A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona

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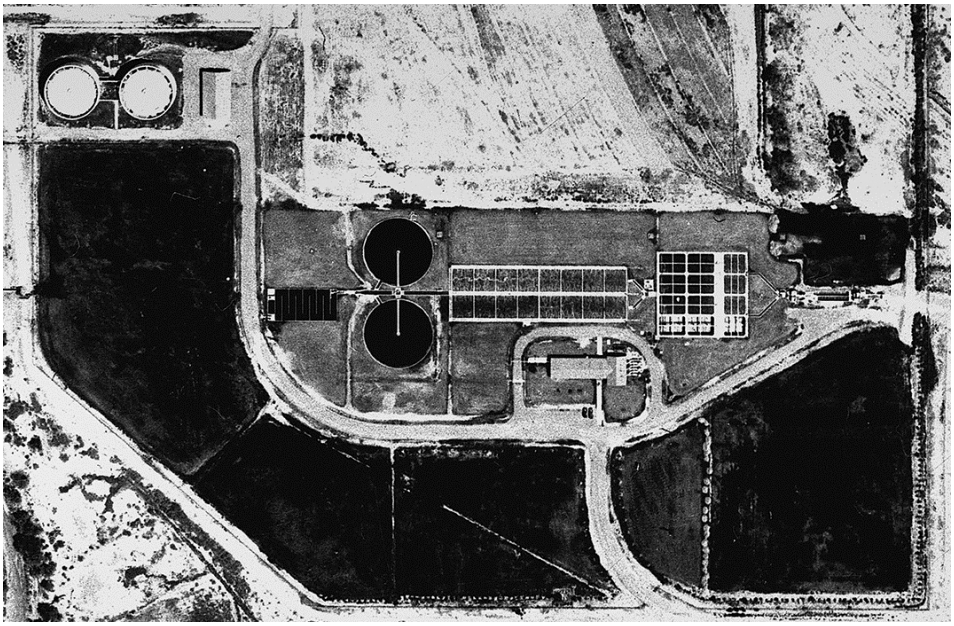

Aerial view of the Tucson Sewage Treatment Plant, July 22, 1953

January 2014
Arizona Antiquities Act Project-Specific Permit No. 2013-099ps
WSA Technical Report No. 2013-54

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WSA

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ABSTRACT

Report Title: *A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona* (WSA Technical Report No. 2013-54)

Report Date: January 2014

Agency: Pima County Administration, Office of Sustainability and Conservation, Cultural Resources and Historic Preservation Division

Permit Number: Arizona Antiquities Act Project-Specific Permit No. 2013-099ps

Project Description: The Pima County Regional Wastewater Reclamation Department (RWRD) is constructing a new wastewater reclamation facility adjacent on the north to the existing Roger Road Wastewater Reclamation Facility. The existing facility will be decommissioned and closed when the new plant is completed in 2014, followed by either the demolition or sale of the existing facility. Pima County asked William Self Associates, Inc. (WSA), to carry out a Class III cultural resources inventory of the facility; to evaluate the eligibility of all identified resources for listing in the National Register of Historic Places and the Arizona Register of Historic Places; and to make recommendations for mitigating the effects to eligible resources. WSA was also asked to conduct archaeological monitoring of soils testing and sampling at the facility related to its decommissioning and closure.

Project Number: Pima County Cultural Resources Project 3RWC11; WSA Project No. 2013-69

Location: The project area, a portion of Pima County tax parcel 103-06-092H, is located in Township 13 South, Range 13 East, section 21, SW¼ (Gila and Salt River Baseline and Meridian), as shown on the USGS Jaynes (1995) 7.5-minute topographic quadrangle.

Acreage: Approximately 48 acres

National Register–eligible Resources: Small portions of two previously recorded prehistoric archaeological sites, AZ AA:12:90 (ASM), also known as the Wetlands site, and AZ AA:12:91 (ASM), also known as Los Pozos, are within the current project area. AZ AA:12:90 (ASM) is considered eligible for listing in the National Register under Criterion D; AZ AA:12:91 (ASM) has been determined eligible for listing in the National Register under the same criterion. The Class III survey found no evidence of AZ AA:12:90 (ASM) and only a trace of AZ AA:12:91 (ASM), consisting of a sparse artifact scatter in a disturbed context.

Six extant buildings and structures dating to the original construction of the Tucson Sewage Treatment Plant (now part of the Roger Road Wastewater Reclamation Facility) in 1950–1951 are recommended by WSA as eligible for listing in the National Register under Criterion A. The six buildings and structures are currently known as the Control and Administration Building, the Equalization Basins, Aeration Basins Nos. 1 and 2, and Final Clarifiers Nos. 1 and 2.

National Register–ineligible Resources: The Roger Road Wastewater Reclamation Facility holds another 82 buildings and structures dating to different periods of construction. All 82 are recommended as ineligible for listing in the National Register under any criterion.

Recommendations: The decommissioning and closure of the Roger Road Wastewater Reclamation Facility by Pima County has the potential to adversely affect the National Register–eligible cultural resources within its boundary, because decommissioning and closure may lead to the partial or complete demolition of the facility, or its modification and adaptive reuse, either by the county or by a subsequent owner. Any ground-disturbing activity, including the use of equipment to remove or modify extant buildings or structures without intentional ground disturbance, has the potential to adversely effect both the previously recorded archaeological sites that fall partly within the facility, AZ AA:12:90 (ASM) and AZ AA:12:91 (ASM), and any unrecorded subsurface archaeological sites with National Register eligibility. Demolition of any of the six National Register–eligible buildings and structures is an adverse effect, and any modification of these buildings and structures for any purpose may also constitute an adverse effect. Any plan for adaptive reuse of the six National Register–eligible buildings and structures should preserve as much of their historic fabric as possible, in consultation with the Arizona State Historic Preservation Office and the appropriate federal or state agencies.

Any proposed demolition, modification, or reuse of any part of the Roger Road Wastewater Reclamation Facility may require the issuance of federal, state, or county permits. Any federal permit, such as a permit under Section 404 of the Clean Water Act, or any other federal nexus, will require compliance with Section 106 of the National Historic Preservation Act, 16 U.S.C. 470, which may involve: additional archaeological investigation to determine the extent of previously unrecorded subsurface archaeological features and deposits; evaluation of any archaeological discoveries for National Register eligibility; development of a plan for the mitigation of adverse effects to National Register–eligible archaeological discoveries; and either the avoidance of National Register–eligible buildings and structures or the mitigation of adverse effects to them. Avoidance should be considered a preferred mitigation strategy for the National Register–eligible buildings and structures, but if avoidance is not possible, mitigation should include documentation of the National Register–eligible buildings and structures to the standards of the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) of the National Park Service. The Section 106 process as a whole will require ongoing consultation among the lead federal agency for the proposed action, the Arizona SHPO, and the appropriate Native American tribal entities.

Any state permit or other state nexus will require compliance with the Arizona State Historic Preservation Act, A.R.S. §41-861 et seq., which will involve a process of archaeological investigation, Arizona Register of Historic Places eligibility evaluation, and mitigation similar to the federal Section 106 process. Pima County cultural resource regulations may also apply to any modification or development of the facility after it leaves county ownership.

The buildings and structures recorded by WSA at the Roger Road Wastewater Reclamation Facility and recommended as ineligible for listing in the National Register are not protected by federal, state, or county laws or other cultural resource regulations. The same is true of any archaeological

features or deposits yet to be discovered within the facility once they have been determined to be National Register ineligible. Any proposed action with the potential to disturb National Register–ineligible resources can proceed without prior mitigation. When the currently ineligible buildings and structures approach 50 years of age, they should be considered as potential historic properties. Their National Register eligibility will need to be reevaluated, and the potential effects of any proposed action will need to be considered.

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CHAPTER 1

INTRODUCTION

The Pima County (Arizona) Regional Wastewater Reclamation Department (RWRD) is constructing a new wastewater reclamation facility adjacent on the north to the existing Roger Road Wastewater Reclamation Facility, which is located at 2600 West Sweetwater Drive in Tucson, Arizona. The construction project is one of three major elements in an RWRD program of improvements called for in its Regional Optimization Master Plan (ROMP), to be completed and functioning by 2015. The other two major elements of the program are an expansion of the Ina Road Wastewater Reclamation Facility and the construction of the Roger Road–Ina Road Plant Interconnect, a large pipeline connecting the two facilities. The Plant Interconnect was recently completed, and both the Ina Road facility expansion and the construction of the new Roger Road facility are nearing completion.

ROMP funding has also provided for the decommissioning and closure of the existing Roger Road Wastewater Reclamation Facility, followed by either its demolition or its sale for adaptive reuse by a new owner. Whatever the final disposition of the facility, its closure and decommissioning have the potential to adversely affect prehistoric and historic-period cultural resources within the 48-acre facility grounds. The facility includes within its boundary portions of two previously recorded prehistoric archaeological sites, AZ AA:12:90 (ASM), also known as the Wetlands site, and AZ AA:12:91 (ASM), also known as Los Pozos. The Wetlands site is considered by its several previous investigators as eligible for listing in the National Register of Historic Places (NRHP), and Los Pozos has been determined eligible for listing in the NRHP. Additionally, the facility includes buildings and structures that date to the earliest years of its operation, which began in 1951. Some of these buildings and structures are old enough to warrant evaluation as historic resources.

To determine the extent to which the pending decommissioning and closure of the Roger Road Wastewater Reclamation Facility will adversely affect cultural resources at the facility, the Pima County Office of Sustainability and Conservation, Cultural Resources and Historic Preservation Division, asked William Self Associates, Inc. (WSA), to carry out a Class III cultural resources inventory of the 48-acre facility. The work was requested under WSA's contract with Pima County for As-Needed Cultural Resource Services (Contract No. CT-SUS-14*046; Cultural Resources Project 3RWC11). The goal of the inventory was to identify and record all cultural resources with potential historic significance, including all prehistoric and historic-period archaeological sites and all buildings and structures at least 50 years old. WSA was also asked to evaluate the eligibility of all identified resources for listing in the NRHP and the Arizona Register of Historic Places (ARHP), and to make recommendations about how the adverse effects to NRHP/ARHP–eligible resources posed by decommissioning and closure can be mitigated. In addition, WSA was asked to conduct archaeological monitoring of soils testing and sampling at the facility related to its decommissioning and closure.

WSA carried out the field inventory and archaeological monitoring requested by Pima County under Arizona Antiquities Act Project-Specific Permit No. 2013-099ps, issued by the Arizona State

Museum (ASM). The fieldwork, along with the associated literature review and records search, took place in July–October 2013.

Project Location

The existing Roger Road Wastewater Reclamation Facility is located in Township 13 South, Range 13 East, section 21, SW¼ (Gila and Salt River Baseline and Meridian), as shown on the USGS Jaynes (1995) 7.5-minute topographic quadrangle (Figure 1). The area of potential effect (APE) for the current project, for the purposes of the cultural resources inventory, is defined by the facility boundary fence, which encloses approximately 48 acres immediately adjacent to the Santa Cruz River. The river runs southeast to northwest along the west side of the facility; the Interstate 10 right-of-way, which runs roughly parallel to the river, is about a quarter mile east of the facility. The facility occupies a portion of county tax parcel 103-06-092H, which is owned entirely by Pima County and falls entirely within the corporate limits of the City of Tucson.

Environmental Setting

The project area is in the northern Tucson Basin of southern Arizona, a part of the Basin and Range physiographic province (Eaton 1982). The Tucson Basin is delimited topographically by the Santa Catalina Mountains on the north, the Rincon Mountains on the east, the Santa Rita Mountains on the southeast, the Sierrita Mountains on the southwest, the Tucson Mountains on the west, and the Tortolita Mountains on the northwest. The Santa Rita Mountains consist of a Precambrian granite core surrounded by Paleozoic sedimentary rocks, the result of thrust faults. The Sierritas are composed of Tertiary and Laramide granite. The Tucson Mountains are a small range composed of Tertiary intrusive and volcanic rocks bordered by faulted, folded Paleozoic and Cretaceous sedimentary rock. The Santa Catalina, Rincon, and Tortolita mountains are a large metamorphic core complex. Facing the basin, the Santa Catalinas and Rincons present a massive face of gneiss. The Tortolitas are Precambrian granite (Chronic 1983).

Within the Tucson Basin proper and between the encircling mountain ranges, most of the landscape is piedmont or *bajada*, a gently rolling expanse of deep alluvium that slopes away from the bases of the mountains to the principal drainages. The principal drainages are the Santa Cruz River and its two largest tributaries, the Rillito River and Cañada del Oro Wash. The current project area is located about 4 km upstream of the confluence of the Rillito and the Santa Cruz, and about 4 km west of the eastern foot of the Tucson Mountains. The project area is entirely within the floodplain of the Santa Cruz River and has been subject to substantial overbank and sheetwash erosion in the last century, as discussed by Lascaux, Howell, and Klucas (2008:26–27).

The climate in the Tucson Basin is semiarid, with average annual precipitation of 28 cm (11.2 inches), at least half of which falls during brief, intense summer storms. Average temperatures range from a maximum of 38° C (100° F) in July to a minimum of 3° C (38° F) in January. The native biotic community of the basin as a whole is Sonoran Desert Scrub, Arizona Upland Subdivi-

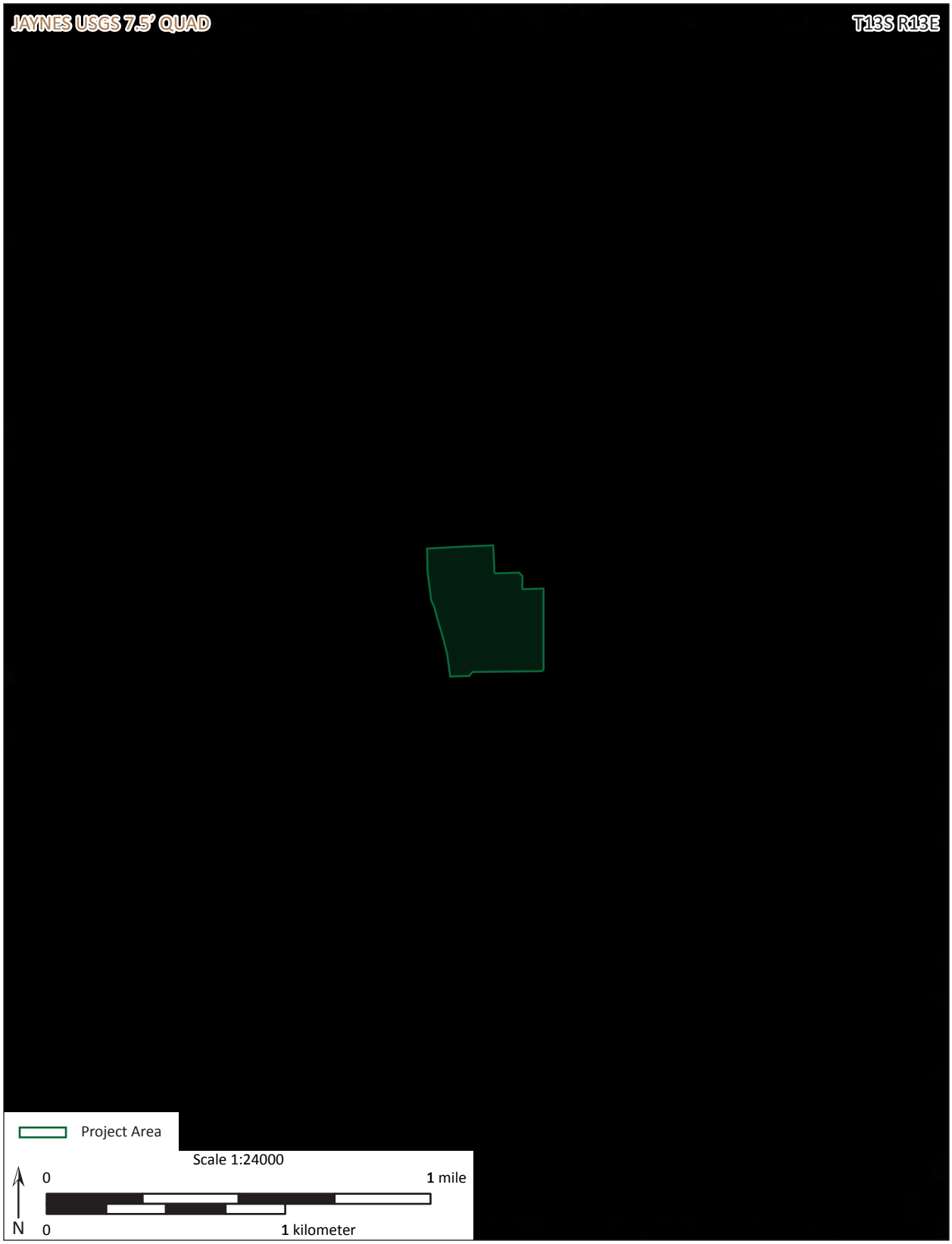

Figure 1. Location of the project area on the USGS 7.5-minute Jaynes (1995) topographic quadrangle.

sion (Turner and Brown 1994), and the vegetation in areas on and adjacent to the Santa Cruz River floodplain before the historic period undoubtedly included the species common to this community: mesquite (*Prosopis*), palo verde (*Cercidium*), creosote bush (*Larrea tridentata*), cholla (*Cylindropuntia*), prickly pear (*Opuntia*), and saguaro (*Carnegiea gigantea*), as well as a wide variety of lesser species. On the floodplain proper, the vegetation probably included other large species common to the typical Sonoran Desert riparian community, including hackberry (*Celtis*), willow (*Salix*), and cottonwood (*Populus*).

