

RIO NUEVO ARCHAEOLOGY, 2000-2003:

Investigations at the San Agustín Mission and Mission Gardens, Tucson Presidio, Tucson Pressed Brick Company, and Clearwater Site

Edited by

**J. Homer Thiel
Jonathan B. Mabry**

Contributions by

Jenny L. Adams	John McClelland
Judi L. Cameron	Kyle McKoy
Sergio F. Castro-Reino	Elizabeth J. Miksa
Owen K. Davis	Caroline Ogasawara
Robert Dayhoff	Manuel R. Palacios-Fest
Beth DeWitt	Barnet Pavao-Zuckerman
Michael W. Diehl	Annamarie Schaecher
Elizabeth Eklund	Peter D. Schulz
Douglas Gann	M. Steven Shackley
Gwen Harvey	R. Jane Sliva
James M. Heidke	Susan L. Stinson
Jennifer Kahn	J. Homer Thiel
Thomas Klimas	Arthur W. Vokes
Vince M. LaMotta	Jennifer A. Waters
Carlos P. Lavayen	Caramia Williams
Jonathan B. Mabry	

Submitted to

**City of Tucson
P.O. Box 27210
Tucson, Arizona 85726-7210**



**Technical Report No. 2004-11
Desert Archaeology, Inc.**

3975 North Tucson Boulevard, Tucson, Arizona 85716 • March 2006

ABSTRACT

Between October 2000 and January 2003, Desert Archaeology, Inc., conducted archaeological investigations at seven locations for the City of Tucson as part of the Rio Nuevo Archaeology project. The City of Tucson plans to revitalize the downtown area, including the re-creation of the historic San Agustín Mission and the Spanish Presidio fortress, as well as the construction of new homes and businesses. Excavations were conducted to either provide basic data for planned reconstructions, or to mitigate the effects of development.

Hundreds of cultural features were excavated, with more than 160,000 artifacts recovered. This work documented 4,100 years of occupation and 3,500 years of irrigated agriculture in the floodplain of the Santa Cruz River just west of downtown Tucson, Arizona. Well-preserved remains of the late eighteenth century Spanish period mission and mission

gardens were also revealed on the western side of the river, as was a portion of the Tucson Presidio, founded in 1775, on the eastern side. Territorial period features and artifacts could be associated with Chinese gardeners and residents of a boardinghouse. These findings establish Tucson as one of the oldest continuously occupied settlements in the United States.

Public interest in the project was high, with an estimated 5,000 visitors during the course of fieldwork. Exhibits at the Arizona Historical Society, Southern Arizona Division, museum brought the Rio Nuevo project to a much larger audience.

The 22 chapters and two appendices of this report summarize the results of fieldwork, providing descriptions of archaeological features and analyses of the artifact assemblages recovered during the project.

ACKNOWLEDGMENTS

A very large number of people participated in the course of the Rio Nuevo Archaeological project. Luis Gutierrez, former City Manager for the City of Tucson, conceived the use of tax increment financing to bring tax money back to the community for revitalization measures. Proposition 400 was placed on the ballot by the City of Tucson council and was passed in November 1999, by a majority of voters. The City of Tucson subsequently asked for proposals to conduct archaeological and historical research and Desert Archaeology, Inc., submitted the winning proposal.

John Jones, the first director of the Rio Nuevo Project, and Karen Thoresen, the Assistant City Manager, were instrumental in helping with the archaeological work. Marty McCune, the City of Tucson's Historic Program Administrator, served as the City's point person for the project. Her assistant, Kristi Jenkins, provided valuable assistance, as did J. T. Fey. Additional City of Tucson personnel who helped make the projects run smoothly included John Updike, Lucy Amparano, Chris Leighton, Ray Murray, and Mike Carson.

The archaeological field crew excavated in a variety of conditions. The crew included Richard "Sonny" Anton, Jesse Ballenger, Patti Bell, Andrew Bockhurst, Avi Buckles, Brandy Ciaccio, Robert Ciaccio, Coya Coleman, Michael Cook, Patti Cook, Edward Corella, Frances Cote, Jennifer Dejong, Allen Denoyer, Steve Ditschler, John Fino, Edmund Gaines, Diedre Hayden, Gloria Inserra, Adam Kiel, Thomas Klimas, Michael Lindeman, Dottie Olman, Fred Perry, Sara Plescia, Mary Prasciunas, Paul Rawson, Stacy Ryan, Ray Sanchez, Karl Seitz, Gaylen Tinsley, Catherine Treat, Ochirkhuyag Tseveendorj, Sandra Wadsworth, Greg Whitney, and Caramia Williams. Mr. Homer Thiel, Dr. Jonathan Mabry, Dr. Michael Lindeman, and Dr. Michael Diehl were Project Directors. Dan Arnit, of Innovative Excavating, performed the backhoe work for the project. William Doelle served as Principal Investigator for the project; Patricia Castalia was the operations director.

Specialists were often called in to provide assistance during excavation, analysis, or report preparation. Dr. John McClelland and Dr. Robert Dayhoff coordinated the excavation and analysis of human remains. Fred Nials provided information on site geomorphology. Charla Hedberg and Stacy Ryan conducted preliminary analysis of Native American ceramics under the direction of James Heidke. Dr. Beth Miksa, Carlos Lavayen, and Dr. Sergio Castro-Reino conducted the petrographic analysis. Dr. Susan Stinson identified fired and unfired figurines. Arthur Vokes of the Arizona State Museum

identified shell artifacts. Jane Sliva analyzed the flaked stone artifacts. Dr. Jenny Adams examined the ground stone artifacts recovered. Stacy Ryan and Caramia Williams helped analyze historic artifacts. Jennifer Waters, consultant Dr. Judi Cameron, and Dr. Barnet Pavao-Zuckerman, Vince LaMotta, Rachel Diaz de Valdez, and Felicia Coppola-Pavao of the Arizona State Museum, and Peter Schulz of the University of California at Davis analyzed zooarchaeological materials. Dr. Michael Diehl identified plant macrobotanical remains, while Dr. Owen Davis of the University of Arizona examined pollen samples. Dr. Manuel Palacios-Fest of Terra Nostra Earth Science Research identified ostracode samples from canal sediments. Dr. Steven Shackley, Jennifer Kahn, Elizabeth Eklund, and Caroline Ogasawara of the University of California, Berkeley, identified the source for obsidian artifacts. Radiocarbon dates were provided by Beta-Analytic. Western Mapping, Inc. (formerly GeoMap, Inc.) provided essential mapping assistance.

Desert Archaeology's proposal called for an extensive public education program. Personnel from the Arizona Historical Society – Dr. Anne Woosley, Executive Director, and Thomas H. Peterson, Director of the Southern Arizona Division – spearheaded the effort to bring the Rio Nuevo project to local residents and tourists. Staff members of the Education Department – Gwen Harvey, Kyle McKoy, Brooke Myers, and Emily Spargo-Guerrero – prepared a teacher's guide and elementary classroom activities book, hosted several lecture series, and mounted an impressive exhibit of Rio Nuevo archaeology. The construction of the exhibit required the skills of Kevin Mills and Leslie Roe, who built new cases, prepared elaborate photographs, and created an interactive children's backhoe. An earlier exhibit, "Carrillo's Chinese Gardeners," which opened at the Sosa-Carrillo-Frémont House Museum, was designed by curator Julia Arriola.

Dr. Bruce Hilpert, Beth DeWitt, and Annamarie Schaecher of the Arizona State Museum coordinated efforts to bring the Rio Nuevo project to local grade schools. Dr. Douglas Gann of the Center for Desert Archaeology prepared computer animations of the mission, presidio, and prehistoric sites, and presented these animations at numerous meetings.

Historical research was conducted by Michael Weber, Naomi Estrada-Weber, and Charles Polzer of Estrada-Weber Cultural Connections. Dr. Sergio Castro-Reino translated Spanish language documents, and Jinshan Tang translated Chinese characters. Christopher Sugnet of the University of Nevada

Las Vegas provided help in acquiring Spanish documents. Assistance with preparation of the computer model of the San Agustín Mission was provided by Bob Vint, Dr. R. Brooks Jeffery, Dr. Bernard Fontana, and Charles Polzer. Rogers prepared a scale model of the chapel and convento with funding provided by the Tucson-Pima County Historical Commission. Members of the Tucson Presidio Trust for Historic Preservation assisted at the Open House held at the presidio site at the end of fieldwork.

Desert Archaeology personnel who assisted in the fieldwork and report production phases of the project included office manager Jean Kramer, equipment manager Jason Hastings, and Sara Lely, who entered the field forms into a computer database. Robert Ciaccio and Dr. Scott Van Keuren photographed artifacts. Robert Ciaccio also prepared hand-drawn illustrations. Emilee Mead and Andrea Mathews spent hundreds of hours editing and formatting the final report.

TABLE OF CONTENTS

Abstract	iii
Acknowledgments	v
List of Figures	xxiii
List of Tables	xxxix
1. AN OVERVIEW OF THE RIO NUEVO ARCHAEOLOGY PROJECT, <i>J. Homer Thiel and Jonathan B. Mabry</i>	1.1
East of Interstate 10	1.1
The San Agustín Mission	1.1
An Early Agricultural Community	1.2
A Hohokam Canal	1.2
The San Agustín Mission and a Piman Ranchería	1.2
Leopoldo Carrillo's House	1.6
The 1950s Landfill	1.7
Future Work at the San Agustín Mission	1.7
Public Involvement and Open Houses	1.7
The Mission Gardens	1.8
Future Work at the Mission Gardens	1.8
The Congress Street Locus	1.10
A 4,100-year-old Farming Settlement	1.10
A 3,500-year-old Canal	1.10
A Cienega Phase Village	1.10
Later Prehistoric Canals and Fieldhouses	1.10
A Long Sequence of Canals	1.14
The Tucson Pressed Brick Factory	1.14
Public Outreach	1.14
The Tucson Presidio	1.14
Courthouse Testing	1.14
Art Museum Testing	1.18
A Surprise Beneath a Parking Lot	1.18
The Northeastern Tower	1.18
Other Parking Lot Finds	1.22
Future Work at the Tucson Presidio	1.24
Historical Research	1.24
Report Organization	1.24
Acknowledgments	1.24
References Cited	1.25
2. EXCAVATION METHODS, <i>J. Homer Thiel and Jonathan B. Mabry</i>	2.1
Standard Excavation Methods	2.1
East of Interstate 10, AZ BB:13:510 (ASM)	2.1
Previous Work	2.2
Goals	2.2
Rio Nuevo Archaeological Work in Area 1	2.2
The San Agustín Mission and the Mission Gardens, the Clearwater Site, AZ BB:13:6 (ASM)	2.2
Previous Work	2.3
Goals	2.3

Rio Nuevo Archaeological Work at the Mission	2.3
Rio Nuevo Archaeological Work at the Mission Gardens	2.4
The Congress Street and Brickyard Loci of the Clearwater Site, AZ BB:13:6 (ASM)	2.4
Previous Work	2.4
Goals	2.5
Rio Nuevo Archaeological Work in the Congress Street and Brickyard Loci	2.5
The Tucson Presidio, AZ BB:13:13 (ASM)	2.6
Previous Work	2.6
Goals	2.6
Rio Nuevo Archaeological Work at the Tucson Presidio	2.6
Summary	2.7
References Cited	2.9
 3. CULTURAL HISTORY OF THE TUCSON BASIN AND THE PROJECT AREA, <i>J. Homer Thiel and Michael W. Diehl</i>	3.1
Cultural Background	3.1
Paleoindian Period	3.1
Archaic Period	3.1
Early Agricultural Period	3.2
Early Ceramic Period	3.3
Hohokam Sequence	3.3
Protohistoric Period	3.4
Spanish and Mexican Periods	3.4
American Territorial and American Statehood Periods	3.4
Previous Archaeological Research	3.5
The Prehistory of the Mission, Brickyard, and Congress Street Loci	3.5
The Prehistory of Downtown Tucson	3.6
The San Agustín Mission	3.6
The Tucson Presidio	3.7
The Tucson Pressed Brick Company	3.7
Summary	3.8
References Cited	3.9
 4. FEATURE DESCRIPTIONS, <i>Thomas Klimas, Caramia Williams, and J. Homer Thiel</i>	4.1
Part 1. San Agustín Mission Locus, the Clearwater Site, AZ BB:13:6 (ASM)	4.1
Prehistoric Pit Structures	4.1
Feature 2, Pit Structure	4.1
Feature 7, Pit Structure	4.8
Feature 15, Pit Structure	4.10
Feature 17, Pit Structure	4.12
Feature 28, Pit Structure	4.13
Feature 29, Pit Structure	4.13
Feature 32, Pit Structure	4.14
Feature 57, Pit Structure	4.15
Feature 62, Pit Structure	4.17
Feature 65, Pit Structure	4.17
Feature 88, Pit Structure	4.19
Feature 97, Pit Structure	4.20
Feature 100, Pit Structure	4.21
Feature 112, Pit Structure	4.22
Feature 121, Pit Structure	4.23
Feature 122, Pit Structure	4.24
Feature 126, Pit Structure	4.25
Feature 128, Pit Structure	4.26

