matrix supported, moderately sorted, subrounded; clear smooth.

C2 235-285 cm; 70% pebbles, 0.2 to 0.5 cm and 1 to 5 cm, moderately to poorly sorted; subrounded, grain supported; tan matrix; abrupt wavy.

C3 285-400 cm; very pale brown (10YR 7/3) sandy clay loam; few medium faint yellow iron soft masses; three pebbles beds, 10 cm thick, 1 to 3 cm, subrounded, grain supported, moderately well sorted; abrupt wavy.

C4 400-440 cm; 80% pebbles, 1 to 8 cm, grain supported, moderately sorted, subrounded; loamy gray matrix.

BHT-1; Modern alluvium (MO) over Early Holocene alluvium (EH); Holocene flood terrace (6.5 m); calcareous throughout.

A 0-9 cm; dark grayish brown (10YR 3.5/2) silt loam; 10% brown (10YR 4/3); moderate fine and medium platy; slightly hard; many biocasts; clear smooth.

Ab 9-51 cm; very dark grayish brown (10YR 3/2) silty clay loam; moderate medium and coarse angular blocky; hard; many biocasts; gradual smooth.

Bw1b 51-80 cm; dark yellowish brown (10YR 4/3.5) silty clay loam; moderate medium prismatic to moderate medium angular blocky; hard; common biocasts; gradual smooth.

Bw2b 80-112 cm; dark yellowish brown (10YR 4/4) silty clay loam; weak coarse prismatic; hard; common biocasts; few pebbles, subrounded, 1 cm; gradual smooth.

Bw3b 112-147 cm; dark yellowish brown (10YR 4/4) silty clay loam; weak coarse prismatic; very hard; few biocasts; few pebbles, subrounded, 1 cm; clear smooth.

Bkb 147-209 cm; dark yellowish brown (10YR 4/4) silty clay loam; weak coarse prismatic to weak coarse angular blocky; very hard; few biocasts; 2% carbonate filaments; gradual smooth.

BCb 209-279 cm; brown (10YR 4/3) and yellowish brown (10YR 5/4) silty clay loam; 5% yellowish brown (7.5YR 5/4) sandy patches; weak coarse prismatic; very hard; few biocasts; few pebbles, subrounded, 1 cm.

BHT-2; late Pleistocene alluvium (LP1); late Pleistocene terrace (12-14 m); calcareous throughout.

A 0-16 cm; very dark grayish brown (10YR 3/2) clay loam; moderate medium subangular blocky; hard; 3% pebbles, 0.5 to 1 cm, angular to subrounded, matrix supported, moderately sorted; gradual smooth.

BA 16-35 cm; yellowish brown (10YR 5/4) clay loam; 30% very dark grayish brown (10YR 3/2) biocasts; moderate medium to coarse angular blocky; hard; 4% carbonate clasts, 0.5 to 1 cm, white, slightly hard; 3% pebbles, 0.2 to 0.4 mm, angular to subrounded, moderate sorted, matrix supported; gradual smooth.

Bw 35-53 cm; brown (7.5YR 5/4) clay loam; few fine faint strong brown (7.5YR 4/6) soft iron masses; 2% very dark grayish brown (10YR 3/2) biocasts; moderate coarse angular blocky; very hard; 1% carbonate clasts, 0.5 to 1 cm, white, slightly hard; 1% pebbles, 0.2 to 0.4 cm, angular to subrounded, moderate sorted, matrix supported; clear smooth.

Bk1b 53-74 cm; brown (7.5YR 5/4) clay; moderate medium angular blocky; very hard; 15% carbonate nodules, 0.5 to 1.5 cm, white, slightly hard to hard; clear smooth.

Bk2b 74-144 cm; yellowish brown (5YR 5/4) clay; moderate medium prismatic to moderate medium angular blocky; very hard; 20% carbonate nodules, 0.5 to 1.5 cm, white, slightly hard to hard; gradual smooth.

BCkb 144-173 cm; brown (7.5YR 5/4) clay; weak coarse prismatic; very hard; 25% yellowish brown (5YR 5/4) pockets; 5% disseminated carbonate soft masses; clear smooth.

Bk1b 173-203 cm; brown (7.5YR 5.5/4) clay; weak coarse prismatic; very hard; 10% carbonate nodules, 0.5 to 1.5 cm, white, slightly hard to hard; gradual smooth. Bulk humate radiocarbon sample of 9260±70 B.P.

Bk2b 203-234 cm; light brown (7.5YR 6/4) clay; weak coarse prismatic; very hard; 15% carbonate nodules, 0.5 to 1.5 cm, white, slightly hard to hard; few fine organic root pores; gradual smooth.

Bk3b 234-326 cm; light brown (7.5YR 6/4) clay; weak coarse prismatic; very hard; 40% carbonate nodules, 0.5 to 1.5 cm, white, slightly hard to hard; clear smooth.

Cb 326-345 cm; brown (7.5YR 5/4) clay; 10 % light brown (7.5YR 6/3) pockets; massive; very hard; 2% carbonate clasts, 0. 5 cm, white, hard.

BHT-3; Early Holocene alluvium (EH); Holocene flood terrace (6.5 m); calcareous throughout.

A1 2-6 cm; very dark gray (10YR 3/1) clay loam; moderate medium subangular blocky; hard; common fine distinct strong brown (7.5YR 5/6) pore linings; gradual smooth.

A2 6-28 cm; very dark grayish brown (10YR 3.5/2) clay loam; moderate medium subangular blocky; friable; gradual smooth.

Bw 28-70 cm; brown (10YR 5.5/3) clay loam; moderate medium subangular blocky; firm; few very dark gray (10YR 3/1) biocasts; clear smooth.

Bk1 70-91 cm; yellowish brown (10YR 5/4) clay loam; few fine faint yellowish brown (10YR 5/8) pore linings; moderate medium angular blocky; hard; 2% carbonate filaments; gradual smooth.

Bk2 91-118 cm; brown (10YR 5.5/4) clay loam; moderate medium angular blocky; hard; 3% carbonate nodules, 0.5 to 1 cm, white, slightly hard to hard; 3% pebbles, 1 to 2 cm, subrounded, moderately sorted, matrix supported; gradual smooth.

Bk3 118-161 cm; dark grayish brown (10YR 4/2) and brownish yellow (10YR 6/6) clay loam; moderate medium angular blocky; hard; 10% pebbles, 1 to 3 cm, subrounded, moderately sorted, matrix supported; 2% carbonate nodules, white, slightly hard to hard; clear wavy.

Bk4 161-198 cm; light brownish gray (10YR 6/2) clay loam; weak coarse angular blocky; very hard; 10% dispersed carbonate masses, 0.3 to 0.5 cm; abrupt wavy.

Bkmb 198-210 cm; many cemented waterworn pebbles and cobbles, 2 to 10 cm, subrounded, moderately sorted.

BHT-4; Late Holocene (LH) over Early Holocene alluvium (EH); Holocene flood terrace (6.5 m); calcareous throughout.

A 0-14 cm; very dark gray (10YR 3.5/1) silty clay loam; moderate fine and medium subangular blocky; friable; 10% strong brown (7.5YR 4/6) iron pore linings; gradual smooth.

BA 14-30 cm; dark gray (10YR 4/1) silty clay loam; common fine distinct strong brown (7.5YR 4/6) iron pore linings; moderate medium subangular blocky; friable; gradual smooth.

Bw1 30-63 cm; brown (10YR 4/2.5) clay loam; common fine distinct strong brown (7.5YR 4/6) iron pore linings; moderate medium angular blocky; hard; gradual smooth.

Bw2 63-117 cm; grayish brown (10YR 4.5/2) clay loam; moderate medium angular blocky; hard; few fine faint dark yellowish brown (10YR 4/6) soft iron masses; 1% carbonate filaments; clear smooth.

Bw1b 117-150 cm; dark grayish brown (3.5/2) clay; 30% brown (10YR 5/3); moderate coarse prismatic; very hard; gradual smooth.

Bw2b 150-184 cm; brown (7.5YR 5/3) clay; moderate coarse prismatic; very hard; gradual smooth.

Bkb 184-218 cm; brown (7.5YR 5/3) and light brown (7.5YR 6/3) clay; moderate coarse prismatic; very hard; 1% carbonate nodules, 0.5 to 1 cm, white, hard; gradual smooth.

BC1b 218-272 cm; brown (7.5YR 5/4, 4/2) clay; moderate coarse prismatic; very hard; clear smooth.

BC2b 272-321 cm; brown (7.5YR 4.5/4, 4/2) clay; moderate coarse prismatic; very hard; 1% carbonate nodules, 0.5 cm, white, hard; 1% pebbles, subrounded, 1 cm, matrix supported; clear smooth. Bulk humate radiocarbon age of 7340±40.

Cgb 321-364 cm; light gray (10YR 7/2) and light yellowish brown (7.5YR 6/4) loam; common medium distinct light bluish gray (5B 7/1) iron depletions; massive; very firm; 1% pebbles subrounded, 1 cm, matrix supported; partially carbonate cemented in lower part.

41TG378 (TU1); Holocene colluvium (HO) over Permian bedrock; upland deflational hillslope; calcareous throughout.

Bw1 0-15 cm; brown (7.5YR 5/4) sandy clay loam; moderate mediums subangular blocky; friable; few fine distinct brown (7.5YR 4/4) iron pore coats; 2% carbonate clasts 0.2 to 0.4 cm, white, hard, angular; many fine roots; clear smooth.

Bw2 15-29 cm; brown (7.5YR 5/4) sandy clay loam; moderate medium subangular blocky; friable; few fine distinct brown (7.5YR 4/4) iron pore coats; 15% carbonate clasts 0.3 to 1 cm, white, hard, angular; few large rip up carbonate clasts, 0.5 to 3 cm, angular, white, very hard; common fine roots; clear smooth.

Bw3 29-38 cm; brown (7.5YR 5/4) clay loam; 30% light reddish brown (2.5YR 6/4); moderate medium subangular blocky; firm; few fine roots; abrupt wavy.

C/Bb 38-54 cm; faint bedding planes, pale yellow (5Y 8/2), 30% brown (7.5YR 5/4), 5% light reddish brown (2.5YR 6/4) silt loam; massive to weak coarse subangular blocky; hard; few fine roots; abrupt smooth.

Crb 54-95 cm; multiple bedding planes, 1 to 5 cm, pale yellow (5Y 8/2), 30% brown (7.5YR 5/4), 5% light reddish brown (2.5YR 6/4), olive yellow (2.5Y 6/6), greenish gray (10GY 6/1) silt loam; few thin nodular iron zones.

41TG389 (TU1); Holocene eolian undifferentiated (HO); upland hillslope; calcareous throughout.

A 0-12 cm; brown (10YR 4/3) fine sandy loam; few fine distinct brown (7.5YR 4/4/) iron pore linings; moderate medium subangular blocky; friable; many fine roots; gradual smooth.

Bw 12-29 cm; brown (10YR 4/3) fine sandy loam; few fine distinct brown (7.5YR 4/4) iron pore linings; moderate medium subangular blocky; friable; many fine roots; 2% carbonate clasts, angular, 0.2 to 0.3 cm; clear smooth.

Bw 29-59 cm; brown (10YR 4/3) sandy clay loam; 15% brown (10YR 5/3); common fine distinct brown (7.5YR 4/4) iron pore linings; moderate medium and coarse subangular blocky; firm; many fine roots; abrupt wavy.

Bkmb 59-63 cm; carbonate cemented channel gravels.

41TG410 (TU1); late Holocene alluvium (LH); Holocene flood terrace (6.5 m); calcareous throughout.

A1 0-11 cm; very dark grayish brown (10YR 3/2) silt loam; moderate fine and medium subangular blocky; firm; many roots and worm casts; gradual smooth.

A2 11-26 cm; dark grayish brown (10YR 4/2) silt loam; moderate medium subangular blocky; firm; many fine and medium roots and worm casts; gradual smooth.

Bw1 26-45 cm; dark grayish brown (10YR 4/2) silt loam; moderate medium angular blocky; firm; many fine and medium roots and worm casts; gradual smooth.

Bw2 45-66 cm; brown (10YR 5/3) loam; moderate coarse angular blocky; hard; common fine and medium roots and worm casts; 1% carbonate filaments; gradual smooth.

Bw3 66-95 cm; brown (10YR 5/3) loam; weak coarse prismatic; hard; few fine and medium roots and worm casts; 1% carbonate filaments.

South Concho River

CB6; Early Holocene alluvium (EH); Holocene flood terrace (6.5 m); calcareous throughout. Quarry pit with 1.5 m of overburden.

A 0-35 cm; very dark grayish brown (10YR 3/2) silty clay loam; moderate medium subangular blocky; very hard; gradual smooth.

AB 35-72 cm; brown (10YR 4.5/3) silty clay loam; moderate coarse subangular blocky; firm; gradual smooth.

Bk 72-142 cm; brown (10YR 4/3) silty clay loam; 15% brown (7.5YR 5/4); moderate medium angular blocky; firm; 1% carbonate filaments; 5% pebbles, 0.5 to 1.5 cm, subrounded, matrix supported, moderately sorted; 6 cm pebble line at base of horizon; abrupt smooth.

BC1 142-178 cm; light brown (7.5YR 6/4) silty clay loam; weak coarse subangular blocky; firm; 3% pebbles, 0.5 to 1.5 cm, subrounded, matrix supported, moderately sorted; gradual smooth.

BC2 178-269 cm; strong brown (7.5YR 5/6) silty clay loam; 20% light yellowish brown (10YR 6/4); weak coarse subangular blocky; firm; gradual smooth.

BC3 269-336 cm; light yellowish brown (10YR 6.5/4) sandy clay loam; massive; friable; abrupt wavy.

C 336-466 cm; 65% pebbles, 0.5 to 5 cm, subrounded, grain supported, moderately sorted.

CB7; Modern alluvium (MO) over Late Holocene alluvium (LH) over Early Holocene alluvium (EH); Holocene flood terrace (6.0 m); calcareous throughout. Quarry pit exposure.

A 0-13 cm; very dark grayish brown (10YR 3/2) silty clay loam; moderate medium subangular blocky; hard; clear smooth.

Ab1 13-49 cm; black (10YR 2/1) silty clay loam; moderate medium subangular blocky; hard; abrupt wavy.

Bwb1 49-111 cm; very dark gray (10YR 2.5/1) loam; 50% pebbles, 1-8 cm, subrounded, matrix and grain supported, moderately sorted; abrupt wavy.

Cb1 111-158 cm; dark grayish brown (10YR 4/2) loam; 50% pebbles, 1-8 cm, subrounded, matrix and grain supported, moderately sorted; abrupt wavy.

Bkb1 158-203 cm; brown (3.5/3) clay loam; moderate medium prismatic; very hard; 1% carbonate filaments; abrupt wavy. Bulk humate radiocarbon age of 3440±50 B.P.

Cb1 203-277 cm; 70% bedded pebbles, 1 to 6 cm, subrounded, matrix and grain supported, moderately sorted; brown (10YR 4/3) loamy; abrupt wavy.

Bkb2 277-300 cm; brown (7.5YR 5/3) clay loam; few medium distinct strong brown (7.5YR 5/6) soft iron masses; 10% carbonate filaments.

Spring Creek

CB5; Late Holocene alluvium (LH); Holocene flood terrace (4.5 m); calcareous throughout.

A 0-18 cm; very dark gray (10YR 3.5/1) clay loam; moderate medium and coarse subangular blocky; hard; common uncoated sand grains; abrupt smooth.

C1 18-31 cm; very dark gray (10YR 3/1) clay loam; 50% bedded pebbles, 0.3 to 0.6 cm and 1 to 4 cm, poorly sorted, subrounded, grain supported; abrupt smooth.

C2 31-49 cm; very dark gray (10YR 3/1) clay loam; moderate medium subangular blocky; hard; occasional discontinuous pebble beds, 0.3 to 0.6 cm and 1 to 4 cm, poorly sorted, subrounded, grain supported; abrupt wavy.

C3 49-134 cm; very dark gray (10YR 3.5/1) clay loam; 60% pebbles, matrix and grain supported, 1 to 2 cm and 3 to 10 cm, subrounded, moderately to moderately well sorted; abrupt wavy.

ABkb 134-153 cm; dark grayish brown (10YR 4/2.5) clay; moderate medium prismatic; very hard; 2% carbonate filaments; gradual smooth.

Bk/Cb 153-228 cm; brown (7.5YR 4/3) clay; 2% carbonate filaments; 10 cm pebble bed in middle, 60%, 1-5 cm, subrounded, moderately well sorted, grain supported; abrupt wavy.

C1b 228-276 cm; brown (7.5YR 4/3) clay loam; multiple beds of pebbles, 0.2 to 0.4 cm and 0.5 to 1.5 cm, subrounded, moderately to poorly sorted, grain supported; abrupt wavy.

C2b 276-301 cm; 65% pebbles, 1 to 7 cm, moderately sorted, subrounded, grain supported; loamy brown matrix; abrupt wavy.

C3b 301-330 cm dark grayish brown (10YR 4/3.5) clay; massive; very firm.

C4b 330-380 cm; 65% pebbles, 1 to 6 cm, subrounded, grain supported, moderately sorted; brown loamy matrix; abrupt wavy.

C5b 380-400 cm; brown (10YR 4/3) clay loam; 2% carbonate filaments; massive; firm. Bulk humate radiocarbon age of 3460±60 B.P.

BHT-8; Late Pleistocene alluvium (LP1), late Pleistocene terrace; calcareous throughout.

A 0-17 cm; very dark grayish brown (10YR 3/2) clay loam; moderate medium subangular blocky; firm; common fine distinct brown (7.5YR 4/4) iron pore linings; gradual smooth.

Bw 17-37 cm; brown (7.5YR 5/4) silty clay loam; few fine faint brown (7.5YR 4/4) iron pore linings; weak medium subangular blocky; friable; abrupt irregular.

Bk1 37-83 cm; light brown (7.5YR 6/4) silty clay loam; common fine distinct yellowish brown (10YR 5/6) soft iron masses; 50% coalescing soft to hard carbonate masses; moderate medium angular blocky; hard; abrupt wavy.

Bk2 83-150 cm; brown (7.5YR 5/4) clay; few biocasts; moderate coarse angular blocky; hard; 20% carbonate nodules, 1 to 2 cm, slightly hard to hard, white; gradual smooth.

BCk3 150-197 cm; light brown (7.5YR 6/4) silty clay loam; moderate coarse prismatic; very hard; 1% carbonate clasts, 1 cm, subrounded; common organic/manganese root linings.

BHT-9; truncated version of BHT-8.

BHT-10; Early Holocene alluvium (EH); Holocene flood terrace (6.5 m); calcareous throughout.

Bk 0-49 cm; brown (7.5YR 5/4) clay loam; common fine distinct dark yellowish brown (10YR 4/6) iron pore linings; moderate to strong medium angular blocky; very hard; 3% carbonate filaments; gradual smooth.

Bw1 49-120 cm; light reddish brown (5YR 6/4) clay loam; weak coarse prismatic; very firm; gradual smooth.

Bw2 120-210 cm; pink (7.5YR 7/4) loam; common medium distinct light gray (5Y 7/1) iron depletions; weak coarse prismatic; very firm; gradual smooth.

Bw3 210-265 cm; pink (7.5YR 7/4) loam; 20% brown (7.5YR 5/4); common medium distinct light gray (5Y 7/1) iron depletions; weak coarse prismatic; very firm; gradual smooth.

Unnamed/No Name Tributary

CB4; Late Holocene alluvium (LH) over early Holocene alluvium (EH) over Permian bedrock; Holocene flood terrace (3 m); calcareous throughout.

A 0-30 cm brown (7.5YR 5/4) clay loam; moderate medium subangular blocky; firm; few fine distinct strong brown (7.5YR 5/6) iron pore linings; clear smooth. (lake deposit)

A1 30-46 cm; very dark grayish brown (10YR 3/2) clay loam; few fine distinct dark yellowish brown (10YR 4/6) iron pore linings; strong fine and medium angular blocky; very firm; gradual smooth.

A2 46-71 cm; dark grayish brown (10YR 4/2) clay loam; few fine distinct yellowish brown (10YR 5/8) iron pore linings; moderate medium angular blocky; very firm; gradual smooth.

Bk 71-107 cm; brown (10YR 5/3) clay loam; moderate medium and coarse angular blocky; very firm; few fine distinct yellowish brown (10YR 5/8) iron pore linings; 2% carbonate nodules, white, hard, 0.5 to 1.5 cm; clear smooth.

Abkb1 107-142 cm; brown (7.5YR 4/3) clay loam; many distinct clay/organic ped coats; moderate medium angular blocky; very firm; 5% carbonate nodules, white, hard, 0.5 to 1.5 cm; gradual smooth.

Bkb1 142-169 cm; brown (7.5YR 4/4) clay loam; common distinct clay/organic ped coats; moderate medium angular blocky; very firm; 12% carbonate nodules, 0.5 to 2 cm, white, hard; clear smooth.

Bw1b1 169-215 cm; strong brown (7.5YR 5/8) clay loam; weak medium subangular blocky; firm; clear smooth.

Bw2b1 215-248 cm; strong brown (7.5YR 5/6) sandy clay loam; weak coarse angular blocky; firm; gradual smooth.

B/Cb1 248-297 cm; multiple beds 2 to 10 cm of pink (7.5YR 8/4) and strong brown (7.5YR 5/6) fine sandy loam; weak coarse subangular blocky; friable; gradual smooth.

Cb1 297-325 cm; 70% pebbles, 0.2 to 0.5 cm, well sorted, subrounded, grain supported.

Crb2 325 cm; yellow and olive sandstone bedrock.

BHT-5; Late Holocene alluvium (LH); Holocene flood terrace (3 m); calcareous throughout.

A 0-12 cm; very dark gray (10YR 3.5/1) clay loam; moderate fine and medium subangular blocky; friable; 5% dark yellowish brown (10YR 4/4) iron pore linings; gradual smooth.

BA 12-28 cm; dark grayish brown (10YR 4/2) clay loam; moderate medium subangular blocky; friable; 8% dark yellowish brown (10YR 4/4) iron pore linings; many very dark gray (10YR 3/1) biocasts; gradual smooth.

Bw1 28-70 cm; brown (7.5YR 4.5/4) clay loam; 5% dark yellowish brown (10YR 4/6) iron pore linings; common very dark gray (10YR 3/1) biocasts; moderate medium and coarse subangular blocky; firm; gradual smooth.