In the second half of the nineteenth century, Mexican-Americans and Anglo-Americans began settling along the Santa Cruz River floodplain below Tucson, using the fertile ground for farming (see Chapter 2 for a fuller discussion). By the early twentieth century, large agricultural operations were cultivating extensive areas on the floodplain, including in the immediate vicinity of the current project area. By 1953, the year of the earliest aerial photographs consulted for the current project and just two years after the predecessor of the current Roger Road Wastewater Reclamation Facility opened, the project area was mostly surrounded by agricultural fields and the native riparian vegetation of the floodplain was largely gone. The flat, mostly barren appearance of the project area and its vicinity today dates to the early years of historic-period agriculture on the floodplain.

CHAPTER 2

CULTURAL BACKGROUND

This chapter reviews the prehistoric and historic cultural background of southern Arizona, with an emphasis on the place of the project vicinity in the larger regional context. The first section outlines a prehistoric culture history from the Paleoindian period to A.D. 1539. The second section addresses the protohistoric and historic periods in southern Arizona.

Prehistoric Context

Several chronologies of prehistoric culture history, each with its unique terminology, have been developed by archaeologists for different areas within southern Arizona (Dean 1991; Deaver and Ciolek-Torrello 1995; Mabry 2008a; Vanderpot and Altschul 2007; Wallace, ed. 2003). The chronology used here incorporates the most recent information about the Paleoindian, Early Archaic, and Middle Archaic periods but avoids reference to the Late Archaic period, which is replaced here by the Early Agricultural period. The Early Agricultural label is increasingly used by archaeologists to characterize the period 2100 B.C.–A.D. 50, which has only recently been recognized for its importance in the prehistory of southern Arizona and the greater Southwest. The period from A.D. 50–450 is referred to as the Agua Caliente phase or Early Ceramic period based on recent work at Valencia Vieja, a site that has a component dating to the later part of this period. For periods after A.D. 450, the chronology used here follows the longstanding terminology developed for the Hohokam tradition, with the understanding that other traditions may have been contemporaneous with the Hohokam in some parts of southern Arizona.

Paleoindian Period

The earliest documented Native American occupation of the Americas is the Paleoindian period, which began at least as early as 12,000 years ago—many recent studies place its beginning thousands of years earlier—and lasted until around 10,500 years ago (Meltzer 2009). The Paleoindian period was characterized by small, highly mobile bands of people and a hunting-and-gathering way of life adapted to a climate that was generally cooler and wetter than today. Archaeological sites dating to the early part of the Paleoindian period are often associated with the remains of extinct large mammals such as mammoth and bison, which has long been interpreted as reflecting a heavy reliance on hunting big game (Waguespack and Surovell 2003). Paleoindian sites are typically identified by the presence of the distinctive fluted spear points of the Clovis and Folsom traditions. The most notable evidence for the Paleoindian period in southern Arizona comes from the Naco, Lehner, and Murray Springs sites, all in the upper San Pedro River valley of Cochise County, and all particularly important to the definition and formulation of the Clovis culture (Haury 1953; Haury et al. 1959; Haynes and Huckell, eds. 2007). Less Paleoindian material has been recovered in the Tucson Basin (Mabry 1998), but a Clovis projectile point was found in a disturbed

context at the Valencia site (AZ BB:13:15 [ASM]) in 1983 (Doelle 1985:181) and another was recently found on the modern ground surface southeast of Tucson (Hesse 2010). These are two of only three Clovis points ever found in the greater Tucson area. Given their proveniences, all three points may well have been curated by later Hohokam occupants.

A later Paleoindian occupation in Tucson is indicated by the recovery of several Plainview-like points. One was recovered at the Pima Canyon site (AZ BB:9:53 [ASM]), one at the Sabino Canyon Ruin, and two in the Tortolita Mountains (Jonathan Mabry, personal communication [to WSA staff] 2010). Available radiocarbon dates associated with Plainview points indicate a date range of 10,200 to 9,800 uncalibrated years B.P. (Bousman et al. 2004; Holliday 2000; Justice 2002; Mabry, ed. 1998, 2000).

Archaic Period

The Archaic period, which in southern Arizona began around 10,500 years ago and ended about 4,100 years ago, was also characterized by a hunting-and-gathering way of life, but Archaic peoples exploited a much greater diversity of plant and animal species than their Paleoindian predecessors. Little evidence of an Early Archaic occupation (10,500–6,000 years ago) has been found in the Tucson Basin. As of 2001, just 19 sites with an Early Archaic component were known in southern Arizona (Stevens 2001). These sites are identified in part by the presence of tapering, stemmed projectile points, including Lake Mohave, Jay, and Bajada points.

Stevens (2001) notes the lack of radiocarbon dates in southern Arizona between 6000 and 3000 B.C. (but see Gregory and Baar 1999). While this may be due to the dearth of alluvial deposits of appropriate age caused by erosion, locations that do retain continuous depositional sequences seem not to have materials of this age. The most parsimonious interpretation is that there was a significant reduction in the regional population during this particularly hot and dry time.

Evidence of a Middle Archaic (3000–2100 B.C.) presence in southern Arizona is greatly increased, with 134 identified sites as of 2001 (Stevens 2001). Representative projectile point types include Chiricahua, Gypsum, Pinto, San Jose, and Cortaro. A range of faunal material has been recovered from these sites, and roasting pits, hearths, and middens are common. Evidence of maize has been found at at least two sites in the larger region: the Cienega Creek site (Haury 1957) and Bat Cave (Wills 1998). A possible maize cupule from Los Pozos, a site that extends partly into the current project area, produced a calibrated date of 2575 B.C., but it was not associated with other cultural material. While suggestive, the evidence for cultigens in the Middle Archaic is not conclusive. Still, Gregory (1999:118) argued that the Middle Archaic occupation at Los Pozos does exhibit "several features that are not incompatible with maize agriculture."

Early Agricultural Period

By about 2100 B.C., the Archaic hunting-and-gathering lifestyle began to give way to a more sedentary existence, made possible in part by the introduction of maize and other cultigens and the

techniques needed to grow these crops in different environments. Intensive use of the Santa Cruz River floodplain in the Early Agricultural period, from about 2100 B.C. to A.D. 50, is indicated by the recent excavation of surprisingly large settlements, which have included evidence for generally increased sedentism, the repeated use of specific locations, and ritual practices, particularly during the San Pedro phase (1200–800 B.C.) and Cienega phase (800 B.C.–A.D. 150) (Diehl, ed. 2005; Mabry 2008b; Mabry, ed. 2008; Sliva, ed. 2005). The evidence for sedentism includes specialized storage pits, a reliance on maize and other tropical cultigens, and the production and use of pottery (Mabry, ed. 1998; Mabry 2008b; Mabry and Clark 1994).

Early Agricultural farmers cultivated a number of tropical plants (Mabry 2005a, 2008a). Primary among these was maize, which is "present at almost every excavated San Pedro site" (Mabry 2008a:9). Other cultigens include pepo squash, cotton, tobacco, common bean, and possibly domesticated amaranth. Whether domesticated or not, amaranth was a part of the diet, as were several other weedy, leafy annuals such as goosefoot, tansy mustard, and dropseed grasses (Mabry 2008a:9). The arrival of other cultigens to the region postdates the earliest dates on maize by at least a millennium (Merrill et al. 2009).

In addition to the appearance of new cultigens, new artifact and feature types were also introduced. San Pedro and Empire dart points are not the only styles recovered from Early Agricultural contexts. Cortaro (Roth and Huckell 1992), Cienega, Tallarin (Sliva 2009), and Western Basketmaker points have also been recovered. Ground stone tools including mortars, pestles, metates, lapstones, proto-palettes, bowls, awls, whorls, disks, rods, pipes, and cruciforms (Adams 2005) were all recovered from Las Capas, as were tools of bone and antler (Mabry 2008a:Table 1.2). Personal adornments made of mica, bone, shell, and fired clay were also recovered from Las Capas. Other fired clay artifacts include small vessels, figurines, pipes, and cornucopia. The cornucopia may have been used in ritual settings, along with bone tubes, balls, and "dice" as well as pigments and minerals. Features associated with the San Pedro complex include oval to round pit structures; storage structures; various pits for storage, processing and cooking; inhumations and cremations; wells; trash middens; canid burials; and large structures that may have served a communal or ceremonial purpose (Mabry 2008a:9, Table 1.2).

San Pedro phase farmers employed numerous cultivation techniques, including rain-fed farming, dry farming, runoff farming, flood farming, irrigated farming, and water-table farming (Mabry 2005b:Table 5.5). Each of these techniques was characterized by differences in upfront labor and maintenance costs, risk, yield, and energy returns. Looking at these characteristics through the lens of human behavioral ecology, Mabry (2005b) developed a model that seeks to explain how various agricultural niches would have been filled by early agriculturalists in the San Pedro phase. Each niche is conceived of as a "specialized strategy of food production with one or more farming systems, with the optimum location for a specific strategy being that combination of landform, soil, and microclimate in which subsistence goals are most closely and predictably achieved" (Mabry 2005b:147). The technique characterized by the lowest labor investment, lowest risk, highest yield, and highest efficiency is water-table farming, so it is expected that this technique would have been practiced first in any niche. Similarly, overbank flood farming should have been practiced early on. These would have been followed by runoff farming, *ak chin* farming, and irrigation farming,

each characterized by higher labor investments, medium to high yields and energy returns, and low to medium risks. Mabry (2005b:147) hypothesizes that groups would have occupied all the "constantly damp, regularly inundated" niches, then started filling the niches that required more labor and were more risky. Mabry (2005b:147–8) points out that nothing about this model is irreversible; the agricultural niches last occupied would have been those first abandoned, and a resumption of hunting and gathering would always have been possible (see also Stevens 2001:408).

Early Agricultural sites have been recorded in a number of ecological zones. In the Tucson Basin, large sites along the Santa Cruz River have garnered attention deservedly, but other sites have been documented in the upper *bajadas*, and fewer numbers are known from the lower *bajadas* and mountains. Roth (1992) summarized three subsistence-settlement models to account for this distribution. First, she suggested that each of the zones was occupied at different points in time. Second, the occupations may have been coeval, but there were two groups practicing different subsistence strategies (Fish et al. 1990). Third, the sites were left by the same people, who alternately exploited both the floodplains and the upper *bajadas* (Roth 1989).

Early Ceramic Period

The Early Ceramic period, also known as the Agua Caliente phase, corresponds to the period between A.D. 50 and 450 in the Tucson Basin. It is primarily defined by the presence of an early plain ware horizon and ends with the appearance of a red ware horizon (Wallace, ed. 2003). The Early Ceramic period saw an increase in the diversity of pottery vessel forms and the proficiency of ceramic manufacturing techniques. Seed jars and hemispherical bowls, both used mostly for food storage, were the most common vessel forms in the period, similar to the early Mogollon cultures to the north and east of the Tucson Basin (Burton 1991; Whittlesey 1998). Agriculture intensified through the period. The increase in ceramic forms for storage coincided with a decrease in the number of subsurface storage pits at Early Ceramic sites. Architecture during the period was more formal than before: square and rectangular pit structures were the rule, with plastered hearths centered on the entry and the occasional flanking of entries by adobe pillars. The distribution of these structures within communities became increasingly organized through time, as discrete courtyard groups, open plazas, and communal houses appeared, anticipating later developments along these lines (Wilcox et al. 1981). The cultural affiliation for Early Ceramic period sites is unresolved, but three hypotheses exist: Haury's (1976) idea that these groups were basically Hohokam; Huckell (1987) and Di Peso's (1956, 1979) proposition of a Mogollon influence; and Deaver and Ciolek-Torrello's (1995) notion that the Hohokam culture emerged from these farmers.

Hohokam Culture

By around A.D. 450, the Hohokam culture was taking root in the Tucson Basin, as evidenced by a "consolidation of patterns in artifact styles, architecture, and economics" (Fish and Fish 2007:8). The distribution of red-on-buff ceramics reached its greatest areal extent during the Colonial and Sedentary periods, or A.D. 750–1150, as did ballcourts. The exact function of ballcourts, which

are a form of public architecture, is not certain—they could have been used to play a ball game, to present dances, or something else (Wilcox 1991)—but it is likely that they served in a general way to integrate the population of communities. At any rate, around the end of the Sedentary period, a major reorganization took place, marked by changes in both domestic and ritual life that would characterize the ensuing Classic period. One of these changes is the addition of platform mounds as the dominant form of public architecture. As with ballcourts, there is some debate over their specific place in Hohokam society, but there is little doubt that they, and the villages in which they were built, played an integral role in community organization. Archaeological evidence of the Hohokam disappears at about A.D. 1450. Reasons for the sudden decline remain contested, but external environmental changes, internal political changes, and the introduction of new diseases all may have played a role. As with Haury's (1976) description of the Hohokam as "desert farmers," throughout the Hohokam Millennium (Fish and Fish, eds. 2007) the Hohokam are described as most notable for their abilities as farmers, using a combination of ditch irrigation, dry farming, and storm-water runoff diversion, elaborating many of the traditions first established in the Early Agricultural period.

Pioneer Period

The Pioneer period in the Tucson Basin consists of two phases: the Tortolita phase (A.D. 450–700) and the Snaketown phase (A.D. 700–750), recently refined as the result of work at sites like the Valencia Vieja locus of AZ BB:13:15 (ASM) (Wallace, ed. 2003). In the Tucson Basin, the Pioneer period is characterized by small, dispersed villages with pit houses and some irrigation ditches. At Snaketown, a major village site in the middle Gila River valley where the Hohokam tradition was first defined, evidence was found of a developing ceremonial complex, including cremations, figurines, and a caliche-capped trash mound (Crown 1991; Gladwin et al. 1937; Haury 1976). Regional ceramic diversity began in the Pioneer period, especially during the Snaketown phase, and some archaeologists consider the Pioneer ceramic traditions the beginning of truly decorated pottery, like Snaketown Red-on-buff.