Feature 151, Pit Structure	4.27
Feature 191, Pit Structure	4.28
Feature 211, Pit Structure	4.29
Feature 218, Pit Structure	4.29
Prehistoric Pits	4.30
Feature 13, Bell-shaped Pit	4.31
Feature 20, Roasting Pit	4.31
Feature 30, Pit	4.31
Feature 31, Bell-shaped Pit	4.31
Feature 45, Pit	4.32
Feature 63, Bell-shaped Pit	4.32
Feature 66, Pit	4.32
Feature 67, Pit	4.32
Feature 68, Pit	4.32
Feature 69, Bell-shaped Pit	4.33
Feature 70, Pit	4.33
Feature 71, Pit	4.33
Feature 72, Pit	4.33
Feature 73, Pit	4.33
Feature 74, Pit	4.33
Feature 75, Pit	4.33
Feature 76, Roasting Pit	4.33
Feature 77, Pit	4.34
Feature 78, Pit	4.34
Feature 79, Pit	4.34
Feature 80, Pit	4.34
Feature 81, Pit	4.34
Feature 82, Pit	4.34
Feature 86, Pit	4.34
Feature 105, Pit	4.35
Feature 107, Pit	4.35
Feature 110, Bell-shaped Pit	4.35
Feature 113, Bell-shaped Pit	4.35
Feature 115, Roasting Pit	4.35
Feature 125, Pit	4.36
Feature 180, Pit	4.36
Feature 183, Pit	4.36
Feature 184, Pit	4.36
Feature 216, Pit	4.36
Protohistoric and Historic Features	4.37
Feature 1, Western and Southern Compound Walls	4.37
Feature 4, Well	4.37
Feature 5, Fenceposts	4.37
Feature 6, Mission Granary	4.37
Feature 23, Well	4.41
Feature 52, Probable Outhouse Pit	4.43
Feature 61, Pit	4.43
Feature 64, Mission Trash Midden	4.43
Feature 87, Pit	4.43
Feature 161, Mission Trash Midden	4.44
Feature 166, Mission Trash Midden	4.44
Feature 177, Mission Pit	4.44
Feature 178, Mission Pit	4.44
Feature 193, Mission Roasting Pit	4.45
Feature 203, Mission Pit	4.45
Summary	4.45

Part 2. Mission Gardens Locus, the Clearwater Site, AZ BB:13:6 (ASM)	4.47
Prehistoric Features	4.47
Feature 3001, Pit	4.47
Feature 3005, Possible Pit Structure	4.47
Feature 3012, Pit	4.50
Feature 3014, Pit Structure	4.50
Feature 3038, Pit Structure	4.51
Feature 3044, Bell-shaped Pit	4.53
Feature 3058, Pit	4.53
Feature 3067, Borrow Pit	4.53
Feature 3072, Hearth	4.53
Feature 3081, Possible Roasting Pit	4.54
Feature 3082, Pit	4.54
Feature 3099, Pit	4.54
Historic-era Features	4.54
Feature 3000, South Mission Gardens Wall	4.54
Feature 3006, Historic-era Well	4.54
Feature 3024, Bell-shaped Pit	4.55
Feature 3026, East Mission Gardens Wall	4.55
Feature 3028, Historic Home	4.55
Feature 3083, Historic Structure	4.57
Feature 3095, Adobe Outbuilding	4.57
Feature 3096, Historic Structure	4.57
Feature 3098, North Mission Gardens Wall	4.57
Summary	4.59
Part 3. Congress Street Locus, the Clearwater Site, AZ BB:13:6 (ASM)	4.61
Pit Structures	4.61
Feature 308, Pit Structure	4.61
Feature 506, Possible Pit Structure	4.64
Feature 510, Pit Structure	4.64
Feature 511, Pit Structure	4.65
Feature 516, Pit Structure	4.66
Feature 546, Pit Structure	4.67
Feature 580, Pit Structure	4.68
Feature 581, Pit Structure	4.69
Feature 608, Pit Structure	4.70
Feature 629, Pit Structure	4.71
Feature 3359, Pit Structure	4.71
Feature 3364, Pit Structure	4.72
Feature 3371, Pit Structure	4.73
Pits	4.73
Feature 538, Pit	4.73
Feature 539, Pit	4.74
Feature 540, Pit	4.74
Feature 541, Pit	4.74
Feature 542, Pit	4.74
Feature 543, Modern Pit	4.74
Feature 544, Pit	4.74
Feature 545, Roasting Pit	4.75
Feature 547, Bell-shaped Pit	4.75
Feature 548, Pit	4.75
Feature 554, Pit	4.75
Feature 558, Roasting Pit	4.75
Feature 559, Roasting Pit	4.76
Feature 560, Pit	4.76
Feature 563, Pit	4.76

Feature 570, Pit	4.76
Feature 571, Pit	4.76
Feature 572, Roasting Pit	4.76
Feature 575, Pit	4.77
Feature 576, Pit	4.77
Feature 578, Pit	4.77
Feature 579, Pit	4.77
Feature 584, Pit	4.77
Feature 588, Pit	4.77
Feature 589, Pit	4.78
Feature 592, Pit	4.78
Feature 593, Bell-shaped Pit	4.78
Feature 594, Pit	4.78
Feature 595, Pit	4.78
Feature 596, Pit	4.79
Feature 597, Pit	4.79
Feature 598, Pit	4.79
Feature 599, Pit	4.79
Feature 600, Pit	4.79
Feature 601, Pit	4.79
Feature 609, Pit	4.80
Feature 610, Pit	4.80
Feature 611, Pit	4.80
Feature 612, Pit	4.80
Feature 613, Pit	4.80
Feature 615, Pit	4.80
Feature 616, Pit	4.80
Feature 619, Pit	4.81
Feature 622, Pit	4.81
Feature 623, Pit	4.81
Feature 624, Pit	4.81
Feature 625, Pit	4.81
Feature 626, Pit	4.81
Feature 628, Charcoal Concentration	4.81
Feature 630, Pit	4.82
Feature 631, Bell-shaped Pit	4.82
Feature 632, Roasting Pit	4.82
Feature 633, Historic Pit	4.82
Feature 3360, Pit	4.82
Feature 3361, Bell-shaped Pit	4.82
Feature 3362, Pit	4.82
Feature 3363, Pit	4.83
Feature 3368, Pit	4.83
Feature 3369, Pit	4.83
Feature 3370, Pit	4.83
Feature 3373, Roasting Pit	4.83
Feature 3374, Pit	4.83
Feature 3375, Pit	4.83
Feature 3381, Pit	4.83
Other Prehistoric Features	4.84
Feature 627, Extramural Surface	4.84
Feature 3414, Extramural Surface	4.84
Part 4. Brickyard Locus, the Clearwater Site, AZ BB:13:6 (ASM)	4.85
Pit Structures	4.85
Feature 3220, Pit Structure	4.85
Feature 3245, Pit Structure	4.86

Feature 3260, Pit Structure	4.88
Feature 3262, Pit Structure	4.89
Feature 3264, Pit Structure	4.90
Feature 3270, Pit Structure	4.91
Feature 3273, Pit Structure	4.93
Feature 3274, Pit Structure	4.95
Feature 3290, Pit Structure	4.96
Feature 3293, Pit Structure	4.96
Feature 3294, Pit Structure	4.97
Feature 3296, Pit Structure	4.99
Feature 3300, Pit Structure	4.100
Feature 3306, Pit Structure	4.100
Feature 3308, Pit Structure	4.101
Feature 3312, Pit Structure	4.102
Feature 3323, Pit Structure	4.103
Feature 3325, Pit Structure	4.104
Feature 3327, Pit Structure	4.105
Feature 3332, Pit Structure	4.106
Feature 9168, Pit Structure	4.107
Feature 9357, Pit Structure (A "Bighouse")	4.108
Feature 9372, Pit Structure	4.111
Feature 9376, Pit Structure	4.112
Prehistoric Pits	4.113
Feature 3221, Pit	4.113
Feature 3222, Pit	4.113
Feature 3223, Pit	4.113
Feature 3225, Pit	4.113
Feature 3229, Pit	4.113
Feature 3237, Pit	4.113
Feature 3238, Pit	4.113
Feature 3240, Pit	4.113
Feature 3241, Pit	4.114
Feature 3242, Bell-shaped Pit	4.114
Feature 3243, Pit	4.114
Feature 3244, Pit	4.114
Feature 3248, Pit	4.114
Feature 3249, Pit	4.114
Feature 3252, Pit	4.114
Feature 3253, Pit	4.114
Feature 3261, Pit	4.114
Feature 3263, Pit	4.114
Feature 3266, Pit	4.115
Feature 3272, Bell-shaped Pit	4.115
Feature 3284, Pit	4.115
Feature 3285, Pit	4.115
Feature 3287, Roasting Pit	4.115
Feature 3288, Pit	4.115
Feature 3289, Pit	4.115
Feature 3295, Pit	4.115
Feature 3313, Roasting Pit	4.116
Feature 3316, Slab-lined Pit	4.116
Feature 3318, Pit	4.116
Feature 3320, Pit	4.116
Feature 3326, Pit	4.116
Feature 3328, Pit	4.116
Feature 3329, Pit	4.117

Feature 3331, Pit	4.117
Feature 3334, Pit	4.117
Feature 3336, Pit	4.117
Feature 3358, Pit	4.117
Other Prehistoric Features	4.117
Feature 3317, Extramural Surface	4.117
Historic-era Features	4.118
Feature 3200, Scove Kiln Foundation	4.118
Feature 3201, Brick Surface	4.118
Feature 3202, Pug Mill Foundation	4.119
Feature 3203, Concrete Surface	4.119
Feature 3204, Scove Kiln	4.120
Feature 3205, Brick Drying Rack	4.121
Feature 3206, Possible Fuel Pit	4.121
Feature 3207, Well	4.121
Feature 3208, Equipment Mounts	4.122
Feature 3209, A Brick-lined Pit	4.123
Feature 3210, Pug Mill Foundation	4.123
Feature 3211, Machinery Mounts	4.124
Feature 3212, House Foundation	4.125
Feature 3213, Subsurface Railroad Track	4.126
Feature 3214, Brick-lined Pit	4.126
Feature 3215, Plank-lined Pit	4.127
Feature 3216, Work Area	4.127
Feature 3217, Pit	4.128
Feature 3256, Office Foundation	4.128
Feature 3259, Privy Pit	4.128
Feature 3302, Pit	4.128
Feature 3309, Pit	4.128
References Cited	4.131
 Part 5. Tucson Presidio, AZ BB:13:13 (ASM)	4.133
Test Excavations along the Eastern Side of the Pima County Courthouse	4.133
Test Excavations at the Fish-Stevens-Duffield House	4.135
Methods	4.135
Archaeological Features	4.135
Early Presidio Features	4.135
Late Presidio Features	4.138
Late Presidio-Early American Territorial Period Features	4.139
The Fish House	4.140
Post-1900 Features	4.141
Excavations at the Northeastern Corner of the Tucson Presidio	4.141
The History of the Block	4.141
Structures on Lot 1	4.143
An Overview of the Presidio-occupation Features	4.143
Northeastern Presidio Corner	4.143
Other Presidio Features	4.147
American Territorial Period Features	4.147
Outhouses or Wells	4.152
Other Features	4.153
Detailed Historic Era Feature Descriptions	4.156
Feature 351	4.156
Feature 352	4.156
Feature 353	4.156
Feature 354	4.156
Feature 356	4.158