Bw2 70-101 cm; brown (7.5YR 5/4) clay loam; common very dark gray (10YR 3/1) biocasts; moderate medium angular blocky; firm; gradual smooth.

Bw3 101-153 cm; strong brown (7.5YR 5.5/6) clay loam; few very dark gray (10YR 3/1) biocasts; few fine dark gray (10YR 4/1) pore iron depletions; moderate medium and coarse angular blocky; very firm; clear smooth.

By 153-230 cm; brown (7.5YR 5/4) clay loam; few fine dark gray (10YR 4/1) pore iron depletions; moderate medium and coarse angular blocky; very firm; 5% gypsum crystals 0.2 to 0.3 cm.

Estimated description from extended trench.

230-310 cm; 60% pebbles, 1 to 8 cm, subrounded, moderately to poorly sorted, matrix supported; yellowish brown (10YR 5/4) clay loam matrix.

310-340 cm; brownish yellow (10YR 6/6) very fine sandy loam; 3% dark yellowish brown (10YR 4/4) iron pore linings; 2% light gray (10YR 7/1) iron depletions.

BHT-6; Late Holocene alluvium (LH) over early Holocene alluvium (EH); Holocene flood terrace (3 m); calcareous throughout.

C 0-8 cm; light gray (2.5Y 7/1) fine sandy loam; single grained; few fine faint yellowish brown (10YR 5/6) iron pore linings; abrupt wavy. (lake deposit).

A1 8-33 cm; very dark gray (10YR 2.5/1) clay loam; moderate medium subangular blocky; friable; few fine faint dark yellowish brown (10YR 3/4) iron pore linings; gradual smooth.

A2 33-51 cm; very dark gray (10YR 2.5/1) clay loam; moderate medium subangular blocky; friable; common fine distinct yellowish brown (10YR 5/6) iron pore linings; gradual smooth.

Bw1 51-76 cm; very dark grayish brown (10YR 3.5/2) clay loam; moderate medium angular blocky; hard; 15% dark yellowish brown (10YR 3/4) iron pore linings; 2% carbonate filaments; 5% pebbles, 0.2 to 0.4 cm, subrounded, moderately sorted; gradual smooth.

Bw2 76-103 cm; yellowish brown (10YR 4.5/4) clay loam; 5% strong brown (7.5YR 5/6) pore linings; moderate medium angular blocky; 10% pebbles, 0.2 to 0. 8 cm, subrounded, moderately sorted, matrix supported; 2% carbonate filaments; abrupt wavy.

ABb 103-118 cm; brown (7.5YR 4/3) clay; 5% very dark gray (10YR 3/1) biocasts; moderate coarse angular blocky; very hard; 1% carbonate filaments; common distinct clay/organic ped coats; gradual wavy. Bulk humate radiocarbon age of 3360±50 B.P.

Bkb 118-150 cm; brown (7.5YR 4/4) clay; few very dark gray (10YR 3/1) biocasts; moderate medium and coarse prismatic; very hard; 5% carbonate nodules, 1 cm, white, hard; common distinct clay/organic ped coats; gradual wavy.

Bwb 150-199 cm; brown (7.5YR 4/3) clay; few very dark gray (10YR 3/1) biocasts; common medium distinct dark gray (10YR 4/1) iron depletions; moderate coarse prismatic; very hard; common distinct clay/organic ped coats; clear wavy.

Byb 199-221 cm; brown (7.5YR 4/3, 10YR 5/3) clay; 2% gray (10YR 5/1) iron depletions; moderate medium prismatic to moderate medium angular blocky; firm; 10% gypsum crystals, 0.2 to 0.4 cm; abrupt wavy.

Cb 221-241 cm; brownish yellow (10YR 6/6) sandy clay; 20% light yellowish brown (10YR 6/4); few gray (2.5Y 6/1) iron depletions; massive; very firm; few fine carbonate nodules.

BHT-7; Late Pleistocene alluvium (LP1); Late Pleistocene terrace (5 m); calcareous throughout. Deflated surface by 20 to 30 cm.

C 0-10 cm light gray (2.5Y 7/2) fine sand; single grained; few fine faint brown (7.5YR 4/4) iron pore linings; abrupt wavy. (lake deposit)

A 10-22 cm; yellowish brown (10YR 5/4) sandy clay loam; weak medium to coarse subangular blocky; friable; 1% carbonate nodules, 0.5 to 1 cm, white, hard; clear wavy.

ABk 22-41 cm; reddish yellow (7.5YR 6/6) sandy clay loam; 20% brown (7.5YR 5/4); weak coarse subangular blocky; friable; 10% carbonate nodules, 0.5 to 1 cm, white, hard; gradual wavy.

Bk1 41-70 cm; reddish yellow (7.5YR 6/6) sandy clay loam; 5% strong brown (7.5YR 5/6) iron soft masses; weak coarse subangular blocky; friable; 8% carbonate nodules, 0.5 to 1 cm, white, hard; gradual wavy.

Bk2 70-112 cm; strong brown (7.5YR 5.5/6) fine sandy loam; 5% strong brown (7.5YR 5/6) iron soft masses; weak coarse angular blocky; firm; 15% carbonate nodules, 0.5 to 1.5 cm, white, hard; gradual wavy.

Bk3 112-151 cm; reddish yellow (7.5YR 6.5/6) fine sandy loam; 40% light brown (7.5YR 6/3); weak coarse prismatic; hard; 10% carbonate nodules, 0.5 to 1.5 cm, white, hard; gradual wavy.

BC 151-174 cm; yellowish red (5YR 5/6) and pale brown (7.5YR 6/3) fine sandy loam; weak coarse prismatic; hard; 1% carbonate nodules, 0.5 cm, white, hard; abrupt wavy.

C 174-200 cm; gravely and sandy bedded with common laminations; gravel beds-60% pebbles, 0.2 to 0.5 cm, subrounded, moderately well sorted, grain supported; sandy beds-light brown (7.5YR 6.5/4). Permian bedrock at base.

Appendix J:
Twin Buttes Archaeological Project

Paleomagnetic and Magnetic Soil Susceptibility Results

by Wulf Gose

Introduction

This appendix presents the results of soil susceptibility sampling from 41TG378, 41TG389, and 41TG410, and the results of archaeomagnetic samples collected from a fire-cracked rock feature at 41TG389. A brief background of these analyses is given, followed by specific site analyses. The reader is referred to Chapter 6 for a discussion of the methods used to process the samples.

Soil Susceptibility Analysis

Background

The magnetic susceptibility (MS) is a parameter which is proportional to the magnetic mineral content of a rock or soil sample. If the sample contains only one magnetic mineral, then the susceptibility is a direct measure of the concentration of this mineral. The susceptibility of a natural soil can be modified by pedogenic as well as cultural processes. Both processes tend to enhance the MS. In the organic-rich top layer of a soil, the susceptibility increases by as much as a factor of ten, probably due to the creation of maghemite as a result of organic activities (e.g., Singer and Fine 1989). If the soil is subsequently buried, this increase is preserved and can be used to identify paleosols.

The susceptibility is also enhanced by the action of fire. In the reducing environment of a wood-burning fireplace, new magnetic minerals are formed such as magnetite or maghemite. This effect can be observed in rocks and soils, as well as in the ash from the wood (Gose 2000; McClean and Kean 1993; Tite and Mullins 1971). The heat and ash produced by a grass fire are insufficient to enhance the MS.

Site Analysis

41TG378

Samples for magnetic susceptibility measurements were collected in 3-cm intervals down to 100 cm below datum. The susceptibilities are very low, close to the detection limit of the instrument. The profile shows two distinct zones; from the surface to a depth of about 48 cm and from 62 cm to 100 cm (Figure J-1). The intervening interval is a transition zone. No obvious expressions of human activity can be discerned. The two susceptibility units correspond well with the observed lithology which shows Permian strata overlain by Holocene beds (see Chapter 4).

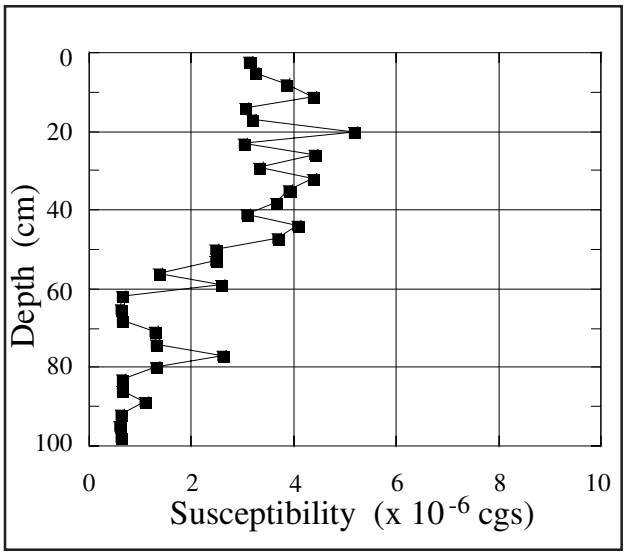


Figure J-1. *Soil susceptibility profile of Unit 1, 41TG378.*

41TG389

Profiles 31E and 31W are very similar (Figures J-2 and J-3). Both show a decrease in susceptibility up-section. The two top samples in profile 31W have much lower susceptibilities than the other samples and the sample at the 7.5-cm depth in profile 31E is very large. These three samples seem to be "contaminated" or, in some way, not representative of these sections. The general upward decrease in susceptibility suggests an influx of material from a different source area. At the level where a burned rock feature was found, both profiles show one sample with larger susceptibility values (at 25 cm in profile 31E and at 40 cm in profile 31W). Such increases can be due to the presence of wood ash (e.g., Collins et al. 1994).

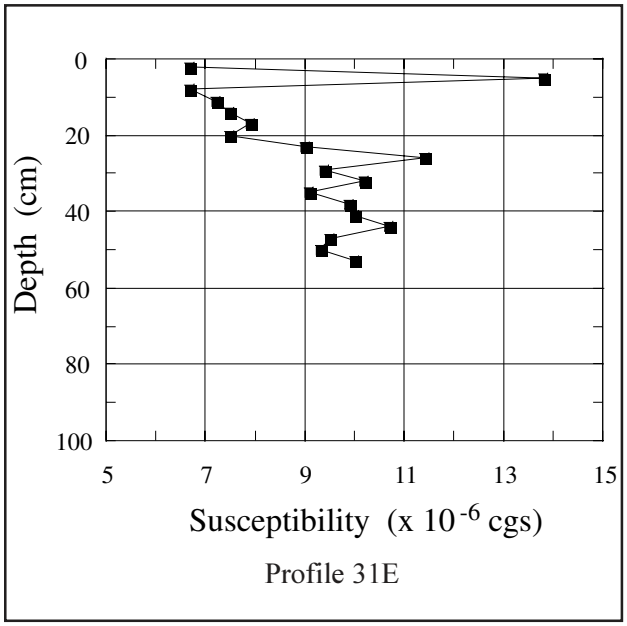


Figure J-*2. Soil susceptibility profile of the east wall of Unit 1, 41TG389.*

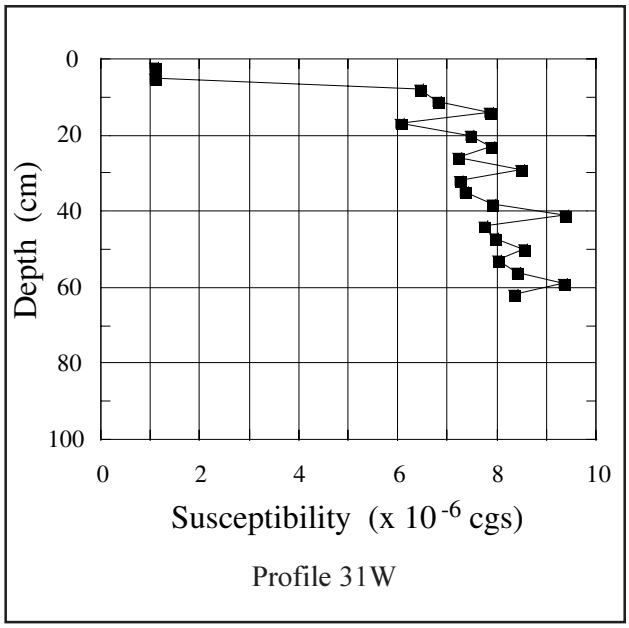
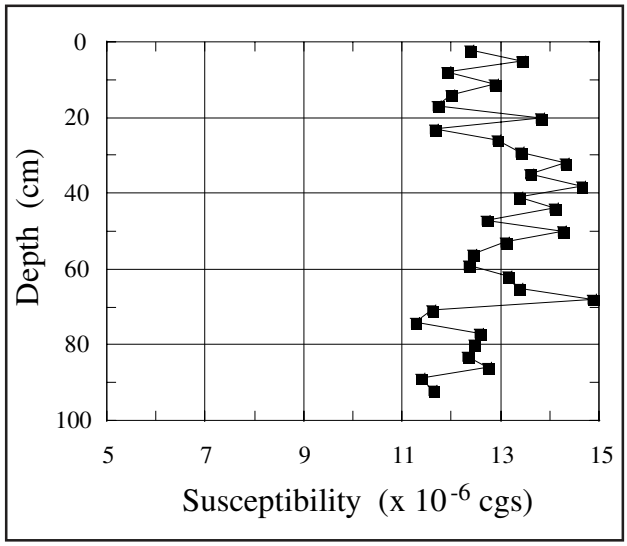


Figure J-3. *Soil susceptibility profile of the west wall of Unit 1, 41TG389.*

41TG410

Samples from this one meter long profile (Figure J-4) yielded the largest susceptibility values of the four sites, averaging about 13 x 10^{-6} cgs (centimeter, gram, second) units. The variations with depth are small. In the interval from 30 to 50 cm or possibly 70 cm below datum the values are slightly larger. This may be the result of human activity, mainly the burning of wood.

Figure J-4. *Soil susceptibility profile of Unit 1, 41TG410.*



Archaeomagnetic Analysis of Heated Rocks - 41TG389

Background

Paleomagnetic methods can be applied to a variety of archaeological problems. The most common application of archaeomagnetism makes use of the secular variation of the earth's magnetic field for dating archaeological sites (e.g., Eighmy and Sternberg 1990). The material used in these studies typically is taken from clay-lined fire pits. As the fireplace cools to ambient temperature, the magnetic minerals in the clay liner will acquire a thermoremanent magnetization (TRM). The direction of this TRM will be parallel to the geomagnetic field as seen at this site and at this point in time. Similarly, if a stone is heated above the Curie temperature of its magnetic mineral(s), it will be magnetized parallel to the ambient magnetic field if it cools *in situ*. The Curie temperature is a mineral specific temperature above which all magnetic alignments are randomized and thus all prior magnetic information is lost. The value for magnetite is 580°C and 680°C for hematite. If, on the other hand, the stone is moved while cooling it will acquire partial thermoremanent magnetization (pTRM) components for each temperature interval during which the stone was not moved. If moved only once at temperature T1, say 300°C, then the rock will have two components of magnetization, one corresponding to the time when the rock cooled from above its Curie temperature to 300°C and a second component which was acquired between 300°C and the ambient temperature. In the laboratory, these components can often be identified by detailed progressive demagnetization.

The paleomagnetic data are best viewed in a vector component diagram. Here, the magnetic vector is projected onto two perpendicular planes, typically the north-south-east-west plane and the up-down-horizontal plane, and the two graphs are combined into one figure. Each demagnetization step yields one point in each plane and the sequential data points are connected. A component of magnetization is identified by at least three colinear points. The data are analyzed in three dimensions by the principal component analysis (PCA, Butler 1992; Kirschvink 1980). PCA calculates the best-fitting vector over a selected demagnetization range.

The resulting directions of magnetization are then plotted in a stereographic projection. The declination is counted clockwise starting at north and the inclination varies from 0º at the periphery to 90º at the center of the stereonet. The paleomagnetic methods as applied to archaeological samples has recently been reviewed by Gose (2000).

Site Analysis

Eleven burned rock samples from a fire-cracked rock feature at 41TG389 were subjected to paleomagnetic analyses. All samples were thermally demagnetized in 50ºC increments from 150ºC to 550ºC. All samples contained two components of magnetization as best seen in vector component diagrams for rocks J, E, and H (Figure J-5). In these diagrams, the normalized intensity of magnetization is plotted for all demagnetization

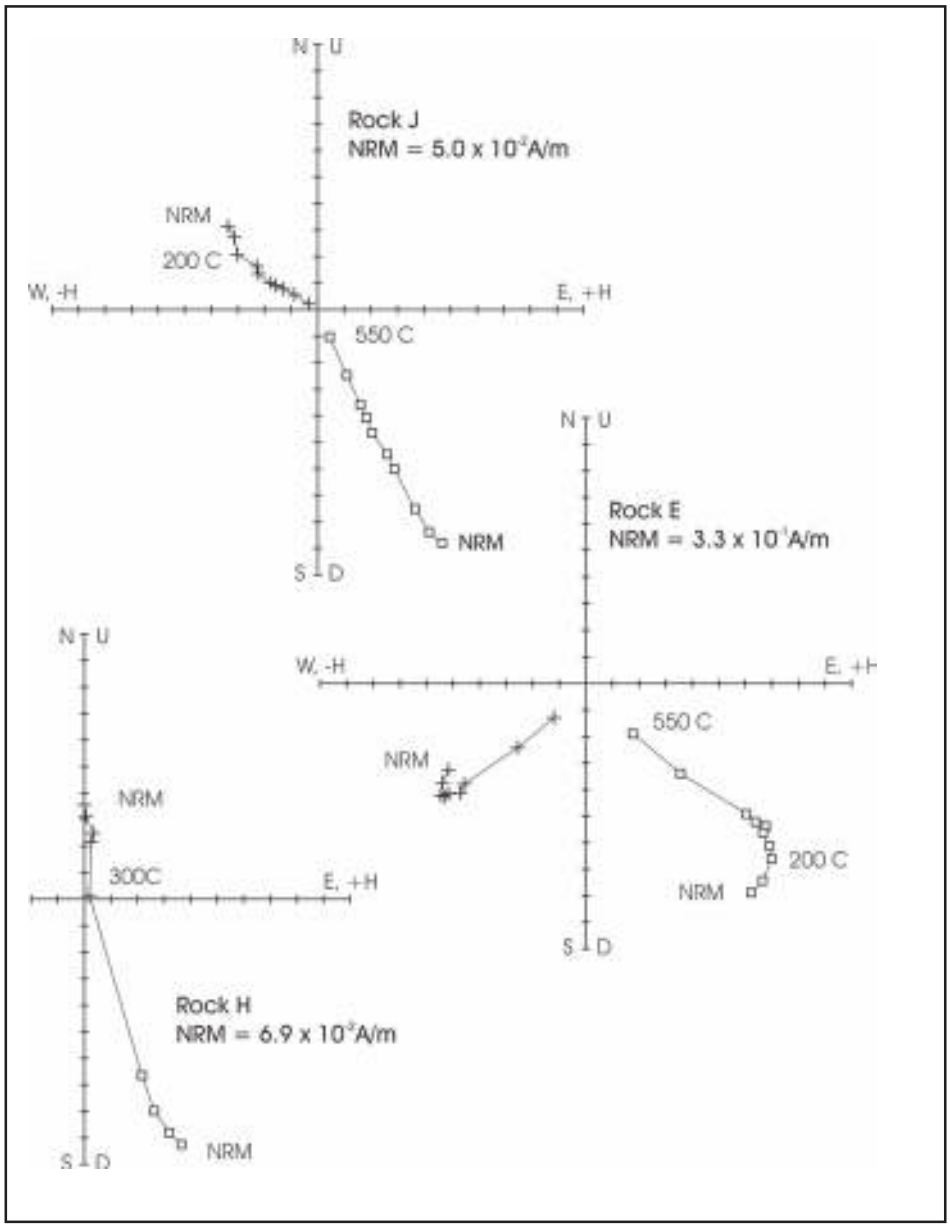


Figure J-5. *Components of magnetization in vector component diagrams for rocks J, E, and H.*

steps in two perpendicular planes. A component of magnetization is identified by three or more colinear points and the best fitting vector is calculated by the principal component method (Kirschvink 1980). All samples contain a low-temperature component which is stable up to 200 or 250ºC and a high temperature component which, in most cases, is stable up to 550ºC.

The directions of the best fitting vectors are plotted in a stereographic projection in Figure J-6. An examination of Figure J-6a indicates that all of the rocks contain a low temperature magnetization at 250ºC which clusters near the present dipole field direction, except for rock I.

Sample I has a negative direction of magnetization implying that this rock was turned upside down after it cooled. When heated beyond 250ºC, the directions of the high temperature components scatter, representing the original, geological magnetization. These results imply that the rocks were heated to about 250ºC and cooled, and have remained *in situ* since. Only rock I was turned over.

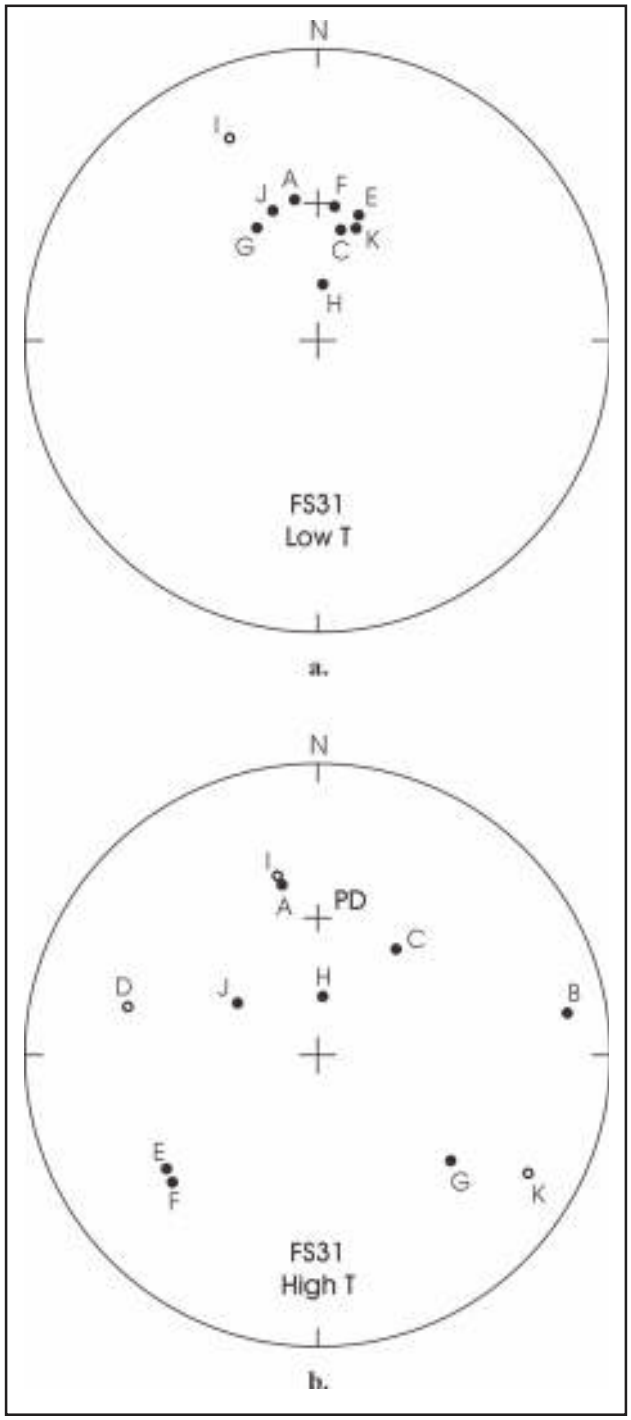


Figure J-6. *Directions of the best fitting vectors in a stereographic projection for (a) low temperature, ca. 250^{0}C, and (b) high temperature, >250^{0}C, representing the original, geological magnetization.*

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Appendix K:
Twin Buttes Archaeological Project

Project Forms

This appendix provides copies of all forms used on the Twin Buttes survey, along with information sheets.