Colonial Period

The Colonial period began around A.D. 750 and ended about A.D. 950. It consisted of the Cañada del Oro and Rillito phases, each approximately 100 years in length. In southern Arizona, the Cañada del Oro phase is not as well documented as other phases, but a handful of sites have provided important information, including Hodges Ruin (Kelly et al. 1978), Dakota Wash (Craig 1988), Honey Bee Village (Wallace 2007), Romero Ruin (Elson and Doelle 1987), and Sleeping Snake Village (Ezzo, ed. 2007). All of these sites had at least one ballcourt (Doelle and Wallace 1991). During the subsequent Rillito phase, there was a fourfold increase in the number of sites in the Tucson Basin (Doelle and Wallace 1991). Ezzo (2007) discusses several of the ballcourt villages of this phase along the Santa Cruz River, including Los Morteros (Wallace 1995) and Huntington Ruin. The number of primary villages increases throughout the phase and there is an increase in the diversity of pit houses, with both true pit houses and the less-formal "houses in pits." In contrast

to other changes in Hohokam culture during the period, there is little change in the ceramics apart from some increase in the formalization of wares.

Sedentary and Classic Periods

More recorded prehistoric sites date to the Sedentary period (A.D. 950–1150), composed entirely of the Rincon phase, than to any other prehistoric period in the Tucson Basin (Doelle and Wallace 1991), which has made it the best-understood part of the Hohokam chronology in the region. In general, the Sedentary period was a time of relative cultural stability and population growth. Small, dispersed sites were located on the *bajada* slopes and alluvial fans in the basin, while large sites were located along the Santa Cruz River and other major drainages (Whittlesey et al. 1994). Courtyard groups, or several houses oriented around a common courtyard or plaza, were the primary mode of organization within sites, and irrigation systems were expanded during this time. Inhabitants used the *bajada* slopes for rock-pile agave cultivation, in addition to other agricultural and wild resource uses. Ceramics of the Sedentary period show a decrease in the quality of painted line decoration, with an overall bolder style; vessels are also thicker and heavier. Rincon Red Ware, a style of pottery coated with a red slip before firing, entered into large-scale production. Rincon Polychrome, a style of pottery with decoration in multiple colors, also became more common. During the late Sedentary period, people initiated new forms of adobe wall construction and increased their use of dry farming and storm water runoff farming. Toward the end of the period, many villages were abandoned, setting the stage for changes evident in the succeeding Classic period.

The tumultuous transition from the Sedentary period to the Classic period resulted in numerous changes to the material culture of the Hohokam. In the Classic period, which is composed of the Tanque Verde phase (A.D. 1150–1250) and the Tucson phase (A.D. 1250–1450), semi-subterranean adobe-walled pit houses and aboveground adobe and stone-masonry structures became the principal forms of architecture and were typically located inside walled compounds, as at the Marana Platform Mound site (Fish et al., eds. 1992) and at University Indian Ruin (Hayden 1957). Ballcourts were replaced by platform mounds as the dominant form of public architecture, and local examples again include the mounds at the Marana Platform Mound site (Fish et al., eds. 1992), University Indian Ruin (Hayden 1957), and Jackrabbit Ruin (Scantling 1939, 1940). Red-on-brown ceramics took on a less curvilinear and more rectilinear pattern than in previous periods. Inhumations were added to the burial practices of the Hohokam, and both cremations and inhumations continued through the Classic period. Populations aggregated in larger primary villages, forming along the major drainages throughout the Tucson Basin and beyond. The total population of the region may have peaked in the early Classic period (or the Tanque Verde phase, A.D. 1150–1250), but then declined in the late Classic (or the Tucson phase, A.D. 1250–1450). A debate continues regarding the causes of the reorganization that occurred between the Sedentary and Classic periods, and one also continues regarding the “disappearance” of the Hohokam at the end of the Classic period. It is likely that environmental changes played a role in both events (see Waters and Ravesloot 2001 for one such argument concerning the transition). Future investigations of Classic period sites may help resolve these differing interpretations.

Protohistory and History in Southern Arizona

The arrival of Europeans to southern Arizona in the sixteenth century has long been considered the end of prehistory and the start of history in the region, a chronological distinction based on the idea that a written record, created by literate Europeans, makes for a fundamental improvement in how one can know and understand the events and processes of the past. But while it is true that historical documents sometimes provide a wealth of detail unavailable to archaeologists of the prehistoric period, it is also true that the emergence of written history did not mark the end of the Native American cultures that first developed in prehistory. The archaeological and documentary record of Native American cultures in southern Arizona during the first three centuries or more after the arrival of Europeans is scant, especially compared to the documentary record of the Europeans themselves. Yet some Native American groups in the region, despite all of the difficulties imposed on them, not only survived those centuries but managed a remarkable cultural continuity. That continuity is evident today among the modern Tohono O'odham, Apache, and Yaqui peoples of southern Arizona.

The following section is a discussion of Native Americans in southern Arizona during both the protohistoric period, or the early years after Spanish contact and before the establishment of Spanish settlements, and the early historic period, or the years before southern Arizona became a part of the United States. Later sections discuss regional history from the perspective of the successive Spanish Colonial, Mexican, and U.S. periods, including both the increasing dominance of Euroamerican economy and society and the continuing if often overwhelmed presence of Native Americans.

Native Americans of the Protohistoric and Early Historic Periods

Whatever the full explanation for the demise of the Hohokam and other Classic-period traditions, the period between A.D. 1450 and the European-dominated historic era was a transition from the prehistoric Native American cultures studied by archaeologists to the historic and modern Native American cultures known through documentary sources and ethnographic studies. The transition from prehistory to history is often called the protohistoric period by archaeologists, but in southern Arizona it is defined in various and sometimes contradictory ways (Gilpin and Phillips 1998). Ravesloot and Whittlesey (1987:83) have pointed out that, strictly speaking, protohistory began with the first arrival of Europeans in the New World (A.D. 1492) and ended with the start of sustained contact between Europeans and Native Americans, which means that the end date for the protohistoric period differs by region. But they suggest that in southern Arizona, where sustained European contact came relatively late, the start of the protohistoric period is usefully defined as A.D. 1540, the year of the first substantial Spanish expedition to the region, and the end of the period is best defined by the establishment of the first Spanish presidio along the Santa Cruz River at Tubac in 1752. On the other hand, Officer (1987) has argued that a more appropriate end date would be the 1690s, when the Jesuit priest Eusebio Francisco Kino initiated the Catholic conversion of the region, establishing missions along the Santa Cruz as far north as San Xavier del Bac (see below for more on the early Spanish presence in southern Arizona).

Despite questions about its precise definition, the protohistoric period is a convenient way of referring to Native American cultural developments in southern Arizona during a time before Europeans arrived in the region but after European influences—in the form of European crops, livestock, and material culture—were already strongly present. When Kino made his earliest trips along the Santa Cruz River into southern Arizona, the sedentary peoples in the farming villages he visited had long ago added wheat and other European crops to their fields, and the horse had been adopted by the nomadic peoples who frequented the surrounding mountains and canyons. Infectious diseases introduced by Europeans to the New World had undoubtedly also spread into the Southwest by the seventeenth century, though the timing and impacts of these diseases on Native Americans in the region are poorly understood (Sheridan 1988).

Southern Arizona was known by Kino as the Pimería Alta, the upper land of the Piman speakers, in contrast to the Pimería Baja, the lower land of the Piman speakers, now part of the Mexican state of Sonora, where Kino had been a missionary for many years before expanding his work into what is now southern Arizona. There were two major groups of indigenous peoples living in the Pimería Alta when Kino arrived, separated by differences in language and way of life. The more numerous group was the O'odham (the name Piman speakers used for themselves), who relied on agriculture to the extent that a particular local environment would allow. The other major group was the Apache, who spoke an Athapaskan language and who relied on a mix of hunting, gathering, and raiding, and only minimally on farming. The Apache were highly mobile and did not live in permanent villages. Their primary range was the vast, sparsely populated area north and east of the Pimería Alta, but they often entered the Tucson Basin to raid the livestock and food supplies of the sedentary O'odham.

According to Spicer (1962:119), there were as many as 30,000 Piman speakers living in the Pimería Alta in the late 1600s. Early on, the Spanish thought of the O'odham in terms of four major subdivisions—the Pima, the Soba, the Sobaipuri, and the Papago—which may not have corresponded closely with the O'odham's own conceptions. The Pima lived in the southeastern part of the region, extending into modern Sonora; the Soba lived to the southwest along the Altar River; the Sobaipuri lived along the San Pedro and Santa Cruz rivers as far north as the Gila River; and the Papago, now known as the Tohono O'odham, lived in the desert to the west of the Santa Cruz River. In the course of the eighteenth century, the distribution of all of these groups changed significantly as encroachments by the Spanish and introduced diseases took their toll. The Soba and Sobaipuri lost their distinct identity altogether and were absorbed by other O'odham groups. The Tohono O'odham became the largest component in the mission settlements along the Santa Cruz River.

Ethnohistorians have noted other probable distinctions among the Piman speakers living along the Santa Cruz River. For example, the Kohatk seem to have been a distinct group living along the lower Santa Cruz as far north as the Picacho Mountains. The Piman speakers living along the Gila River, later known as the Akimel O'odham, were also a discrete group that fared comparatively well in the colonial period, largely because they were beyond the regular reach of Spanish missionaries (Dobyns 1976; Erickson 1994). When modern anthropologists began studying O'odham culture in the twentieth century, the O'odham themselves recognized three distinct groups based

on economic practices and residential patterns. The Hia C'ed O'odham, or Sand People, were the most mobile and least agricultural of the O'odham and lived in the arid western desert as far south as the Gulf of California. The Tohono O'odham, or Desert People, alternated between summer farming villages and winter hunting-and-gathering camps in the vast area between the Santa Cruz River and the arid western desert. And the Akimel O'odham, or River People, stayed year-round in permanent villages along the Gila River. In Fontana's (1983) terms, these groups are, respectively, the No Villagers, the Two Villagers, and the One Villagers.

The Apache were also labeled many different ways by the Spanish, though the Spanish tendency to call any nomadic people "Apache" whether or not they were Athapaskan speakers makes it difficult to interpret some early sources. In southeastern Arizona and southwestern New Mexico, the Jocome and Suma occupied what was later the territory of the Chiricahua Apache (Spicer 1962:237). Farther to the east were the Jano, Manso, and Jumano, who ranged through what is now Chihuahua as far east as the Río Grande. Schroeder (1974a, 1974b) has suggested that no Apache peoples ranged south of the Gila River before the 1680s, which would mean that the ongoing conflict between O'odham and Apache first described by Kino and other Spaniards late in the seventeenth century had begun only recently. North of the Gila River was a region mostly unexplored by the Spanish but called Apachería, land of the Apache, a loosely applied term describing the area between Pimería Alta and the pueblos of Hopi and Zuni (Opler 1983:402). Basso (1983:465) has suggested that the inhabitants of this area later became the Western Apache. By 1700, the Western Apache occupied an extensive territory extending south from the Mogollon Rim to the Gila River.

From the founding of the first Spanish presidio at Tubac in 1752 until the surrender of the Apache leader Geronimo in 1886, the history of southern Arizona was dominated by the conflict between the sedentary peoples of the region and various bands of Apache. The successive efforts of the Spanish, Mexican, and U.S. governments to make the region suitable for settlement were focused heavily, often exclusively, on reducing the threat of Apache raids. There were occasional conflicts between Euroamericans and the O'odham in the region, but none compared in duration or ferocity with the conflict between Euroamericans and the Apache, and the O'odham typically sided with the Spanish, Mexican, or U.S. forces in their attempts to drive out or eliminate the Apache. For the Apache, raiding was a cultural tradition and an important element in their economic survival. The villages of the O'odham, the associated small Euroamerican settlements, and any traveling party in the region were easy and regular targets of the Apache. It was only in the 1870s, when the U.S. Army succeeded in driving the Apache east and north out of the Tucson Basin, that Euroamerican settlement was able to expand significantly beyond the narrow confines of the Santa Cruz River valley (Dobyns 1976; Officer 1987; Sheridan 1995).

A third group of Native Americans, the Yaqui, had an important presence in the Tucson Basin relatively late in the historic period. The Yaqui speak a dialect of Cahita, a language once spoken in a large area in what are now the Mexican states of Sonora and Sinaloa. The traditional home of the Yaqui is along the Yaqui River in Sonora and in adjacent portions of the Sierra Madre, where they led a primarily agricultural way of life. Because of persecution by the Mexican government in the late nineteenth century, groups of Yaqui abandoned their traditional territory for locations elsewhere in northern Mexico and in southern Arizona. In the Tucson area, the Yaqui eventually

settled in two principal locations: Pascua Village on the north side of Tucson and a smaller satellite community in Marana.

Historic Context

The history of southern Arizona is usefully divided into three periods, corresponding to the three major political entities that have prevailed in the region: the Spanish Colonial period (1539–1821), the Mexican period (1821–1854), and the U.S. period (1854–present). These three designations reflect a fundamental political reality in each period, but they also gloss over a diversity of culture and language that has always characterized the region. For example, the O'odham and Apache were of central importance to the course of events throughout the Spanish Colonial, Mexican, and early U.S. periods, and they continue to have a significant presence in the region today. Similarly, the early U.S. period, although dominated in many ways by the Anglo-American culture imported to the region after 1854, saw a Mexican-American majority until 1900, as well as the introduction of significant new populations of distinct cultural backgrounds, including Chinese (Keane et al. 1992), African-Americans, and the Yaqui. Since 1900, the majority of southern Arizona's population has been Anglo-American, but Mexican-Americans have remained a large and influential minority.

The following discussion of the three periods is based on syntheses of Arizona and regional history by Bolton (1984), Erickson (1994), O'Mack and Klucas (2004), O'Mack and Toupal (2000), O'Mack and others (2004), Sheridan (1988, 1995), Twilling and others (2003), Weber (1982, 1992), and Whittlesey and others (1994).

Spanish Colonial Period (1539–1821)

The earliest documented Spanish *entrada* into what later became Arizona was made by a Franciscan, Marcos de Niza, in 1539. With the permission of the colonial government, Niza led a small expedition northward from the town of Culiacán, in what was then northernmost New Spain, to the vicinity of the pueblo of Zuni, in what is now western New Mexico. It is uncertain whether Niza himself made it as far north as Zuni, but he and his companions probably passed through southern Arizona along the San Pedro River, reaching at least as far north as the Gila River before returning to Culiacán. One member of Niza's expedition, a North African known as Esteban, reportedly did reach Zuni but died there at the hands of the suspicious residents. Niza's report of a fabulously wealthy place called Cíbola (inspired by what he had heard of Zuni) prompted a more substantial *entrada* in 1540, led by Francisco Vásquez de Coronado and consisting of some 300 Spaniards, 1,000 Native American guides and porters, and 1,500 head of cattle, horses, and mules. Much of Coronado's route, which eventually led him as far north and east as the Great Plains, is difficult to reconstruct, but he, too, passed through southern Arizona, probably also traveling along the San Pedro River. Over the next two years, Coronado's lieutenants made numerous exploratory side trips, including at least a dozen into Arizona, but none of these trips included any further exploration of the southern portion of the state. Coronado never did find Cíbola or anything remotely like it, and southern Arizona remained essentially unexplored and uninhabited by Europeans for the next 150 years.

A sustained Spanish presence in southern Arizona did not begin until 1691, when Eusebio Francisco Kino, a Jesuit priest, led a small expedition from an established Jesuit mission in what is now Sonora, Mexico, to an O'odham (Pima-speaking) settlement at Tumacacori on the Santa Cruz River. Kino's purpose was to spread the Catholic faith to the inhabitants of the region, just as he and his Jesuit colleagues had already done at their missions in Sonora. His many subsequent trips to the region over the next two decades led to the establishment of missions at several O'odham settlements on the Santa Cruz, most notably San Xavier del Bac, 9 miles south of modern Tucson. Kino also established a number of *visitas*—secondary mission sites without resident priests—at smaller O'odham settlements along the Santa Cruz north of San Xavier, including San Cosme de Tucsón, on the west bank of the river and across from the eventual site of the Tucson presidio.