Feature 357	4.158
Feature 358	4.158
Feature 359	4.158
Feature 360	4.160
Feature 361	4.160
Feature 363	4.161
Feature 364	4.161
Feature 365	4.161
Feature 366	4.161
Feature 367	4.161
Feature 368	4.162
Feature 369	4.162
Feature 370	4.162
Feature 371	4.162
Feature 372	4.162
Feature 373	4.163
Feature 374	4.163
Feature 375	4.163
Feature 376	4.163
Feature 377	4.164
Feature 378	4.164
Feature 381	4.164
Feature 382	4.164
Feature 383	4.165
Feature 384	4.165
Feature 385	4.165
Feature 386	4.165
Feature 387	4.165
Feature 389	4.166
Feature 390	4.166
Feature 391	4.166
Feature 392	4.166
Feature 393	4.166
Feature 394	4.166
Feature 395	4.166
Feature 396	4.167
Feature 397	4.167
Feature 398	4.167
Feature 399	4.167
Feature 400	4.167
Feature 401	4.168
Feature 402	4.168
Feature 403	4.168
Feature 404	4.168
Feature 407	4.168
Feature 408	4.168
Feature 409	4.169
Feature 410	4.169
Feature 414	4.169
Feature 418	4.169
Feature 420	4.169
Feature 421	4.170
Feature 422	4.170
Feature 423	4.170
Feature 424	4.170
Feature 425	4.170

Feature 427	4.170
Feature 428	4.170
Feature 429	4.171
Feature 431	4.171
Feature 432	4.171
Feature 433	4.171
Feature 435	4.171
Feature 436	4.171
Feature 437	4.171
Feature 438	4.172
Feature 439	4.172
Feature 441	4.172
Feature 442	4.172
Feature 443	4.172
Prehistoric Features	4.172
Feature 350	4.172
Feature 380	4.175
Feature 405	4.176
Feature 406	4.176
Feature 412	4.176
Feature 416	4.177
Feature 417	4.177
Feature 430	4.178
Feature 434	4.178
References Cited	4.179
 Part 6. Canals, AZ BB:13:481 (ASM)	4.181
Early Agricultural Period Canals	4.181
San Agustín Mission Locus	4.181
Congress Street/Brickyard Loci	4.184
Hohokam Canals	4.186
San Agustín Mission Locus	4.186
Mission Gardens Locus	4.186
Congress Street/Brickyard Loci	4.188
Protohistoric Period Canals	4.191
Mission Gardens Locus	4.191
Historic Era Canals	4.193
San Agustín Mission Locus	4.193
Mission Gardens Locus	4.194
Congress Street/Brickyard Loci	4.195
Summary	4.197
References Cited	4.199
 Part 7. Features Southeast of Interstate 10 and Congress Street	4.201
Introduction	4.201
AZ BB:13:NW (ASM)	4.201
Feature 1, Trash-filled Depression	4.201
Feature 2, Trash Midden	4.203
AZ BB:13:735 (ASM)	4.203
Feature 3, Roasting Pit	4.203
Feature 4, Trash Pit	4.203
Feature 5, Water Trough	4.203
Feature 6, Posthole	4.204
Feature 7, House Foundation	4.204
Feature 8, House Foundation	4.204
Summary	4.204

5. ARTIFACT INVENTORIES AND RESEARCH QUESTIONS, <i>Jonathan B. Mabry and J. Homer Thiel</i>	5.1
Clearwater Site, AZ BB:13:6 (ASM), Mission Locus	5.1
Samples Selected for Analyses	5.1
Research Questions	5.1
San Agustín Mission	5.1
Samples Selected for Analyses	5.1
Research Questions	5.4
Clearwater Site, AZ BB:13:6 (ASM), Congress Street and Brickyard Loci	5.4
Samples Selected for Analyses	5.4
Research Questions	5.6
Tucson Presidio, AZ BB:13:13 (ASM), Spanish and Mexican Periods	5.7
Samples Selected for Analyses	5.8
Research Questions	5.8
Tucson Presidio, AZ BB:13:13 (ASM), American Territorial Period	5.8
Samples Selected for Analyses	5.8
Tucson Presidio, AZ BB:13:13 (ASM), Prehistoric Era	5.8
Samples Selected for Analyses	5.8
Chinese Gardeners	5.9
Samples Selected for Analyses	5.9
Research Questions	5.9
Mission Gardens, Prehistoric Era	5.9
Samples Selected for Analyses	5.9
Research Questions	5.9
AZ BB:13:481 (ASM) Canals	5.10
Samples Selected for Analyses	5.10
Research Questions	5.10
References Cited	5.13
6. PETROGRAPHIC ANALYSIS OF POTTERY FOR THE RIO NUEVO PROJECT, WITH A CASE STUDY OF TEMPORAL TRENDS IN HISTORIC ERA NATIVE AMERICAN POTTERY PRODUCTION, <i>Elizabeth J. Miksa, Carlos P. Lavayen, and Sergio F. Castro-Reino</i>	6.1
Introduction	6.1
Methods	6.1
Petrographic Analysis	6.3
Temper Type Analysis	6.22
Temper Composition Analysis	6.25
Discussion	6.32
Case Study: The Effects of Historic Events on O'odham Pottery Production in Historic Tucson, Arizona	6.33
Results	6.33
Conclusions	6.39
References Cited	6.41
7. NATIVE AMERICAN POTTERY, <i>James M. Heidke</i>	7.1
Sampling Strategy	7.1
Analysis Methods	7.1
Temper Type and Provenance	7.2
Vessel Function	7.5
Early Agricultural Period Pottery from the Clearwater Site, AZ BB:13:6 (ASM)	7.22
Summary of Previous Early Agricultural Period Research	7.22

Incipient Plain Ware Production Sequence Attribute Data	7.24
Discussion	7.33
Agua Caliente Phase Pottery from the Mission Gardens Locus, the Clearwater Site, AZ BB:13:6 (ASM)	7.34
Temper Attributes	7.35
Pottery Function	7.36
Cañada del Oro Phase Pottery from the Clearwater Site, AZ BB:13:6 (ASM)	7.37
Temper Attributes	7.37
Pottery Function	7.38
Historic Era Pottery	7.42
Protohistoric Period and Historic Era Ceramic Typology	7.44
Historic O'odham Pottery from the San Agustín Mission Locus, the Clearwater Site, AZ BB:13:6 (ASM), circa 1771-1821	7.45
Historic O'odham Pottery from the Tucson Presidio, AZ BB:13:13 (ASM), circa 1810s-1820s	7.52
Historic O'odham Pottery from the Tucson Presidio, AZ BB:13:13 (ASM), circa 1820s-1830s	7.56
Historic O'odham Pottery from the Carrillo Household, circa 1860-1880	7.62
Historic O'odham Pottery from Block 181, Lot 1, circa Late 1870s-Early 1890s	7.63
Review of Vessel Function	7.71
O'odham Pottery Systematics: A Review of Technological Attributes Exhibited by Material Recovered from Well-dated, Tucson-area Historic Era Deposits	7.72
Summary	7.83
Acknowledgments	7.83
References Cited	7.85
8. HUMAN FIGURINES, <i>Susan L. Stinson</i>	8.1
References Cited	8.5
9. GROUND STONE ARTIFACTS, <i>Jenny L. Adams</i>	9.1
Analysis Approach	9.1
Nature of the Assemblage	9.7
Early Agricultural Period	9.8
Cienega Phase	9.20
Early Ceramic Period	9.27
Hohokam Periods	9.28
Spanish Period O'odham	9.29
Spanish and Mexican Periods	9.29
Conclusions	9.30
References Cited	9.31
10. FLAKED STONE, <i>R. Jane Sliva</i>	10.1
Introduction	10.1
Sampling	10.1
Methods of Analysis and Definitions of Terms	10.1
Artifact Classification and General Terminology	10.1
Assemblage Descriptions	10.5
Pre-San Pedro Phase Assemblage	10.5
Agua Caliente Phase	10.6
Spanish Period O'odham	10.6
Projectile Points from Rio Nuevo	10.8
References Cited	10.17

11. SHELL ARTIFACTS, <i>Arthur W. Vokes</i>	11.1
Methodology	11.1
Genera and Species	11.1
The Artifact Assemblage	11.4
Finished Shell Artifacts	11.4
Manufacturing Evidence	11.9
Fragmentary Material	11.10
Descriptive Summary	11.10
Discussion	11.11
Cienega Phase Shell	11.11
Ceramic Period and the Hohokam	11.13
The Historic Era	11.13
References Cited	11.17
12. HISTORIC ERA ARTIFACTS, <i>J. Homer Thiel</i>	12.1
Traces of Daily Life at the Tucson Presidio	12.1
Kitchen Artifacts	12.1
Architecture	12.3
Arms and Ammunition	12.4
Clothing and Personal Items	12.5
Summary	12.6
American Territorial Period	12.7
Artifacts from the Presidio Site Parking Lot	12.7
Artifact Analysis	12.12
Artifacts from the Chinese Well	12.15
Kitchen	12.15
Architectural	12.19
Arms and Ammunition	12.20
Clothing	12.20
Personal	12.21
Activity	12.21
Summary	12.22
Acknowledgments	12.22
References Cited	12.23
13. FAUNAL REMAINS, <i>Judi L. Cameron, Jennifer A. Waters, Barnet Pavao-Zuckerman, Vince M. LaMotta, and Peter D. Schulz</i>	13.1
Faunal Remains from Prehistoric Contexts	13.1
Methodology	13.1
Assemblage Composition	13.2
The Clearwater Site, AZ BB:13:6 (ASM)	13.2
Tucson Presidio, AZ BB:13:13 (ASM)	13.16
Summary and Conclusions	13.17
Vertebrate Faunal Remains from the Spanish and Mexican Period Features at the Tucson Presidio, AZ BB:13:13 (ASM)	13.18
Methods	13.18
Identified Taxa	13.19
Bone Surface Modifications	13.21
Element Representation and Butchering Practices	13.22
Comparisons with Other Hispanic Assemblages in the Tucson Area	13.26
Summary and Conclusions	13.28

Zooarchaeology of Mission San Agustín del Tucson, AZ BB:13:6 (ASM)	13.29
Introduction	13.29
Methods	13.29
Results and Discussion	13.30
Conclusions	13.30
Faunal Bone from the Chinese Well, San Agustín Mission Locus, the Clearwater Site, AZ BB:13:6 (ASM)	13.32
Methods	13.32
Assemblage Description	13.33
Comparisons with Contemporaneous Assemblages	13.41
Summary and Conclusions	13.43
Late Nineteenth Century Fish Remains from a <i>Huáqiao</i> Site near Tucson, Arizona	13.44
Provenience, Materials, and Methods	13.44
Results	13.45
Discussion	13.49
References Cited	13.51
14. PLANT REMAINS FROM THE CLEARWATER SITE, AZ BB:13:6 (ASM), AND THE TUCSON PRESIDIO, AZ BB:13:13 (ASM), <i>Michael W. Diehl</i>	14.1
Quantification and Methods	14.1
Ubiquity as an Indicator of Importance	14.1
Diet Breadth and Optimization	14.2
Plant Resource Groups	14.2
Crops	14.2
High-density Weeds	14.3
Low-density Weeds	14.3
Desert Tree Legumes	14.3
Cacti	14.3
Low-density Wild Grasses	14.4
Local Shrubs	14.4
Distant Resources	14.4
Subsistence Trends in Arizona	14.4
Prior Research	14.4
Unnamed Phase of the Early Agricultural Period	14.9
Cienega Phase	14.9
Early Ceramic Period	14.10
Hohokam Pioneer Period	14.10
Hohokam Colonial Period	14.10
Hohokam Classic Period	14.10
Historic Era Occupations	14.11
References Cited	14.13
15. POLLEN ANALYSIS OF THE CLEARWATER SITE, AZ BB:13:6 (ASM), <i>Owen K. Davis</i>	15.1
Introduction	15.1
Setting	15.1
Previous Studies	15.1
Methods	15.2
Quantification	15.2
Results and Interpretation	15.4
Summary	15.16
Conclusions	15.16
References Cited	15.17