1) Twin Buttes survey site checklist. Two pages.
2) Twin Buttes shovel test form, and explanation sheet. Two pages.
3) Isolated find log. One page.
4) Unique item log. One page.
5) Photographic log. One page.
6) Archaeomagnetic sample log. One page.
7) Unit level excavation form. Two pages.
8) Collection bag log. One page.
9) Surface observation area recording form and explanation. Three pages.

TWIN BUTTES SURVEY
SITE CHECKLIST - Phase I

Field Site #_____ Area_____ Nearest Station and Transect_____

1. Identify surface artifact distribution, establish boundary, and then place site datum with "iron rebar and aluminum identification tag.

2. Complete sketch map.
   Indicate provenience of datum, features, and diagnostics collected. Map in artifact concentrations, disturbed areas, slope, approximate boundary, and natural terrain features such as drainages, etc.

3. Take GPS readings on site datum and boundary.

4. Complete the following checklist:

Artifacts	Present	Absent
Cores		
Primary Flakes		
Secondary Flakes		
Tertiary Flakes		
Tested Cobbles		
Quarry Blanks		
Preforms		
Bifaces		
Unifaces		
Retouched Flakes		
Utilized Flakes		
Ground Stone		
Fire Cracked Rock (Not Modern)		
Prehistoric Hearth		

Prehistoric Ceramics		
Historic Ceramics or Glass		
Historic Metal		
Historic Structure		

5. Make subjective and general observations about the site:

a. Setting (circle one) riverine, terrace, upland

b. Vegetation_____

c. Estimated surface visibility (%)_____

d. Nearest extant water_____

e. Observable landmarks (and Degrees)_____

f. Subjective evaluation of disturbance which equates to % of site still intact_____

g. Estimated debitage present (check mark on line):

<10____>10____ >50____ >100____ >150____>300____ >500____ >1,000____

h. Estimated fire cracked rock present (check mark on line):

<10____>10____>50____>100____>150____>300____>500____>1,000____

i. Subjective evaluation of artifacts observed on the surface expressed in numbers:

Tertiary Flakes_____

Primary Flakes_____

Secondary Flakes_____

Cores_____

Tested Cobbles_____

Bifaces_____

Unifaces_____

Retouched Flakes_____

Utilized Flakes_____

Diagnostics Collected:_____

Twin Buttes Survey - 1999

Shovel Test #_____ Date_____

EXCAVATOR(S)_____

0-10 CM COLOR_____
TEXTURE_____
STRUCTURE_____
MOTTLES_____
INCLUSIONS_____
MATERIAL COLLECTED_____
REMARKS_____

10-20 CM COLOR_____
TEXTURE_____
STRUCTURE_____
MOTTLES_____
INCLUSIONS_____
MATERIAL COLLECTED_____
REMARKS_____

20-30 CM COLOR_____
TEXTURE_____
STRUCTURE_____
MOTTLES_____
INCLUSIONS_____
MATERIAL COLLECTED_____
REMARKS_____

30-40 CM COLOR_____
TEXTURE_____
STRUCTURE_____
MOTTLES_____
INCLUSIONS_____
MATERIAL COLLECTED_____
REMARKS_____

40-50 CM COLOR_____
TEXTURE_____
STRUCTURE_____
MOTTLES_____
INCLUSIONS_____
MATERIAL COLLECTED_____
REMARKS_____

(See reverse side for soil description guidelines)

Twin Buttes shovel test form.

1. **Depth** – top and bottom layer, centimeters from surface.

2. **Color** – Munsell Chart, moist or dry, but indicate which–be consistent!

1. **Texture** –
   Type = 1. Sand 2. Sandy Loam 3. Loam 4. Silt Loam 5. Clay Loam 6. Clay
   Consistency (moist) = Loose Friable Firm Extremely Firm

4. **Structure** –
   Type: 1. Massive 2. Blocky 3. Prismatic 4. Granular 5. Platy
   Size = fine < 2cm medium < 5cm coarse > 5cm
   Grade = weak moderate strong

5. **Mottles** – Color = Munsell Chart
   Abundance = few <2% common <20% many >20%
   Size = fine <0.5cm medium <1.5cm coarse >1.5cm
   Contrast = faint distinct prominent

6. **Inclusions** – manganese, charcoal, calcium carbonate, pebbles-cobbles, roots, rodent burrows, leaf litter, artifacts, features, or anything else.

7. **Lower Boundary** –
   Distinctness = very abrupt <1mm abrupt <2.5cm clear <6cm
   gradual <12.5cm diffuse >12.5cm
   Topography = smooth, wavy, irregular, broken, sloping, horizontal

8. **Soil Horizon** – O, A, B, E, C, R – if you are sure!

Field Definitions of Texture –

1. Sand – loose and single grained—moist squeezed cast will crumble

2. Sandy Loam – mostly sand with silt and clay—individual sand grains visible, moist cast can bear careful handling

3. Loam – even mixture of sand, silt, and clay—gritty, but smooth and slightly plastic, moist cast handled freely

4. Silt Loam – fine sands, little clay, mostly silt—dry clods break easily, soft, smooth and floury if dry, moist casts don't break, won't ribbon

5. Clay Loam – dry clods are hard, moist ribbon breaks easily, moist cast bears heavy handling, kneaded heavy compact mass that won't crumble

6. Clay – very hard clods, very plastic ad sticky if wet, flexible ribbon

Center for Archaeological Research - UTSA
Twin Buttes Reservoir Survey
ISOLATED FIND LOG

Iso. Find#	Area	Station	Description	Date

Twin Buttes Isolated Find log.

Center for Archaeological Research - UTSA
Twin Buttes Reservoir Survey
UNIQUE ITEM LOG

Unique #	Area	Description	Surveyor	Date

Twin Buttes Unique Item log.

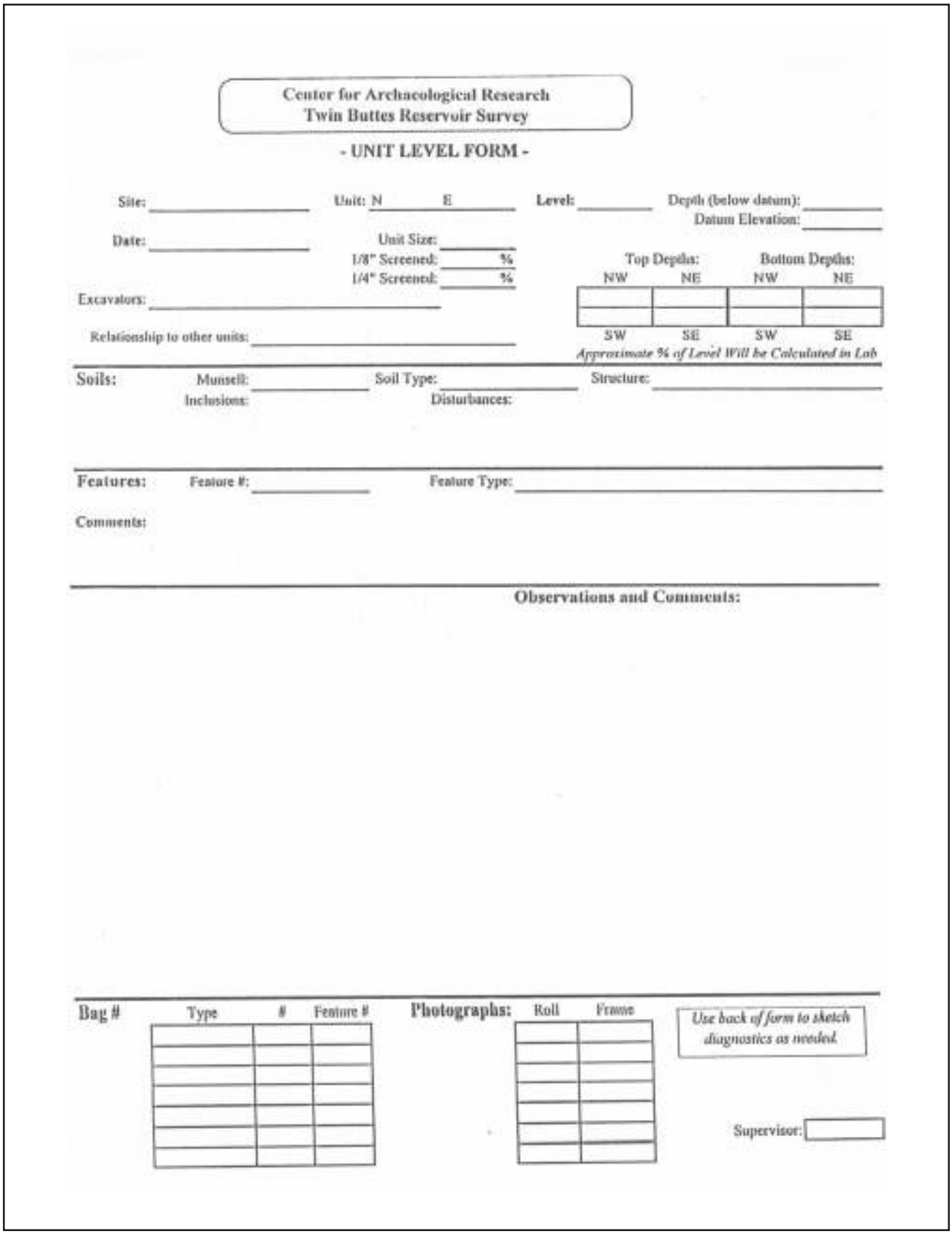
Center for Archaeological Research - UTSA
Twin Buttes Reservoir Survey
PHOTOGRAPHIC LOG

Color [ ] Black/ White [ ] Print [ ] Slide [ ] Film Type _____ Roll #____
Camera:_____

Frame#	Description	Facing	Name	Date

			ARCHAEOMAGNETIC SAMPLES					
	FIELD SITE____ - TWIN BUTTES ARCHAEOLOGICAL SURVEY							
				CAR-UTSA				
						Declination	Inclination	
Sample #	Level	Provenience	Northing	Easting	Elevation	(Degrees)	(Degrees)	Intensity

Twin Buttes Archaeomagnetic Sample log.



Center for Archaeological Research
Twin Buttes Reservoir Survey

- UNIT LEVEL FORM -

Site: _____ Unit: N _____ E _____ Level: _____ Depth (below datum): _____
Datum Elevation: _____

Date: _____ Unit Size: _____
1/8" Screened: _____ %
1/4" Screened: _____ %

Excavators: _____

Relationship to other units: _____

Top Depths: NW	Top Depths: NE	Bottom Depths: NW	Bottom Depths: NE
SW	SE	SW	SE

Approximate % of Level Will be Calculated in Lab

Soils: Munsell: _____ Soil Type: _____ Structure: _____
Inclusions: Disturbances:

Features: Feature #: _____ Feature Type: _____

Comments:

Observations and Comments:

Bag #	Type	#	Feature #

Photographs:

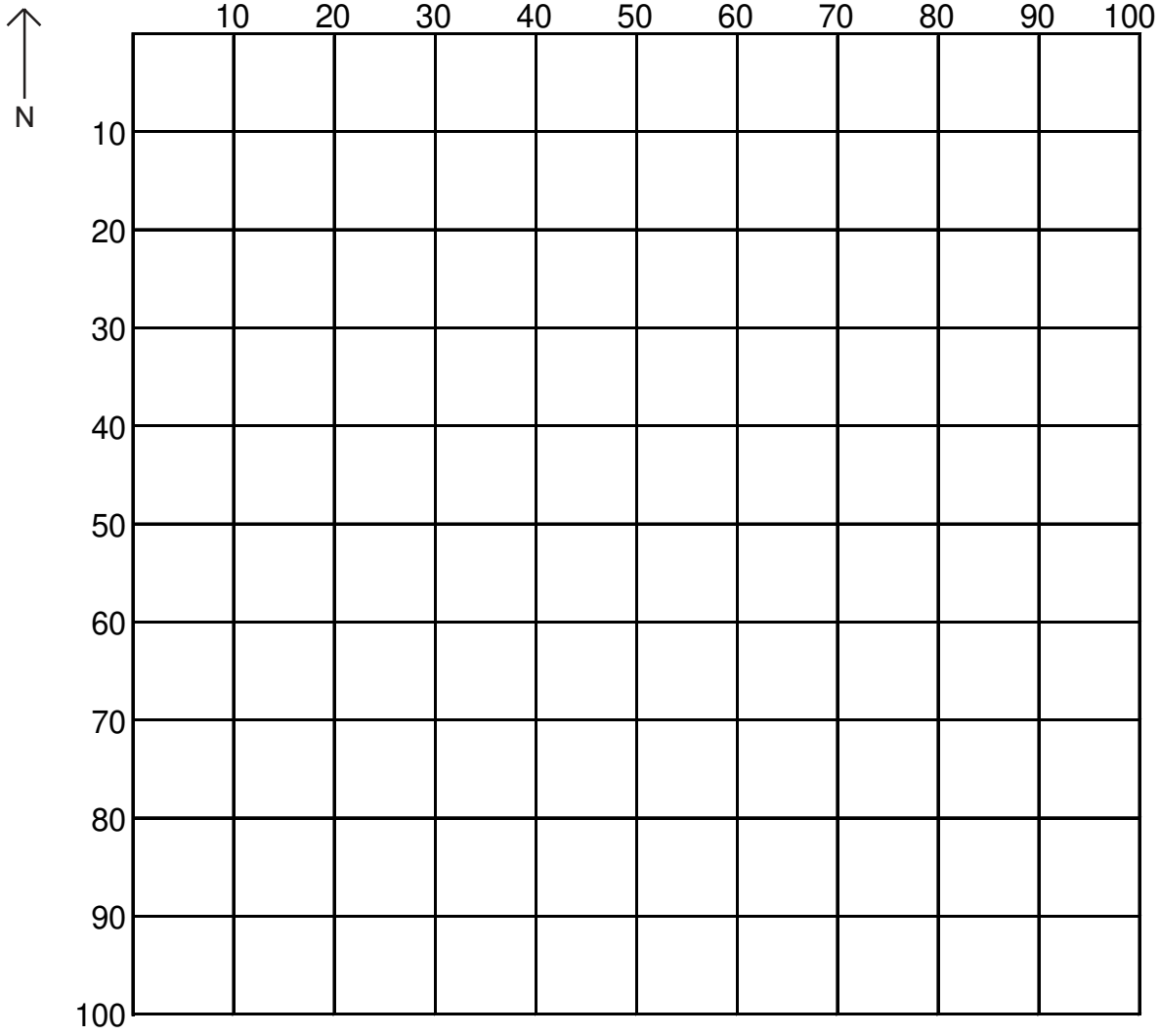
Roll	Frame

Use back of form to sketch diagnostics as needed.

Supervisor: _____

Twin Buttes Unit Level Excavation form, page 1.

One Meter Excavation Unit



Twin Buttes Unit Level Excavation form, page 2.

Center for Archaeological Research - UTSA
Twin Buttes Reservoir Survey
COLLECTION BAG LOG

Bag#	Location	Depth	Contents	Excavator	Date

Twin Buttes Collection Bag log.

CENTER FOR ARCHAEOLOGICAL RESEARCH
TWIN BUTTES
SURFACE OBSERVATION AREAS

Site: Date: Recorder: Page:

Recording Unit	Artifact Type	Maximum Length	Maximum Thickness	Cortex %	Material Type/Color	Comments

Twin Buttes Surface Observation Area recording form, page 1.

SURFACE OBSERVATION DATA COLLECTION INFORMATION

Recording Unit: Refers to the recording unit- area (e.g., A1; A2,....An) or Dog Leash (DL1, DL2...).

Artifact Type: Codes 1 through 7.

1. Flakes. All utilized flakes and/or debris which cannot be classified as a core, tool, or ground stone. Flakes and debris do not necessarily have to have a clearly distinguishable ventral and dorsal surface - pieces often referred to as "chunks" or "angular debris" are of this type.

2. Cores. Cores are defined as any parent block from which flakes have been removed. This category does not, however, include tools. Cores must have at least three negative bulbs and cannot have a positive bulb; if a positive bulb is present in this classification, it is a flake and not a core. "Flake cores" were not a category for the purposes of this analysis.

3. Tested Cobbles. A tested cobble must have had one or two negative bulbs present; no positive bulb.

4. Bifaces. This type includes any item on which both facies have flake scars that cover at least 1/3 of the face and have been removed in a systematic manner. This class includes points, preforms, and blanks. Pieces elsewhere called "bifacial cores" were considered as cores for the purposes of this analysis, and functional use was not considered.

5. Unifaces. This type includes any item on which only one face has systematically removed flakes that cover at least 1/3 of that face. In some cases, unifacial retouch may be accompanied by use and retouch; in this case the piece was still classified as a uniface.

6. Retouched/Utilized Flakes. This type includes any item on which flakes have been systematically removed from an edge, but which does no qualify as a biface or uniface.

7. Other. This includes any specimen not covered above such as ground stone, hammer stone, etc. Their identity would be specified in the comments section.

Maximum Length:
This is the maximum length of an artifact, recorded in 1-cm units (0 to 1 = 1; 1 to 2 cm = 2; 2 to 3 cm = 3....etc.).

Maximum Thickness:
This is the maximum thickness of an artifact, recorded in 1-cm units as shown above for Maximum Length.

Cortex:
This is the percentage of cortex on the dorsal surface (including the platform) of all items with the exception of cores, tested cobbles, and the "other" artifact type (see notes below). The following groupings were used:

0%	= No Cortex	Code as 0
1-25%	= Cortex	Code as 12
26-50%	= Cortex	Code as 38
51-75%	= Cortex	Code as 62
76-99%	= Cortex	Code as 88
100%	= Cortex	Code as 100

On Cores, tested cobbles, and "other" types the following codes were used:

No Cortex	Code as 0
Less than 51% Cortex	Code as 25
More than 50% Cortex	Code as 75

Material Type/Color:
The vast majority of the material was coded as "1", which is either grey, brown, or blue-grey. Codes 2 and 4 are white and/or pale white. Code 3 is either pinkish or red; often heat-treated. Code 9 is any other color.

Comments:
Any additional information or observations not covered by the above.

Appendix L:
Twin Buttes Archaeological Project

Previous Land Ownership

by Tanya Norris, Katie Plum, Preston Stone, and David Nickels

This appendix provides a brief synthesis of land ownership prior to 1962 for properties on which historic sites were identified during the Twin Buttes survey. This information was compiled from deed records and maps from the West Texas Collection at Porter Henderson Library, Angelo State University, and the Tom Green County Courthouse Annex, San Angelo, Texas. In addition to land ownership and oil and gas maps, the most current USGS Quadrangle maps (*Twin Buttes, Pecan Station,* and *Knickerbocker*) were used to locate more modern structures. In many cases the maps used did not provide complete information, and therefore they are not referenced in the tables.

Map 1 cited in the tables is a Twin Buttes Reservoir Land Acquisition map drawn by the United States Department of the Interior, Bureau of Reclamation, September 27, 1962 (copy on file, CAR-UTSA).

Copies of maps obtained from the West Texas Collection and cited in the tables are:

2	1945 Ownership Map, Tom Green County.
TW-8	1959 Oil and Gas Map, Tom Green County.
TW-64	1947 Southern Tom Green County Ownership Map.
TW-10	1942 Southern Tom Green County Ownership Map.
3	1916 Map of Tom Green County.
4	1894 Map of Tom Green County (Tweedy Collection).
TW-4	1855 Survey Map of Fisher & Miller's Colony, prepared by G. Schleicher, District Surveyor for Bexar District, San Antonio, 1855.

An additional reference cited most often in Chapter 11 is an extract from a 1923-24 topographical survey map originally prepared by W. H. Griffin, R. W. Buchard, W. J. Lloyd, and H. S. Milsted from which the Twin Buttes Reservoir area was traced over for the reservoir project (copy on file, CAR-UTSA). Handwritten Survey Records are from Survey Record Books in the West Texas Collection at Porter Henderson Library, Angelo State University. Deed Records were obtained from deed books at the Tom Green County Courthouse Annex, San Angelo, Texas.

Tanya Norris, University Archivist, Angelo State University
Katie Plum, Student Assistant, West Texas Collection, Angelo State University
Preston Stone, Student Assistant, West Texas Collection, Angelo State University

41TG160

Table L-1. Land ownership of 41TG160 - Survey #1896

Map #	Map Reference	Current Owner
TW-4	1855 Fisher and Miller Colony	In McDonald's District #11
4	1894 Tom Green County Map	H. Deidrich
3	1916 Map of Tom Green County	H. Deidrich
TW-64	1947 Southern Tom Green County Ownership Map	H. Deidrich
TW-8	1959 Oil and Gas Map, Tom Green County	H. Deidrich (213 acres)
1	1962 Land Ownership Map	H. Deidrich

See Figure L-1 for Surveyor's Record.