In 1752, in response to a rebellion by the O'odham the year before, the Spanish government established a presidio at Tubac on the Santa Cruz River near Tumacacori. This was the first permanent Spanish settlement in Arizona. The presidio afforded some protection to the missions along the river and served as a base for further explorations of southern Arizona. Following the expulsion of the Jesuits from the New World in 1767, care of the missions along the Santa Cruz fell to the Franciscans, who continued the efforts of the Jesuits despite a declining O'odham population and an increasing incidence of Apache raiding. Bands of Apache lived in mountain strongholds to the north and east of the Santa Cruz Valley, descending regularly on the sedentary O'odham population to carry off food and livestock, and disrupting the efforts of the missions. In 1776, with the hope of better protecting the settlements and missions of the northernmost frontier of the colony, the colonial government closed the Tubac presidio in favor of a new presidio at Tucson. For the remainder of the colonial period, Tucson represented the maximum northern extent of the Spanish colony in what later became Arizona.

The Tucson presidio held a small, permanent contingent of soldiers and officers, which afforded enough protection from Apache raids to allow the development of a small community of settlers outside its adobe walls. This community, the beginning of modern Tucson, consisted mostly of Spanish-speaking settlers from other parts of New Spain, but it also included Tohono O'odham from places in the surrounding desert and a small enclave of pacified Apache. The presidio community, located at the tail end of colonial supply lines, mostly had to support itself, farming the adjacent Santa Cruz River floodplain and grazing cattle and other stock on the lands around the presidio. Mining was pursued on a small scale, but the places suitable for mining were in the mountains, where travel was too dangerous to allow a sustained effort at mining.

Mexican Period (1821–1854)

When Mexico gained its independence from Spain in 1821, the Spanish presence in southern Arizona was limited to the Tucson presidio, with its small dependent community of settlers, and the two Franciscan missions at San Xavier del Bac and Tumacacori. At first, little changed under the newly formed Mexican government, except that daily life for both Spanish and O'odham residents of the Santa Cruz Valley became even less secure. The presidio at Tucson, soon weakened by lack of supplies, arms, and reinforcements, saw its most important weapon for Apache pacification—

rations for the Apache already pacified, a group of whom lived near the presidio—withdrawn for a lack of funds. Apache raiding throughout southern Arizona once again became a major threat and continued unabated throughout the Mexican period.

In 1828, uneasy with the power of the Catholic Church in remote parts of the republic, the Mexican government ordered the withdrawal of the Franciscans from the northern missions, leaving the O'odham community and the recently built mission churches at San Xavier del Bac and Tumacacori without their longtime advocates in the region. As the missions declined and Hispanic settlers put more pressure on mission lands, the Tohono O'odham who had come to depend on those lands suddenly became a problem themselves, although never to the same degree as the Apache.

During the turbulent decades of the Mexican period, the Hispanic population of southern Arizona actually declined somewhat. Despite the decline, the period saw a great increase in the number of land grants petitioned for and granted to Hispanic settlers in the region (the earliest large land grants were actually petitioned for under the Spanish government and eventually granted under Mexican law). Major land grants along the Santa Cruz River and in adjacent areas included San Ignacio de la Canoa (along the Santa Cruz, north of Tubac), San Rafael de la Zanja (along the headwaters of the Santa Cruz), Tumacacori and Calabazas (former lands of the Tumacacori mission), San Ignacio del Babocomari (in the San Pedro Valley), and San José de Sonoita (along Sonoita Creek, a tributary of the upper Santa Cruz). In some cases, these grants included lands "abandoned" by the missions (the official status of such lands was often not clear) and still farmed by Tohono O'odham associated with the missions. The granting of land to a Hispanic rancher usually meant an end to its use by Native American mission dependents; this was an important source of unrest among the Tohono O'odham. Although the land grants consisted of many thousands of acres, the constant threat of Apache raids meant that they often did not actually get used for ranching. Sheridan (1995:49) has called them "little more than adobe islands in a desert sea—isolated, vulnerable, easily destroyed." By the end of the Mexican era, most either had been abandoned or were barely hanging on. The most substantial impact of the granting of these large tracts of land took place after the tracts were bought by Anglo-American interests later in the century.

In 1848, when the Treaty of Guadalupe Hidalgo ended the Mexican-American War, the Gila River became the new boundary between Mexico and the United States. The region south of the river remained a part of Mexico, but the new proximity of the United States fostered a significant increase in the social and economic interaction of the region with the rapidly expanding country to the north. The settlements along the Santa Cruz River actually saw little direct evidence of the war waged between the United States and Mexico from 1846 to 1848. The sole visit to the Santa Cruz Valley by U.S. troops was a brief stop in December 1846 by the Mormon Battalion, which was en route to the Pacific coast. The battalion entered Tucson unopposed by the presidio troops, who had withdrawn to San Xavier to avoid a battle. The loss of a huge portion of Mexican territory in 1848 due to the Treaty of Guadalupe also had no immediate impact on the people living along the Santa Cruz, whose status as the northernmost outpost of Sonora remained unchanged and whose hard lives fighting the Apache and farming the desert continued as before.

The only substantial change in the last years of the Mexican era was the increasing number of Anglo-Americans passing through the area, most notably the sudden wave of Anglo-Americans

headed to California during the 1849 gold rush. Even after the Gadsden Purchase was ratified in 1854, making all of what is now Arizona south of the Gila River a part of the United States, it was two years before the presidio at Tucson was abandoned by its Mexican garrison.

Following the incorporation of southern Arizona into the United States, the Mexican presence in the region became increasingly centered in Tucson, at the same time that the city was becoming the hub of Anglo-American settlement and enterprise. The most significant aspect of the Mexican presence after the Gadsden Purchase was its essential continuity with pre-Gadsden days. Most of the families who had established themselves along the Santa Cruz River and in outlying areas chose to remain there, and even many of the presidio troops, after first abandoning Tucson and Tubac for Sonora, came back to lead civilian lives in U.S. territory. For most Mexicans, Tucson remained an extension of Sonoran culture and society.

The Anglo-American population grew slowly but steadily in the first few decades after the Gadsden Purchase, knitting itself, to a degree, into the existing Mexican social structure (intermarriage among Mexicans and Anglo-Americans was common) and sharing the dangers of life in a region still under Apache threat. But despite their minority status, the Anglo-Americans quickly dominated the regional economy, in large part because of the capital that they brought with them into an area that, prior to their arrival, had been decidedly poor. Although the culture of the city remained predominantly Mexican, as did its population, Anglo-American traditions grew steadily stronger as Anglo-American money entered the region. In 1880, the year the railroad arrived, Anglo-Americans truly began to dominate life in Tucson politically, economically, and culturally. Nonetheless, people of Mexican descent and culture remained in the majority in Tucson until shortly after the turn of the century. Mexican Americans remain a viable and distinctive presence in Tucson today.

U.S. Period (1854–present)

In 1854, the Gadsden Purchase made the rest of what is now southern Arizona, from the Gila River to the modern international border, a part of the United States. The Gadsden Purchase was prompted in part by U.S. interest in securing a suitable right-of-way for a southern railroad route to California, and it was immediately followed by topographical surveys searching for the most practical route. The U.S. Army established posts in the region shortly after the purchase, and soon more Anglo-Americans and others were entering southern Arizona, first as traders and merchants, and later as farmers and ranchers. The Homestead Act of 1862 made it easy for ordinary citizens to file claims on recently acquired government lands, and the end of the Civil War sent a new generation of immigrants to the west in search of economic opportunities in farming, ranching, and mining. Tucson was still the only substantial settlement in southern Arizona at the start of the U.S. period, but within a decade new settlements were taking shape in the region, including along the Salt and Gila rivers to the north.

The Civil War made southern Arizona an area of Union-Confederate contention for a brief time in 1861–1862, which temporarily slowed Anglo-American settlement, but a far more substantial obstacle was posed by the Apache, who were a relentless threat in southern Arizona for another

two decades. Both the Apache and the Tohono O'odham continued to play important roles in the region during the first several decades of the period, and the fate of both groups under U.S. control deserves particular discussion.

Native Americans in the U.S. Period

In 1874, a reservation was established by executive order for the Tohono O'odham, consisting of 69,200 acres centered on the Franciscan mission at San Xavier del Bac. Eight years later, a second, much smaller reservation was established at Gila Bend for Tohono O'odham who had resettled on the Gila River to the west of the Akimel O'odham villages. Only about 10 percent of the Tohono O'odham population lived on the two reservations in the early years, but the formal designation of reservations eventually provided the Tohono O'odham, particularly those living at San Xavier, with a certain amount of political clout. Squatting on reservation lands by non–Tohono O'odham, especially Mexican Americans, was at first common near San Xavier, and the lack of a government agency on the reservation meant squatting could happen freely. But by 1882, with the help of their federal Indian agent, the Tohono O'odham managed to expel all squatters from the reservation. A single Mexican American, José María Martínez, retained his pre–Gadsden Mexican land grant near the mission, under special circumstances.

The late nineteenth century brought another important Anglo-American–imposed change to the Tohono O'odham living at San Xavier. The Dawes Severalty Act of 1887 provided for the allotment of small parcels of reservation land, typically 160 acres, to individual O'odham. The purpose of the act was to encourage O'odham to abandon their previously communal approach to land use, in which families used whatever land they needed, and fixed ownership was unknown. After 25 years, allotted land could be sold like any privately held land, and any reservation land not yet allotted to individual O'odham would be made available to non-O'odham settlers. The federal government considered individual land ownership a necessary step in making reservations throughout the West less dependent on federal aid and administration, but the concept of private ownership was alien to the O'odham, as it was to many other Native Americans, and they adapted slowly to the new system. The act ultimately did have the effect of converting many traditional O'odham into organized growers, commercial stock raisers, and even individual wage earners, and it pushed the O'odham toward a cash-based economy.

In 1916, the federal government granted the Tohono O'odham a much larger reservation to the west of San Xavier, extending from the Baboquivari Mountains westward almost to Ajo, and from the border with Mexico northward almost to Gila Bend, encompassing some 2.75 million acres. With a number of minor additions and subtractions during its early years, this huge area has survived largely intact as the current Tohono O'odham reservation. In 1934, the federal Indian Reorganization Act, intended as an impetus to Indian self-government, led to the establishment of a centralized Tohono O'odham tribal government and 11 constituent districts. Each district elected a council, two members of which served as representatives on the tribal council, which itself was headed by a chairman, vice chairman, secretary, and treasurer. The districts also elected their own officers to head the district councils. The federal constitution was the model for the tribal constitu-

tion, but tribal bylaws also reflected O'odham traditions, which encouraged the communal use of land. The tribal council continued the practice of meeting with villages to discuss issues before decisions were made.

The Apache experience of the early U.S. period in southern Arizona was fraught with conflict and tragedy. As Anglo-American miners and settlers spread into Arizona, the Apache found it increasingly hard to live by their traditional, mobile ways. The Aravaipa band, whose traditional range was the area just northeast of the Tucson Basin, was kept on the move for many years both by the U.S. Army and by settlers, who regularly destroyed Aravaipa farms and camps. Beginning in 1866, several stations were established by the army to provide the Apache with rations, clothing, and protection in exchange for a promise of peaceful behavior. Camp Grant was one such site and the eventual scene of an infamous slaughter. The camp was established on the San Pedro River at its junction with Aravaipa Creek in the late 1850s; it was abandoned for a time then reopened after the Civil War.

In 1871, the Aravaipa band, under the leadership of Eskiminzin, along with a group of Pinal band members, settled peacefully near Camp Grant. In April of that year, a party of Anglo-Americans and Mexicans from Tucson, accompanied by a larger group of Tohono O'odham from San Xavier, attacked Camp Grant. The party mistakenly believed that the Apache at Camp Grant were responsible for recent raids on Tucson and other settlements in the area, and they were angered by what they perceived as the federal government's slow response to their requests for help. Their decision to mete out punishment themselves ended in the killing of more than 100 unsuspecting Aravaipa and Pinal Apache, mostly women and children. When news of the senseless slaughter reached Washington, a presidential order was issued by Ulysses Grant to bring the perpetrators to trial. But the deliberations in a local trial lasted just 19 minutes and ended with acquittal.

The Camp Grant incident left all Apache in southern Arizona wary of Anglo-American requests for peace and was also a clear indictment of federal Indian policy. Soon after the massacre, Gen. George Crook was appointed head of the Department of Arizona. His subsequent campaign against the Apache and Yavapai was a sweeping offensive and included a new emphasis on the use of Indian scouts and the destruction of winter food supplies. By 1872, Crook's campaign began to have real effects and the remaining Apache leaders were ready to discuss peace. Many Apache were forced to move to a newly established reservation at San Carlos in 1875. After several unsuccessful attempts to relocate the Chiricahua Apache, including an especially difficult sojourn at San Carlos and a failed attempt to establish a reservation for them in southeastern Arizona, the Chiricahua continued to raid in Arizona, New Mexico, and Sonora. The Chiricahua were not pacified until Geronimo surrendered in southeastern Arizona in 1886.

The federal government hurriedly established four reservations between 1871 and 1872 in an effort to contain and control the Apache. The White Mountain Reservation was established in 1871, followed by an executive order in 1872 that added to it the San Carlos Division. In 1897, the White Mountain and San Carlos Apache Reservations were formally partitioned. Many Aravaipa Apache also settled at Bylas on the Gila River in the late 1800s. The Chiricahua Apache, exiled to Florida after Geronimo's surrender, were transferred to a reservation at Fort Sill, Oklahoma, in 1894. In

1913, they were given full freedom, and some moved to New Mexico to share a reservation with the Mescalero Apache. Today, most Western Apache in Arizona live on the White Mountain and San Carlos Apache Reservations. The Chiricahua Apache, once a distinct band, have dispersed through intermarriage and relocation.

The Railroad and Related Transformations

The Southern Pacific Railroad was built across southern Arizona, from west to east, in 1878–1880. Following the same corridor along the Gila and Santa Cruz rivers used for many years by foot and wagon traffic, the railroad reached Tucson in March 1880. Its arrival led to an even greater influx of Anglo-Americans and others to southern Arizona and marked southern Arizona's complete integration into the national economic and industrial system. The political integration of Arizona into the United States became similarly complete when the territory finally achieved statehood in 1912.

The changes brought about by the railroad included sweeping transformations in the scale and complexity of the three economic pursuits that had defined southern Arizona from the start of the historic era: mining, farming, and ranching. Each pursuit quickly saw the emergence of large, heavily capitalized businesses, closely linked to the greater financial system of the United States, with sweeping consequences for the southern Arizona landscape. The process continued through the course of the twentieth century and continues today.

After the railroad arrived, mining in southern Arizona entered a cyclical pattern of boom and bust. The late 1880s saw the collapse of a silver market that had led to the brief boom of silver- mining centers such as Tombstone. Not long after the decline of silver, copper became the focus of the mining industry in southern Arizona. The most important copper-mining operation in the region, by far, was centered at Bisbee in Cochise County. By the end of the nineteenth century, the Copper Queen mine at Bisbee had a large, modern smelter, many miles of underground rail, and a huge labor force. It was also one of the richest copper mines in the world. Improved metal prices in the late 1890s also led to an increase in copper production in the Helvetia, Rosemont, Silver Bell, Twin Buttes, and Mineral Hill Districts of Pima County, districts that subsequently enjoyed a heyday during World War I when the demand for copper rose sharply to satisfy the demands of weapons manufacturing. The Ajo District also began large-scale production at the start of the war. Production in all of these districts declined after the end of the war, nearly disappeared during the Depression, then rose again during World War II.

The most recent stage in the development of mining in southern Arizona has been the nearly complete change from underground mining to large, open-pit extraction, a change implemented throughout the industry after World War II. The conversion has involved a great increase in mechanization, which has in turn allowed both increased exploitation of lower-grade ores and much less reliance on human labor. Yet despite the increased production created by open-pit extraction, the general trend for copper throughout the United States since World War II has been one of decline, due in large part to the expansion of copper-mining operations overseas. Nonetheless, the copper industry continues to be a major force in the southern Arizona economy, and the enormous open

excavations and mountains of tailings and slag left on the landscape by copper mining since World War II are inescapable reminders of the industry's importance.