16. ANALYSES AND INTERPRETATIONS OF CANAL OSTRACODES, Manuel R. Palacios-Fest	16.1
Introduction	16.1
Areas of Investigation	16.1
Materials and Methods	16.1
Results from Canals in the Congress Street/Brickyard Loci, the Clearwater Site, AZ BB:13:6 (ASM)	16.4
Early Agricultural Period Canals	16.5
Hohokam Canals	16.6
Historic-era Canals	16.8
Interpretations of Canal Ostracode Records from the Congress Street/Brickyard Loci, the Clearwater Site, AZ BB:13:6 (ASM)	16.10
Summary	16.14
Results from Canals in the San Agustín Mission Locus, the Clearwater Site, AZ BB:13:6 (ASM)	16.14
Cienega Phase Canals	16.15
Hohokam Canal	16.15
American Territorial Period Canals	16.17
Interpretations of Canal Ostracode Records from the San Agustín Mission Locus, the Clearwater Site, AZ BB:13:6 (ASM)	16.17
Summary	16.20
Results from Canals in the Mission Gardens Locus, the Clearwater Site, AZ BB:13:6 (ASM)	16.20
Hohokam Canal	16.21
Protohistoric Period Canals	16.21
Historic-era Canals	16.23
Interpretations of Canal Ostracode Records from the Mission Gardens Locus, the Clearwater Site, AZ BB:13:6 (ASM)	16.24
Summary	16.25
Conclusions	16.25
References Cited	16.95
17. SOURCES OF OBSIDIAN ARTIFACTS, M. Steven Shackley, Jennifer Kahn, Elizabeth Eklund, and Caroline Ogasawara	17.1
Analysis and Instrumental Conditions	17.1
Results and Discussion	17.2
References Cited	17.9
18. HUMAN BURIALS, John McClelland, Robert Dayhoff, and Thomas Klimas	18.1
San Agustín Mission Locus, the Clearwater Site, AZ BB:13:6 (ASM)	18.1
Feature 24B	18.1
Feature 35	18.1
Feature 36	18.2
Feature 38	18.2
Feature 39	18.3
Feature 90	18.3
Feature 159	18.4
Feature 160	18.4
Feature 190	18.4
Isolated Human Bone	18.4
Mission Gardens Locus, the Clearwater Site, AZ BB:13:6 (ASM)	18.5
Feature 3002	18.5
Feature 3019	18.5
Feature 3025	18.5
Feature 3041	18.5

Feature 3045	18.6
Feature 3048	18.6
Feature 3057	18.6
Feature 3071	18.7
Feature 3080	18.7
Feature 3097	18.7
Feature 3101	18.8
Feature 3343	18.8
Feature 3345	18.8
Feature 3346	18.8
Feature 3347	18.9
Isolated Human Bone	18.9
Congress Street Locus, the Clearwater Site, AZ BB:13:6 (ASM)	18.9
Feature 144	18.9
Feature 573	18.9
Feature 574	18.9
Feature 591	18.10
Feature 603	18.10
Feature 604	18.10
Feature 605	18.10
Feature 618	18.11
Isolated Bone	18.11
Brickyard Locus, the Clearwater Site, AZ BB:13:6 (ASM)	18.11
Feature 3267	18.11
Feature 3268	18.11
Isolated Bone from Feature 9357	18.11
Feature 3330	18.12
Feature 3357	18.12
The People from the San Agustín Mission Cemeteries	18.12
The People of the Tucson Presidio Cemetery, AZ BB:13:13 (ASM)	18.13
References Cited	18.15
 19. RADIOCARBON DATING OF THE EARLY OCCUPATIONS, <i>Jonathan B. Mabry</i>	19.1
The Pooled Probability Method	19.1
The Age Ranges of Early Occupations	19.1
Early Dates for Maize, Ceramics, and Canals	19.2
References Cited	19.5
 20. GEOMORPHOLOGY AND STRATIGRAPHY, <i>Jonathan B. Mabry</i>	20.1
Geomorphology	20.1
Alluvial Units	20.3
Summary	20.11
Local Patterns	20.13
Regional Patterns	20.16
Causes and Timings of Floodplain Aggradation and Erosion	20.18
Site Locations, Sediment Contexts, and Preservation Conditions	20.19
Alluvial Processes and Cultural Activities	20.20
References Cited	20.21
 21. PUBLIC OUTREACH, <i>Douglas Gann, Beth DeWitt, Annamarie Schaecher, Gwen Harvey, and Kyle McKoy</i>	21.1
Reconstructing the San Agustín Mission on the Computer: Creating a Visual Hypothesis	21.1
Incorporating Photographic Data: Photometric Modeling	21.1

Digital Modeling with Plan Views and Archaeological Data	21.2	
Placing the Model on the Landscape	21.2	
The Arizona State Museum Rio Nuevo School Partnership	21.3	
A Sense of Place, a Sense of Identity, a Sense of Pride	21.4	
Partnership Resources and Programs: Special Projects	21.4	
Sense of Place	21.8	
Arizona Historical Society	21.8	
Educational Outreach	21.8	
Conclusion	21.10	
22. SUMMARY: THE ARCHAEOLOGY OF A CHANGING COMMUNITY, <i>J. Homer Thiel and Jonathan B. Mabry</i>		22.1
The Evolving Riverine Oasis	22.1	
Tucson as an Oasis Community, circa 2100 B.C.-A.D. 1890s	22.2	
Tucson as an Irrigation Community, circa 1500 B.C.-A.D. 1890s	22.4	
Tucson as a Mission Community, 1690s-1820s	22.6	
Tucson as a Military Community, 1775-1856	22.7	
Tucson as a Diverse Frontier Community, 1856-1900s	22.9	
The Modern Community of Tucson	22.11	
References Cited	22.13	
A. SUPPLEMENTARY DATA ON RIO NUEVO SHELL ARTIFACTS, <i>Arthur W. Vokes</i>		A.1
B. SUPPLEMENTARY DATA ON RIO NUEVO PROJECT MACROBOTANICAL SAMPLES, <i>Michael W. Diehl</i>		B.1

LIST OF FIGURES

1.1.	Map showing loci of archaeological investigations of the Rio Nuevo Archaeology project, 2000-2003	1.3
1.2.	Map No. 1 of the cultivated fields in and about Tucson, A.T., 1862	1.4
1.3.	Map of archaeological features at the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	1.5
1.4.	A volunteer clears a section of the western compound wall foundation at the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	1.6
1.5.	Archaeologists excavate the well filled with Chinese artifacts, the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	1.7
1.6.	An Early Agricultural period pithouse was reconstructed in its original pit, the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	1.8
1.7.	Map of archaeological features at the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	1.9
1.8.	Hohokam pottery sherds found in the plowzone at the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	1.10
1.9.	Map of archaeological features at the Congress Street and Brickyard loci, the Clearwater site, AZ BB:13:6 (ASM)	1.11
1.10.	Map of archaeological features in strata 503 and 504, Block 5, Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM)	1.13
1.11.	Archaeologists uncover the remains of a 4,100-year-old farming settlement at the Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM)	1.14
1.12.	Map of prehistoric archaeological features in the Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	1.15
1.13.	Map of prehistoric and historic irrigation canals in the Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM)	1.17
1.14.	Map of historic archaeological features in the Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	1.19
1.15.	Archaeologists document adobe walls in a trench between the Edward Fish and Hiram Stevens houses along Main Avenue, the Tucson Presidio, AZ BB:13:13 (ASM)	1.18
1.16.	Map of historic archaeological features between the Stevens and Fish houses, Tucson Museum of Art, the Tucson Presidio, AZ BB:13:13 (ASM)	1.21
1.17.	Map of archaeological features at the Tucson Presidio, AZ BB:13:13 (ASM)	1.23
1.18.	An archaeologist removes the time capsule from a pit inside a Hohokam pithouse, the Tucson Presidio, AZ BB:13:13 (ASM)	1.22

4.1. Prehistoric features at the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.9
4.2. Features 7 and 29, Cienega phase pithouses, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.10
4.3. Feature 15, a Cienega phase pithouse, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.11
4.4. Feature 29, a Cienega phase pithouse, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.14
4.5. Feature 32, a Cienega phase pithouse, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.15
4.6. Feature 57, a Cienega phase pithouse, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.16
4.7. Feature 65, a Cienega phase pithouse with a fired central pit, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.18
4.8. Feature 97, a Cienega phase pithouse, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.20
4.9. Feature 100, a Cienega phase pithouse, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.21
4.10. Feature 112, a Cienega phase pithouse, and Feature 110, a small pit, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.22
4.11. Features 121 and 191, Cienega phase pithouses, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.23
4.12. Feature 126, a Cienega phase pithouse, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.25
4.13. Feature 218, a Cienega phase pithouse, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.30
4.14. Feature 31, an Early Agricultural period pit containing a ground stone cache, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.31
4.15. Mission-occupation features, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.38
4.16. A close-up of the granary and the mission cemetery, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.39
4.17. American Territorial period and American Statehood period features, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.40
4.18. A close-up of Feature 1, the foundation of the western mission compound wall, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.41
4.19. Feature 4, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM), a well filled by Chinese gardeners in the 1890s, partially excavated	4.41

4.20.	A profile of the upper 1.5 m of Feature 4, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.42
4.21.	The foundations of the Tucson Mission granary, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.43
4.22.	Feature 193, a Protohistoric period roasting pit, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.45
4.23.	Prehistoric features located in the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.48
4.24.	Historic era features located in the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.49
4.25.	Feature 3014, an Early Ceramic period pithouse, Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.50
4.26.	Feature 3038, an Early Ceramic period pithouse, Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.52
4.27.	Feature 3058, a Hohokam cache of ground stone hoes and preforms, Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.53
4.28.	Feature 3026, the foundations of the eastern gardens wall, Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.55
4.29.	Map of the southeastern corner of the gardens walls, Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.56
4.30.	Map of Feature 3083, a structure built against the eastern gardens wall, Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.58
4.31.	Feature 3095, a Historic era outbuilding foundation, Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.59
4.32.	Prehistoric features located at the Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM)	4.63
4.33.	Feature 516, an Early Agricultural period pithouse in Stratum 504, the Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM)	4.67
4.34.	Feature 580, an Early Agricultural period pithouse, the Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM)	4.68
4.35.	Feature 581, an Early Agricultural period pithouse in Stratum 504, and Features 571 and 589, Early Agricultural period extramural pits in Stratum 503, the Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM)	4.69
4.36.	Feature 608, an Early Agricultural period pithouse, the Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM)	4.70
4.37.	Feature 629, an Early Agricultural period pithouse, the Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM)	4.71
4.38.	Feature 3220, a Cienega phase pithouse, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.86

4.39. Feature 3245, a Cienega phase pithouse, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.87
4.40. Feature 3260, a Cienega phase pithouse, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.89
4.41. Feature 3264, a Cienega phase pithouse, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.90
4.42. Features 3270 and 9168, Early Agricultural period pithouses, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.92
4.43. Feature 3273, a Cienega phase pithouse, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.94
4.44. Feature 3293, an Early Ceramic period or Hohokam pithouse, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.96
4.45. Feature 3294, a Cienega phase pithouse, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.97
4.46. Feature 3296, a Cienega phase pithouse, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.99
4.47. Feature 3323, a Cienega phase pithouse, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.103
4.48. Feature 3227, a Cienega phase pithouse, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.105
4.49. Feature 9168, a Cienega phase pithouse, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.107
4.50. Feature 9357, a Cienega phase “bighouse,” Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.109
4.51. Feature 9372, a Cienega phase pithouse, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.111
4.52. Feature 3316, a slab-lined pit, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.116
4.53. Feature 3200, a scove kiln foundation, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.118
4.54. Feature 3201, a brick surface, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.118
4.55. Feature 3202, the foundation of a pug mill, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.119
4.56. Feature 3204, scove kiln, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.120
4.57. Feature 3205, the brick drying rack, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.121