41TG248

Table L-2. Land ownership of 41TG248 - Survey #958 and Survey #1815

Survey #1815 (south side of river)		
Map #	**Map Reference**	**Current Owner**
TW-4	1855 Fisher and Miller Colony	In McDonald's District #11
4	1894 Tom Green County Map	Samuel W. Woodhouse
3	1916 Map of Tom Green County	-
TW-10	1942 Southern Tom Green County Ownership Map	Samuel W. Woodhouse
TW-64	1947 Southern Tom Green County Ownership Map	Samuel W. Woodhouse
TW-8	1959 Oil and Gas Map, Tom Green County	Samuel W. Woodhouse (626.5 acres)
1	1962 Land Ownership Map	J. Willis Johnson

Survey #958 (north side of river)		
Map #	**Map Reference**	**Current Owner**
TW-4	1855 Fisher and Miller Colony	In McDonald's District #11
4	1894 Tom Green County Map	Frans Dorris
3	1916 Map of Tom Green County	-
TW-10	1942 Southern Tom Green County Ownership Map	Frans Dorris (320.9 acres)
TW-64	1947 Southern Tom Green County Ownership Map	Frans Dorris/J. B. Russell
TW-8	1959 Oil and Gas Map, Tom Green County	Mrs. Frans Dorris
1	1962 Land Ownership Map	Frans Dorris

Notes to Survey #1815 (41TG248):

Woodhouse, the original grantee, was a doctor who lived in Philadelphia. The property remained in his family until his grandson sold the land in 1940. Samuel Woodhouse, Jr. lived in Maine when he sold the survey to Gordon, Hall and Johnson. All of the men in the Woodhouse family were doctors.

Deed. T. R. and S. W. Woodhouse, grantee; John Lackey, grantor. March 7, 1881. Woodhouse paid Lackey $100 for the land originally granted to Sam Woodhouse that was purchased by Lackey at a tax sale for taxes due in 1877. Date: March 7, 1881. Deed Book D, page 297.

Deed. T. R. Woodhouse by extr. (Philadelphia, Trust, Safe Deposit and Insurance Co.) to Samuel Woodhouse. March 18, 1886. Deed Book Q, page 600.

S.W. Woodhouse dec'd. C/C S. W. Woodhouse last will and testament. Estate given to S.W. Woodhouse Jr. and Matilda Woodhouse, his children. November 14, 1904.

Matilda died and will filed December 29, 1926. Gave Woodhouse Survey to brother, Samuel Jr.

Deed. Samuel Woodhouse Jr. and Catherine, grantor. Kansas City, Mexico and Orient Railway Co., grantee. Easement of land 100 feet wide on each side of the track. Consideration $200. April 30, 1930. Deed Book 163, page 231.

Affidavit and Heirship. Affidavit saying S.W. Woodhouse owned survey 1815. The land was granted to his grandfather by letter patent issued by Governor Edward Clark September 1861 recorded 1867. District 11, Toby script No. 449. May 22, 1940. Deed Book 205, page 285.

Deed. Samuel Woodhouse, Jr. sold land to Ruth J. Gordon, Mary B. Hall and J. Willis Johnson. May 14, 1940. Deed Book 205, page 302.

See Figure L-2 for Surveyor's Record.

Notes to Survey #958 (41TG248):

Deed. Grantor: Franz Dorris; Grantee: Gustavus Schleicher, Date of Instrument: August 14, 1858; Date of Filing: October 17, 1859. B. R. Bexar County Records, page 106.
320 acres in Fisher Miller Colony; Schleicher bought land for $50.
Dorris died in Comal County.

No further information discovered.

41TG253

Table L-3. Land ownership of 41TG253 - Survey #811 and Survey #656

Survey #811 (south side of creek)		
Map #	**Map Reference**	**Current Owner**
TW-4	1855 Fisher and Miller Colony	In McDonald's District #11
3	1916 Map of Tom Green County	-
TW-64	1947 Southern Tom Green County Ownership Map	J. M. Wagstatt
TW-8	1959 Oil and Gas Map, Tom Green County	Edward H. Jones (328 acres)
1	1962 Land Ownership Map	-

Survey #656 (north side of creek)		
Map #	**Map Reference**	**Current Owner**
TW-4	1855 Fisher and Miller Colony	Possibly Plot # 174 in McDonald's District #11
3	1916 Map of Tom Green County	-
TW-64	1947 Southern Tom Green County Ownership Map	H. C. White et al.
TW-8	1959 Oil and Gas Map, Tom Green County	H. C. White (76 acres)
1	1962 Land Ownership Map	H. C. White

Notes to Survey #811 (41TG253):

Patent. State of Texas to Gustavus Schleicher. Filed March 12, 1883. Deed Book F, page 468.

Deed. Gustavus Schleicher to Eleanor Elliott. Sold eight tracks of land on the south bank of Dove Creek and Good Spring Fork of the Concho River; including survey 811. Deed Book F, page 471.

Deed. Eleanor Elliott to Grinnell, Tweedy and Reynolds. Filed March 12, 1883. Deed Book F, page 474.

Warranty Deed, O. W. Matthews and wife to J. M. Wagstatt. Filed April 15, 1927. All of survey 811. Deed Book 128, page 429. (Matthews lived in Tarrant County and Wagstat in Taylor County.)

Release of Vendors Lien between O. W. Matthews and J. M. Wagstatt. August 8 1927. Deed Book 130, page 616.

Nothing in the index that mentioned Wagstatt after 1944. Unable to link Grinnell, Tweedy and Reynolds to Wagstatt.

Notes to Survey #656 (41TG253):

No information on H. C. White was found in the indexes up to 1920. A copy of the entry in the Surveyor's Record Book 2 is provided (Figure L-3).

See Figure L-3 for Surveyor's Record.

Table L-4. Land ownership of 41TG344 and 41TG459 - Survey #876

Survey	Acreage	Date/Map Reference	Grantor	Grantee/Current Owner	Book	Page	Map #
876		1855 Fisher and Miller Colony		Part of McDonald's District #11			TW-4
	320	18 January 1861	State of Texas	John O. Meusebach	D	492	
	320	1 November 1861	J.O. Meusebach	Gustave Schleicher	BR	435	
*							
	320	16 July 1881	Mary A. Maverick	Jacob Fluhr	D	497	
	320	19 November 1881	Jacob Fluhr	John D. Patterson	D	635	
	320	2 July 1902	J.D. Patterson (will)	T.W. & W.W. Patterson	26	56	
	320	25 April 1906	T.W. Patterson	George Hagelstein	26	343	
*							
	25.5	1 December 1913	George Hagelstein	Frank Jecker	82	249	
	103.2	1 December 1913	George Hagelstein	Frank Jecker	82	248	
	25.5	5 August 1914	Frank Jecker, et ux.	S.S. Cummings, et al.	75	189	
	103.2	5 August 1914	Frank Jecker, et ux.	S.S. Cummings, et al.	75	193	
		1916 Map of Tom Green County		Adam Burkhardt			3
	50	12 November 1917	J.B. Burns	Sallie Armstrong	91	120	
	77.3	1 December 1919	S.S. Cummings, et al.	J.W. Cox	96	419	
	103.2	29 November 1922	Gus Allen, et ux.	J.W. Cox	106	128	
	103.2	3 November 1923	J.W. Cox	Gus Allen	108	486	
	50	2 April 1924	Sallie Armstrong	J.W. Cox	110	90	
	77.3	30 October 1935	J.W. Cox	Rose & R.F. Gandy	183	198	
*							
	50	30 April 1951	J.W. Cox	Rose Gandy			
Site 41TG459		1959 Oil and Gas - Southern Tom Green County		Adam Burkhardt			TW-8
Site 41TG344	127.3	1959 Oil and Gas Map, Tom Green County		J. W. Cox			TW-8
		1962 Land Ownership Map		Rose Gandy			1

* Indicates gaps in sequence

Notes to Survey #876 (41TG344 and 41TG459):

RELEASE OIL AND GAS LEASE
HUMBLE OIL AND REFINING CO.
THE STATE OF TEXAS TO J.W. COX
COUNTY OF HARRIS
KNOW ALL MEN BY THESE PRESENTS:

That Humble Oil and Refining Company does hereby release, remise, and relinquish unto J.W. Cox his successors and assigns, all its rights, titles, and interest in and to that certain oil, and gas mineral lease dated the 16th day of October A.D. 1937 executed by J.W. Cox as Lessor, to Gordon Kenley as Lessee, and of record in Volume

192 at page 462-65 of the Deed Records of Tom Green County, State of Texas, in so far as said lease covers and includes the following described land situated in Tom Green County, State of Texas…

QUITCLAIM DEED
STATE OF CALIFORNIA
COUNTY OF LOS ANGELES

KNOW ALL MEN BY THESE PRESENTS, that I, IRENE SPARKS, a widow of the County of Los Angeles, State of California, for and in consideration of the sum of Ten Dollars, cash in hand, paid to me by ROSE GANDY, the receipt of which I hereby acknowledge, have granted, sold, quitclaimed, and conveyed, and by these presents do grant, sell, quitclaim, and convey unto the said ROSE GANDY of Tom Green County, Texas, all of my right, title, and interest in and to all that certain tract of land which is situated in Tom Green County, Texas described as follows:

The West one-half (W. 1/2) of the following described 50 acres of land out of Survey No. 876, Adam Burkhardt, Abstract No. 64, which 50 acres is described by metes and bounds as follows:

Beginning at a stake and stone mound on East line of said Survey No. 876, at the intersection with the North line of the San Angelo and Sherwood Road; Thence North with East line of said Survey No. 876, 649 ½ varas to a stake from which a mesq. 6" bears S. 9 ¾ W. 22 varas, a do 8" bears N. 89 W. 35 varas; Thence West with South line of a 210.9 acre tract sold to Wm. Linbrugger, 426 ½ varas to a stake from which a mesq. 8" bears N. 3 ¾ E. 3 varas, a do 6" bears S. 38 W. 16 varas; Thence South 436 ½ varas to a stake from which a mesq. 6" bears S. 47 ½ E. 20 ½ varas; a do 6" bears N. 70 ½ W. 11 varas; Thence S. 31 ½ E. 404 ½ varas to a stake and stone mound on North side of the San Angelo and Sherwood road, from which a mesq. 5" bears N. 24 ¾ E. 15 ½ varas; a double mesq. 6" bears N. 10 ¼ W. 72 ½ varas; Thence N. 58 ½ E. with North line of said road, 252 varas to place of beginning.

TO HAVE AND TO HOLD all of my right, title, and interest in and to the above-described premises, together with all and singular the rights and appurtenances in anywise belonging thereto unto the said Rose Gandy, her heirs and assigns forever.

(Witnessed and signed by George W. Arnold)

Deed Book 433, pages 102–103.

DEED

I, J.W. COX of the county of Dallas, State of Texas for $10.00 and other good and valuable considerations hand paid (in cash) by IRENE SPARKS, have Granted, Sold and Conveyed… unto the said MRS. IRENE SPARKS…all that certain tract or parcel of land lying and being situated in Tom Green County, Texas, described as follows:

(*See deed transferring this land –Survey No. 876– to R. Gandy for description.)

(Witnessed on 30 April 1951 by Pat Tinkle.)

DEED

I, J.W. COX of the county of Dallas, State of Texas for $10.00 and other good and valuable considerations hand paid (in cash) by ROSE GANDY, have Granted, Sold and Conveyed… unto the said MRS. ROSE GANDY…all that certain tract or parcel of land lying and being situated in Tom Green County, Texas, described as follows:

THE WEST ONE HALF (W. ½) of the following described 50 acres of land out of Survey No. 876, Ada [sic], Burkhardt, Abstract No. 64, which 50 acres is described by metes and bounds as follows:

BEGINNING at a stake and stone mound on East line of said Survey No. 876, at the intersection with the North line of the San Angelo and Sherwood Road; THENCE North with East line of said Survey 876, 649 ½ varas to a stake from which a mesq. 6" bears S. 9 ¾ W. 22 varas, a do 8" bears N. 89 W. 35 varas; THENCE West with South line of a 210.9 acre tract sold to Wm. Linbrugger, 426 ½ varas to a stake from which a mesq. 8" bears N. 3 ¾ E. 3 varas, a do 6" bears S. 38 W. 16 varas; THENCE South 436 ½ varas to a stake from which a mesq. 6" bears S. 47 ½ E. 20 ½ varas; a do 6" bears N. 70 ½ W. 11 varas; THENCE S. 31 ½ E. 404 ½ varas to a stake and stone mound on North side of the San Angelo and Sherwood road, from which a mesq. 5" bears N. 24 ¾ E. 15 ½ varas; a double mesq. 6" bears N. 10 ¼ W. 72 ½ varas; THENCE N. 58 ½ E. with North line of said road, 252 varas to place of BEGINNING.

(Witnessed 30 April 1951 by Pat Tinkle)

AGREEMENT OF LEASE

1 January 1961:

EDITH J. MONROE leased to R.F. GANDY 40 7/10 acres out of Survey No. 875, in name of F. Decker; 42 8/10 acres out of Survey No. 876, in name of Adam Burkhardt, for a term of three years, beginning on 1 January 1961, and ending on 31 December 1963, paying $900.00 semi-annually in advance on the first day of January and on the first day of July of each year in payments of $150.00.

The premises will be used strictly for farming and ranching, and for no other purpose.

This lease shall not interfere with the rights of the Lessor to lease the property for oil or mineral purposes.

Rent shall be paid to Edith J. Monroe, 6526 Fairfield Ave. Berwyn Illinois.

Boundary Line Agreement

THIS AGREEMENT is made on this, the 12th day of October, 1961, by and between IRENE SPARKS, a widow, on the one hand, and ROSE GANDY, and her husband, R.F. GANDY, on the other hand.

WITNESSETH THAT:

WHEREAS, by deed from J.W. Cox dated April 30, 1951, and recorded in Volume 309 at page 155 of the Deed Records of Tom Green County, Texas, the west one-half of a certain fifty-acre tact out of Survey No. 876, Adam Burkhardt, Abstract No. 64, was conveyed to the said Rose Gandy which tract is more particularly described in the said deed to which reference is hereby made for all purposes; and,

WHEREAS, the said J.W. Cox, by deed dated April 30, 1951, recorded in the Deed Records of Tom Green County, Texas in Volume 309 at page 156 conveyed to the said Irene Sparks the east one-half of the said fifty-acre tract above described; and,

WHEREAS, certain questions have arisen concerning the boundary line established between the two tracts by such conveyance; which the parties hereto by these presents do mutually desire to resolve;

NOW, THEREFORE, for and in consideration of the mutual covenance hereinafter set forth, the said IRENE SPARKS, on the one hand, and the said ROSE GANDY and her husband, R.F. GANDY, on the other hand, do hereby covenant and agree that the boundary line which exists between the two tracts hereinabove described is and shall hereafter be described and recognized to be as follows:

> "BEGINNING at a point in the North right-of-way boundary of U.S. Highway No. 67 whence the intersection of the East line of the Adam Burkhardt Survey No. 876 and the North right-of-way boundary of U.S. Highway No. 67 bears North fifty eight degrees forty minutes East (N58°40'E), three hundred fifty six and one tenth (356.1) feet; Thence North twenty three degrees eleven minutes West (N23°11'W), eight hundred nineteen and seven tenths (819.7) feet; Thence North one thousand two hundred twelve and five tenths (1,212.5) feet to the North boundary of said Rose Gandy and Irene Sparks property and the South boundary of the Edith Monroe property."

(Witnesses: Irene Sparks, Rose Gandy, and R.F. Gandy)

Deed Book 433, pages 100–101.

See Figure L-4 for Surveyor's Record.

41TG412

Table L-5. Land ownership of 41TG412 - Survey #825

Survey	Acreage	Date/Map Reference	Grantor	Grantee/Current Owner	Book	Page	Map #
825	314	4 February 1858	State of Texas	John O. Meusebach	D	489	
	314	1 November 1861	J.O. Meusebach	Gustave Schleicher	BR	435	
*							
	314	16 July 1881	Mary A. Maverick	Jacob Fluhr	D	497	
	314	19 November 1881	Jacob Fluhr	John D. Patterson	D	635	
	314	25 April 1906	W.W. & T.W. Patterson	George Hagelstein	26	343	
	192	1947 Southern Tom Green County Ownership Map		Wilhelm Leuders			TW-64
		1959 Oil and Gas - Southern Tom Green County		Wilhelm Leuders			TW-8
		1962 Land Ownership Map		Homer Byrd			1

* Indicates gaps in sequence

41TG419

Table L-6. Land ownership of 41TG419 - Survey #824

Survey	Acreage	Date/Map Reference	Grantor	Grantee/Current Owner	Book	Page	Map #
824	246	1 November 1861	J.O. Meusebach	Gustave Schleicher	BR	435	
	246	2 April 1866	Gustave Schleicher	Mexican Gulf R.R. Co.	C	762	
*							
	246	25 April 1906	T.W. & W.W. Patterson	George Hagelstein	26	343	
		1947 Southern Tom Green County Ownership Map		L. M. Ratliff et al.			TW-64
		1959 Oil and Gas - Southern Tom Green County		W. B. Duncan III			TW-8
		1959 Oil and Gas - Southern Tom Green County		Jno. Odstreil			TW-8
		1959 Oil and Gas - Southern Tom Green County		Charles C. Motl			TW-8
		1959 Oil and Gas - Southern Tom Green County		ERG Blanco			TW-8
		1959 Oil and Gas - Southern Tom Green County		Stanford			TW-8
		1962 Land Ownership Map		O. D. Harrison			1

* Indicates gaps in sequence

See Figure L-5 for Surveyor's Record.

41TG443 and 41TG445

Table L-7. Land ownership of 41TG443 and 41TG445 - Survey #104

Map #	Map Reference	Current Owner
TW-4	1855 Fisher and Miller Colony	Plot # 174 or 175 in McDonald's District #11
3	1916 Map of Tom Green County	Washington County School
TW-64	1947 Southern Tom Green County Ownership Map	Washington County School
TW-8	1959 Oil and Gas - Southern Tom Green County	Washington County School
TW-8	1959 Oil and Gas - Southern Tom Green County	J. R. Medlock - 640 acres - 1933?
1	1962 Land Ownership Map	Washington County School

Notes to Survey #104 (41TG443):

Land Patent
Deed Book B, page 245.
August 22, 1877
Filed September 18, 1877.

Land Patent awarded by P. H. Bell, Governor of Texas to the school Commissioners of Washington County. One league of land in Bexar County known as survey 104 in Sec. No. 14 on the west bank of the south fork of the Concho River. The NE corner of survey 102 from which a pecan bears E. ...

Lease
Deed Book S, page 422.
Date of instrument: July 7, 1886.
Date of filing: October 16, 1886.

In May 1883 C. B. Metcalfe leased four leagues of Washington Co. School Land at 13 ½ cents per acre per annum for the term of five years beginning July 1, 1888. Metcalfe agreed to pay the sum of $239.12 annually in advance. Metcalfe canceled the agreement and left a lease for the remaining term of 2 years, July 1 1886 - July 1 1888.

Beginning July 1886 Washington County leased the land to Seaton Keith for 13 ½ cents per acre. This leased land was on both sides of the Concho River. Seaton Keith agreed to use all necessary means and labor to protect and care for the timber on the said land. Lease expired July 1, 1888.

Searched indexes through 1970 and found no other Washington County entries that referred to survey 104.

See Figure L-6 for Surveyor's Record.

41TG450

Table L-8. Land ownership of 41TG450 - Survey #653

Map #	Map Reference	Current Owner
TW-4	1855 Fisher and Miller Colony	Possibly Plot # 174 in McDonald's District #11
3	1916 Map of Tom Green County	James Davis
TW-64	1947 Southern Tom Green County Ownership Map	James Davis
TW-8	1959 Oil and Gas - Southern Tom Green County	James Davis
1	1962 Land Ownership Map	E. Hobbs

See Figure L-7 for Surveyor's Record.

41TG452

Table L-9. Land ownership of 41TG452 - Survey #654

Map #	Map Reference	Current Owner
TW-4	1855 Fisher and Miller Colony	Possibly Plot # 174 in McDonald's District #11
3	1916 Map of Tom Green County	Probandt and Raphael
TW-64	1947 Southern Tom Green County Ownership Map	Probandt and Raphael
TW-8	1959 Oil and Gas - Southern Tom Green County	Joe Sawyer
1	1962 Land Ownership Map	Joe Sawyer

See Figure L-8 for Surveyor's Record.

41TG458

Table L-10. Land ownership of 41TG458 - Survey #875

Survey	Acreage	Date/Map Reference	Grantor	Grantee/Current Owner	Book	Page	Map #
875		1855 Fisher and Miller Colony		Possibly Plot # 174 in McDonald's District #11			TW-4
	320	1 November 1861	J.O. Meusebach	Gustave Schleicher	BR	435	
	320	1 July 1873	State of Texas	Samuel A. Maverick	D	491	
*							
	320	16 July 1881	Mary A. Maverick	Jacob Fluhr	D	497	
	320	19 November 1881	Jacob Fluhr	John D. Patterson	D	635	
	320	2 July 1902	J.D. Patterson (will)	T.W. & W.W. Patterson	26	56	
	320	25 April 1906	T.W. Patterson	George Hagelstein	26	343	
*							
	43.2	19 February 1913	P.J. Baron (will-J.D.P)	George Hagelstein	77	338	
	46.6	1 December 1913	George Hagelstein	Adel Jecker	74	561	
	163.3	1 December 1913	George Hagelstein	Frank Jecker	82	249	
	101.4	1 December 1913	George Hagelstein	Frank Jecker	82	248	
	101.4	5 August 1914	Frank Jecker, et ux.	S.S. Cummings, et al.	75	189	
	163.3	5 August 1914	Frank Jecker, et ux.	S.S. Cummings, et al.	75	193	
	46.6	5 August 1914	Adel Jecker	S.S. Cummings, et al.	75	191	
		1916 Map of Tom Green County		Illegible			3
	163.3	1 December 1919	S.S. Cummings, et al.	J.W. Cox	96	419	
	102.9	29 November 1922	Gus Allen, et ux.	J.W. Cox	106	128	
	102.9	3 November 1923	J.W. Cox	Gus Allen	108	486	
	163.3	30 October 1935	J.W. Cox	Rose & R.F. Gandy	183	198	
		1947 Southern Tom Green County Ownership Map		Illegible			TW-64
		1959 Oil and Gas - Southern Tom Green County		Rose Gandy			TW-8
		1962 Land Ownership Map		Thomas A. Childress			1

* Indicates gaps in sequence

See Figure L-9 for Surveyor's Record.