Agriculture in southern Arizona had a less volatile but still transformative evolution in southern Arizona after the railroad arrived. Early on, the increasing population of Tucson brought a rise in demand for crops such as alfalfa (for livestock forage) and vegetables. Alfalfa required twice the water of traditional crops, and the vegetable truck farms that sprang up on the west bank of the Santa Cruz River, many owned by Chinese immigrants, were much more intensive operations than the traditional Mexican-American family vegetable gardens that preceded them. But these developments were only the beginning of the strains placed on the water supply in the river as more and more people strove to intensify agricultural efforts along its banks: extensive woodcutting and overgrazing near the river also had their effects. In 1889, a project designed to access water flowing beneath the surface of the river backfired when flood waters, racing through a canal cut deep into the riverbed, ended up carving an arroyo 18 miles long and placing the water level even further out of reach of irrigation. The net result of all of these changes was a rapid decrease in the number of small-time farmers able to make a living along the Santa Cruz, and the emergence of agricultural companies able to fund major irrigation efforts.

In the late nineteenth and early twentieth centuries, irrigated farming was also practiced on a smaller scale elsewhere in the Tucson Basin, notably along the major tributary of the Santa Cruz, the Rillito River. The Mormon settlement of Binghampton was founded at the end of the nineteenth century along the Rillito about 6 miles northeast of Tucson. The Mormon community farms were soon serviced by a canal originating in Tanque Verde Creek. Also on the Rillito, the Mexican-American community of El Fuerte, established at abandoned Fort Lowell, farmed with irrigation on a portion of the Rillito floodplain. Both Binghampton and El Fuerte eventually felt the effects of a lowering water table and an entrenched river, caused in significant part by the increasingly intensive mechanized pumping of groundwater in the area. Both communities were absorbed by greater Tucson in the 1940s and largely ceased farming.

The biggest change in Anglo-American agriculture in Arizona as a whole came with the cotton boom that followed U.S. entry into World War I in 1917. Agriculture along the Santa Cruz River attempted to follow suit. The war demand for cotton was spurred by the need for high-tensile, long-staple cotton for tires and aircraft fabric, and long-staple cotton required the lengthy growing season that southern Arizona could provide. The biggest cotton-growing operations were based in the Salt River Valley near Phoenix, where cotton soon replaced the existing mix of dairy, citrus, and grain operations. But the Santa Cruz Valley also began producing cotton during the war, most notably along a stretch of the river near Cortaro, downstream from Tucson and near the northern end of the Tucson Mountains. A land speculator named Edwin R. Post had earlier purchased large tracts of land in the area and developed an extensive irrigation system of wells and canals, with the idea of selling parcels to independent farmers who would then purchase his water and raise cotton. The scheme worked until cotton prices plummeted at the end of the war and most of the farmers went bankrupt. The operation changed hands several times over the following years, and a variety of efforts to establish farming in the area finally met with success in the 1940s, when the demand for cotton once again rose in response to World War II. The area continues to be important for agri-

cultural production today, although the community of Marana, which originally arose as a result of Post's project, is now a rapidly growing suburb, and much of the land once devoted to agriculture is either developed or threatened by future development.

Ranching was the third major economic pursuit of the historic era, and it continues to be an important industry in southern Arizona today, transformed in many ways from its original expression in the Spanish Colonial period. The earliest examples of large-scale Anglo-American ranches in southern Arizona actually appeared before the arrival of the railroad. In 1872, Henry Hooker, who began in the business in the 1860s by running cattle across southern Arizona from Texas to California, founded the 25-square-mile Sierra Bonita Ranch in the northern Sulphur Spring Valley, 10 miles from Camp Grant. Hooker was soon the main supplier of beef to the federal government throughout the region. In 1876, Walter Vail and two English partners started the Empire Ranch in the vicinity of Cienega Creek, to the east of the Santa Rita Mountains. The ranch eventually spread to cover over a thousand square miles, and was grazed by more than 50,000 head of cattle. Vail and his partners also began the Total Wreck mine in the nearby Empire Mountains, supplementing their ranching business in the 1880s with profits from silver mining.

But the arrival of the railroad in southern Arizona in 1880 was a major boost to the cattle industry, which from then on was entirely dominated by large business interests. An important example of the shift was the 1883 purchase of the San Rafael land grant along the headwaters of the Santa Cruz River by a consortium of eastern investors organized by Colin Cameron, not a cattleman by training or inclination, but a businessman. With a combination of shrewd legal maneuvering and ruthlessness, Cameron developed the San Rafael into a major enterprise. For years he vigorously contested the original 17,000-acre allotment of the grant, claiming it should have been 152,000 acres, and though he never won a larger allotment he was able to graze a large herd on many times the official acreage for the remainder of the century. He was also one of the few large ranchers in the region to recognize and act against the problems of overgrazing that soon plagued the industry. In 1903, well after the boom of the 1880s was over and most of southern Arizona was grazed to destruction, he was still able to sell the San Rafael for $1,500,000.

Most ranchers in the 1880s kept grazing as many cattle as they could, both on their own acreage and on the abundant acreage still in the public domain. By the start of the 1890s, it was apparent to many ranchers that overgrazing had become a serious problem. To compound the problem, the early 1890s saw several years of severe drought. The grass soon disappeared, pulled from the ground by its roots by starving cattle. From 50 to 75 percent of all the cattle in southern Arizona died; most surviving animals were shipped out of the region to avoid complete losses; and numerous ranching operations of every size folded.

A key to the disaster of the 1890s was the nature of ownership and control over the range lands of southern Arizona. Cattle-raising operations were almost always based on private land holdings, but use of the large surrounding tracts of public lands for grazing was unavoidable, both from the standpoint of the acreage required to support a herd of profitable size, and because the federal government could never practically prevent cattlemen from using the land. Since the 1890s, cattlemen and the federal agencies responsible for public lands have struggled, sometimes in coopera-

tion, sometimes in conflict, to adapt the raising of cattle to the limitations of the southern Arizona environment, attempting to resolve the dilemma posed by an industry that both requires access to large areas of public land to be profitable and constitutes a threat to the health of that land when multiple individuals use it for the same purpose. Mayro (1999:47–55) has reviewed the history of federal policy regarding the access to federal lands allowed to private ranchers, which ultimately led to the development of the modern system of grazing districts, leases, and fees, administered by federal agencies such as the Forest Service and the Bureau of Land Management. Although ranching in southern Arizona in the twentieth century saw periods of relative success and decline, it has survived into the twenty-first century as a viable industry in large part because of the conservation of public lands made possible by the combination of federal management and the responsible practices of many private ranchers.

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CHAPTER 3

RECORDS SEARCH AND SURVEY EXPECTATIONS

At the beginning of the project, WSA carried out a Class I records search to identify previously conducted cultural resource surveys and previously recorded cultural resources in the vicinity of the current project area. The records search included consulting AZSITE, the online database of archaeological surveys and sites in Arizona maintained by the Arizona State Museum (ASM). Tables and maps were compiled of all previous surveys and previously recorded sites registered in AZSITE within 1 mile of the current project area (Tables 1 and 2; Figures 2 and 3). Because AZSITE often does not include recently completed survey projects, or projects involving test excavation, monitoring, or data recovery, the records search also included consulting with the Pima County cultural resources staff regarding recent archaeological work in the vicinity of the current project area, most notably ROMP-associated projects, including the construction of the new Roger Road Wastewater Reclamation Facility immediately north of the current project area. These additional projects are also included in Table 1 and shown in Figure 3. A useful summary of recent archaeological work associated with the main ROMP construction projects is provided by Wöcherl (2012a:16–20).

The Class I records search indicated that 59 archaeological surveys have been previously conducted within 1 mile of the current project area, including several large block surveys, various smaller block surveys (including two ROMP projects), and several linear surveys. The AZSITE search also indicated that [redacted] archaeological sites have been previously recorded within 1 mile of the current project area. The large number of surveys reflects the large number of development projects that have taken place along this stretch of the Santa Cruz River, including the Interstate 10 corridor, since the 1950s. The fairly large number of sites reflects the importance of the Santa Cruz River floodplain in both the prehistoric and historic periods. Surprisingly, no part of the current project area has ever been included in a systematic archaeological survey, although several surveys have taken place just to the east along Interstate 10, just to the west along the opposite bank of the Santa Cruz River, and just to the north in association with recent ROMP projects.

[redacted]

Table 1. Previous cultural resource projects within 1 mile of the current project area.

ASM Project No.	Client/Sponsor	Undertaking	Performing Agency/Consultant	Reference
1955-3	Southern Pacific	pipeline	Southern Pacific	Komerska and Breternitz 1955
1980-143	Consoer, Townsend & Associates	unknown	Arizona State Museum	Huckell and Brew 1980
1980-152	Pima County Parks and Recreation	neighborhood park	Arizona State Museum	Brew 1980
1980-155	Buck Lewis Engineering	unknown	Arizona State Museum	Adams, Huchell, and Brew 1980
1984-187	Desert Sun Properties, Inc.	testing program	Arizona State Museum	Castalia and Deaver 1984
1985-150	RGA Engineering, City of Tucson	waterline	Institute for American Research	Dart 1985
1985-167	Western Area Power Administration	transmission line	Archaeological Consulting Services	Efflano and Green 1985
1989-167	Tucson Water	park construction clearance	Cultural and Environmental Systems	Heuett 1989
1990-173	JHK & Associates	road improvement	Desert Archaeology, Inc.	Bernard-Shaw 1991
1991-109	Camp, Dresser & McKee, Inc.	CAP clearance	Cultural and Environmental Systems	Slawson 1991
1991-164	City of Tucson	pipeline construction	Desert Archaeology, Inc.	Mabry 1991a
1991-185	City of Tucson	well construction	Desert Archaeology, Inc.	Mabry 1991b
1992-62	Santa Fe Pacific Pipeline, Inc.	pipeline clearance	Archaeological Consulting Services	Adams and Macnider 1992
—	CH2M Hill	wastewater plant	Desert Archaeology, Inc.	Huckell 1992

Table 1. Previous cultural resource projects within 1 mile of the current project area (continnued).

ASM Project No.	Client/Sponsor	Undertaking	Performing Agency/Consultant	Reference
1993-38	Acorn Associates Architecture	building construction clearance	Cultural and Environmental Systems	Slawson 1993
1993-88	City of Tucson	water main replacement	Desert Archaeology, Inc.	Eppley 1993
1994-397	City of Tucson, Department of Transportation	installation of traffic signals	Desert Archaeology, Inc.	Freeman 1994
1996-14	City of Tucson	Sun Tran maintenance facility	Desert Archaeology, Inc.	Wallace 1996a
1996-46	8A Builders	commercial construction	Desert Archaeology, Inc.	Swartz 1996a
1996-71	8A Builders	property development	Old Pueblo Archaeology Center	Lorentzen 1996
1996-284	City of Tucson	wildlife habitat and trail improvement	Desert Archaeology, Inc.	Sliva 1996
1998-14	Rogers Civil Engineering	housing development	Tierra Archaeological and Environmental Consultants	Lenhart 1998
1998-147	City of Tucson	road and utility easement	Desert Archaeology, Inc.	Wallace 1998
1998-244	ADOT	highway improvements	Stantech Consulting	Larkin and Giacobbe 1998
1999-54	City of Tucson	sewer line	Desert Archaeology, Inc.	Diehl 1999a
1999-55	City of Tucson	street light installation	Desert Archaeology, Inc.	Diehl 1999b
1999-145	City of Tucson	road and utility easement	Desert Archaeology, Inc.	Wallace 1999
1999-154	City of Tucson	housing development	Desert Archaeology, Inc.	Ruble 1999

Table 1. Previous cultural resource projects within 1 mile of the current project area (continnued).

ASM Project No.	Client/Sponsor	Undertaking	Performing Agency/Consultant	Reference
1999-362	ADOT	highway improvements	Dames and Moore	Hill and Garcia 1999
1999-587	Parsons Brinckerhoff Network Services	fiber optic line	SWCA, Inc.	Doak 1999a-d, 2001; Hesse 2000
2000-140	Kinder Morgan Energy Partners, L.P.	pipeline repair	William Self Associates, Inc.	Self 2001
2000-170	City of Tucson	wastewater recharge	Desert Archaeology, Inc.	Dutt and Stevens 2000
2000-283	City of Tucson	well site	Desert Archaeology, Inc.	Cook 2000
2000-723	PF.Net Construction Corporation	fiber optic cable	Western Cultural Resource Management, Inc.	Kearns et al 2001
2001-245	City of Tucson	well installation	Desert Archaeology, Inc.	Hall 2001
2001-325	Pima County	development clearance	Old Pueblo Archaeology Center	Jones and Dart 2001
2001-553	Jeffrey A. Stanley Engineering	business development	Professional Archaeological Services and Technologies - P.A.S.T.	Stephen 2001a
2001-662	Victory Assembly of God	church construction	Professional Archaeological Services and Technologies - P.A.S.T.	Stephen 2001b
2003-37	City of Tucson	park development	Desert Archaeology, Inc.	Ruble 2002
2003-366	Harry L. and Lori D. Foster	development clearance	Old Pueblo Archaeology Center	Jones and Dart 2003
2003-910	360Networks	fiber optic line	TRC	Railey and Yost 2001
2003-1262	Kinder Morgan Energy Partners, L.P.	pipeline replecement	William Self Associates, Inc.	Estes 2004

Table 1. Previous cultural resource projects within 1 mile of the current project area (continnued).

ASM Project No.	Client/Sponsor	Undertaking	Performing Agency/Consultant	Reference
2003-1335	City of Tucson	land sale	Desert Archaeology, Inc.	Ruble 2003
2004-324	City of Tucson	water main corrosion prevention	Desert Archaeology, Inc.	Diehl 2003
2004-592	Tucson Electric Power	flood channel and detention basin	URS	Cox and Rogge 2004
2004-1712	City of Tucson	golf course improvements	Desert Archaeology, Inc.	Whitney 2004a
2004-1866	City of Tucson	culvert construction	Desert Archaeology, Inc.	Whitney 2004b
2005-58	Entranco	I-10 widening	EcoPlan Associates, Inc.	Garcia 2005
2005-796	City of Tucson	road widening and drainage improvements	Desert Archaeology, Inc.	Hall 2005
2006-507	City of Tucson	landscaping	Desert Archaeology, Inc.	Cook 2006
2006-999	ADOT	road clearance	EcoPlan Associates, Inc.	Fenicle 2007
2007-316	**Pima County**	**wastewater plant**	**Tierra Right of Way Services**	**Lascaux, Howell, and Klucas 2008**
2007-677	City of Tucson	power lines	Tierra Right of Way Services	Hushour 2008
2008-506	City of Tucson	booster pump and associated equipment	Tierra Right of Way Services	Howell 2008
2008-527	Pima County	wastewater plant	Tierra Right of Way Services	Lascaux, Klucas, and Howell 2008
2008-579	City of Tucson	road widening and sidewalk construction	SWCA, Inc.	Griset 2008

Table 1. Previous cultural resource projects within 1 mile of the current project area (continnued).

ASM Project No.	Client/Sponsor	Undertaking	Performing Agency/Consultant	Reference
2009-612	City of Tucson	roadway corridor	SWCA, Inc.	Petersen and Griset 2010a
2010-062. ASM	Pima County	wastewater plant	Tierra Right of Way Services	Klucas, Lascaux, and Howell 2008; Lascaux 2010a-b; Lascaux and Howell 2013
2010-211	HDR Engineering	road construction	Desert Archaeology, Inc.	Cook 2011
2011-230	Alpha Underground Construction Company, Inc.	utility line	SWCA, Inc.	Rawson 2011
—	Pima County	wastewater interconnect	Northland Research, Inc.	Craig 2011
—	ADOT	highway improvements	EcoPlan Associates, Inc.	Neuzil 2011
2012-043	Pima County	transmission line/wastewater plant	Desert Archaeology, Inc.	Whitney and Nials 2012; Wöcherl 2012c, 2013
2012-486	Qwest Communications/Century Link	fiber optic cables	Power Engineers	Euler 2011
2012-616. ASM	Pima County	drainage and roadway easements/ wastewater plant	Northland Research, Inc.	Doak and Jones 2012; Hopkins 2011; Klucas 2010; Wöcherl 2012a, 2012b

Note: **Bolded** entries overlap with the current project area.