4.58.	Feature 3207, the brickyard well, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.122
4.59.	Feature 3208, brick equipment mounts, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.122
4.60.	Feature 3209, a brick-lined pit, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.123
4.61.	Feature 3210, a pug mill foundation, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.123
4.62.	Feature 3210, foundation of the early pug mill, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.123
4.63.	Features 3210 and 3213, the early pug mill and subsurface railroad track, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.124
4.64.	Features 3210, 3213, and 3216, the early pug mill, the subsurface railroad track, and a work area, respectively, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.124
4.65.	Feature 3212, a house foundation, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.125
4.66.	A close-up of the subsurface railroad track, Feature 3213, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.126
4.67.	Feature 3256, the foundation of the brickyard office, Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM)	4.128
4.68.	Location of excavation areas within the Tucson Presidio, AZ BB:13:13 (ASM)	4.134
4.69.	Archaeological features found at the Tucson Museum of Art project area, Tucson Presidio, AZ BB:13:13 (ASM)	4.136
4.70.	Overview of the excavations at the Tucson Museum of Art complex, Tucson Presidio, AZ BB:13:13 (ASM)	4.137
4.71.	Archaeological features at the western end of the Tucson Museum of Art project area trench, Tucson Presidio, AZ BB:13:13 (ASM)	4.137
4.72.	Features 331 and 332, an adobe wall and a molded adobe corner fireplace from an early presidio home, Tucson Presidio, AZ BB:13:13 (ASM)	4.137
4.73.	Feature 314, a late presidio-occupation to early American Territorial period adobe wall, Tucson Presidio, AZ BB:13:13 (ASM)	4.138
4.74.	Features 301 and 302, the eastern foundation of the late 1860s Fish House and an adjacent hard ground surface; several postholes are also visible; Tucson Presidio, AZ BB:13:13 (ASM)	4.140
4.75.	The 1883 Sanborn Fire Insurance map for Block 181, Tucson Presidio, AZ BB:13:13 (ASM)	4.144
4.76.	The 1901 Sanborn Fire Insurance map for Block 181, Tucson Presidio, AZ BB:13:13 (ASM)	4.145

4.77.	Presidio features found beneath the parking lot, Tucson Presidio, AZ BB:13:13 (ASM)	4.146
4.78.	An overview of the presidio corner excavations, Tucson Presidio, AZ BB:13:13 (ASM)	4.147
4.79.	Feature 377, the southern foundation of the tower, looking to the west, Tucson Presidio, AZ BB:13:13 (ASM)	4.147
4.80.	Feature 374, the northern foundation of the tower, looking to the southwest, Tucson Presidio, AZ BB:13:13 (ASM)	4.148
4.81.	Feature 386, a cobble column support base within the southern foundation of the tower, Tucson Presidio, AZ BB:13:13 (ASM)	4.148
4.82.	Features 404 and 495, an adobe column base and an interior room wall within the northern foundation of the tower, Tucson Presidio, AZ BB:13:13 (ASM)	4.148
4.83.	Feature 400, a small fragment of the eastern presidio wall, Tucson Presidio, AZ BB:13:13 (ASM)	4.149
4.84.	Feature 409, a presidio borrow pit, Tucson Presidio, AZ BB:13:13 (ASM)	4.149
4.85.	Profile of Feature 409, a presidio-occupation borrow pit, Tucson Presidio, AZ BB:13:13 (ASM)	4.150
4.86.	American Territorial period features found beneath the corner parking lot, Tucson Presidio, AZ BB:13:13 (ASM)	4.151
4.87.	Profile of Feature 376, an American Territorial period borrow pit, Tucson Presidio, AZ BB:13:13 (ASM)	4.152
4.88.	Profile of Feature 360, an American Territorial period outhouse, Tucson Presidio, AZ BB:13:13 (ASM)	4.154
4.89.	Profile of Feature 408, an American Territorial period outhouse, Tucson Presidio, AZ BB:13:13 (ASM)	4.155
4.90.	Feature 378, a set of American Territorial period postholes for a probable ramada structure, Tucson Presidio, AZ BB:13:13 (ASM)	4.157
4.91.	Photograph of the Feature 378 postholes and other features, Tucson Presidio, AZ BB:13:13 (ASM)	4.158
4.92.	A structure depicted on the 1862 Fergusson map of Tucson may be represented by adobe bricks found in the project area, Tucson Presidio, AZ BB:13:13 (ASM)	4.159
4.93.	Prehistoric features located in the corner parking lot, Tucson Presidio, AZ BB:13:13 (ASM)	4.173
4.94.	Feature 350, a Hohokam pithouse originally exposed in 1954, lies adjacent to the eastern wall of the northeastern tower, Feature 351, Tucson Presidio, AZ BB:13:13 (ASM)	4.174
4.95.	Feature 430, a partially excavated Early Agricultural period pithouse, Tucson Presidio, AZ BB:13:13 (ASM)	4.175

4.96.	Irrigation canals, AZ BB:13:481 (ASM), at the San Agustín Mission and the Mission Gardens loci, the Clearwater site, AZ BB:13:6 (ASM)	4.182
4.97.	Irrigation canals, AZ BB:13:481 (ASM), located at the Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM)	4.183
4.98.	Photograph of canal Feature 53, AZ BB:13:481 (ASM), at the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.184
4.99.	Cross section of canal Feature 140, AZ BB:13:481 (ASM), at the Congress Street and Brickyard loci, the Clearwater site, AZ BB:13:6 (ASM)	4.185
4.100.	Cross section of canal Feature 141, AZ BB:13:481 (ASM), at the Congress Street and Brickyard loci, the Clearwater site, AZ BB:13:6 (ASM)	4.185
4.101.	Cross section of canal Feature 152, AZ BB:13:481 (ASM), at the Congress Street and Brickyard loci, the Clearwater site, AZ BB:13:6 (ASM)	4.186
4.102.	Photograph of canal Feature 137, AZ BB:13:481 (ASM), at the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.186
4.103.	Cross section of canal Feature 200, AZ BB:13:481 (ASM), at the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.187
4.104.	Cross section of canal Feature 202, AZ BB:13:481 (ASM), at the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.187
4.105.	Cross section of canal Feature 203, AZ BB:13:481 (ASM), at the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.188
4.106.	Cross section of canal Feature 142, AZ BB:13:481 (ASM), at the Congress Street and Brickyard loci, the Clearwater site, AZ BB:13:6 (ASM)	4.189
4.107.	Cross section of canal Feature 143, AZ BB:13:481 (ASM), at the Congress Street and Brickyard loci, the Clearwater site, AZ BB:13:6 (ASM)	4.189
4.108.	Cross section of canal Feature 144, AZ BB:13:481 (ASM), at the Congress Street and Brickyard loci, the Clearwater site, AZ BB:13:6 (ASM)	4.189
4.109.	Cross section of canal Feature 146, AZ BB:13:481 (ASM), at the Congress Street and Brickyard loci, the Clearwater site, AZ BB:13:6 (ASM)	4.190
4.110.	Cross section of canal Feature 149, AZ BB:13:481 (ASM), at the Congress Street and Brickyard loci, the Clearwater site, AZ BB:13:6 (ASM)	4.190
4.111.	Cross section of canal Feature 151, AZ BB:13:481 (ASM), at the Congress Street and Brickyard loci, the Clearwater site, AZ BB:13:6 (ASM)	4.191
4.112.	Cross section of canal Feature 201, AZ BB:13:481 (ASM), at the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.192
4.113.	Cross section of canal Feature 204, AZ BB:13:481 (ASM), at the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.192
4.114.	Cross section of canal Feature 205, AZ BB:13:481 (ASM), at the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.192

4.115. Cross section of canal Feature 207, AZ BB:13:481 (ASM), at the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.193
4.116. Feature 3, Solomon Warner's millrace; the northern wall of the millrace has been severely damaged by modern roadwork, San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	4.193
4.117. Cross section of canal Feature 206, AZ BB:13:481 (ASM), at the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.194
4.118. Cross section of canal Feature 208, AZ BB:13:481 (ASM), at the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.194
4.119. Cross section of canal Feature 138, AZ BB:13:481 (ASM), at the Congress Street and Brickyard loci, the Clearwater site, AZ BB:13:6 (ASM)	4.195
4.120. Cross section of canal Feature 145, AZ BB:13:481 (ASM), at the Congress Street and Brickyard loci, the Clearwater site, AZ BB:13:6 (ASM)	4.195
4.121. Cross section of canal Feature 148, AZ BB:13:481 (ASM), at the Congress Street and Brickyard loci, the Clearwater site, AZ BB:13:6 (ASM)	4.196
4.122. Cross section of canal Feature 150, AZ BB:13:481 (ASM), at the Congress Street and Brickyard loci, the Clearwater site, AZ BB:13:6 (ASM)	4.196
4.123. Locations of trenches excavated southeast of Congress Street and Interstate 10 at AZ BB:13:NW (ASM) and AZ BB:13:735 (ASM)	4.202
6.1. Current petrofacies map of the Tucson Basin	6.4
6.2. Photomicrograph of a Beehive Petrofacies sand-tempered sherd	6.24
6.3. Photomicrograph of sherd RNA-52, tempered with Beehive Petrofacies sand plus grog	6.24
6.4. Photomicrograph of sherd RNA2-22, showing prismatic fiber voids, carbon rim, and some remnant fiber structure	6.25
6.5. Photomicrograph of sherd RNA-44, showing elongated fiber voids, one of which is bent around a sand grain	6.25
6.6. Photomicrograph of sherd RNA2-23, showing detail of a fiber void with remnant plant structure	6.25
6.7. Photomicrograph of an unfired briquet made from an ethnographic collection of prepared clay	6.25
6.8. Photomicrograph of an unfired briquet made from an ethnographic collection of prepared clay	6.25
6.9. Dot density graph showing the proportion of sand in the sand plus fiber-tempered sherds versus the fiber-tempered ethnographically collected prepared clays	6.26
6.10. Ethnographic distance-to-resource measurements, by resource type	6.26

6.11.	Schematic diagram illustrating the relationships among the nested discriminant models in the Tucson Basin Petrofacies model	6.29
6.12.	QmFLt ternary plot showing sherds assigned to the Airport Petrofacies, along with sand from the Airport, Beehive, Black Mountain, Santa Rita, and Sierrita petrofacies	6.32
6.13.	Overview of archaeological sites in the case study, showing nearby petrofacies	6.35
6.14.	Close-up of archaeological sites in the case study, showing site names and locations in downtown Tucson	6.35
6.15.	Distribution of ceramic sample, by ware, site, and analytical group	6.36
6.16.	Bar chart showing results of the temper type analysis through time	6.38
6.17.	Bar chart showing results of the temper composition analysis through time	6.38
7.1.	Current petrofacies map of the Tucson Basin and Avra Valley	7.23
7.2.	Incipient plain ware sherds recovered from the Clearwater site, AZ BB:13:6 (ASM)	7.26
7.3.	Illustration showing unusual aspects of the manufacture of one Early Cienega phase Incipient Plain: Coiled and Incised variety sherd from the Clearwater site, AZ BB:13:6 (ASM)	7.27
7.4.	Incipient plain ware bowl vessel forms from the Clearwater site, AZ BB:13:6 (ASM)	7.28
7.5.	Incised Agua Caliente phase plain ware body sherd and red-on-brown sherd recovered from Feature 3014, the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	7.35
7.6.	Agua Caliente phase vessel forms from the Clearwater site, AZ BB:13:6 (ASM)	7.38
7.7.	Agua Caliente phase seed jars from the Clearwater site, AZ BB:13:6 (ASM)	7.39
7.8.	Exterior views of Agua Caliente phase rim sherds from the Clearwater site, AZ BB:13:6 (ASM)	7.40
7.9.	Views of the interior surface of the Agua Caliente phase rim sherds shown in Figure 7.8	7.41
7.10.	Papago Black-on-red cup, recovered from Feature 373, the Tucson Presidio, AZ BB:13:13 (ASM)	7.55
7.11.	Papago Black-on-red pitcher, recovered from Feature 409, the Tucson Presidio, AZ BB:13:13 (ASM)	7.62
7.12.	Papago Black-on-red outcurved bowl, recovered from Feature 409, the Tucson Presidio, AZ BB:13:13 (ASM)	7.62
7.13.	Papago Red-on-buff or White-on-buff plate, recovered from Feature 409, the Tucson Presidio, AZ BB:13:13 (ASM)	7.63