41TG501

Table L-11. Land ownership of 41TG501 - Survey #817

Acreage	Date/Map Reference	Grantor	Grantee/Current Owner	Book	Page	Map #
	1855 Fisher and Miller Colony		Part of McDonald's District #11			TW-4
160	1856	Fisher and Miller	Phillip Huppman	Survey Record Book 2	289	
	1894 Map of Tom Green County		P. Huppmann (Patent #5138)			4
	1916 Map of Tom Green County		illegible			3
	1942 Map of Tom Green County		P. Huppmann (Patent #5138)			
	1947 Southern Tom Green County Ownership Map		P. Huppmann (J. D. Suggs estate)			TW-64
	1959 Oil and Gas - Southern Tom Green County		P. Huppmann			TW-8
155.8	1959 Map of Tom Green County		O. McGowan et al.			
154	1962 Land Ownership Map		O. McGowan et al.			1
	1965 Map of Tom Green County		C. M. McGowan et al.			

See Figure L-10 for Surveyor's Record.

41TG504

Table L-12. Land ownership of 41TG504 - Survey #888

Acreage	Date/Map Reference	Grantor	Grantee/Current Owner	Book	Page	Map #
	1855 Fisher and Miller Colony		Part of McDonald's District #11			TW-4
160		Fisher and Miller	Heirs of Joseph Jung	Survey Record Book 2	210	
	1894 Tom Green County Map		Joseph Jung			4
	1916 Map of Tom Green County		Illegible			3
	1942 Southern Tom Green County Ownership Map		Joseph Jung			TW-10
	1947 Southern Tom Green County Ownership Map		Joe Jung			TW-64
	1959 Oil and Gas - Southern Tom Green County		Joe Jung			TW-8
160	1959 Map of Tom Green County		Edward H. Jones			
160	1962 Land Ownership Map		Joe Jung			1
	1965 Map of Tom Green County		E. H. Jones			

See Figure L-11 for Surveyor's Record.

41TG513

Table L-13. Land ownership of 41TG513 - Survey #102

Acreage	Date/Map Reference	Grantor	Grantee/Current Owner	Book	Page	Map #
half league or ½ labor	1849	Board of Land Comm. County of Red River	David Lloyd	Survey Record Book 1	480	
	1855 Fisher and Miller Colony		Part of McDonald's District #11			TW-4
640	1886	C. A. Ragsdale	J. N. Upton			
	1887	J. N. Upton	J. W. Johnson			
	1894 Tom Green County Map		David Lloyd			4
Plat I-840	1942 Tom Green County Map		David Lloyd			
Plat I-840	1947 Southern Tom Green County Ownership Map		David Lloyd			TW-64
1,400	1959 Oil and Gas - Southern Tom Green County		David Lloyd			TW-8
640	1959 Tom Green County Map		Mrs. J.T. Jenson/ J.W. Shepperson			
1,318	1959 Tom Green County Map		Gene Whitehead			
376	1959-65 Tom Green County Maps		W.C. Hoelscher			
568.8	1962 Land Ownership Map		G. D. Morgan			1
1318	1965 Tom Green County Map		Alfredo D. Braden et al.			
55.4 (?)	1965 Tom Green County Map		A.A. Hoelscher			
	1965 Tom Green County Map		Ann W. McGowan/ J.W. Shepperson			

Notes to Survey #102 (41TG513):

Field Notes of a survey of a Half League of a half labor land made for David Lloyd it being part of a quantity of land to which he is entitled by virtue of Certificate issued be the Board of Land for the county of Red River on the 5th day of July 1838. No. 655.

Said survey is 102 in Section 14 situated on the South Fork of the Concho river about 58 miles NW of the Old San Saba Fort being at a stake on the West bank of Concho River.

See Figure L-12 for Surveyor's Record.

41TG516

Table L-14. Land ownership of 41TG516 - Survey #814

Survey	Acreage	Date/Map Reference	Grantor	Grantee/Current Owner	Book	Page	Map #
814		1855 Fisher and Miller Colony		Probably Plot #166 in McDonald's District #11			TW-4
	561	10 July 1882	Mary A. Maverick	T.J. Wiley	F	18	
	561	15 February 1884	T.J. Wiley	John R. Nasworthy	J	41	
	561	20 October 1886	John R. Nasworthy	William Lackey	S	441	
	561	15 October 1888	William Lackey, et ux.	J.S. Fowlkes	Y	44	
		1894 Tom Green County Map		Mrs. Heinr. Roth			4
		1916 Map of Tom Green County		Charles Mott			3
	110	6 October 1929	R.D. Loika	J.M. Wagstaff	157	140	
	174	9 October 1929	Wencel Motl, et ux.	J.M. Wagstaff	157	139	
	100	24 December 1929	Frank Motl, et ux.	J.M. Wagstaff	157	517	
		1942 Southern Tom Green County Ownership Map		H. Roth			TW-10
		1945 Tom Green County Land Ownership Map		Heirs of H. Roth			2
		1947 Southern Tom Green County Ownership Map		R. Roth			TW-64
	94	1959 Oil and Gas - Southern Tom Green County		D. E. Switzer			TW-8
		1962 Land Ownership Map		Dawse E. Switzer			1

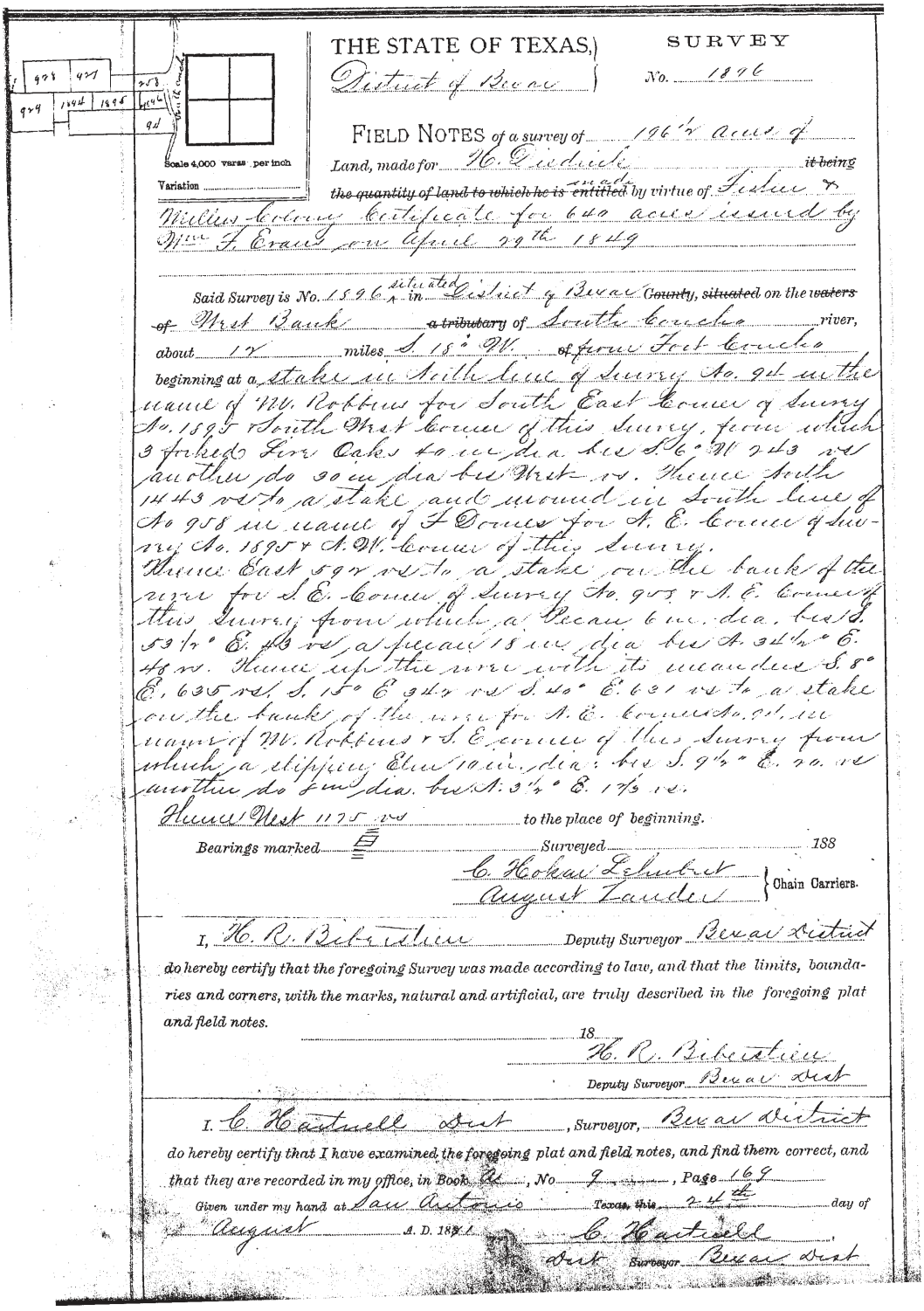
See Figure L-13 for Surveyor's Record.

41TG520, 41TG521, and 41TG523

Table L-15. Land ownership of 41TG520, 41TG521, 41TG523 - Survey #647

Acreage	Date/Map Reference	Grantor	Grantee/Current Owner	Book	Page	Map #
	1855 Fisher and Miller Colony		Plot #166 in McDonald's District #11			TW-4
	1856	Fisher and Miller	Heirs of Phillip Kurzenocker	Survey Record Book 2	340	
	1894 Tom Green County Map		Phil Kurzenocker			4
	1916 Tom Green County Map		Phil Kurzenocker			3
608	1922	A. Lee/ E. & T. J. Caldwell	R. C. DeLong	105 258		
150 1/10	1926	R. C. DeLong	H. A. Montgomery	124 551		
75	1927	H. A. Montgomery	E. V. Morris	136 34		
150 1/10	1929	H. A. Montgomery	J. M. Wagstaff	157 340		
75	1929	E. V. Morris	J. M. Wagstaff	157 339		
178.62	1929	R. C. DeLong	G. W. Fry	153 210		
178.62	1929	G. W. Fry	J. M. Wagstaff	192 174		
68.5	1929		H. C. Ragsdale	153 210		
109.6	1929		Frank Daugherty	153 210		
73.939	1940	West Texas Utilities	J. F. Key	227 60		
94.594	1941	West Texas Utilities	J. F. Key	208 610		
1332.745	1941	West Texas Utilities	J. F. Key	227 61		
	1942 Southern Tom Green County Ownership Map		Heirs of P. Kurzenocker			TW-10
	1945 Tom Green County Land Ownership Map		Heirs of P. Kurzenocker			2
	1947 Southern Tom Green County Ownership Map		P. Kurzenocker			TW-64
	1959 Oil and Gas - Southern Tom Green County		J. F. Key (132.7 acres)			TW-8
	1962 Land Ownership Map		J. F. Key			1

See Figure L-14 for Surveyor's Record.



THE STATE OF TEXAS,
District of Bexar

SURVEY
No. 1896

FIELD NOTES of a survey of 196½ acres of Land, made for H. Pudritz it being ~~the quantity of land to which he is entitled~~ by virtue of Scrip & Millers Colony Certificate for 640 acres issued by Wm. F. Craig on April 29th 1849

Said Survey is No. 1896 ½ situated in District of Bexar ~~County~~, ~~situated~~ on the ~~waters of~~ West Bank ~~a tributary~~ of South Concho river, about 1½ miles S 18° W of Fort Concho

beginning at a stake on South line of Survey No. 94 in the name of W. Robbins for South East Corner of Survey No. 1895 & South West Corner of this Survey, from which 3 forked Live Oaks 4 in. dia. bear S 56° W 7 vrs another do 20 in. dia. bear West 12 vrs. Thence South 1443 vrs to a stake and mound in South line of No 958 in name of F. Bowes for N. E. Corner of Survey No. 1895 & N. W. Corner of this Survey.

Thence East 594 vrs to a stake on the banks of the river for S. E. Corner of Survey No. 958 & N. E. Corner of this Survey from which a Pecan 6 in. dia. bears S. 53½° E. 43 vrs, a Pecan 18 in. dia bears N. 34½° E. 48 vrs. Thence up the river with its meanders S. 8° E. 635 vrs, S. 15° E 942 vrs S. 40° E. 631 vrs to a stake on the banks of the river for N. E. Corner No. 94 in name of W. Robbins & S. E. corner of this Survey from which a slipping Elm 10 in. dia. bears S. 9½° E. 20 vrs another do 8 in. dia. bears N. 3½° E. 17½ vrs.

Thence West 1175 vrs to the place of beginning.

Bearings marked ☰ Surveyed 188

C. Hoban Schubert
August Zander
} Chain Carriers.

I, H. R. Bibestein Deputy Surveyor Bexar district do hereby certify that the foregoing Survey was made according to law, and that the limits, boundaries and corners, with the marks, natural and artificial, are truly described in the foregoing plat and field notes.

18

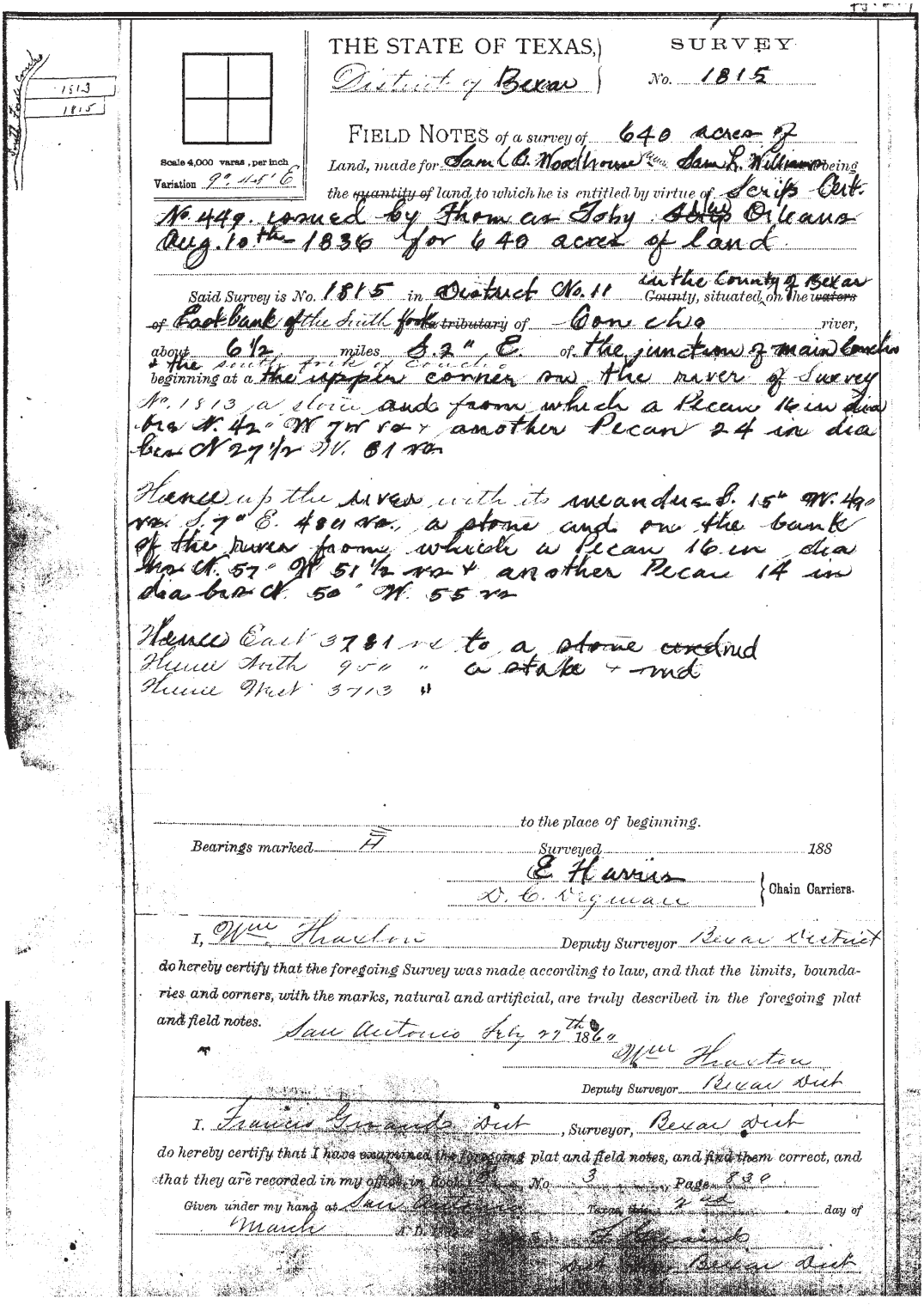
H. R. Bibestein
Deputy Surveyor Bexar dist

I. C. Hartwell Dist, Surveyor, Bexar district do hereby certify that I have examined the foregoing plat and field notes, and find them correct, and that they are recorded in my office, in Book A, No 9, Page 169

Given under my hand at San Antonio Texas, this 24th day of August A. D. 1881

C. Hartwell
Dist Surveyor Bexar Dist

Figure L-1. *Survey #1896 (41TG160), Surveyor's Record, Book 1, Tom Green County.* West Texas Collection, Angelo State University.



THE STATE OF TEXAS, SURVEY
District of Bexar No. 1815

Scale 4,000 varas, per inch
Variation 9° 45' E

FIELD NOTES of a survey of 640 acres of Land, made for Sam'l A. Woodhouse Assee. Sam'l L. Williams being the ~~quantity of~~ land to which he is entitled by virtue of Scrip Cert. No 449. issued by Thomas Toby Adgt Orleans Aug. 10th 1836 for 640 acres of Land

Said Survey is No. 1815 in District No. 11 in the County of Bexar County, situated on the ~~waters~~ of Eastbank of the South ~~fork~~ tributary of Cone Creek river, about 6½ miles S. 2° E. of the junction of main & the south fork of Concho beginning at a the upper corner on the river of Survey No. 1813 a stone and from which a Pecan 16 in dia bears N. 42° W 7 vrs + another Pecan 24 in dia bears N 27½ W. 81 vrs.

Hence up the river with its meander S. 15° W. 49 vrs. S. 7° E. 48 vrs. a stone and on the bank of the river from which a Pecan 16 in dia bears N. 57° W 51½ vrs + another Pecan 14 in dia bears N. 50° W. 55 vrs

Hence East 3781 vrs to a stone ~~corner~~ mound
Thence South 950 " a stake + mnd
Thence West 3713 "

to the place of beginning.

Bearings marked N Surveyed 188

E Harris
D. C. Vigneaux } Chain Carriers.

I, Wm Hawkins Deputy Surveyor Bexar District do hereby certify that the foregoing Survey was made according to law, and that the limits, boundaries and corners, with the marks, natural and artificial, are truly described in the foregoing plat and field notes.

San Antonio Feb 27th 1860

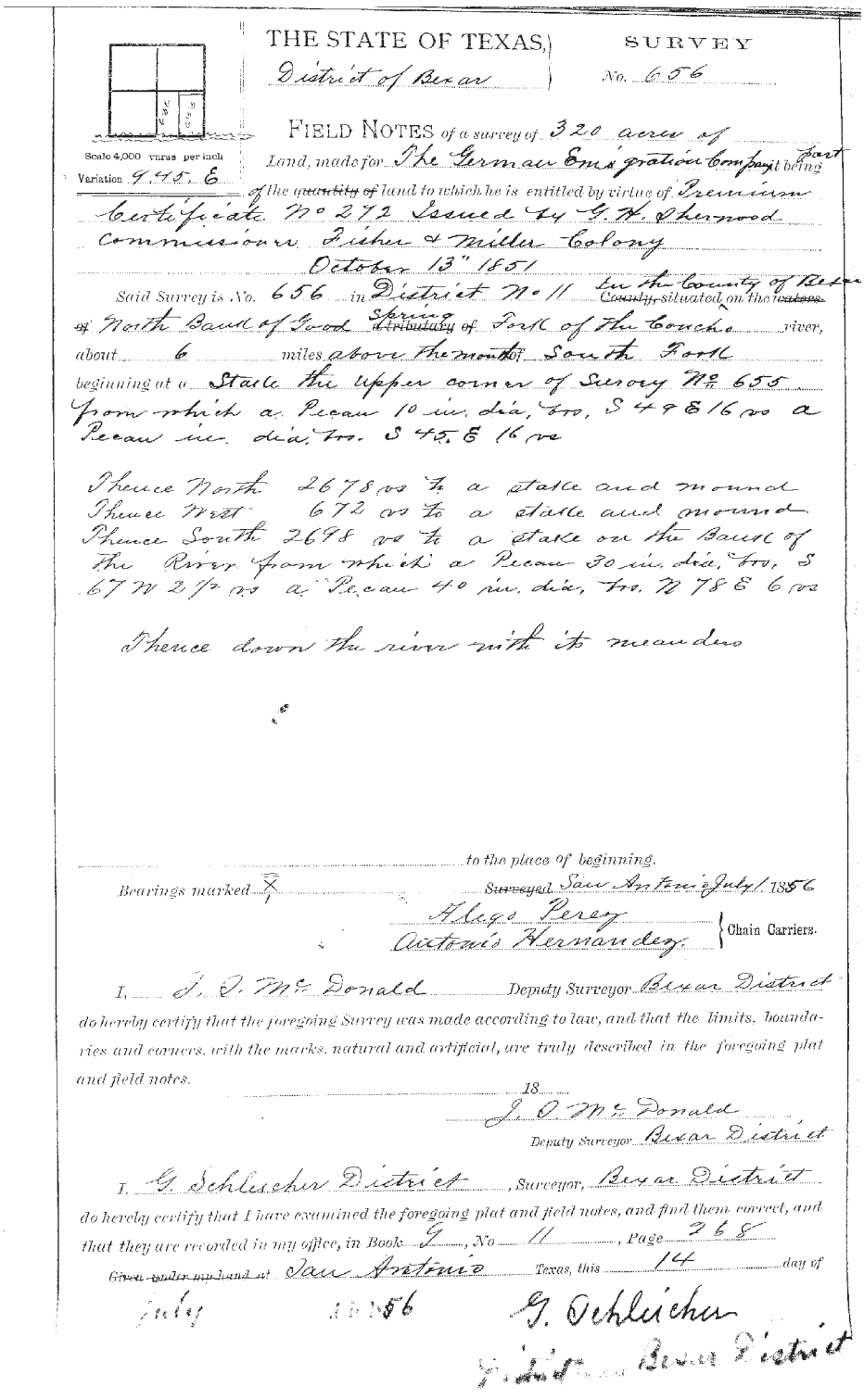
Wm Hawkins
Deputy Surveyor Bexar Dist

I. Francis Giraud Dist, Surveyor, Bexar Dist do hereby certify that I have examined the foregoing plat and field notes, and find them correct, and that they are recorded in my office in Book 1 No 3 Page 839

Given under my hand at San Antonio Texas this 2nd day of March A. D. 1860

F. Giraud
Dist Surv Bexar dist

Figure L-2. *Survey #1815 (41TG248), Surveyor's Record, Book 1, page 214, Tom Green County.* West Texas Collection, Angelo State University.