Table 2. Previously recorded archaeological sites within 1 mile of the current project area.

ASM Site No.	Site Type*	Temporal/Cultural Affiliation*	Reference
[redacted]			

Table 2. Previously recorded archaeological sites within 1 mile of the current project area (continued).

ASM Site No.	Site Type*	Temporal/Cultural Affiliation*	Reference
[redacted]			

*As classified by original recorder(s)

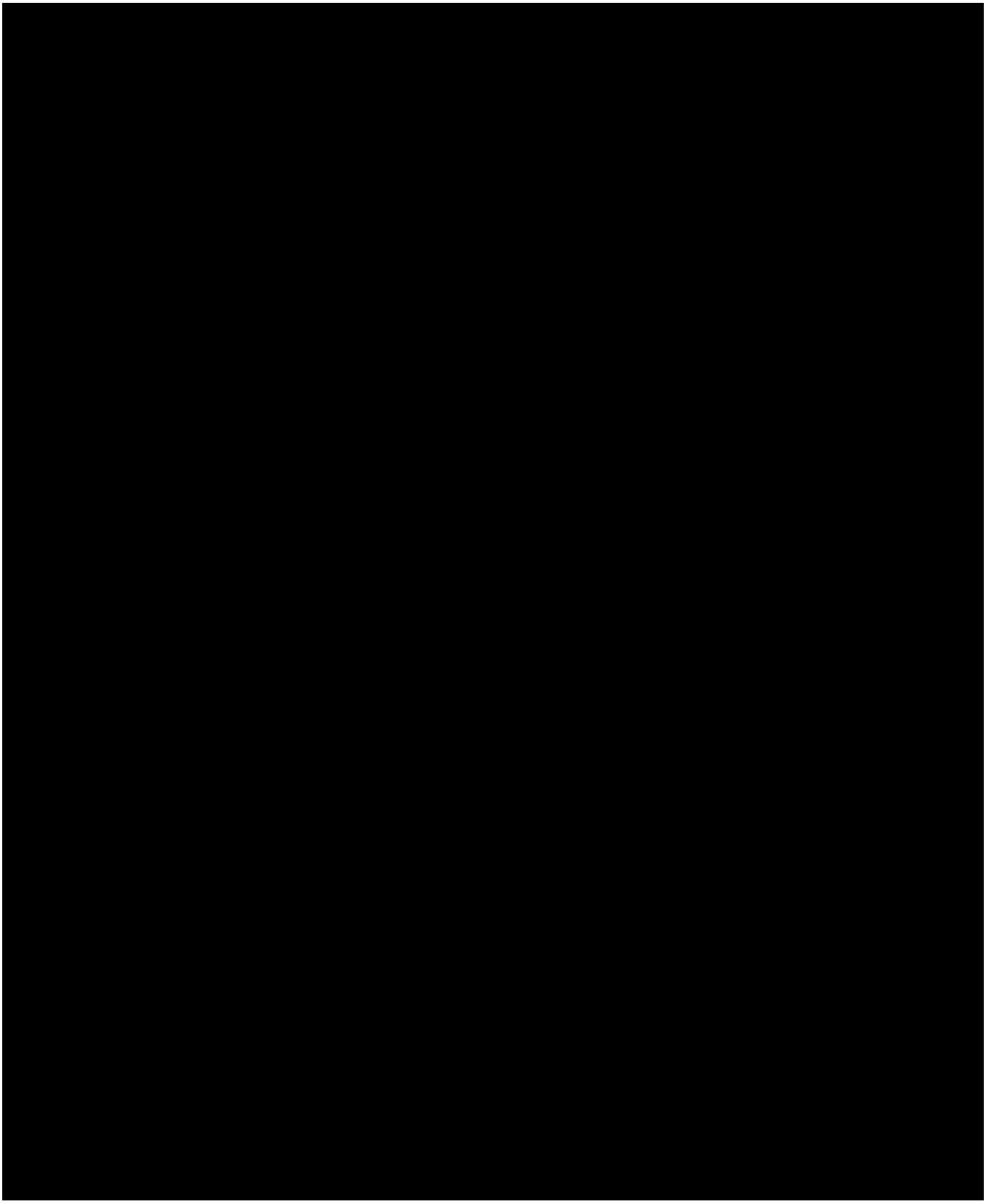


Figure 2. Previous cultural resource surveys within 1 mile of the current project area.

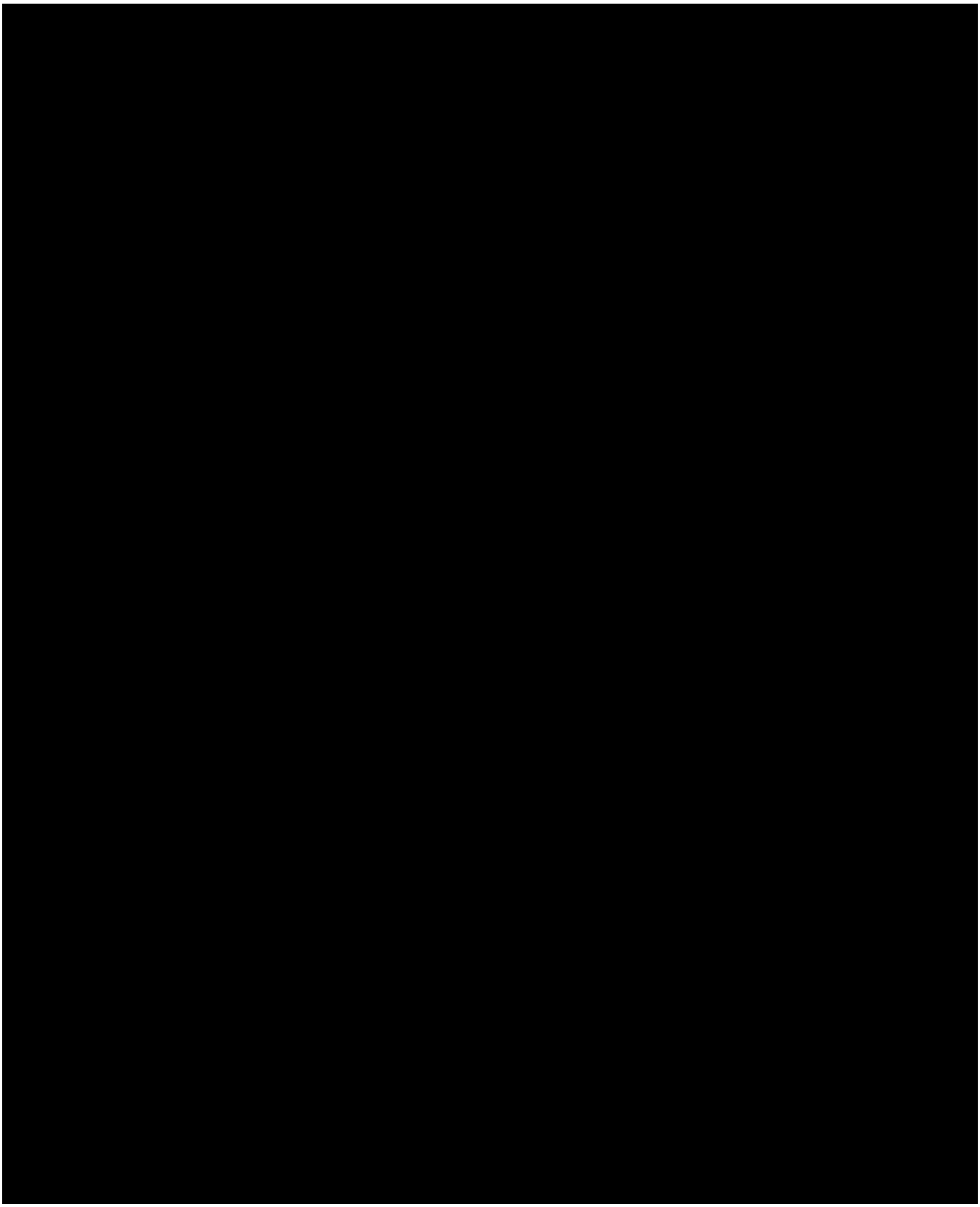


Figure 3. Previously recorded archaeological sites within 1 mile of the current project area.

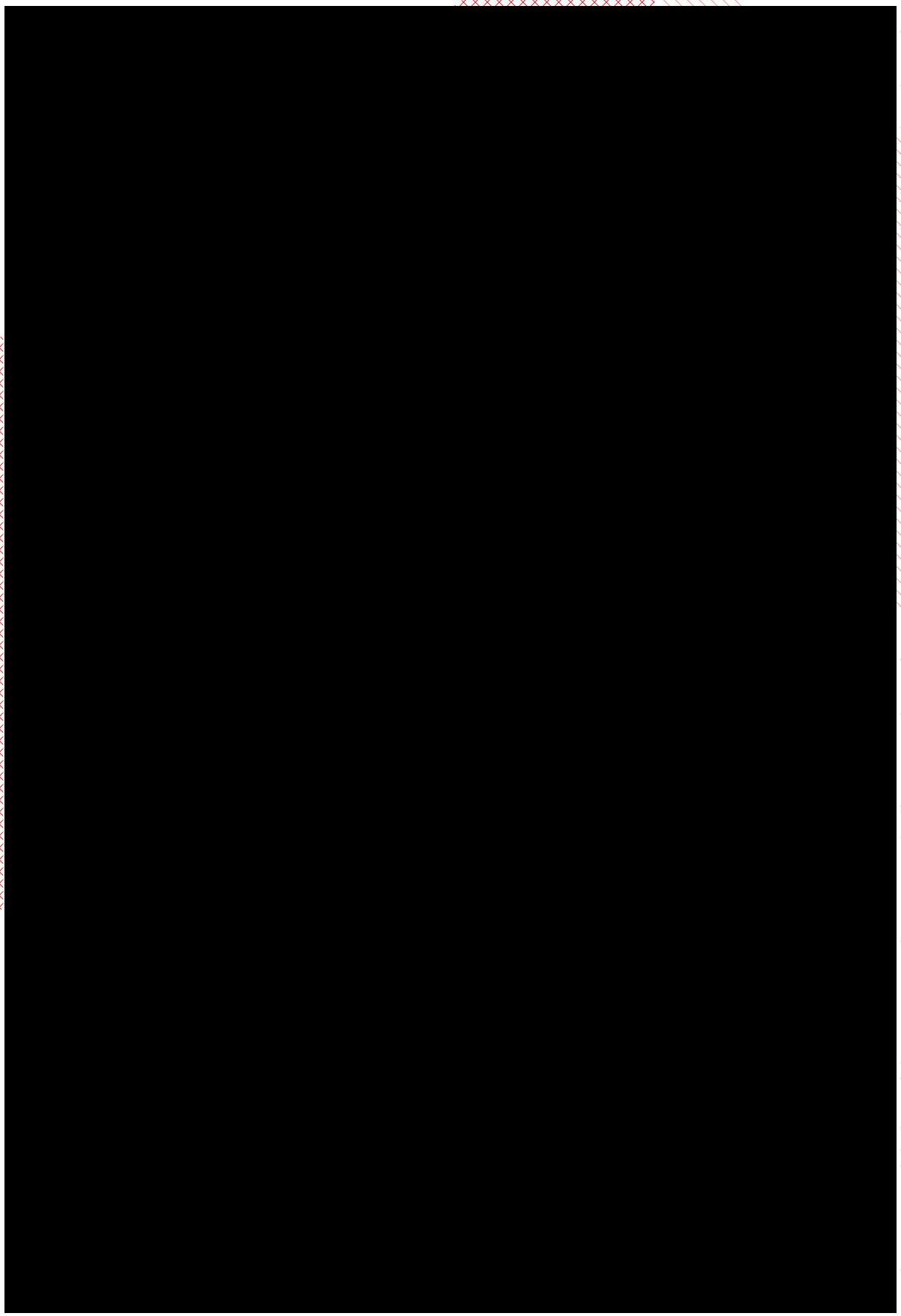


Figure 4. Aerial view of the current project area and adjacent portions of AZ AA:12:90 (ASM) and AZ AA:12:91 (ASM), showing the locations of test excavations by Lascaux, Howell, and Klucas (2008).

[redacted]

[redacted]

[redacted]

The Class I records search also included a look at the relevant early General Land Office (GLO) survey plats and early USGS topographic quadrangles, along with the 1893 official map of Pima

County (Roskruge 1893), in order to identify potentially historic features within the current project area. The earliest of these maps is the 1871 GLO plat of Township 13 South, Range 13 East (GLO 1871), which shows a large cultivated field straddling the line between sections 20 and 21, near the northwest corner of the current project area (Figure 5). The plat also shows an irrigation ditch (labeled "Ditch") running from a point on the east bank of the Santa Cruz River, near the southwest corner of section 21, generally northward for about a half mile to the cultivated field. The river runs along roughly its current alignment just southwest of the project area, and the "Road to Fort Yuma" runs along roughly the current alignment of the Interstate 10 and Union Pacific Railroad rights of way, about a quarter mile east of the project area. A segment of unnamed road (labeled "Road") runs parallel and just west of the Road to Fort Yuma, just north of the project area. None of the cited features falls within the project area, but the general vicinity had clearly seen some use or settlement early in the U.S. period.

The 1893 Pima County map (Roskruge 1893) also shows the Santa Cruz River in roughly its current alignment just southwest of the current project area, along with the Southern Pacific Railroad (later bought by the Union Pacific) just east of the project area. The only other cultural feature shown near the project area is a house labeled "Heney" in the northwest quarter of section 21, Township 13 South, Range 13 East, about a quarter mile north of the project area. WSA has found no record of anyone named Heney claiming or patenting land in section 21, but the name may refer to Francis J. Heney, a lawyer who moved to Tucson from San Francisco in the 1870s and became locally famous when he shot and killed, apparently in self defense, Dr. John C. Handy on September 24, 1891, in downtown Tucson (Sonnichsen 1987:130–132). Francis Heney's brother, Ben Heney, joined Francis in Tucson in 1880 and may be the Heney indicated on the 1893 map. Ben Heney was elected mayor of Tucson in 1908 but served for less than a year (McDuffie 2009).

The earliest USGS topographic map coverage of the current project area is the 1947 15-minute Cortaro quadrangle (USGS 1947). The map shows the Santa Cruz River passing through the southwest corner of section 21, Township 13 South, Range 13 East, just southwest of the project area, with essentially the same alignment it has today (Figure 6). This map was prepared a few years before construction of the earliest features at the Roger Road Wastewater Reclamation Facility, so the project area, mostly in the southwest quarter of section 21, is empty of features. A few unrelated features are shown nearby. An unpaved road runs west from Casa Grande Highway (later replaced by Interstate 10) along the section line between sections 21 and 28, along the south edge of the project area. This road is the antecedent of the road that leads to the Roger Road facility today, but in 1947 it apparently served a single house shown just north of the project area, on the south side of a small pond. The fate of the house after 1947 is unknown, but the pond is still shown on the 1957 edition of the same map (USGS 1957). Another small pond, shown on the 1947 Cortaro quadrangle just south of the road that leads to the project area, also appears on the 1957 revision of the map. The origin and function of the two ponds are unknown, but they do not seem to have been related to the sewage treatment plant, which made its first appearance on the 1957 revision. By the year of the next USGS map of the area, the 1968 7.5-minute Jaynes quadrangle, the sewage treatment plant had expanded to cover the project area (Figure 7).