7.14. Papago Red-on-brown semi-flaring, angled long-collared jar, recovered from Feature 409, the Tucson Presidio, AZ BB:13:13 (ASM)	7.63
7.15. Sobaipuri semi-flaring, angled long-collared jar, recovered from Feature 409, the Tucson Presidio, AZ BB:13:13 (ASM)	7.63
7.16. Sobaipuri semi-flaring, angled long-collared, jar, recovered from Feature 409, the Tucson Presidio, AZ BB:13:13 (ASM)	7.63
7.17. Date ranges of features summarized in Tables 7.50 and 7.51	7.77
7.18. Temporal trends in Historic Native American pottery temper provenance	7.77
7.19. Detail of Tucson area petrofacies map showing the location of two Tohono O'odham villages in relation to the Black Mountain and Sierrita temper sources	7.78
7.20. Temporal trends in Historic Native American pottery temper type	7.78
7.21. Temporal trends in the folded rim coil attribute	7.79
7.22. Temporal trends in Historic Native American pottery ware abundance	7.81
7.23. Temporal trends in the location of red-slipped surfaces on Historic Native American pottery	7.81
9.1. Hematite and limonite chunks collected for use as colorants	9.24
9.2. Flat/concave mano and metate recovered from Cienega phase pithouses at the Clearwater site, AZ BB:13:6 (ASM)	9.25
9.3. Flat/concave mano recovered from a Cienega phase exterior pit, Feature 69, at the Clearwater site, AZ BB:13:6 (ASM)	9.25
9.4. Mortars, sometimes called knobbed trays, recovered from the floor of Feature 126, a Cienega phase pithouse at the Clearwater site, AZ BB:13:6 (ASM)	9.26
9.5. Lapstone recovered from the floor of a Cienega phase pithouse, Feature 29, at the Clearwater site, AZ BB:13:6 (ASM)	9.26
9.6. Flat/concave mano secondarily used to process red pigment recovered from the floor of an Early Ceramic period pithouse, Feature 3014, at the Clearwater site, AZ BB:13:6 (ASM)	9.27
9.7. Field photograph of a tabular tool cache, Feature 3058, at the Clearwater site, AZ BB:13:6 (ASM)	9.28
9.8. Tabular tool from the tool cache, Feature 3058, at the Clearwater site, AZ BB:13:6 (ASM)	9.28
9.9. Palette fragments recovered from the Tucson Presidio, AZ BB:13:13 (ASM)	9.29
10.1. Projectile points from pre-San Pedro or unknown period contexts at the Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM)	10.10
10.2. Projectile points from Spanish period O'odham contexts at the Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	10.14

10.3. Projectile points and a drill from Cienega phase, American Territorial period, or unknown period contexts at the Mission, Congress Street, and Brickyard loci, the Clearwater site, AZ BB:13:6 (ASM)	10.16
11.1. Examples of shell artifacts recovered from the Rio Nuevo excavations, the Clearwater site, AZ BB:13:6 (ASM)	11.7
12.1. A Spanish period olive jar, provenience unknown	12.3
12.2. Copper <i>chocolateros</i> discovered near Marana, Pima County, Arizona	12.3
12.3. Mexican majolica from Spanish or Mexican period features from the Tucson Presidio, AZ BB:13:13 (ASM)	12.4
12.4. English transfer-print ceramics recovered from Spanish or Mexican period borrow pits within the Tucson Presidio, AZ BB:13:13 (ASM)	12.4
12.5. Brass gunstock ornaments from the Terrenate Presidio, AZ E:4:11 (ASM), dating to 1775-1780	12.5
12.6. Brass ramrod holder recovered from the Tucson Presidio, AZ BB:13:13 (ASM), Feature 0	12.5
12.7. Brass buttons from the Terrenate Presidio, AZ E:4:11 (ASM), dating to 1775-1780	12.6
12.8. Brass clothing buckles from the Terrenate Presidio, AZ E:4:11 (ASM)	12.6
12.9. Small metal artifacts from the Tucson Presidio, AZ BB:13:13 (ASM)	12.6
12.10. A sponge-printed plate from an American Territorial period borrow pit, Feature 376 at the Tucson Presidio, AZ BB:13:13 (ASM)	12.9
12.11. A decorative English bowl with a fish design found in an American Territorial period borrow pit, Feature 376 at the Tucson Presidio, AZ BB:13:13 (ASM)	12.9
12.12. Bisque porcelain children's toys recovered from an American Territorial borrow pit, Feature 359 at the Tucson Presidio, AZ BB:13:13 (ASM)	12.11
12.13. A decorative bowl found in an American Territorial period well, Feature 360 at the Tucson Presidio, AZ BB:13:13 (ASM)	12.11
12.14. An iron wok found in the Chinese well, Feature 4, at the Clearwater site, AZ BB:13:6 (ASM)	12.17
12.15. A Mexican earthenware bowl found in the Chinese well, Feature 4 at the Clearwater site, AZ BB:13:6 (ASM)	12.17
12.16. Celadon and Bamboo rice bowls from the Chinese well at the Clearwater site, AZ BB:13:6 (ASM)	12.18
12.17. Four Seasons sauce bowl from the Chinese well, Feature 4 at the Clearwater site, AZ BB:13:6 (ASM)	12.18
12.18. Food and sauce jars from the Chinese well at Clearwater, AZ BB:13:6 (ASM)	12.19
12.19. Glass opium lamp from the well, Feature 4, disk; globe at the Clearwater site, AZ BB:13:6 (ASM)	12.22

13.1. Bone tools from the Tucson Presidio, AZ BB:13:13 (ASM)	13.21
13.2. Tucson Presidio, AZ BB:13:13 (ASM), cattle body part representation	13.24
13.3. Cattle femur from the Tucson Presidio, AZ BB:13:13 (ASM), showing chopmarks and impact scar	13.26
13.4. Cattle metacarpal from the Tucson Presidio, AZ BB:13:13 (ASM), with chopmarks	13.26
13.5. Cattle metatarsal from the Tucson Presidio, AZ BB:13:13 (ASM), showing cutmarks and chopmarks	13.26
13.6. Chopmarks on domestic cat (<i>Felis silvestris</i>) bones from Feature 4 at the Clearwater site, AZ BB:13:6 (ASM)	13.39
15.1. Map of the Tucson Basin, showing location of archaeological sites for which pollen analyses have been completed	15.2
15.2. Pollen diagram for the Clearwater site, AZ BB:13:6 (ASM), Tucson, Pima County, Arizona	15.14
15.3. Pollen diagrams for selected loci at RNA-8, the Clearwater site, AZ BB:13:6 (ASM), Tucson, Pima County, Arizona	15.15
16.1a. Alignments of canals, AZ BB:13:481 (ASM), in the Congress Street/Brickyard loci, the Clearwater site, AZ BB:13:6 (ASM), identified during the Rio Nuevo Archaeology project	16.2
16.1b. Alignments of canals, AZ BB:13:481 (ASM), in the San Agustín Mission and Mission Gardens loci, the Clearwater site, AZ BB:13:6 (ASM), identified during the Rio Nuevo Archaeology project	16.3
16.2. Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, canal Feature 139, AZ BB:13:481 (ASM)	16.5
16.3. Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, canal Feature 140, AZ BB:13:481 (ASM)	16.6
16.4. Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, canal Feature 142, AZ BB:13:481 (ASM)	16.7
16.5. Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, canal Feature 144, AZ BB:13:481 (ASM)	16.7
16.6. Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, canal Feature 146, AZ BB:13:481 (ASM)	16.8
16.7. Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, canal Feature 149, AZ BB:13:481 (ASM)	16.8
16.8. Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, canal Features 153 and 154, AZ BB:13:481 (ASM)	16.9
16.9. Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, canal Feature 138, AZ BB:13:481 (ASM)	16.9

16.10.	Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, canal Feature 147, AZ BB:13:481 (ASM)	16.10
16.11.	Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, canal Feature 148, AZ BB:13:481 (ASM)	16.10
16.12.	Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, canal Feature 150, AZ BB:13:481 (ASM)	16.11
16.13.	Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, canal Feature 53, AZ BB:13:481 (ASM)	16.16
16.14.	Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, canal Feature 127, AZ BB:13:481 (ASM)	16.17
16.15.	Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, canal Feature 137, AZ BB:13:481 (ASM)	16.18
16.16.	Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, canal Feature 9, AZ BB:13:481 (ASM)	16.19
16.17.	Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, canal Feature 200, AZ BB:13:481 (ASM)	16.21
16.18.	Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, AZ BB:13:481 (ASM): (a) canal Feature 207; (b) canal Feature 205; (c) canal Feature 204; (d) canal Feature 201	16.22
16.19.	Ostracode valves per gram, relative frequencies of ostracode species, and paleosalinity index, by stratigraphic level, canal Feature 206, AZ BB:13:481 (ASM)	16.23
17.1.	Identified material sources of Cienega phase obsidian artifacts from the Rio Nuevo sites	17.6
17.2.	Identified material sources of Hohokam obsidian artifacts from the Rio Nuevo sites	17.7
17.3.	Identified material sources of Spanish period obsidian artifacts from the Rio Nuevo sites	17.8
19.1.	Calibrated pooled probability age ranges of major strata of occupation at the Clearwater site, AZ BB:13:6 (ASM)	19.3
20.1.	Locations of described alluvial exposures at the Clearwater site, AZ BB:13:6 (ASM), and nearby sites	20.2
20.2.	Topographies of the tops of Stratum 503 and Stratum 504 at the Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM)	20.7
20.3.	Composite geologic cross section of the A-Mountain reach of the Santa Cruz River floodplain	20.12
20.4.	Locations of described and dated alluvial exposures in the Santa Cruz River floodplain	20.14
20.5.	Correlations of the alluvial sequences of various reaches of the Santa Cruz River within the Tucson Basin	20.15

20.6. Age ranges of Holocene valley alluvial fills in the Greater Southwest, based on radiocarbon and archaeological dating	20.17
21.1. The first step in the modeling of the convento buildings at the San Agustín Mission	21.2
21.2. The second step in the modeling was to mark the same points in the first photograph onto a second photograph and to add extra points	21.2
21.3. Composite photometric model of the Carrillo House and the convento, generated from photographic data	21.2
21.4. Plan view of the San Agustín Mission	21.3
21.5. Plan view extruded into three dimensions by including wall height information	21.3
21.6. The convento model with surface textures applied	21.3
21.7. The convento model placed in three-dimensional space	21.4
21.8. The terrain model, utilizing USGS topographic map data	21.4
21.9. The placement of an early version of the convento and chapel model upon the landscape	21.4
21.10. A conjectural reconstruction of the San Agustín Mission, Tucson, Arizona, as the mission might have appeared sometime around A.D. 1820	21.5
21.11. Metaja Blackwater participated in the Davis Bilingual Magnet School oral history project and discovered two of her great aunt's baskets in the Arizona State Museum collections in the process	21.5
21.12. Chinese celadon bowl from the "Layers of Tucson History" kit	21.6
21.13. A collage of the Davis Bilingual Magnet School Oral History Family Night held 7 February 2002	21.7
21.14. The entrance to the Arizona Historical Society exhibit entitled, <i>Rio Viejo/Rio Nuevo: Uncovering Tucson's Past</i>	21.9
21.15. Teachers participate in a session demonstrating how to use the CD "Downtown Under Ground: Archaeological Clues to Tucson's Past"	21.10
21.16. A teacher workshop on the Rio Nuevo project at the Arizona Historical Society	21.10
22.1. The Rio Nuevo Archaeological project uncovered the last surviving remnants of the Spanish period San Agustín Mission in Tucson's birthplace below A-Mountain	22.2
22.2. Excavations were conducted in several areas of downtown Tucson during the Rio Nuevo Archaeological project	22.3
22.3. White circles mark pithouses and pits of a 4,100-year-old early farming settlement south of West Congress Street	22.4