THE STATE OF TEXAS, SURVEY
District of Bexar No. 656

Scale 4,000 varas per inch
Variation 9.45 E

FIELD NOTES of a survey of 320 acres of Land, made for The German Emigration Company it being part of the ~~quantity of~~ land to which he is entitled by virtue of Premium Certificate No 272 Issued to G. W. Sherwood Commissioner Fisher & Miller Colony October 13th 1851

Said Survey is No. 656 in District No 11 in the County of Bexar ~~County~~ situated on the ~~waters~~ of North Bank of Good Springs ~~Stream~~ tributary of Fork of the Concho river, about 6 miles above the mouth of South Fork beginning at a Stake the Upper corner of Survey No 655 from which a Pecan 10 in. dia, bro. S 49 E 16 vrs a Pecan in. dia. bro. S 45 E 16 vrs

Thence North 2678 vrs to a stake and mound
Thence West 672 vrs to a stake and mound
Thence South 2698 vrs to a stake on the Bank of the River from which a Pecan 30 in. dia, bro. S 67 W 2 vrs a Pecan 40 in. dia, bro. N 78 E 6 vrs

Thence down the river with its meander

to the place of beginning.

Bearings marked X / Surveyed San Antonio July 1856

Hugo Perez
Antonio Hernandez } Chain Carriers.

I, J. D. McDonald Deputy Surveyor Bexar District do hereby certify that the foregoing Survey was made according to law, and that the limits, boundaries and corners, with the marks, natural and artificial, are truly described in the foregoing plat and field notes.

18

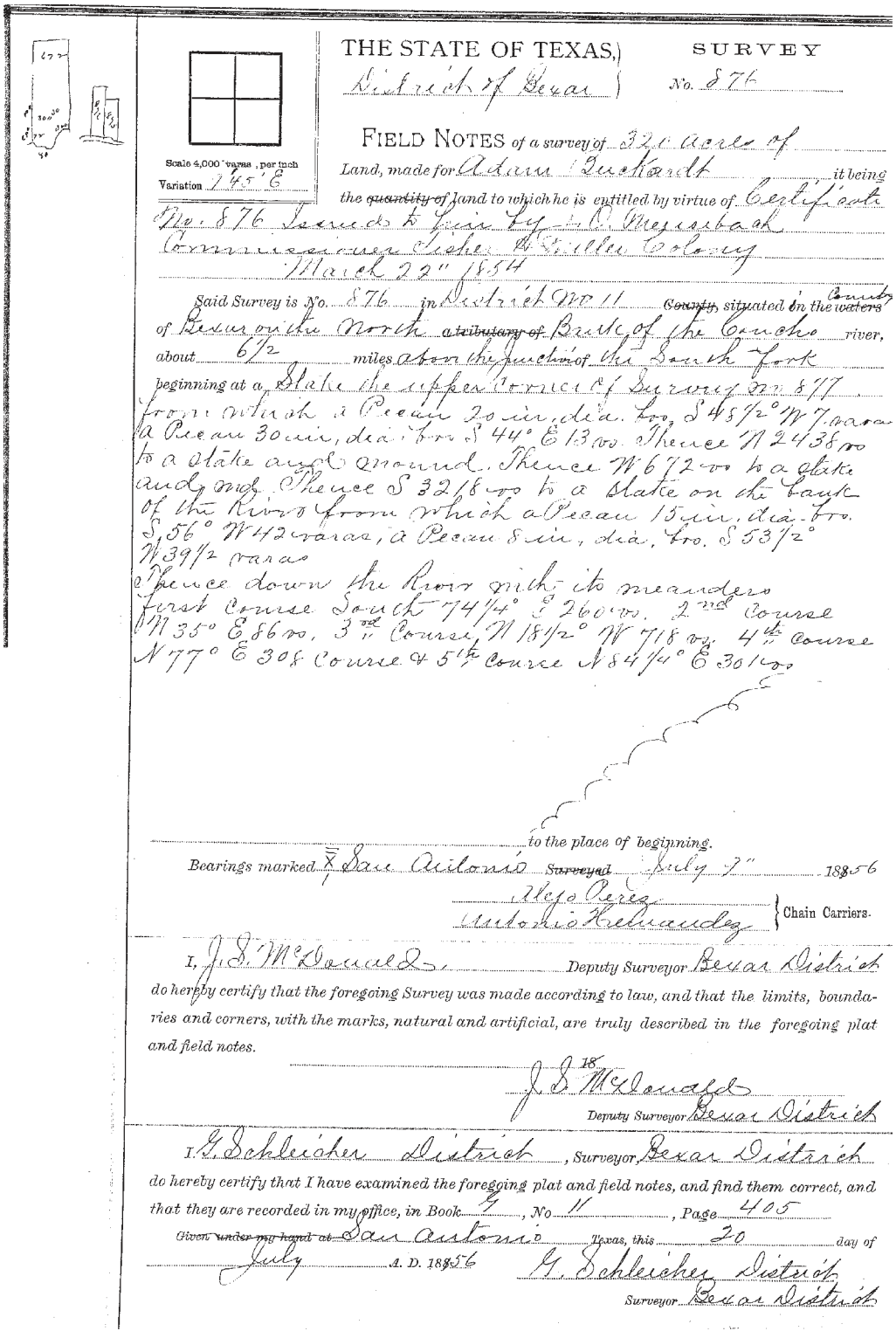
J. D. McDonald
Deputy Surveyor Bexar District

I, G. Schleicher District, Surveyor, Bexar District do hereby certify that I have examined the foregoing plat and field notes, and find them correct, and that they are recorded in my office, in Book G, No 11, Page 268

Given ~~under my hand~~ at San Antonio Texas, this 14 day of July A.D. 1856

G. Schleicher
Bexar District

Figure L-3. *Survey #656 (41TG253), Surveyor's Record, Book 2, page 9.* West Texas Collection, Angelo State University.



THE STATE OF TEXAS, SURVEY
District of Bexar No. 876

Scale 4,000 varas, per inch
Variation 7 45' E

FIELD NOTES of a survey of 320 acres of Land, made for Adam Buckhardt it being the ~~quantity of~~ land to which he is entitled by virtue of Certificate No. 876 Issued to him by the Commissioners of Fisher & Miller Colony March 22nd 1854

Said Survey is No. 876 in District No 11 ~~County~~, situated in the (bounds) of Bexar on the North ~~a tributary of~~ Branch of the Cibolo river, about 6 1/2 miles above the junction of the South Fork beginning at a Stake the upper corner of Survey No 877 from which a Pecan 20 in. dia. bro. S 45 1/2° W 7 varas a Pecan 30 in. dia. bro. S 44° E 13 vrs. Thence N 24 38 vrs to a stake and mound. Thence W 67 2 vrs to a stake and md. Thence S 32 8 vrs to a Stake on the bank of the River from which a Pecan 15 in. dia. bro. S 56° W 42 varas, a Pecan 8 in. dia. bro. S 53 1/2° W 39 1/2 varas

Thence down the River with its meanders First Course South 74 1/4° E 260 vrs. 2nd Course N 35° E 86 vrs. 3rd Course N 18 1/2° W 718 vrs. 4th Course N 77° E 308 Course & 5th Course N 84 1/4° E 301 vrs.

to the place of beginning.

Bearings marked ☧ San Antonio Surveyed July 7" 1856

Hugo Perez
Antonio Hernandez } Chain Carriers.

I, J. D. McDonald, Deputy Surveyor Bexar District do hereby certify that the foregoing Survey was made according to law, and that the limits, boundaries and corners, with the marks, natural and artificial, are truly described in the foregoing plat and field notes.

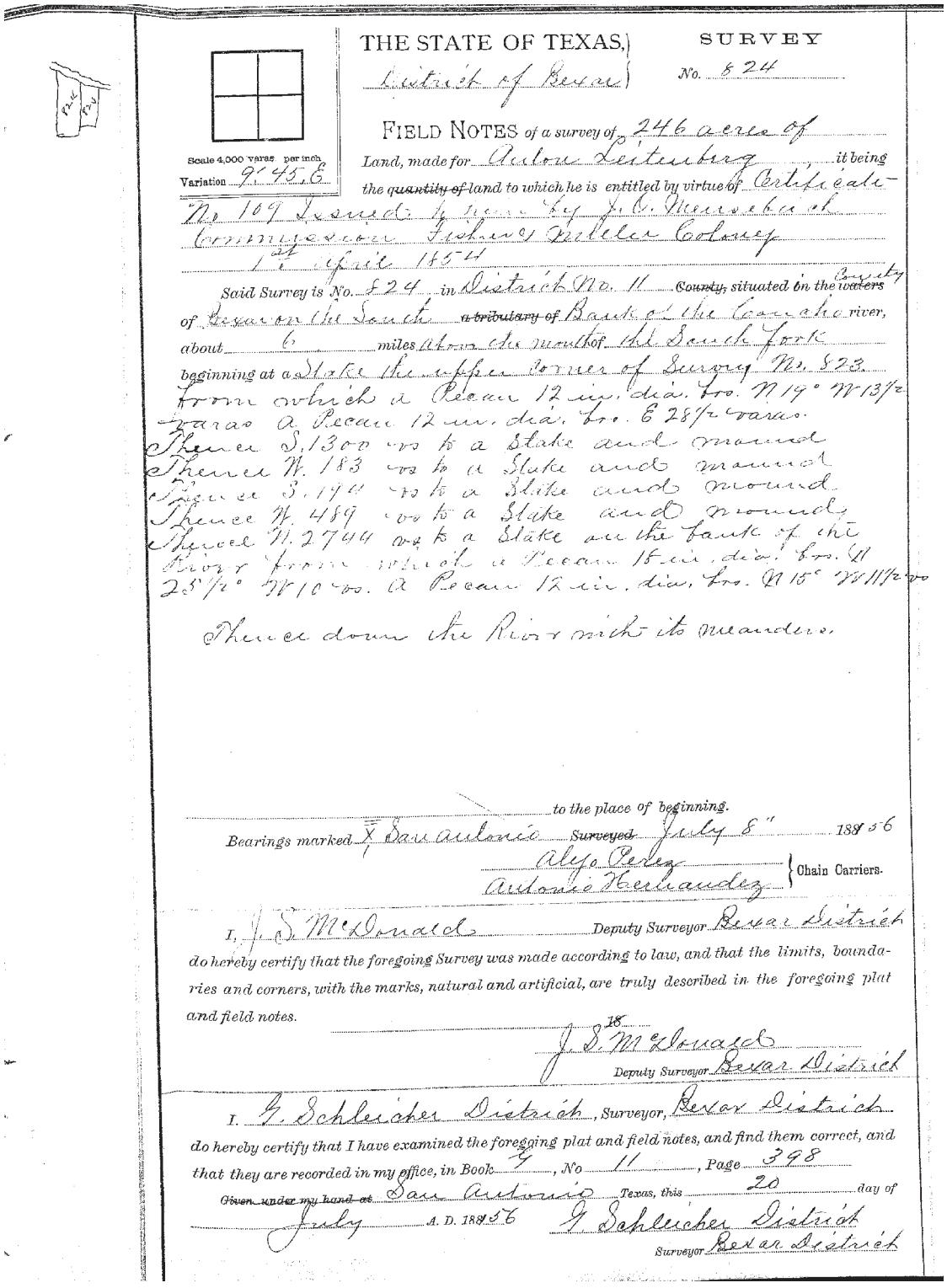
18
J. D. McDonald
Deputy Surveyor Bexar District

I G. Dahlreicher District, Surveyor, Bexar District do hereby certify that I have examined the foregoing plat and field notes, and find them correct, and that they are recorded in my office, in Book 2, No 11, Page 405

Given ~~under my hand~~ at San Antonio Texas, this 20 day of July A. D. 1856

G. Dahlreicher, District
Surveyor Bexar District

Figure L-4. *Survey #876 (41TG344 and 41TG459), Surveyor's Record, Book 2, page 315.* West Texas Collection, Angelo State University.



THE STATE OF TEXAS,
District of Bexar

SURVEY
No. 824

Scale 4,000 varas per inch
Variation 9° 45 E

FIELD NOTES of a survey of 246 acres of Land, made for Antonio Leitenberg, it being the ~~quantity of~~ land to which he is entitled by virtue of Certificate No 109 Issued to Jno. Leitenberg by J. B. Menchaca & Commissioner Fisher's Settler Colony 1st Class 1845

Said Survey is No. 824 in District No. 11 ~~County~~, situated in the ~~waters~~ County of Bexar on the South ~~a tributary of~~ Bank of the Comal river, about 6 miles above the mouth of the South Fork beginning at a Stake the upper corner of Survey No. 823. from which a Pecan 12 in. dia. bro. N 19° W 13 1/2 varas a Pecan 12 in. dia. bro. E 28 1/2 varas.

Thence S. 1300 vrs to a Stake and mound
Thence W. 183 vrs to a Stake and mound
Thence S. 1744 vrs to a Stake and mound
Thence W. 489 vrs to a Stake and mound
Thence N. 2744 vrs to a Stake on the bank of the River from which a Pecan 15 in. dia. bro. N 25 1/2° W 10 vrs. a Pecan 12 in. dia. bro. N 15° W 11 1/2 vrs

Thence down the River with its meanders.

to the place of beginning.

Bearings marked X San Antonio Surveyed July 8" 1856

Alejo Perez
Antonio Hernandez
} Chain Carriers.

I, J. S. McDonald Deputy Surveyor Bexar District do hereby certify that the foregoing Survey was made according to law, and that the limits, boundaries and corners, with the marks, natural and artificial, are truly described in the foregoing plat and field notes.

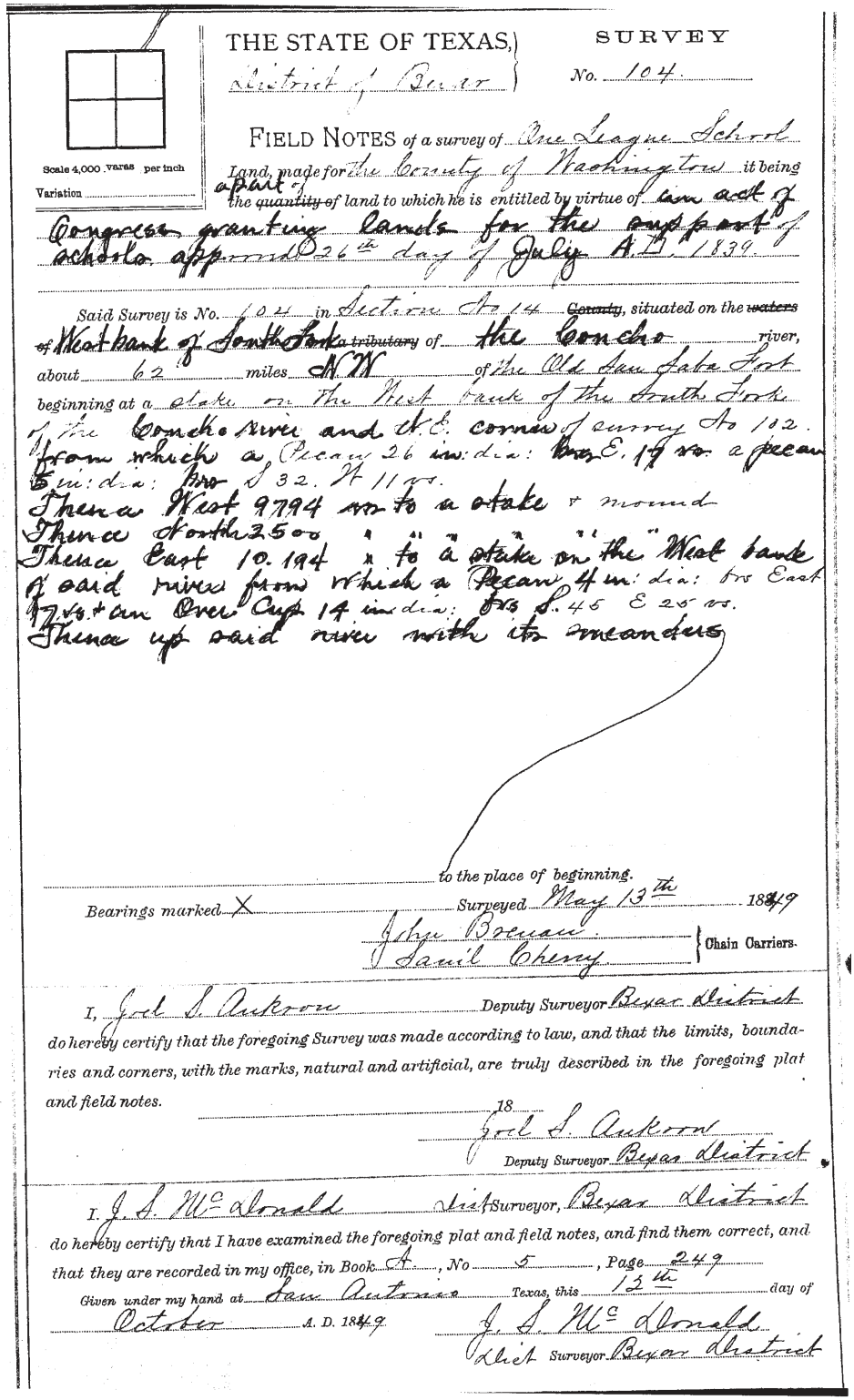
18
J. S. McDonald
Deputy Surveyor Bexar District

I. G. Schleicher District, Surveyor, Bexar District do hereby certify that I have examined the foregoing plat and field notes, and find them correct, and that they are recorded in my office, in Book G, No 11, Page 398

~~Given under my hand at~~ San Antonio Texas, this 20 day of July A. D. 1856

G Schleicher District
Surveyor Bexar District

Figure L-5. *Survey #824 (41TG419), Surveyor's Record, Book 2, page 311.* West Texas Collection, Angelo State University.



THE STATE OF TEXAS, District of Bexar

SURVEY No. 104

Scale 4,000 varas per inch

Variation

FIELD NOTES of a survey of One League School Land, made for the County of Washington it being a part of the quantity of land to which he is entitled by virtue of an act of Congress granting lands for the endowment of schools approved 26th day of July A.D. 1839.

Said Survey is No. 104 in Section No 14 County, situated on the ~~waters~~ of West bank of South Fork a ~~tributary~~ of the Concho river, about 62 miles NW of the Old San Saba Fort beginning at a stake on the West bank of the South Fork of the Concho river and N.E. corner of survey No 102. From which a Pecan 26 in: dia: bears E. 19 vrs. a pecan 8 in: dia: bears S 32. W 11 vrs.

Thence West 9794 vrs to a stake & mound
Thence North 2500 " " "
Thence East 10.194 " to a stake on the West bank of said river from which a Pecan 4 in: dia: bears East 7 vrs & an Over Cup 14 in dia: bears S. 45 E 25 vrs.
Thence up said river with its meanders to the place of beginning.

Bearings marked X Surveyed May 13th 1849

John Brenan
Saml Cheny
Chain Carriers.

I, Jos S Askrow Deputy Surveyor Bexar District do hereby certify that the foregoing Survey was made according to law, and that the limits, boundaries and corners, with the marks, natural and artificial, are truly described in the foregoing plat and field notes. 18

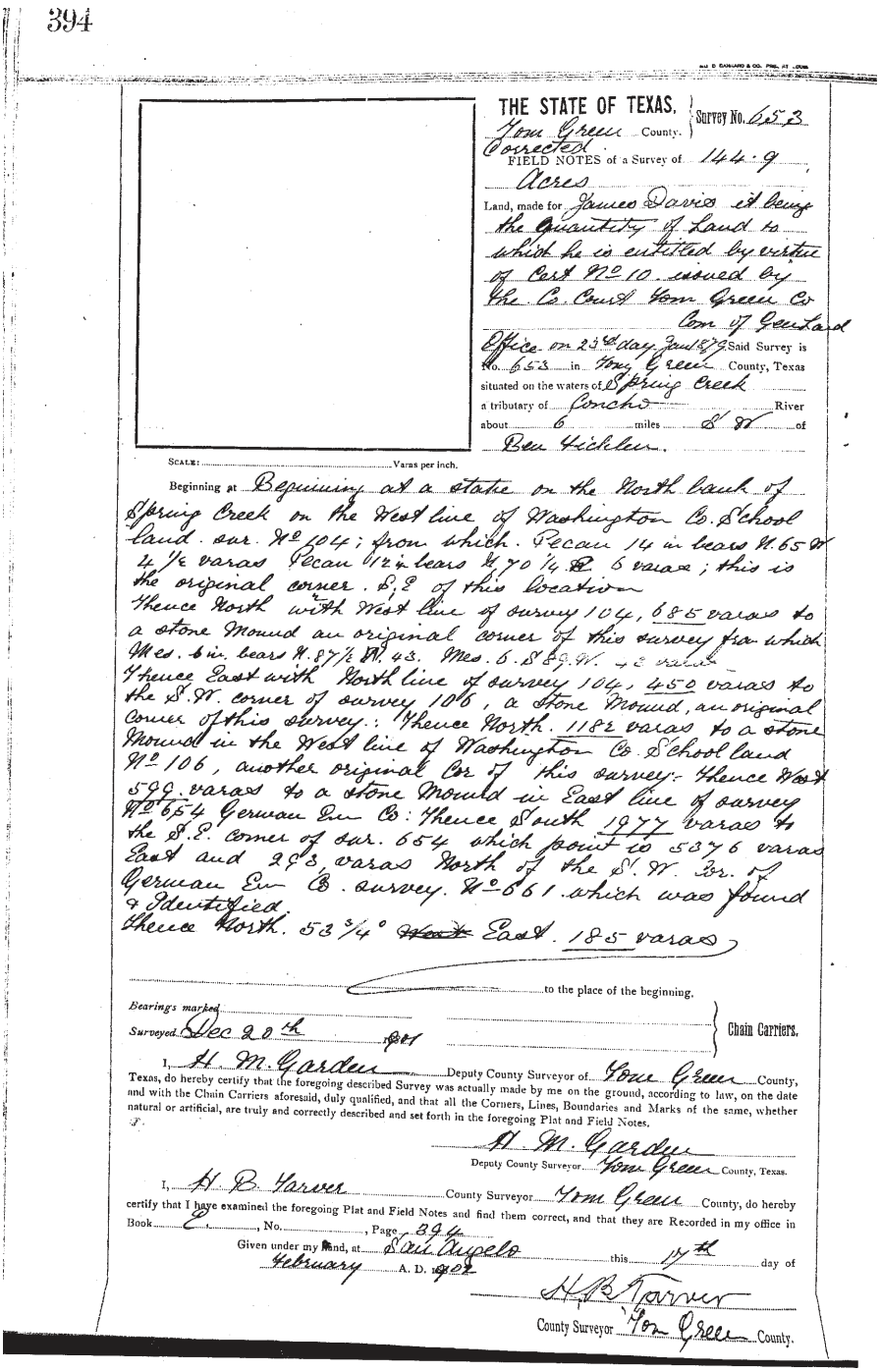
Jos S Askrow
Deputy Surveyor Bexar District

I. J. S. McDonald Dist Surveyor, Bexar District do hereby certify that I have examined the foregoing plat and field notes, and find them correct, and that they are recorded in my office, in Book A, No 5, Page 249

Given under my hand at San Antonio Texas, this 13th day of October A. D. 1849

J. S. McDonald
Dist Surveyor Bexar District

Figure L-6. *Survey #104 (41TG445), Surveyor's Record, Book 1, page 479, Tom Green County.* West Texas Collection, Angelo State University.