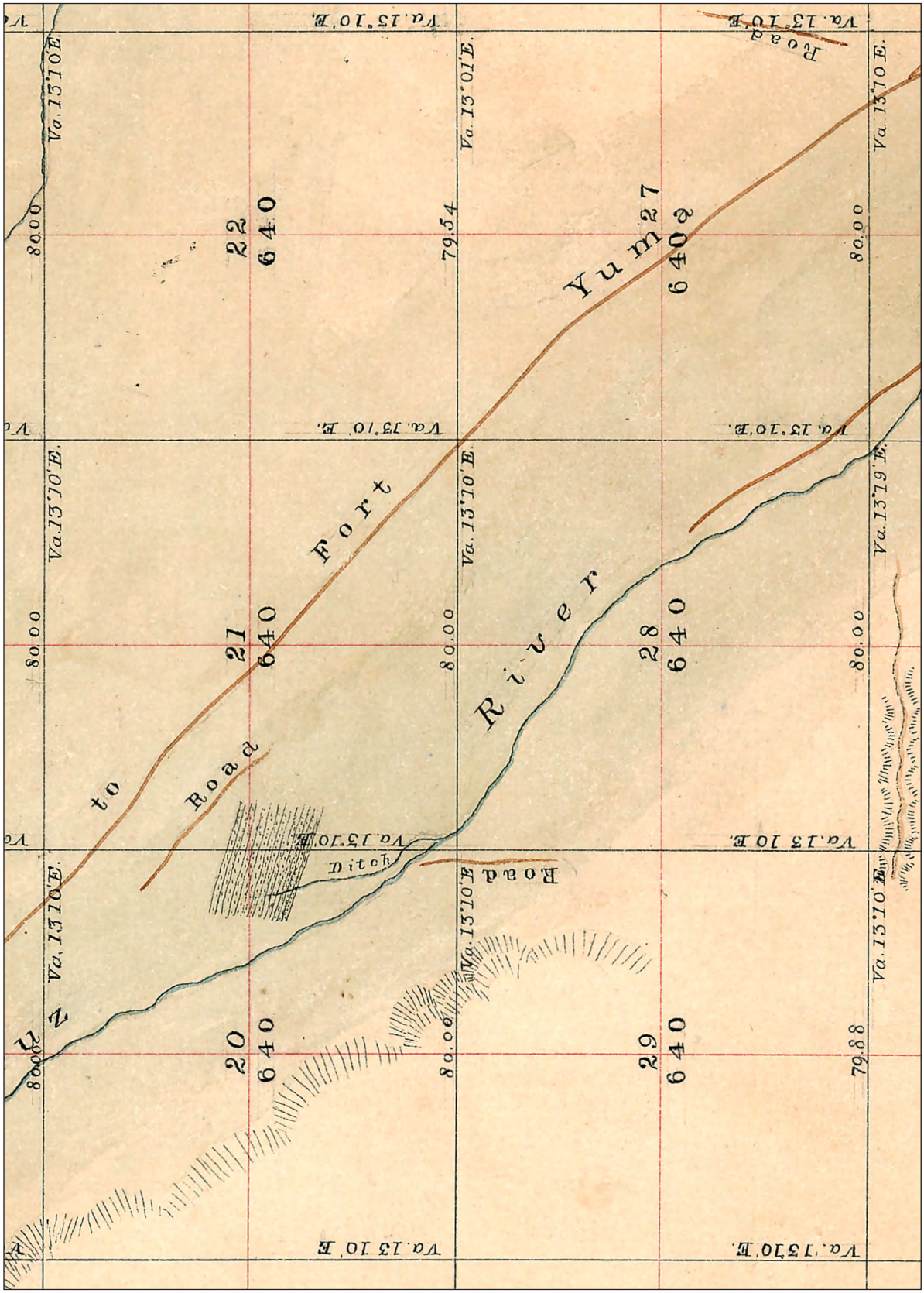


Figure 5. Detail from the 1871 GLO survey plat of Township 13 South, Range 13 East (GLO 1877).

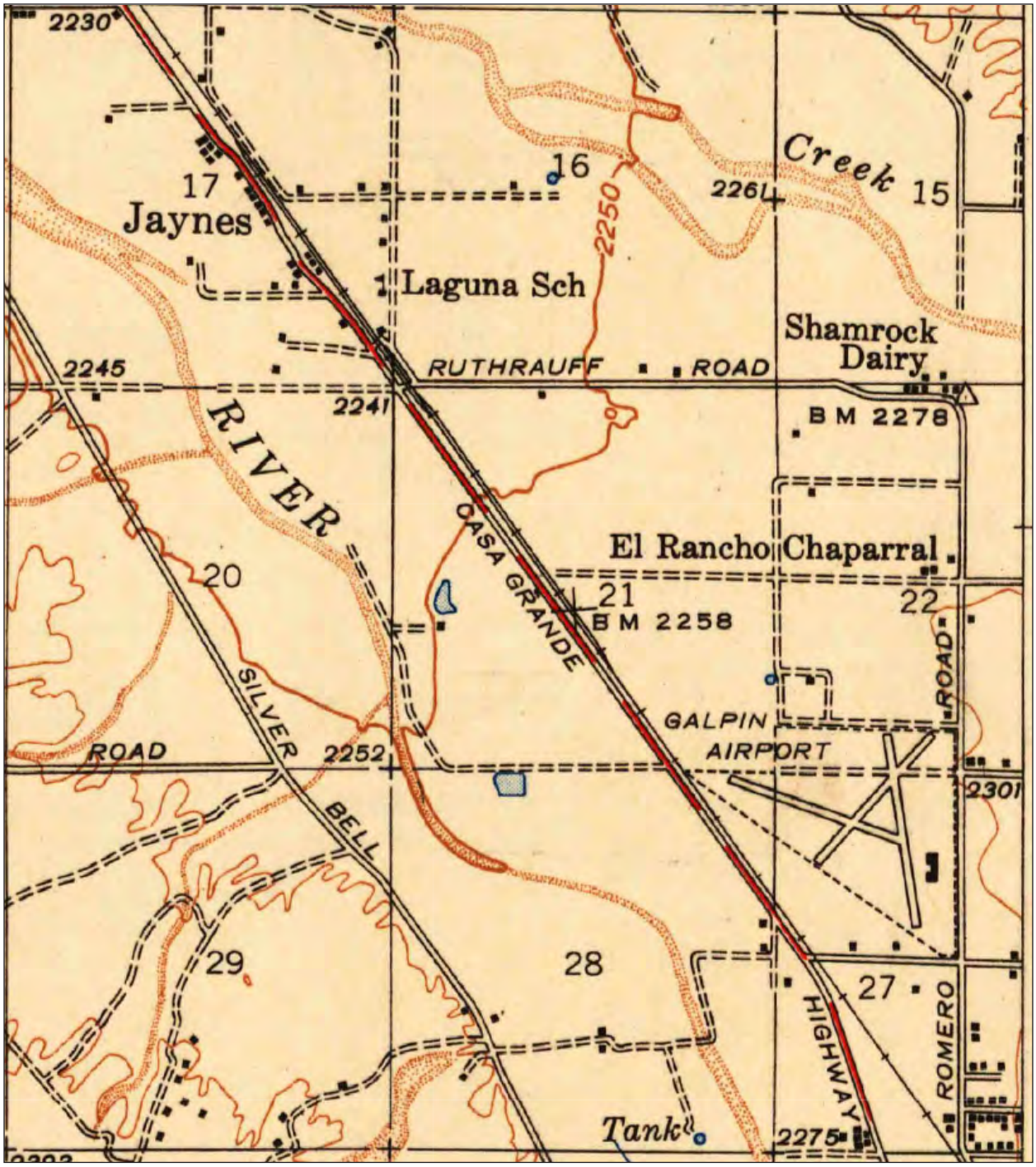


Figure 6. Detail from the 1947 USGS Cortaro 15-minute quadrangle (USGS 1947).

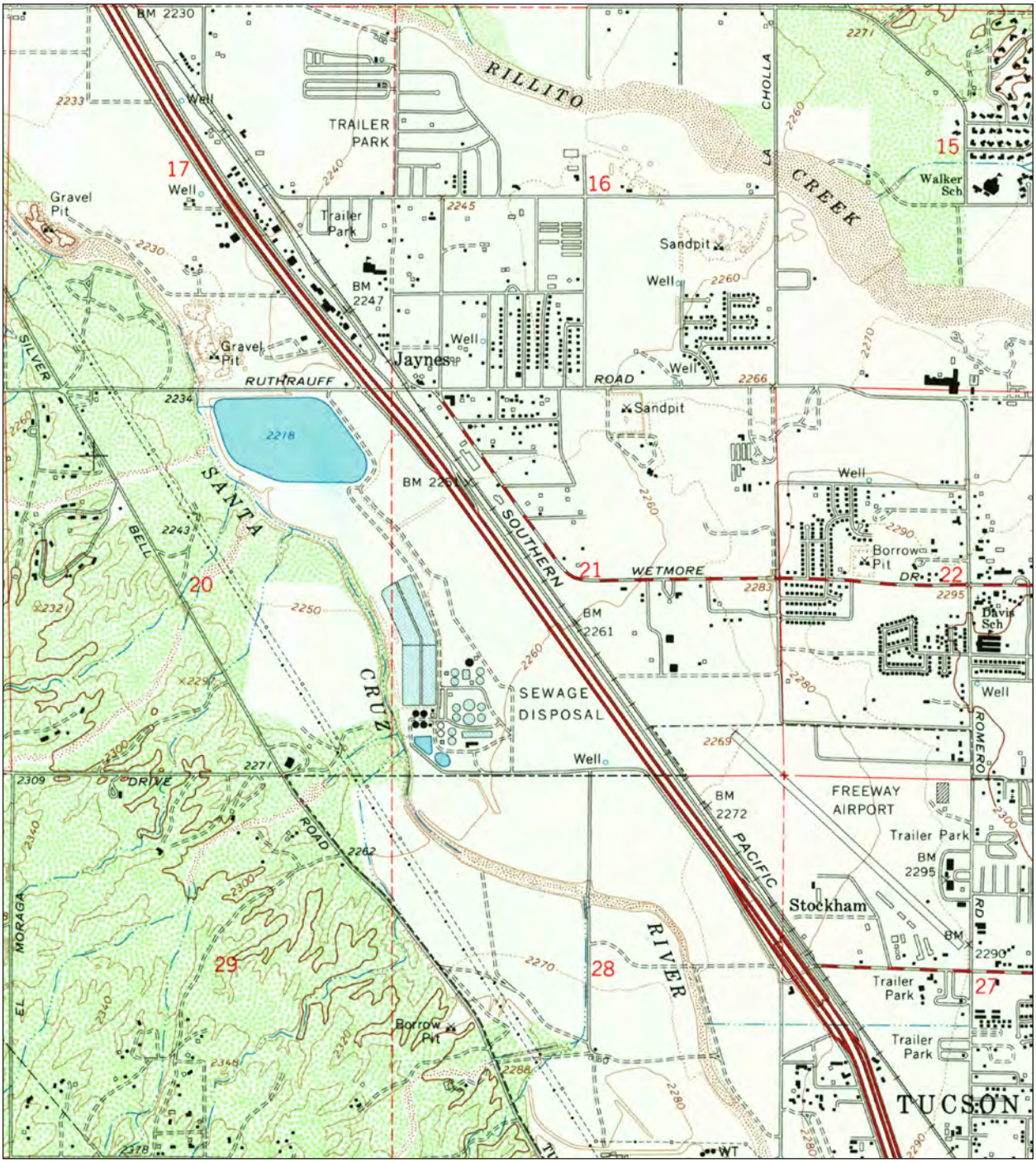


Figure 7. Detail from the 1968 USGS Jaynes 7.5-minute quadrangle (USGS 1968).

Apart from the Heney name that appears on the 1893 Pima County map, the only other name WSA has found associated with the project area in the territorial period is E. N. (Edward Nye) Fish, who patented a cash sale entry on 640 acres in the project vicinity in 1891 (GLO 1891). Fish's patent covered multiple parcels of 40 and 80 acres along both sides of the Santa Cruz River, probably indicating an effort by Fish to buy up unclaimed land on the floodplain rather than a typical attempt at homesteading. One 80-acre parcel was the west half of the southwest quarter of section 21, Township 13 South, Range 13 East, which largely encompasses the project area. Fish was a prominent figure in territorial Tucson, a merchant and freighter who first came to Arizona in the 1860s: a house where he once lived in downtown Tucson has been restored as a historic landmark and is now part of the Tucson Museum of Art (Sonnichsen 1987:91–92, 225). Fish was involved in many different enterprises in Tucson and held land elsewhere in Pima County, so it is hard to say what his intentions were for the parcel where the project area is located. WSA has not researched how the parcel became City of Tucson property by 1949, the year the original sewage treatment plant was designed by a city contractor (see Chapter 5).

Survey Expectations

The results of the Class I records search indicated [redacted] The construction of the many buildings and structures at the Roger Road Wastewater Reclamation Facility in multiple phases over the last 62 years would undoubtedly have destroyed or significantly damaged surface archaeological features and relatively shallow buried deposits, but it was possible that soils testing and sampling would take place in areas where construction impacts were minimal, or that surface finds of artifacts displaced by construction might indicate intact buried deposits.

It is worth noting that during historical research for the current project (see Chapter 5), a newspaper article from 1959 was found that described the accidental discovery of a secondary cremation burial during the construction of the first expansion of the original sewage treatment plant (*Tucson Daily Citizen [TDC]*, 17 April 1959:5). According to the article, a "crematory urn" with skeletal remains was recovered by "mechanical scoop" at a depth of 6 feet and was reported to the Arizona State Museum by Emil Krall, the contractor, and E. O. Dye, the plant superintendent. University of Arizona archaeologist William Wasley, who examined the find, characterized the remains as a Hohokam adult and noted that the vessel was removed unbroken. Based on the discovery of the burial during the first expansion of the plant, it must have been made somewhere just southwest of the area where Tierra Right of Way Services carried out test trenching in 2007, and north of (at least 250 feet north of) the current Control and Administration Building. The discovery emphasizes the possibility that portions of the current facility have either destroyed or still sit atop significant archaeological remains.

WSA contacted Dr. John McClelland, manager of the Osteology Laboratory at the Arizona State Museum, regarding the 1959 discovery. The museum still has the intact vessel and the accompa-

nying human remains (Accession No. AP-980). The accession file, dated April 8, 1959, does not include field notes except for a note that nothing else was found in the area. Krall and Dye are listed as the donors of the vessel and remains. Dr. McClelland indicated that the 1959 discovery will probably be repatriated in the near future as part of a large repatriation project involving all Tucson Basin human remains and funerary objects housed at the museum.

CHAPTER 4

FIELD METHODS AND RESULTS

A preliminary survey of the Roger Road Wastewater Reclamation Facility was made by the WSA project director, Scott O'Mack, on August 16, 2013, guided by the facility manager, Frank Gall. The purpose of the preliminary survey was to become familiar with the facility as it operates today, to see the range of buildings and structures present at the facility, and to gauge the general impact of existing buildings and structures on surface and subsurface archaeological potential. O'Mack returned to the facility on October 4, 2013, and carried out a systematic pedestrian survey of the facility grounds, both to search for archaeological artifacts and features on the modern surface and to make an inventory of extant buildings and structures.

The pedestrian survey was conducted to meet the ASM standard of survey transects spaced no more than 20 m apart, but the limited amount of open ground on the facility meant that transects spaced at a regular interval were not feasible. Instead, the survey consisted of meandering among the many buildings, structures, and other modern features, examining open areas wherever possible. In terms of open areas that could actually be surveyed, this amounted to a much more intensive coverage than transects would have provided. It is clear from the survey that the ground surface of the entire 48-acre parcel has been significantly modified by construction projects, either by the construction of individual buildings and structures or by the leveling, blading, and other earthmoving activities associated with landscaping and the preparation of roads and parking areas. This is equally clear in a review of aerial photographs of the facility taken over the years 1953–1980 (see Chapter 6).