22.4. Pieces of pottery discovered in the 4,100-year-old pithouses are the oldest known pottery in the southwestern United States	22.4
22.5. When this photograph was taken in 1880 from A-Mountain, the ruin of the two-story convento was the last standing structure of the San Agustín Mission	22.7
22.6. Archaeological excavations in several parts of downtown Tucson have uncovered portions of the walls of the Tucson Presidio, occupied between 1775 and 1856	22.8
22.7. Zuni sherds found in the Tucson Presidio excavations	22.9
22.8. The wall foundations of a corner tower of the Tucson Presidio were found beneath a parking lot on the corner of Washington Street and Church Avenue; a prehistoric Hohokam pithouse is visible beneath the wall	22.9
22.9. The foundations of a water-powered mill completed in 1875 by Solomon Warner are still visible on the lower slope of A-Mountain above the Mission Gardens	22.10

LIST OF TABLES

3.1.	Periodization and chronology of the Santa Cruz Valley-Tucson Basin	3.2
4.1.	Summary list of excavated and unexcavated features found during the Rio Nuevo Archaeology project, by site/locus and time period	4.2
4.2.	Buttresses located along the southern wall of the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.54
4.3.	Buttresses located along the eastern wall of the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	4.57
4.4.	Early property owners of Lots 1 and 2, Block 181, Tucson Presidio, AZ BB:13:13 (ASM)	4.142
4.5.	Canal feature numbers at AZ BB:13:481 (ASM), by locus and period/era	4.184
5.1.	Analyzed samples of artifacts and subsistence remains from the Rio Nuevo Archaeology project, by loci, contexts, and time intervals	5.2
5.2.	Inventories of artifacts recovered from prehistoric pithouses at the Mission locus of the Clearwater site, AZ BB:13:6 (ASM)	5.3
5.3.	Inventories of artifacts recovered from historic-era Native American features from the Mission locus of the Clearwater site, AZ BB:13:6 (ASM)	5.4
5.4.	Inventories of artifacts recovered from Block 5, Stratum 504, Congress Street locus of the Clearwater site, AZ BB:13:6 (ASM)	5.5
5.5.	Inventories of artifacts recovered from Block 5, Stratum 503, Congress Street locus of the Clearwater site, AZ BB:13:6 (ASM)	5.6
5.6.	Inventories of artifacts recovered from Cienega phase and Early Ceramic period pithouses at the Brickyard locus of the Clearwater site, AZ BB:13:6 (ASM)	5.7
5.7.	Inventories of artifacts recovered from presidio-occupation features, Tucson Presidio, AZ BB:13:13 (ASM)	5.8
5.8.	Inventories of artifacts recovered from prehistoric Hohokam features found at the Tucson Presidio, AZ BB:13:13 (ASM), during the RNA 12 phase	5.9
5.9.	Inventories of artifacts recovered from the Chinese well, Feature 4, at the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	5.9
5.10.	Inventories of artifacts recovered from prehistoric pithouses at the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	5.10
5.11.	Inventories of artifacts recovered from irrigation canals and a mill spillway, AZ BB:13:481 (ASM), on the western side of the Santa Cruz River	5.10
6.1.	Inventory of sherd samples from the Rio Nuevo Archaeology project submitted for petrographic analysis	6.2

6.2.	Point-count parameters and calculated parameters used for the petrographic analysis of Tucson Basin sands and sherds	6.5
6.3.	Point-count data for the thin-sectioned sherds	6.8
6.4.	Qualitative data for the thin-sectioned sherds from the Rio Nuevo Archaeology project	6.16
6.5.	Comparison of temper type assessments made by the ceramicist and the petrographers for sherds from the Rio Nuevo Archaeology project	6.23
6.6.	Proportion of thin sections by concatenated generic temper source and specific temper source groups, Rio Nuevo Archaeology project	6.27
6.7.	Point-count parameters and calculated parameters used for each discriminant analysis model	6.28
6.8.	Discriminant analysis results and petrofacies characterizations for the point-counted sherds	6.30
6.9.	Number of sherds and proportion of thin sections in each final provenance group	6.34
6.10.	Sites and site components used in the case study	6.36
6.11.	Number of sherds in the case study, by ware, site, time interval, and type of analysis	6.37
7.1.	Attribute index used to record provenience, typological, technological, morphological, and use-alteration data from pottery recovered at the Clearwater site, AZ BB:13:6 (ASM), and the Tucson Presidio, AZ BB:13:13 (ASM), and analyzed by Hedberg and Ryan	7.3
7.2.	Attribute index used to record supplemental information from incipient plain ware sherds recovered at the Clearwater site, AZ BB:13:6 (ASM), and the Tucson Presidio, AZ BB:13:13 (ASM)	7.6
7.3.	Attribute index used to record supplemental information from prehistoric, Protohistoric, and Historic sherds and vessels recovered at the Clearwater site, AZ BB:13:6 (ASM), and the Tucson Presidio, AZ BB:13:13 (ASM)	7.15
7.4.	Vessel form classes, designated A-TT, created by cross-tabulating values for containment security and frequency of access	7.24
7.5.	Relationship between the vessel form class and ceramic ware	7.24
7.6.	Incipient plain ware recovery contexts at the Clearwater site, AZ BB:13:6 (ASM)	7.25
7.7.	Clearwater site, AZ BB:13:6 (ASM), incipient plain ware production sequence attribute data	7.29
7.8.	Frequency of incipient plain ware sherds in each vessel form class, reported by time, from the Clearwater site, AZ BB:13:6 (ASM)	7.32
7.9.	Pottery types recovered from Agua Caliente phase deposits at the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	7.34
7.10.	Location of slip on Agua Caliente phase red ware rim sherd recovered from the Clearwater site, AZ BB:13:6 (ASM)	7.35

7.11.	Plain ware sherd discs recovered from Agua Caliente phase features at the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	7.35
7.12.	Three-way classification of Agua Caliente phase pottery from the Mission Gardens locus, Clearwater site, AZ BB:13:6 (ASM), by ceramic type, vessel part, and temper type	7.36
7.13.	Three-way classification of Agua Caliente phase pottery from the Mission Gardens locus, Clearwater site, AZ BB:13:6 (ASM), by ceramic type, vessel part, and temper source	7.37
7.14.	Frequency of Agua Caliente phase rim sherds in each vessel form class, reported by ceramic type, the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	7.37
7.15.	Frequency of Agua Caliente phase rim sherds in each functional category, reported by ceramic type, the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	7.42
7.16.	Hohokam pottery types recovered from Cañada del Oro phase Feature 308, the Clearwater site, AZ BB:13:6 (ASM)	7.42
7.17.	Three-way classification of Cañada del Oro phase Feature 308 ceramic types, vessel part, and temper type from the Clearwater site, AZ BB:13:6 (ASM)	7.43
7.18.	Three-way classification of Cañada del Oro phase Feature 308 ceramic type, vessel part, and temper source from the Clearwater site, AZ BB:13:6 (ASM)	7.43
7.19.	Frequency of rim sherds in each vessel form class recovered from Cañada del Oro phase Feature 308, reported by ceramic type, the Clearwater site, AZ BB:13:6 (ASM)	7.44
7.20.	Frequency of rim sherds in each functional category recovered from Cañada del Oro phase Feature 308, reported by ceramic type, the Clearwater site, AZ BB:13:6 (ASM)	7.45
7.21.	Native American pottery types recovered from mission-time deposits at the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	7.46
7.22.	Location of slip on historic red ware and Papago Red pottery from the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	7.48
7.23.	Three-way classification of historic ceramic types from the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM), by vessel part and temper type	7.49
7.24.	Three-way classification of historic ceramic types from the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM), by vessel part and temper source	7.50
7.25.	Frequency of rim sherds and reconstructible vessels from the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM), in each vessel form class, reported by ceramic type	7.51
7.26.	Frequency of rim sherds and reconstructible vessels from the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM), in each functional category, reported by ceramic type	7.52
7.27.	Native American pottery types recovered from Feature 373, the Tucson Presidio, AZ BB:13:13 (ASM)	7.53

7.28.	Location of slip on historic red ware from Feature 373, the Tucson Presidio, AZ BB:13:13 (ASM)	7.53
7.29.	Three-way classification of historic ceramic types, vessel part, and temper type from Feature 373, the Tucson Presidio, AZ BB:13:13 (ASM)	7.54
7.30.	Three-way classification of historic ceramic types, vessel part, and temper source from Feature 373, the Tucson Presidio, AZ BB:13:13 (ASM)	7.53
7.31.	Frequency of rim sherds and reconstructible vessels in each vessel form class recovered from Feature 373, the Tucson Presidio, AZ BB:13:13 (ASM), reported by ceramic type	7.55
7.32.	Frequency of rim sherds and reconstructible vessels in each functional category recovered from Feature 373, the Tucson Presidio, AZ BB:13:13 (ASM), reported by ceramic type	7.56
7.33.	Native American pottery types recovered from Features 409 and 441, the Tucson Presidio, AZ BB:13:13 (ASM)	7.57
7.34.	Location of slip on historic red ware and Papago Red pottery recovered from Features 409 and 441, the Tucson Presidio, AZ BB:13:13 (ASM)	7.58
7.35.	Three-way classification of historic ceramic types, vessel part, and temper type from Features 409 and 441, the Tucson Presidio, AZ BB:13:13 (ASM)	7.59
7.36.	Three-way classification of historic ceramic types, vessel part, and temper source from Features 409 and 441, the Tucson Presidio, AZ BB:13:13 (ASM)	7.60
7.37.	Frequency of rim sherds and reconstructible vessels in each vessel form class recovered from Features 409 and 441, the Tucson Presidio, AZ BB:13:13 (ASM), reported by ceramic type	7.61
7.38.	Frequency of rim sherds and reconstructible vessels in each functional category recovered from Features 409 and 441, the Tucson Presidio, AZ BB:13:13 (ASM), reported by ceramic type	7.64
7.39.	Native American pottery types recovered from Feature 61, the Carrillo household, at the San Agustín Mission locus, Clearwater site, AZ BB:13:6 (ASM)	7.65
7.40.	Location of slip on historic red ware and Papago Red pottery recovered from Feature 61, the Carrillo household, at the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	7.65
7.41.	Three-way classification of historic ceramic types, vessel part, and temper type from Feature 61, the Carrillo household, at the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	7.66
7.42.	Three-way classification of historic ceramic types, vessel part, and temper source from Feature 61, the Carrillo household, at the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	7.66
7.43.	Frequency of rim sherds and reconstructible vessels in each vessel form class recovered from Feature 61, the Carrillo household, at the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM), reported by ceramic type	7.66