THE STATE OF TEXAS, Survey No. 653
Tom Green County.
Corrected
FIELD NOTES of a Survey of 144.9 Acres
Land, made for James Davis it being the Quantity of Land to which he is entitled by virtue of Cert No 210. issued by the C. Court Tom Green Co Com of Garland
Office on 23rd day Jan 1879 Said Survey is No. 653 in Tom Green County, Texas situated on the waters of Spring Creek a tributary of Concho River about 6 miles S 81 of Ben Hickler.

SCALE: Varas per inch.

Beginning at Beginning at a stake on the North bank of Spring Creek on the West line of Washington Co. School land. sur. No 104; from which Pecan 14 in bears N. 65 W 4 ½ varas Pecan 12 in bears N 70 ¼ E 6 varas; this is the original corner. S.E. of this location
Thence North with West line of survey 104, 685 varas to a stone Mound an original corner of this survey fm which Mes. 6 in. bears N. 87½ W. 43. Mes. 6. S 89 W. 43 varas
Thence East with North line of survey 104, 450 varas to the S.W. corner of survey 106, a stone Mound, an original corner of this survey.: Thence North. 1182 varas to a stone Mound in the West line of Washington Co. School land No 106, another original Cor of this survey: Thence West 599. varas to a stone Mound in East line of survey No 654 German Em Co: Thence South 1977 varas to the S.E. corner of sur. 654 which point is 5376 varas East and 293 varas North of the S.W. Cor. of German Em Co. survey. No 661. which was found & identified.
Thence North. 53 ¾ ° ~~West~~ East. 185 varas
to the place of the beginning.

Bearings marked
Surveyed Dec 20th 1881 } Chain Carriers.

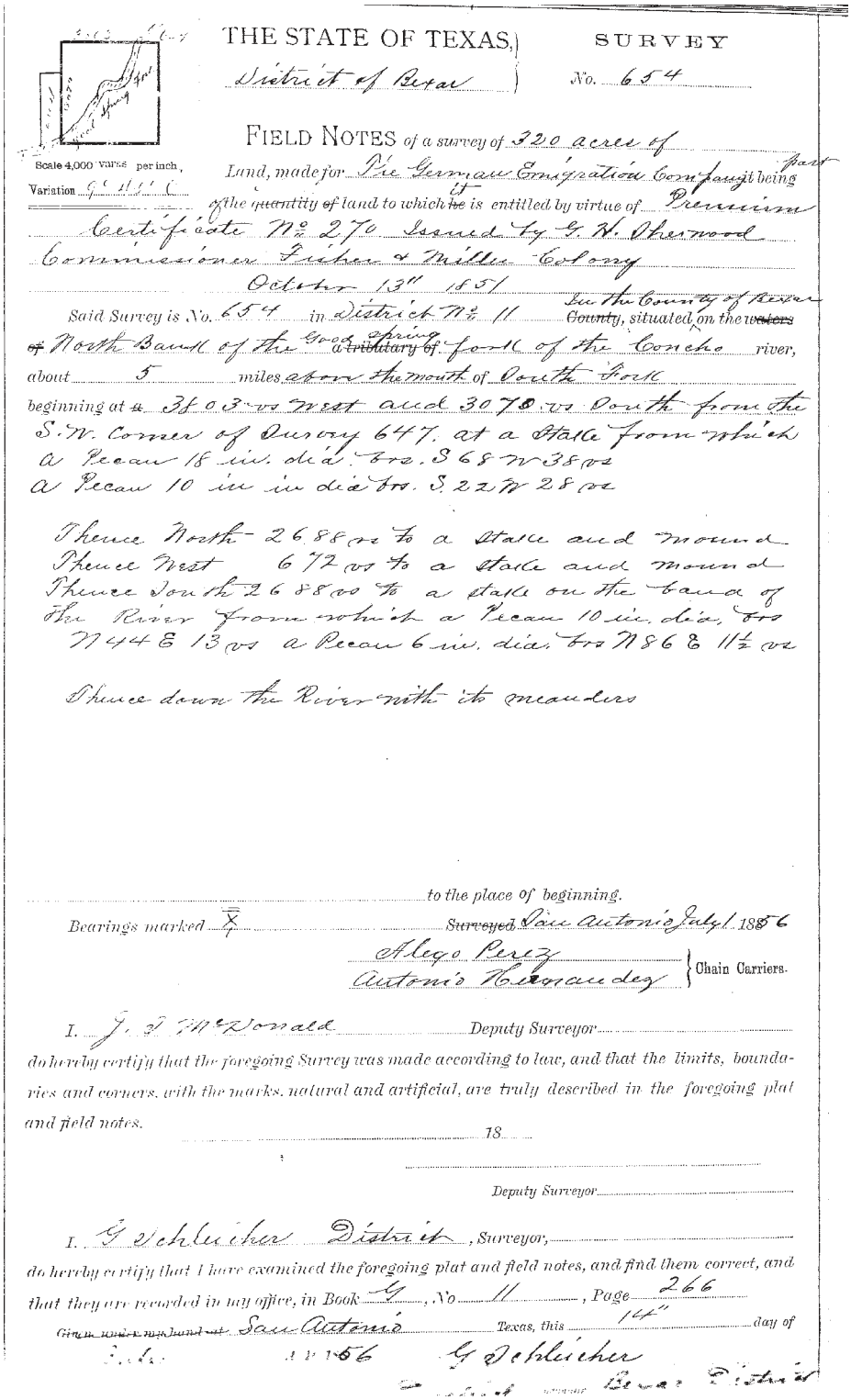
I, H. M. Garden Deputy County Surveyor of Tom Green County, Texas, do hereby certify that the foregoing described Survey was actually made by me on the ground, according to law, on the date and with the Chain Carriers aforesaid, duly qualified, and that all the Corners, Lines, Boundaries and Marks of the same, whether natural or artificial, are truly and correctly described and set forth in the foregoing Plat and Field Notes.

H. M. Garden
Deputy County Surveyor Tom Green County, Texas.

I, H. B. Varner County Surveyor Tom Green County, do hereby certify that I have examined the foregoing Plat and Field Notes and find them correct, and that they are Recorded in my office in Book C, No. , Page 394
Given under my hand, at San Angelo this 17th day of February A. D. 1882

H B Varner
County Surveyor Tom Green County.

Figure L-7. *Survey #653 (41TG450), Surveyor's Record, School Land E, page 394.* West Texas Collection, Angelo State University.



THE STATE OF TEXAS, SURVEY

District of Bexar No. 654

FIELD NOTES of a survey of 320 acres of Land, made for the German Emigration Company it being part of the quantity of land to which ~~he~~ is entitled by virtue of Premium Certificate No. 270 Issued by G. H. Sherwood Commissioner Fisher & Miller Colony October 13th 1851 in the County of Bexar

Said Survey is No. 654 in District No. 11 County, situated on the ~~waters~~ North Bank of the Good Spring ~~a tributary of~~ fork of the Concho river, about 5 miles above the mouth of South Fork

beginning at a 3403 vrs West and 3078 vrs South from the S.W. Corner of Survey 647, at a Stake from which a Pecan 18 in. dia. bears S 68 W 38 ors a Pecan 10 in in dia bears S. 22 W 28 ors

Thence North 2688 ors to a Stake and Mound
Thence West 672 ors to a Stake and Mound
Thence South 2688 ors to a Stake on the bank of the River from which a Pecan 10 in. dia. bears N 44 E 13 ors a Pecan 6 in. dia. bears N 86 E 11½ ors

Thence down the River with its meanders

to the place of beginning.

Bearings marked X Surveyed San Antonio July 1 1856

Alego Perez
Antonio Hernandez } Chain Carriers.

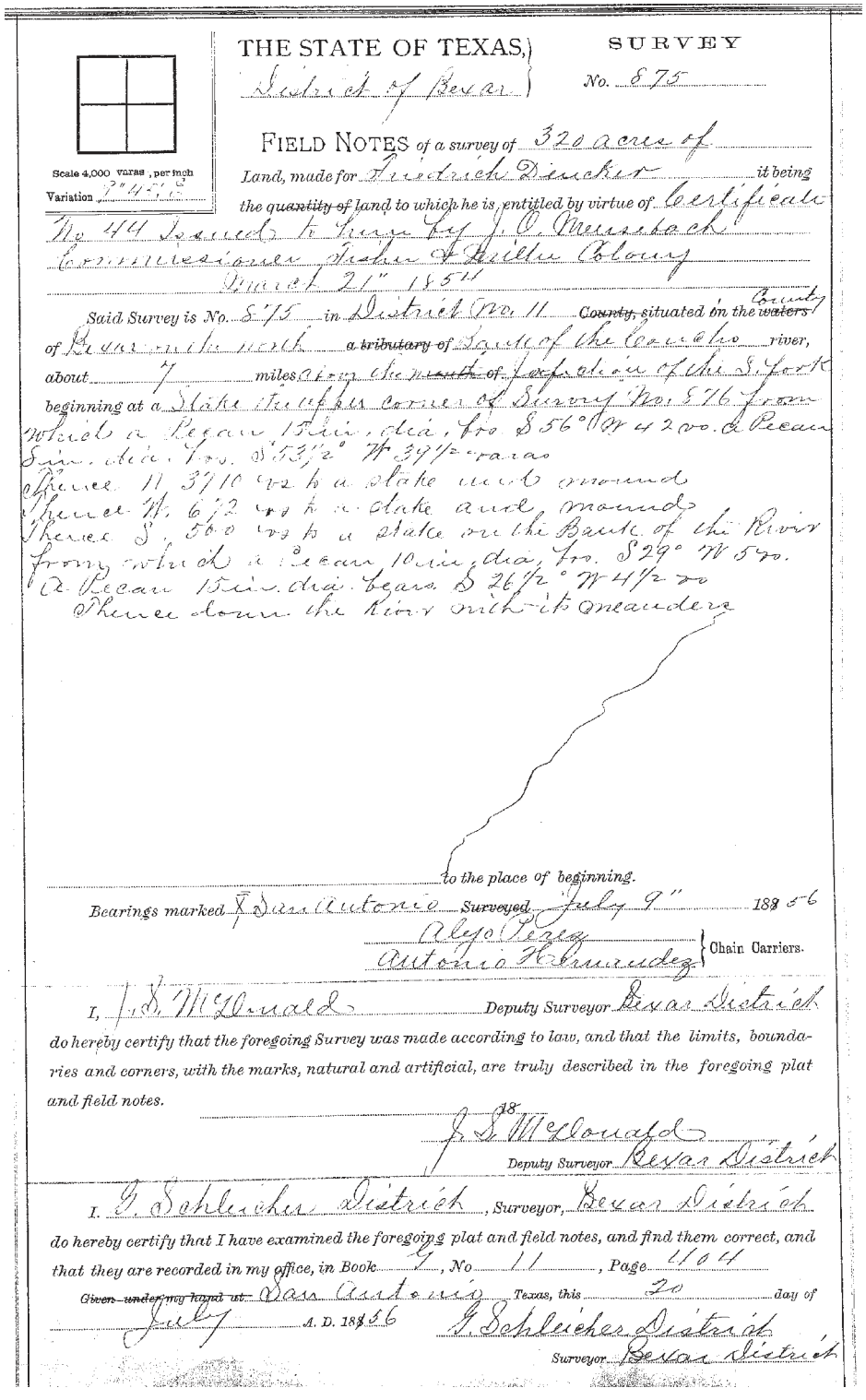
I. J. J. McDonald Deputy Surveyor do hereby certify that the foregoing Survey was made according to law, and that the limits, boundaries and corners, with the marks, natural and artificial, are truly described in the foregoing plat and field notes. 18

Deputy Surveyor

I. G Schleicher District, Surveyor, do hereby certify that I have examined the foregoing plat and field notes, and find them correct, and that they are recorded in my office, in Book G, No 11, Page 266

Given under my hand at San Antonio Texas, this 14th day of July A.D. 1856 G Schleicher Bexar District

Figure L-8. *Survey #654 (41TG452), Surveyor's Record, Book 2, page 7.* West Texas Collection, Angelo State University.



THE STATE OF TEXAS, SURVEY

District of Bexar No. 875

Scale 4,000 varas, per inch

Variation 3° 45' E.

FIELD NOTES of a survey of 320 acres of Land, made for Friedrich Dincker it being the quantity of land to which he is entitled by virtue of Certificate No 44 Issued to him by J. O. Meusebach Commissioner Peter A. Bellle Colony Dated 21st 1854

Said Survey is No. 875 in District No. 11 County, situated in the County of Bexar on the north a tributary of South of the Cow Cho river, about 7 miles above the mouth of Confluence of the S. Fork beginning at a Stake Stumps corner of Survey No. 876 from which a Pecan 15 in. dia, bears S 56° W 4 2/10 vs. a Pecan 8 in. dia. bears S 53 1/2° W 39 1/2 varas

Thence N 37 10 vrs to a stake and mound
Thence W. 6 2 vrs to a stake and mound
Thence S. 560 vrs to a stake on the Bank of the River from which a Pecan 10 in. dia, bears S 29° W 5 vrs. a Pecan 15 in. dia. bears S 26 1/2° W 4 1/2 vs
Thence down the River with its meanders

to the place of beginning.

Bearings marked X Dan Antonio Surveyed July 9th 1856

Alejo Perez
Antonio Hernandez } Chain Carriers.

I, J. S. McDonald Deputy Surveyor Bexar District do hereby certify that the foregoing Survey was made according to law, and that the limits, boundaries and corners, with the marks, natural and artificial, are truly described in the foregoing plat and field notes.

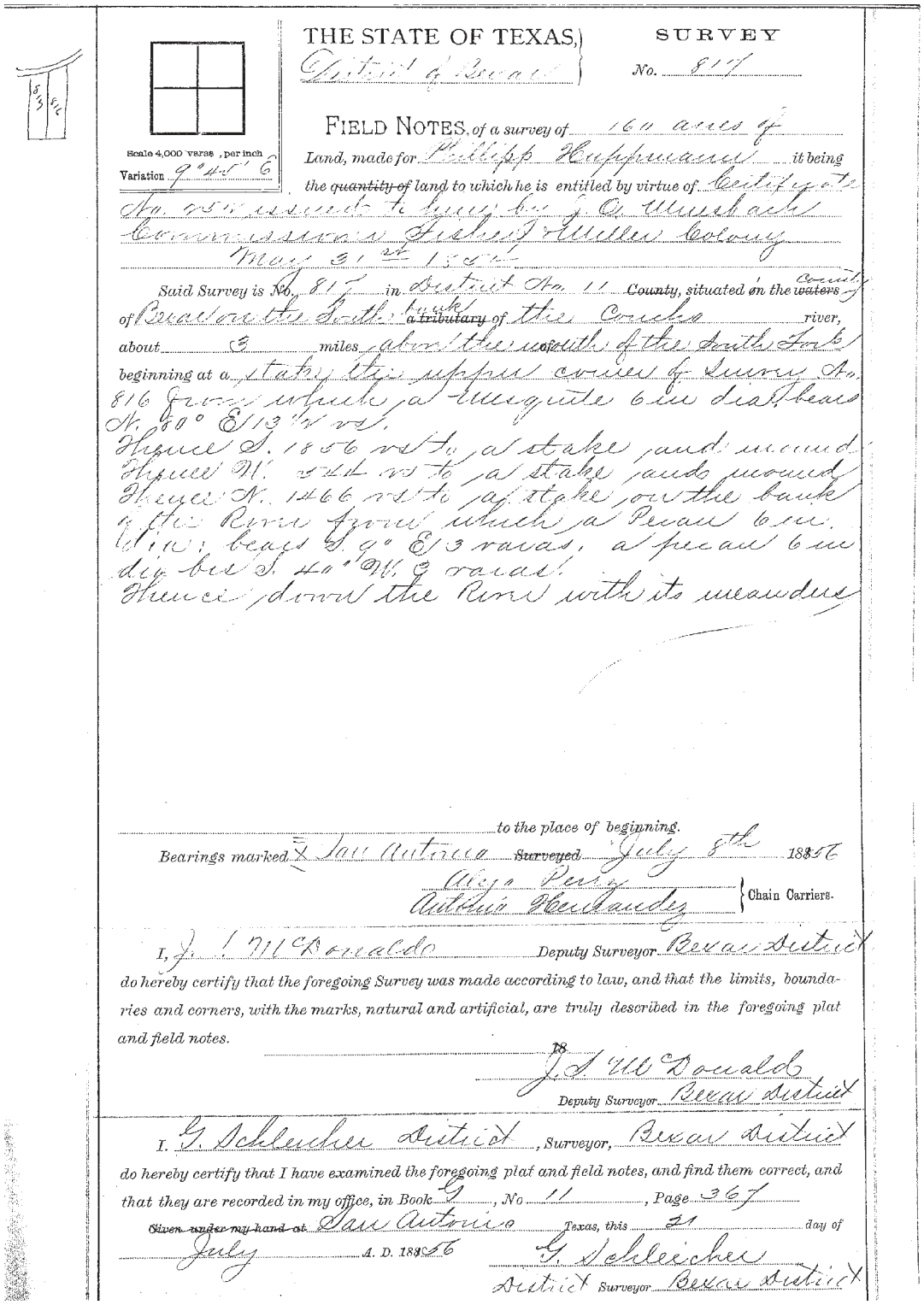
18 J. S. McDonald
Deputy Surveyor Bexar District

I. G. Schleicher District, Surveyor, Bexar District do hereby certify that I have examined the foregoing plat and field notes, and find them correct, and that they are recorded in my office, in Book G, No 11, Page 404

Given under my hand at San Antonio Texas, this 20 day of July A. D. 1856

G. Schleicher District
Surveyor Bexar District

Figure L-9. *Survey #875 (41TG458), Surveyor's Record, Book 2, page 316.* West Texas Collection, Angelo State University.



THE STATE OF TEXAS, District of Bexar

SURVEY No. 817

Scale 4,000 varas, per inch
Variation 9° 45' E

FIELD NOTES, of a survey of 160 acres of Land, made for Phillip Huppmann it being the ~~quantity of~~ land to which he is entitled by virtue of Certificate No. 95 issued to Lucy L. J. O. Meusbach Commissioner Fisher & Miller Colony May 31st 1854

Said Survey is No. 817 in District No. 11 County, situated ~~in the waters~~ county of Bexar on the South ~~a tributary~~ fork of the Cibolo river, about 5 miles above the mouth of the South Fork beginning at a stake & mound corner of Survey No. 816 from which a Mesquite 6 in diam. bears N. 30° E 13 vrs.

Thence S. 1856 vrs to a stake and mound
Thence W. 774 vrs to a stake and mound
Thence N. 1466 vrs to a stake on the bank of the River from which a Pecan 6 in. diam. bears S. 9° E 3 varas, a pecan 6 in dia. bears S. 40° W. 2 varas
Thence down the River with its meanders

to the place of beginning.

Bearings marked ~~X~~ San Antonio ~~Surveyed~~ July 8th 1856

Chain Carriers: Wm Perry, Antonio Hernandez

I, J. I. McDonald Deputy Surveyor Bexar District do hereby certify that the foregoing Survey was made according to law, and that the limits, boundaries and corners, with the marks, natural and artificial, are truly described in the foregoing plat and field notes.

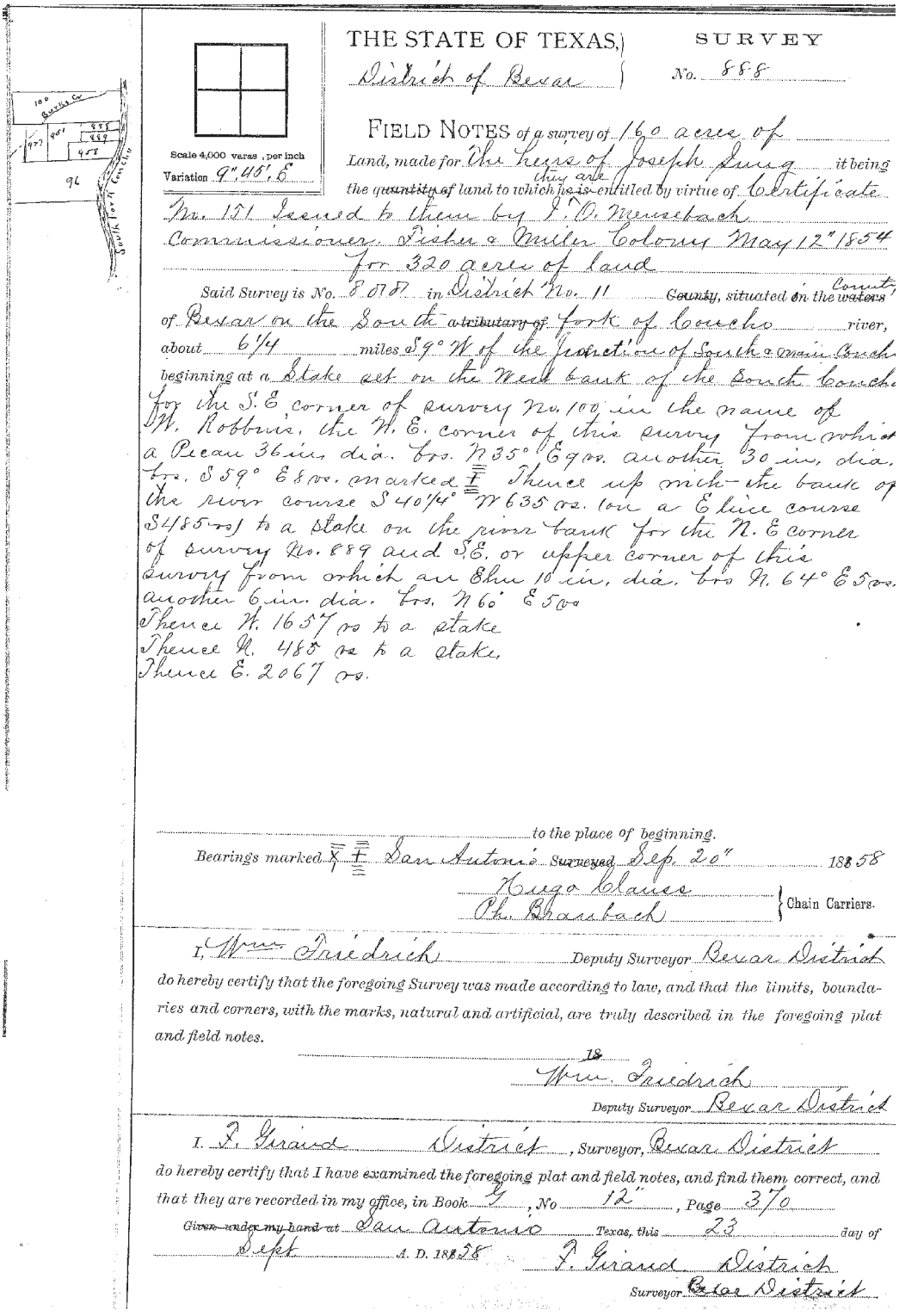
~~18~~ J. I. McDonald
Deputy Surveyor Bexar District

I, G. Schleicher District, Surveyor, Bexar District do hereby certify that I have examined the foregoing plat and field notes, and find them correct, and that they are recorded in my office, in Book G, No 11, Page 367

~~Given under my hand at~~ San Antonio Texas, this 21 day of July A. D. 1856

G. Schleicher
District Surveyor Bexar District

Figure L-10. *Survey #817 (41TG501), Surveyor's Record.* West Texas Collection, Angelo State University.



THE STATE OF TEXAS, SURVEY
District of Bexar No. 888

Scale 4,000 varas, per inch
Variation 9° 45' E

FIELD NOTES of a survey of 160 acres of Land, made for the heirs of Joseph Lang it being this are the quantity of land to which he is entitled by virtue of Certificate No. 151 Issued to them by I. D. Mercerbach Commissioner Fisher & Miller Colony May 12th 1854 for 320 acres of land

Said Survey is No. 888 in District No. 11 County, situated on the waters of Bexar on the South a tributary of fork of Conchs river, about 6 1/4 miles S 9° W of the Junction of South & main Conch beginning at a Stake set on the West bank of the South Conchs for the S. E corner of survey No. 100 in the name of W. Robbins, the N. E. corner of this survey from which a Pecan 36 in. dia. brs. N 35° E 9 vrs. another 30 in. dia. brs. S 59° E 8 vrs. marked X Thence up with the bank of the river course S 40 1/4° W 635 vrs. to a E line course S 485 vrs to a stake on the river bank for the N. E corner of survey No. 889 and S.E. or upper corner of this Survey from which an Elm 10 in. dia. brs N. 64° E 5 vrs. another 6 in. dia. brs. N 60° E 5 vrs
Thence W. 1657 vrs to a stake
Thence N. 485 vrs to a stake,
Thence E. 2067 vrs.

to the place of beginning.

Bearings marked X Y Z San Antonio Surveyed Sep. 20" 1858

Hugo Clauss
Chs. Brandbach } Chain Carriers.

I, Wm. Friedrich Deputy Surveyor Bexar District do hereby certify that the foregoing Survey was made according to law, and that the limits, boundaries and corners, with the marks, natural and artificial, are truly described in the foregoing plat and field notes.

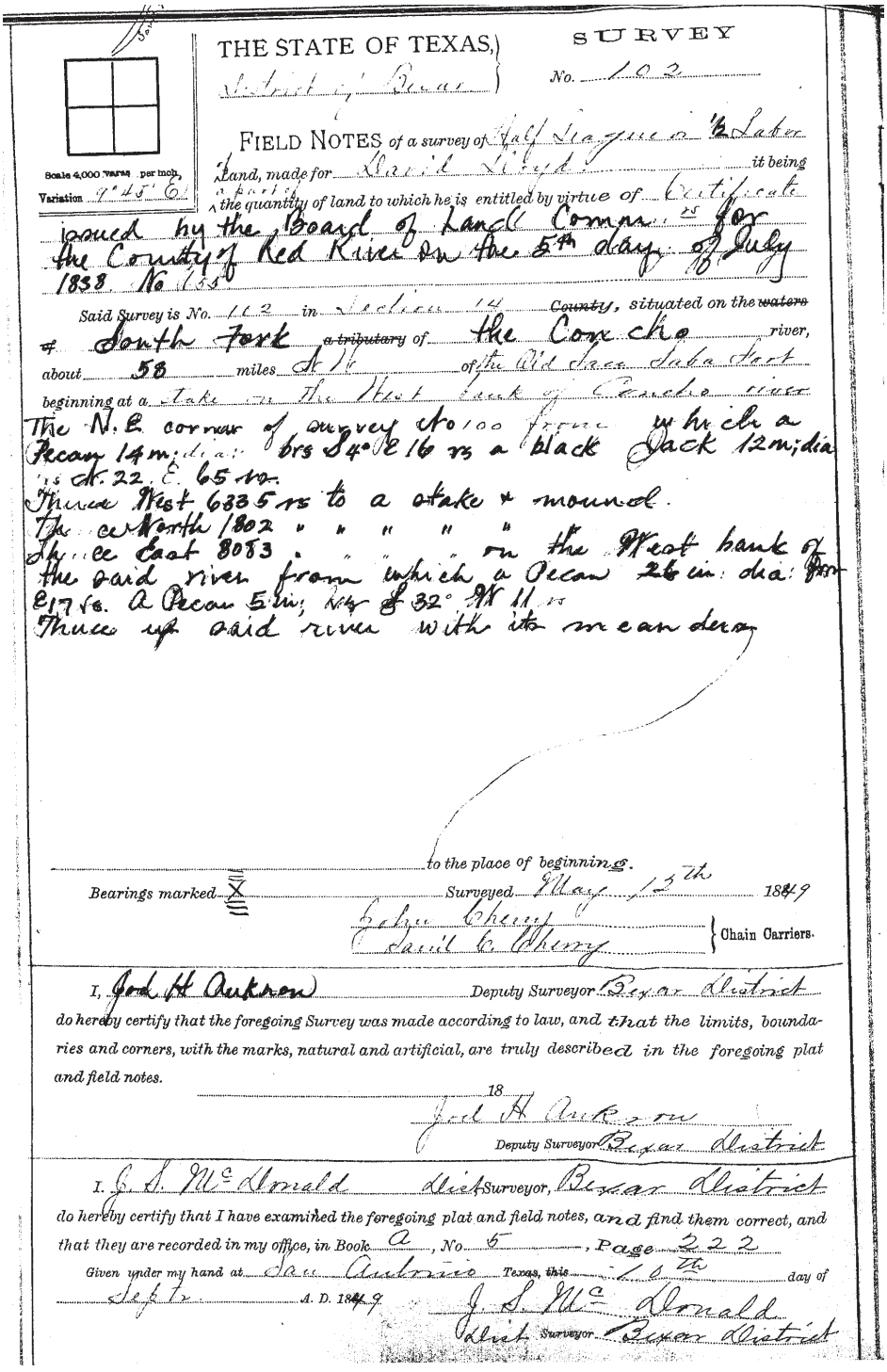
18
Wm. Friedrich
Deputy Surveyor Bexar District

I. J. Giraud District, Surveyor, Bexar District do hereby certify that I have examined the foregoing plat and field notes, and find them correct, and that they are recorded in my office, in Book G, No 12", Page 370

Given under my hand at San Antonio Texas, this 23 day of Sept A. D. 1858

J. Giraud District
Surveyor Bexar District

Figure L-11. *Survey #888 (41TG504), Surveyor's Record.* West Texas Collection, Angelo State University.



THE STATE OF TEXAS,
State of Texas

SURVEY
No. 102

Scale 4,000 varas per inch,
Variation 9° 45' E.

FIELD NOTES of a survey of Jas Niagues ½ Labor
Land, made for David Lloyd it being
a portion of the quantity of land to which he is entitled by virtue of Certificate
issued by the Board of Land Commrs. for
the County of Red River on the 5th day of July
1838 No 655

Said Survey is No. 102 in Section 14 County, situated on the ~~waters~~
of South Fork ~~a tributary~~ of the Concho river,
about 58 miles N W of the Old San Saba Fort
beginning at a Stake on the West bank of Concho river
The N.E. corner of survey No 100 from which a
Pecan 14 m; dia: brs S 4° E 16 vrs a black Jack 12 m; dia
brs N. 22. E. 65 vrs.
Thence West 6335 vrs to a stake & mound.
Thence North 1802 " " " " "
Thence East 8083 " " " on the West bank of
the said river from which a Pecan 26 in: dia: brs
E 17 vrs. A Pecan 5 in; brs S 32° W 11 vrs
Thence up said river with its meanderings

to the place of beginning.

Bearings marked X Surveyed May 15th 1849

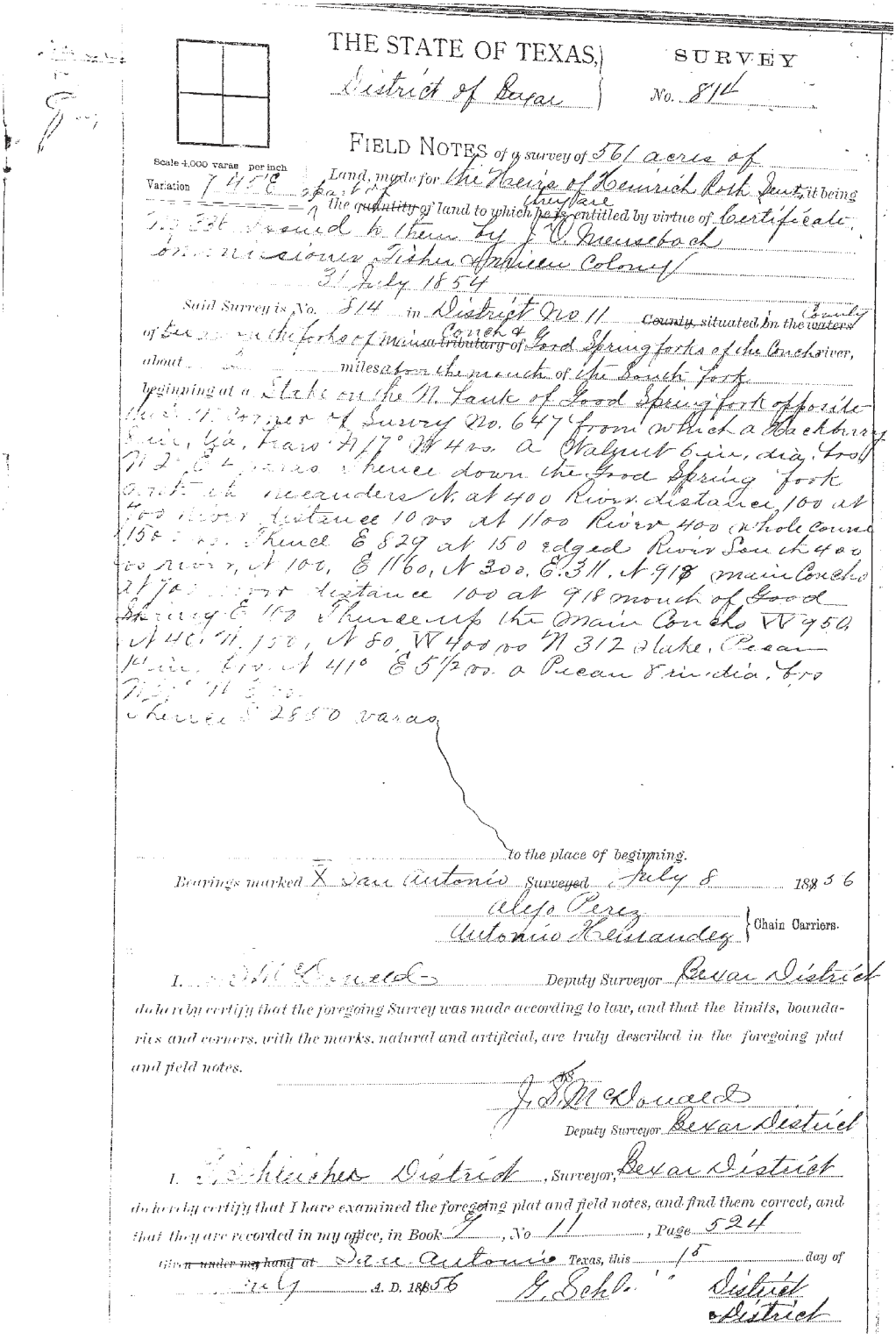
John Cheny
David C. Cheny
} Chain Carriers.

I, Joel H Aukrow Deputy Surveyor Bexar District
do hereby certify that the foregoing Survey was made according to law, and that the limits, boundaries and corners, with the marks, natural and artificial, are truly described in the foregoing plat and field notes.

18
Joel H Aukrow
Deputy Surveyor Bexar District

I. C. S. McDonald Dist Surveyor, Bexar District
do hereby certify that I have examined the foregoing plat and field notes, and find them correct, and that they are recorded in my office, in Book A, No 5, Page 222
Given under my hand at San Antonio Texas, this 20th day of
Sept A. D. 1849
J. S. McDonald
Dist Surveyor Bexar District

Figure L-12. *Survey #102 (41TG513), Surveyor's Record.* West Texas Collection, Angelo State University.



THE STATE OF TEXAS, District of Bexar

SURVEY No. 814

FIELD NOTES of a survey of 561 acres of Land, made for the Heirs of Henrich Roth dec'd, it being the quantity of land to which he is entitled by virtue of Certificate No. 231 issued to them by J. P. Henderson Commissioner Fisher & Miller Colony 31 July 1854

Said Survey is No. 814 in District No 11 County, situated in the County of Bexar on the forks of Mina tributary of Good Spring forks of the Cibolo river, about ... miles above the mouth of the South fork beginning at a Stake on the N. bank of Good Spring fork opposite the N. W. corner of Survey No. 647 from which a Hackberry 6 in. dia. bears N 47° W 4 vrs. a Walnut 6 in. dia. bears N 2° E 4 vrs. thence down the Good Spring fork with its meanders N. at 400 River distance 100 at 400 River distance 1000 at 1100 River 400 (whole course 1500 vrs. thence E 829 at 150 edged River South 400 to River, N 100, E 1160, N 200, E 311, N 918 main Cibolo at 100 distance 100 at 918 mouth of Good Spring E 150 thence up the main Cibolo W 950 at 46, N. 150, N 80, W 400 to N 312 a Lake, Pecan pointer at 41° E 5 1/2 vrs. a Pecan & Cedar, bears N 45° W 6 vrs. thence S 2850 varas

to the place of beginning.

Bearings marked X San Antonio Surveyed July 8 1856

Alejo Perez
Antonio Reisandez } Chain Carriers.

I. J. M. Howard Deputy Surveyor Bexar District do hereby certify that the foregoing Survey was made according to law, and that the limits, boundaries and corners, with the marks, natural and artificial, are truly described in the foregoing plat and field notes.

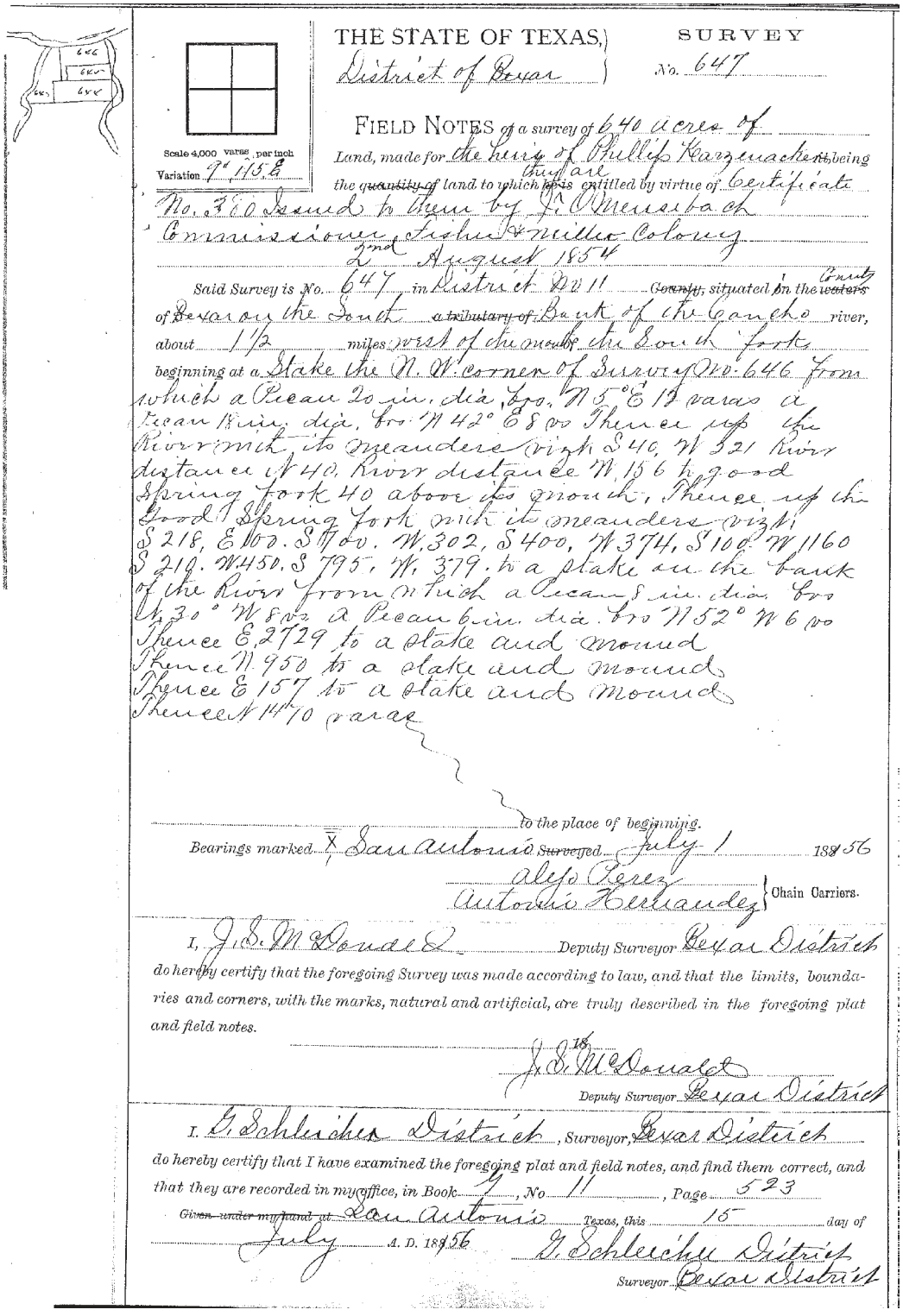
J. M. Howard
Deputy Surveyor Bexar District

I. [illegible] District, Surveyor, Bexar District do hereby certify that I have examined the foregoing plat and field notes, and find them correct, and that they are recorded in my office, in Book 2, No 11, Page 524

Given under my hand at San Antonio Texas, this 15 day of July A. D. 1856

G. Schl. District

Figure L-13. *Survey #814 (41TG516), Surveyor's Record, Book 2, page 341.* West Texas Collection, Angelo State University.



THE STATE OF TEXAS, District of Bexar

SURVEY No. 647

Scale 4,000 varas per inch
Variation 7° 11'E

FIELD NOTES of a survey of 640 acres of Land, made for the heirs of Phillip Karzenacher, being the quantity of land to which they are entitled by virtue of Certificate No. 760 issued to them by J. O. Meriwether Commissioner Fisher & Miller Colony 2nd August 1854

Said Survey is No. 647 in District No 11 County, situated in the ~~waters~~ County of Bexar on the South a ~~tributary of~~ Bank of the Cibolo river, about 1 1/2 miles west of the mouth of the South fork beginning at a Stake the N. W. corner of Survey No. 646 from which a Pecan 20 in. dia. bro. N 5° E 12 varas a Pecan 8 in. dia. bro. N 42° E 8 vrs Thence up the River with its meanders viz: S 40, W 321 River distance W 40, River distance N 156 to good Spring Fork 40 above its mouth, Thence up the Good Spring Fork with its meanders viz: S 218, E 100. S 80 vrs. W 302, S 400, W 374, S 100 W 1160 S 210. W 450. S 795, W. 379. to a stake on the bank of the River from which a Pecan 8 in. dia. bro N 30° W 8 vrs a Pecan 6 in. dia. bro N 52° W 6 vrs Thence E 2729 to a stake and mound Thence N 950 to a stake and mound Thence E 157 to a stake and mound Thence N 1470 varas

to the place of beginning.

Bearings marked X, San Antonio Surveyed July 1 1856

Alejo Perez
Antonio Hernandez } Chain Carriers.

I, J. D. McDonald Deputy Surveyor Bexar District do hereby certify that the foregoing Survey was made according to law, and that the limits, boundaries and corners, with the marks, natural and artificial, are truly described in the foregoing plat and field notes.

18

J. D. McDonald
Deputy Surveyor Bexar District

I, G. Schleicher District, Surveyor, Bexar District do hereby certify that I have examined the foregoing plat and field notes, and find them correct, and that they are recorded in my office, in Book 2, No 11, Page 523

Given under my hand at San Antonio Texas, this 16 day of July A. D. 1856

G. Schleicher District
Surveyor Bexar District

Figure L-14. *Survey #647 (41TG520, 41TG521, and 41TG523), Surveyor's Record, Book 2, page 340.* West Texas Collection, Angelo State University.