7.44.	Native American pottery types recovered from Feature 376 at Block 181, Lot 1, the Tucson Presidio, AZ BB:13:13 (ASM)	7.67
7.45.	Location of slip on historic red ware and Papago Red pottery recovered from Feature 376 at Block 181, Lot 1, the Tucson Presidio, AZ BB:13:13 (ASM)	7.68
7.46.	Three-way classification of historic ceramic types, vessel part, and temper type from Feature 376 at Block 181, Lot 1, the Tucson Presidio, AZ BB:13:13 (ASM)	7.69
7.47.	Three-way classification of historic ceramic types, vessel part, and temper source from Feature 376 at Block 181, Lot 1, the Tucson Presidio, AZ BB:13:13 (ASM)	7.70
7.48.	Frequency of rim sherds and reconstructible vessels in each vessel form class recovered from Feature 376 at Block 181, Lot 1, the Tucson Presidio, AZ BB:13:13 (ASM), reported by ceramic type	7.71
7.49.	Frequency of rim sherds and reconstructible vessels in each functional category recovered from Feature 376 at Block 181, Lot 1, the Tucson Presidio, AZ BB:13:13 (ASM), reported by ceramic type	7.72
7.50.	Summary of temporal changes in select technological attributes of Native American pottery from Spanish and Mexican period deposits	7.73
7.51.	Summary of temporal changes in select technological attributes of historic Native American pottery from the American periods deposits	7.75
7.52.	Temper source and type of Historic Native American pottery exhibiting a folded rim recovered from the sites shown in Tables 7.50 and 7.51	7.80
7.53.	Frequency of Papago Black-on-red vessel forms identified in rim sherds and reconstructible vessels recovered from the sites shown in Tables 7.50 and 7.51	7.82
8.1.	Context of Rio Nuevo fired clay objects, by site	8.2
8.2.	Figurine and other fired-clay object types from the Rio Nuevo project, by site	8.2
8.3.	Figurine characteristics from the Rio Nuevo project	8.2
9.1.	Temporal and spatial designations of features with analyzed ground stone from the Clearwater site, AZ BB:13:6 (ASM), and the Tucson Presidio, AZ BB:13:13 (ASM)	9.2
9.2.	Temporal comparisons of ground stone artifact types from various Santa Cruz River basin sites	9.4
9.3.	Temporal comparisons of ground stone variables from various Santa Cruz River basin sites	9.5
9.4.	Accounting of inventoried and analyzed ground stone artifacts from the Clearwater site, AZ BB:13:6 (ASM), and the Tucson Presidio, AZ BB:13:13 (ASM)	9.6
9.5.	Variables recorded for each analyzed artifact from the Clearwater site, AZ BB:13:6 (ASM), and the Tucson Presidio, AZ BB:13:13 (ASM)	9.9
9.6.	Rock type and source availability during specific time periods from the Clearwater site, AZ BB:13:6 (ASM), and the Tucson Presidio, AZ BB:13:13 (ASM)	9.19

9.7.	Temporal comparisons of ground stone artifact types from the Clearwater site, AZ BB:13:6 (ASM), and the Tucson Presidio, AZ BB:13:13 (ASM)	9.21
9.8.	Temporal comparisons of ground stone variables from the Clearwater site, AZ BB:13:6 (ASM), and the Tucson Presidio, AZ BB:13:13 (ASM)	9.22
9.9.	Pigments and pigment processing tools from the Clearwater site, AZ BB:13:6 (ASM), and the Tucson Presidio, AZ BB:13:13 (ASM)	9.24
10.1.	General terminology for Desert Archaeology, Inc., flaked stone analysis	10.2
10.2.	Definitions of retouch attributes	10.3
10.3.	Stages of biface manufacture	10.3
10.4.	Pre-San Pedro phase flaked stone artifact class distributions at the Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM)	10.6
10.5.	Pre-San Pedro phase raw material distributions, by context, at the Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM)	10.7
10.6.	Projectile points and other retouched artifacts from pre-San Pedro contexts at the Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM)	10.9
10.7.	Technological profiles of assemblages from pre-San Pedro contexts at the Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM), compared with aggregated data from other Early Agricultural period sites in southern Arizona	10.11
10.8.	Agua Caliente phase flaked stone artifact class distributions at the Mission Gardens locus, the Clearwater site, AZ BB:13:6 (ASM)	10.12
10.9.	Spanish period O'odham flaked stone artifact class distributions at the Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	10.12
10.10.	Projectile points from Spanish period O'odham contexts at the Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	10.12
10.11.	Spanish period O'odham raw material distributions, by context, at the Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	10.13
10.12.	Projectile points and a drill from Cienega phase, American Territorial period, or unknown period contexts at the Mission, Congress Street, and Brickyard loci, the Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	10.15
11.1.	Shell species recovered during the Rio Nuevo Archaeology project excavations	11.2
11.2.	The Rio Nuevo collection, summarized by genus and artifact form	11.5
11.3.	Shell artifacts from the Rio Nuevo excavations, summarized by temporal association	11.12
11.4.	Shell genera recovered from the Rio Nuevo excavations, summarized by temporal association	11.14
12.1.	Inventory of Father Arriquibar's household in 1820	12.2

12.2.	Number of artifacts from selected American Territorial period features at the Tucson Presidio, AZ BB:13:13 (ASM)	12.8
12.3.	Percentages of functional categories of artifacts from selected American Territorial period features at the Tucson Presidio, AZ BB:13:13 (ASM)	12.13
12.4.	Number of ceramic sherds of different decorative types from selected American Territorial period features at the Tucson Presidio, AZ BB:13:13 (ASM)	12.14
12.5.	The number of fragments and minimum number of artifacts from the Chinese well, Feature 4, the Clearwater site, AZ BB:13:6 (ASM)	12.16
13.1.	Unworked taxa recovered from Stratum 504 contexts at the Clearwater site, AZ BB:13:6 (ASM)	13.2
13.2.	Worked bone artifacts recovered from the Clearwater site, AZ BB:13:6 (ASM)	13.3
13.3.	Unworked taxa recovered from Cienega phase contexts at the Clearwater site, AZ BB:13:6 (ASM)	13.5
13.4.	Jackrabbit elements recovered from Cienega phase contexts at the Clearwater site, AZ BB:13:6 (ASM)	13.7
13.5.	Cottontail elements recovered from Cienega phase contexts at the Clearwater site, AZ BB:13:6 (ASM)	13.8
13.6.	Burned black-tailed jackrabbit elements recovered from Cienega phase contexts at the Clearwater site, AZ BB:13:6 (ASM)	13.9
13.7.	Burned cottontail elements recovered from Cienega phase contexts at the Clearwater site, AZ BB:13:6 (ASM)	13.10
13.8.	Artiodactyl and large mammal elements recovered from Cienega phase contexts at the Clearwater site, AZ BB:13:6 (ASM)	13.13
13.9.	Unworked taxa recovered from Early Ceramic period contexts at the Clearwater site, AZ BB:13:6 (ASM)	13.14
13.10.	Unworked taxa recovered from Hohokam period contexts at the Clearwater site, AZ BB:13:6 (ASM)	13.15
13.11.	Unworked taxa recovered from Hohokam period contexts at the Tucson Presidio, AZ BB:13:13 (ASM)	13.16
13.12.	Taxa represented among identifiable bone in features from the Tucson Presidio, AZ BB:13:13 (ASM)	13.19
13.13.	Epiphyseal fusion rates for sheep/goat and cattle specimens from the Tucson Presidio, AZ BB:13:13 (ASM)	13.20
13.14.	Pig, sheep/goat, and identifiable artiodactyl elements from the Tucson Presidio, AZ BB:13:13 (ASM)	13.23
13.15.	Body part representation of cattle and large mammal specimens identifiable to element from the Tucson Presidio, AZ BB:13:13 (ASM)	13.24

13.16. Cattle and very large mammal elements with butchering marks from the Tucson Presidio, AZ BB:13:13 (ASM)	13.25
13.17. Percentages of major domestic animal bone and butchering marks in Hispanic faunal assemblages from the Spanish, Mexican, and American Territorial periods	13.27
13.18. Faunal species list from the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	13.31
13.19. Faunal remains from the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM), summary table	13.32
13.20. San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM), faunal body part distribution	13.32
13.21. Epiphyseal fusion for all deer (<i>Odocoileus</i> sp.) at the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	13.32
13.22. Epiphyseal fusion for cow (cf. <i>Bos taurus</i> and <i>Bos taurus</i>) at the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	13.33
13.23. Epiphyseal fusion for sheep/goat (<i>Caprinae</i>) at the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	13.33
13.24. Bone modifications, the San Agustín Mission locus, the Clearwater site, AZ BB:13:6 (ASM)	13.34
13.25. Faunal taxa represented in Feature 4 at the Clearwater site, AZ BB:13:6 (ASM)	13.35
13.26. Cattle, pig, and sheep/goat elements from Feature 4 at the Clearwater site, AZ BB:13:6 (ASM)	13.35
13.27. Age ranges for sheep/goat cranial material with teeth from Feature 4 at the Clearwater site, AZ BB:13:6 (ASM)	13.36
13.28. Ages of pig cranial material with teeth from Feature 4 at the Clearwater site, AZ BB:13:6 (ASM)	13.36
13.29. Epiphyseal fusion rates for sheep/goat and cattle specimens from Feature 4 at the Clearwater site, AZ BB:13:6 (ASM)	13.37
13.30. Epiphyseal fusion rates for pig specimens from Feature 4 at the Clearwater site, AZ BB:13:6 (ASM)	13.38
13.31. Butchering marks on identifiable bone from Feature 4 at the Clearwater site, AZ BB:13:6 (ASM), by level	13.40
13.32. The number of identified specimens of cattle versus pig in Feature 4 at the Clearwater site, AZ BB:13:6 (ASM), by level	13.40
13.33. Comparisons among the faunal assemblage from Feature 4, the Clearwater site, AZ BB:13:6 (ASM), and contemporaneous assemblages in Tucson	13.41
13.34. Chinese fish remains from other <i>Huáquiáo</i> sites	13.45
14.1. Trends in the ubiquities of selected taxa from Tucson Basin sites	14.5

14.2.	Trends in the mean diet breadths of Tucson Basin sites	14.6
14.3.	Ubiquities of identified food, fodder, and ornamental plant taxa in the Rio Nuevo project assemblages	14.7
15.1.	Comparative pollen statistics for southern Arizona archaeological sites	15.3
15.2.	Pollen extraction procedure	15.4
15.3.	Pollen counts for the Clearwater site, AZ BB:13:6 (ASM), and canal feature AZ BB:13:481 (ASM), by locus	15.5
15.4.	Loci, contexts, and dating of pollen samples from the Rio Nuevo Archaeology project	15.12
16.1.	Canal feature numbers at AZ BB:13:481 (ASM), by locus and period	16.4
16.2.	Ostracode samples from AZ BB:13:481 (ASM), by identification number, stratigraphic level, bulk and residual weights, lithology, color, and color code of sediment residuals	16.27
16.3.	Minerals and other materials present in ostracode samples, AZ BB:13:481 (ASM)	16.41
16.4.	Biological contents and taphonomic characteristics of ostracode samples, AZ BB:13:481 (ASM)	16.52
16.5.	Ostracode populations by sample number, stratigraphic level, weight, and adult/juvenile and carapace/valve ratios, AZ BB:13:481 (ASM)	16.59
17.1.	Information about obsidian artifacts from the Rio Nuevo archaeological investigations, in temporal order	17.2
17.2.	Elemental concentrations for the obsidian samples from the Rio Nuevo Archaeology project, by state	17.3
17.3.	Periods and sample sizes of obsidian artifacts from archaeological sites in the Tucson Basin	17.4
17.4.	Sources of obsidian artifacts from archaeological sites in the Tucson Basin	17.5
18.1.	List of human remains found during the Rio Nuevo project, the Clearwater site, AZ BB:13:6 (ASM)	18.2
18.2.	Position of skeletal elements for Rio Nuevo inhumations, the Clearwater site, AZ BB:13:6 (ASM)	18.3
19.1.	Radiocarbon dates from the Clearwater site, AZ BB:13:6 (ASM), by stratum	19.2
20.1.	Radiocarbon dates from the Clearwater site, AZ BB:13:6 (ASM), by stratum	20.4
20.2.	Relevant radiocarbon dates from sites near the Clearwater site, AZ BB:13:6 (ASM), by alluvial unit	20.5
20.3.	Concordance table for identified alluvial units in the Santa Cruz River floodplain at the base of A-Mountain	20.6

A.1.	Specific contexts and temporal associations of the shell material from the Rio Nuevo Archaeology project	A.3
B.1.	General characteristics of Rio Nuevo project flotation samples	B.3
B.2.	Frequencies of charred seeds and propagules in Rio Nuevo project flotation samples	B.10
B.3.	Frequencies of wood charcoal in Rio Nuevo project flotation samples	B.28