During the survey, photographs were taken of most of the buildings and structures at the facility, and information was gathered for the completion of State of Arizona Historic Property Inventory Forms. Mr. Gall also provided a CD of digital photographs of individual buildings and structures taken by Pima County staff in April 2012 in anticipation of the ROMP closure. The results of the building and structure survey are presented in Chapter 6 of this report. It is preceded by a history of the Roger Road Wastewater Reclamation Facility (Chapter 5), prepared specifically to aid in the evaluation of the extant buildings and structures. The results of the archaeological survey of the facility, along with the results of archaeological monitoring carried out by WSA for the current project, can be summarized briefly here.

Archaeological Survey Results

During the survey on October 4, 2013, O'Mack observed [redacted] WSA archaeologist Shane Miller visited the facility on October 23, 2013, to examine this area more closely. Using a handheld Trimble GeoXT GPS unit, he recorded 16 point locations where artifacts occur on the surface (Table 3 and Figure 8). Like the rest of the ground surface at the facility, this area clearly has been disturbed by earthmoving associated with construction or

Table 3. Artifacts recorded in the Class III survey of the current project area.

[redacted]

landscaping (Figure 9). [redacted]

Archaeological Monitoring Results

Soils testing and sampling related to the decommissioning and closure of the Roger Road Wastewater Reclamation Facility took place on September 3–4, 2013. WSA archaeologist Shane Miller was present to monitor all of the ground-disturbing activities associated with the work, which was carried out by EnviroIntegration Services, subcontractor to Quest Ventures Southwest, Pima County's general contractor for the decommissioning and closure project. The procedures and methods for this and all subsequent monitoring at the facility followed the *Cultural Resources Monitoring Plan for Certain Maintenance and Repair Projects in Pima County, Arizona* (O'Mack and Boley 2010). The ground-disturbing activities related to soils testing and sampling were limited to the use of a hand boring tool to remove soil from eight locations at the facility, including four background soil borings (BSBs 1–4) and four initial soil borings (ISBs 1–4), as mapped in Figure 8. No artifacts, features, or any other evidence of archaeological deposits were observed in monitoring at any of these locations.

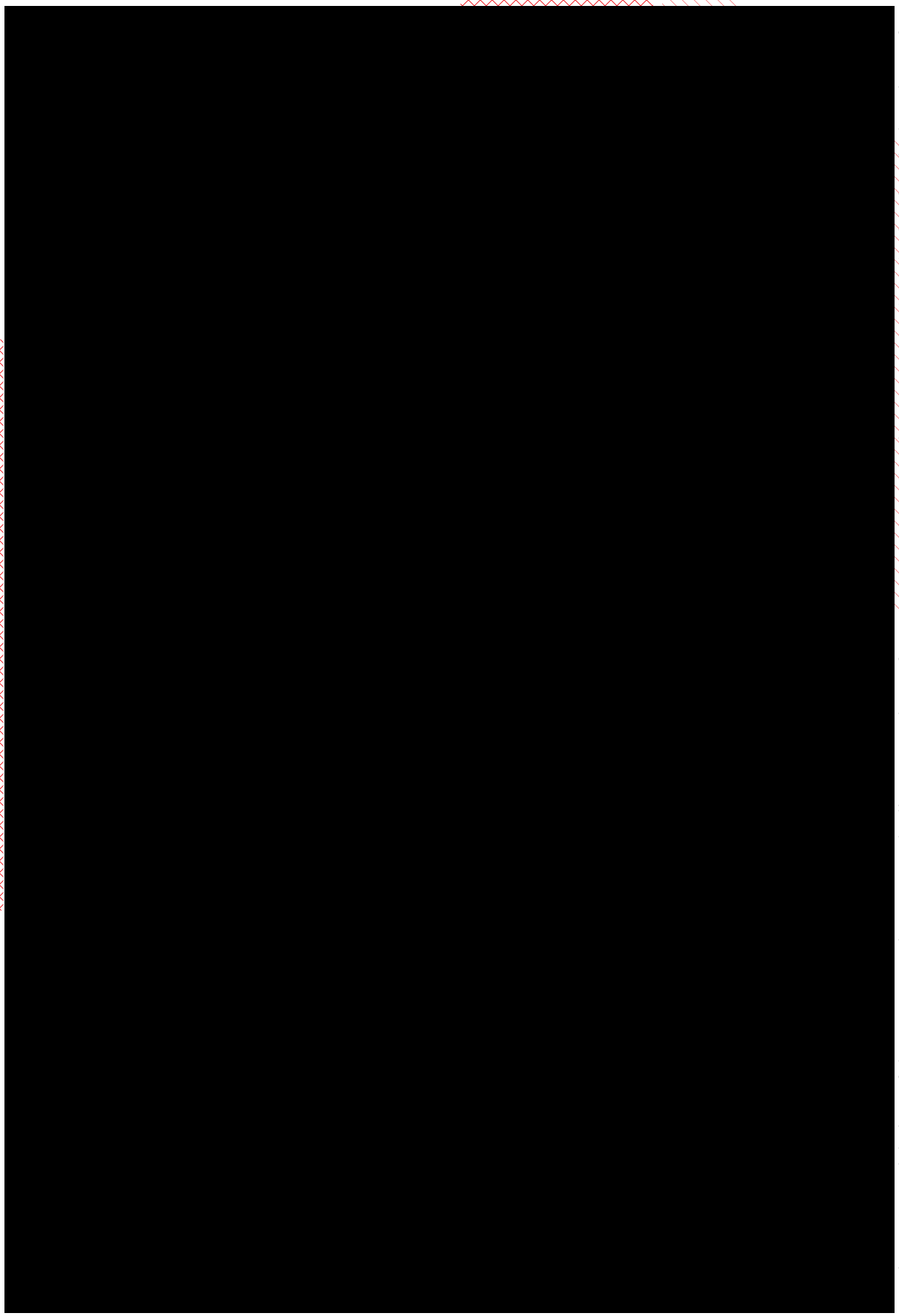


Figure 8. Aerial view of the current project area and adjacent portions of AZ AA:12:90 (ASM) and AZ AA:12:91 (ASM), showing the locations of artifacts recorded on the surface in the current project.

[redacted]

On October 29, 2013, WSA was asked by Pima County to respond to an unanticipated discovery of bone by a construction crew at the Roger Road Wastewater Reclamation Facility, made during limited exploratory excavations associated with the installation of a sewer line, part of the larger decommissioning and closure project. The discovery was made in one of eight small pit and trench excavations dug by machine to look for existing buried utility lines just east of the facility, in the immediate vicinity of the two large buried pipelines that carry untreated sewage into the facility (see the utility monitoring locations [UMLs] 1–8 in Figure 8). WSA project director O'Mack responded to the location (UML 1), where the construction crew, employed by SSC Boring, a subcontractor to Quest Ventures Southwest, had stopped all work pending an examination of the discovery by an archaeologist. It was clear on examining the discovery that it was the unmodified femur of a small nonhuman mammal, probably a jackrabbit. It was found in a disturbed context, 1.6 m below the modern surface, without accompanying artifacts, features, or any other evidence of an archaeological deposit. All of the excavations by the construction crew were also in disturbed contexts, immediately above or adjacent to the two large buried pipelines that carry sewage into the facility.

After notifying the Pima County Cultural Resources and Historic Preservation Division that the unanticipated discovery was noncultural and not of concern, WSA gave the SSC Boring crew permission to continue their work. O'Mack stayed at the location to monitor the work for the rest of the day, and WSA archaeologist Miller monitored the work as it continued the next day, October 30, 2013. No other discoveries were made. After consulting with the contractor and reviewing the work plan for the new sewer line, the Cultural Resources and Historic Preservation Division determined that no additional monitoring would be required because of the high degree of previous ground disturbance in the area.

CHAPTER 5

HISTORY OF THE ROGER ROAD WASTEWATER RECLAMATION FACILITY

One of the goals of the current project has been to research the history of the Roger Road Wastewater Reclamation Facility from its origins to the present, including its construction, operation, and maintenance, and its association with significant people and events. The resulting historic context is meant to serve in an evaluation of the eligibility of the facility (and its individual buildings and structures) for listing in the National Register of Historic Places (NRHP) and the Arizona Register of Historic Places. Because NRHP/ARHP eligibility is generally restricted to properties that are at least 50 years old, the research has focused on the events leading up to the original design of the facility in 1949 and the early decades of its operation, or the approximate period 1945–1975. But the research has also included a look at expansions and improvements made to the facility in later years, in order to understand how such changes have affected its earliest components.

Sources Consulted

The Roger Road Wastewater Reclamation Facility, called simply the Tucson Sewage Treatment Plant when it opened in April 1951, has played an important if never prominent role in the post–World War II history of Tucson and Pima County. Like most other elements of infrastructure, sewage treatment in southern Arizona has never been a focus of historical interest, despite its fundamental importance in the development of the state's second-largest metropolitan area. The history of Tucson itself is the subject of two well-researched books by professional historians (Sheridan 1986; Sonnichsen 1987), but, not surprisingly, neither work makes more than passing mention of sewage treatment. If other quintessentially postwar creations like highways, generating stations, and housing developments rarely inspire historical analysis, facilities devoted to processing what most people prefer to forget the moment it leaves their houses have even less chance of careful study.

The only substantial historical study of sewage collection and treatment in Tucson and the surrounding areas of Pima County is that of Schladweiler (2000), who has assembled a time line for the development of a sanitary sewage system in the Tucson metropolitan area. Mr. Schladweiler began working for the City of Tucson sewage department in 1973, became chief wastewater engineer for Pima County in 1977, and later served as the deputy director for wastewater engineering and operations in the Pima County Wastewater Management Department until his retirement in 2004. Mr. Schladweiler, who now serves as historian for the Arizona Water Association, provided WSA with several useful tips on how to research the history of the Roger Road Wastewater Reclamation Facility. Mr. Schladweiler's own work has not included a detailed study of the facility, but his time line is the main source of the information summarized here for the period before 1949, the year the facility was designed, and after 1979, the year that an intergovernmental agreement between the county and the city gave the Pima County Wastewater Management Department responsibility for the operation of all public sewage facilities in the region.

A complete history of the Roger Road Wastewater Reclamation Facility would benefit from a thoroughgoing search for relevant documents in the files of the Pima County Regional Wastewater Reclamation Department, which is the successor to the Pima County Wastewater Management Department and the inheritor of the records of the Tucson Sewage Department. Unfortunately, many of the files that might include relevant documents are currently stored in shipping containers at the Pima County Ina Road Wastewater Reclamation Facility and could not be accessed by WSA within the timeframe of the current project. However, WSA was able to obtain from the Regional Wastewater Reclamation Department digital scans of the construction plans from nearly all stages of construction and improvement at the Roger Road facility, including the plans from the original 1949 design of the plant. The construction plans have proven indispensable for reconstructing and understanding the evolution of the plant from its original design to its current configuration. An important complement to the construction plans have been aerial photographs taken of the plant and its vicinity in 1953, 1960, 1967, 1973, and 1980, obtained by WSA as digital files from Cooper Aerial Surveys of Tucson. The aerial photographs confirm the sequence of construction at the plant and show details about particular buildings and structures that are not readily evident in the construction plans.

WSA's research into the history of the Roger Road Wastewater Reclamation Facility included trips to the Arizona Historical Society and the Special Collections department of the University of Arizona Library, both in Tucson. The relevant holdings in both repositories are limited to a small number of official documents generated at different times by the City of Tucson or Pima County, plus microfilm copies of the two principal Tucson newspapers of the twentieth century, the *Arizona Daily Star* and the *Tucson Citizen*. Both newspapers regularly published articles about sewage-related issues in Tucson and Pima County, the construction or improvement of sewage facilities, and the sewage-related decisions made by city and county officials over the years. However, with the exception of a handful of newspaper clippings filed as ephemera at the Arizona Historical Society, the many relevant articles in both papers have not been inventoried or indexed in a way that allows efficient use of them. (An index to the *Arizona Daily Star* for the years 1953–1965 and 1970–1989 exists, but it was of limited use in the current project [University of Arizona Library 1953–1989].) Fortunately, the relevant years of the *Tucson Citizen* (when its official name was the *Tucson Daily Citizen*) were recently scanned and made available online by Ancestry.com, the popular genealogical research website. The scans can be searched by keyword, which has allowed WSA to compile considerable information about the history of the Tucson Sewage Treatment Plant and its successors, including details about the companies that designed and built the plant in stages and the associated administrative and political processes. A time line of events related to the plant and reported in contemporary newspaper articles is provided here as Appendix A.

The research by WSA has also benefited from conversations with Frank Gall, the current manager of the Roger Road Wastewater Reclamation Facility; Judy Scrivener, deputy director of the Regional Wastewater Reclamation Department; and Al Bustamante, GIS specialist with the Regional Wastewater Reclamation Department. It was Mr. Bustamante who provided WSA with the digital scans of construction plans for the facility.

Sewage Treatment in Tucson, 1900–1950

The City of Tucson installed its first sewer lines in 1900, a year when the total population of the city was just under 8,000. A main line of glazed clay pipe was placed under Main Avenue from Seventeenth Street north to St. Mary's Road, and connections were made to individual houses along the way. From St. Mary's Road, the sewage traveled by open ditch to a city-owned farm along the Santa Cruz River about 1 mile north of downtown where it was used for irrigation. Later the same year, some 30 miles of additional lines were installed within the city limits, all draining eventually into the same open ditch. By 1914, problems with odor and capacity led to the abandonment of the first city sewer farm and the opening of a new, larger farm about 4½ miles northwest of downtown. A 30-inch concrete pipe replaced the open ditch to carry sewage to the new farm, a 120-acre parcel straddling the Santa Cruz River. By 1917, a 30-inch pipe was extended across the river to deliver sewage to the western portion of the farm. The city-owned and -operated farm was eventually expanded along the river to cover an area about ½ mile wide and 3 miles long (Schladweiler 2000).

The selection of a location northwest of downtown Tucson and along the Santa Cruz River for the city sewer farm was based in topography: the floodplain of the river downstream from downtown was the obvious choice for sewer lines that flowed strictly by gravity. The subsequent development of sewage treatment plants in the same topographical setting over the next half century was driven by the same consideration. In 1928, Tucson's first sewage treatment plant was built on the west bank of the Santa Cruz River within the city sewer farm, in the northeast quarter of section 33 of Township 13 South, Range 13 East, between the river and Silverbell Road, and in line with the westernmost extension of Fort Lowell Road. Located about 1¼ miles upstream of the current Roger Road Wastewater Reclamation Facility, the plant consisted of primary sedimentation tanks and separate, uncovered, sludge-digestion tanks. Effluent from the sedimentation tanks was used for irrigation on the city farm (City of Tucson 1957; Dye 1959; Schladweiler 2000).

Tucson's first sewage treatment plant was still in service in 1942 when the U.S. Army contributed $100,000 to upgrade it, in response to the anticipated connection of new World War II–related facilities at Davis-Monthan Field (City of Tucson 1957; also see Appendix A, where all of the newspaper sources for the following discussion can be found). The improvements, which consisted of additional sedimentation and sludge digestion tanks, were designed by the Phoenix engineering firm, Headman, Ferguson and Carollo, and were promptly completed. This was the start of a long relationship between the City of Tucson and Headman, Ferguson and Carollo, a firm also hired multiple times by Pima County in later years for sewer projects.

Following World War II, the population of Tucson and the adjacent areas of unincorporated Pima County began to grow quickly. As early as 1946, city engineer Glenton Sykes was reporting to the city council that a new outfall line was needed to connect new subdivisions opening in the northern part of the city, which in turn prompted city manager Phil Martin to call for a study of a possible expansion of the sewage treatment plant. Later that year, the Pima County board of supervisors hired Headman, Ferguson and Carollo to carry out a survey of the area just north of the city and make recommendations for an expansion of sewer service to the area. By May 1947, the sewage treatment plant, which had a capacity of 4,000,000 gallons a day, was receiving 4,500,000 gallons

a day, and Martin was taking steps to double its capacity to 8,000,000 gallons a day. The population of the city was now 55,000, up from 36,000 in 1940, and was steadily rising. A federal loan of $11,500 was available for the preparation of plans and specifications; the total cost of the expansion was estimated at $250,000.

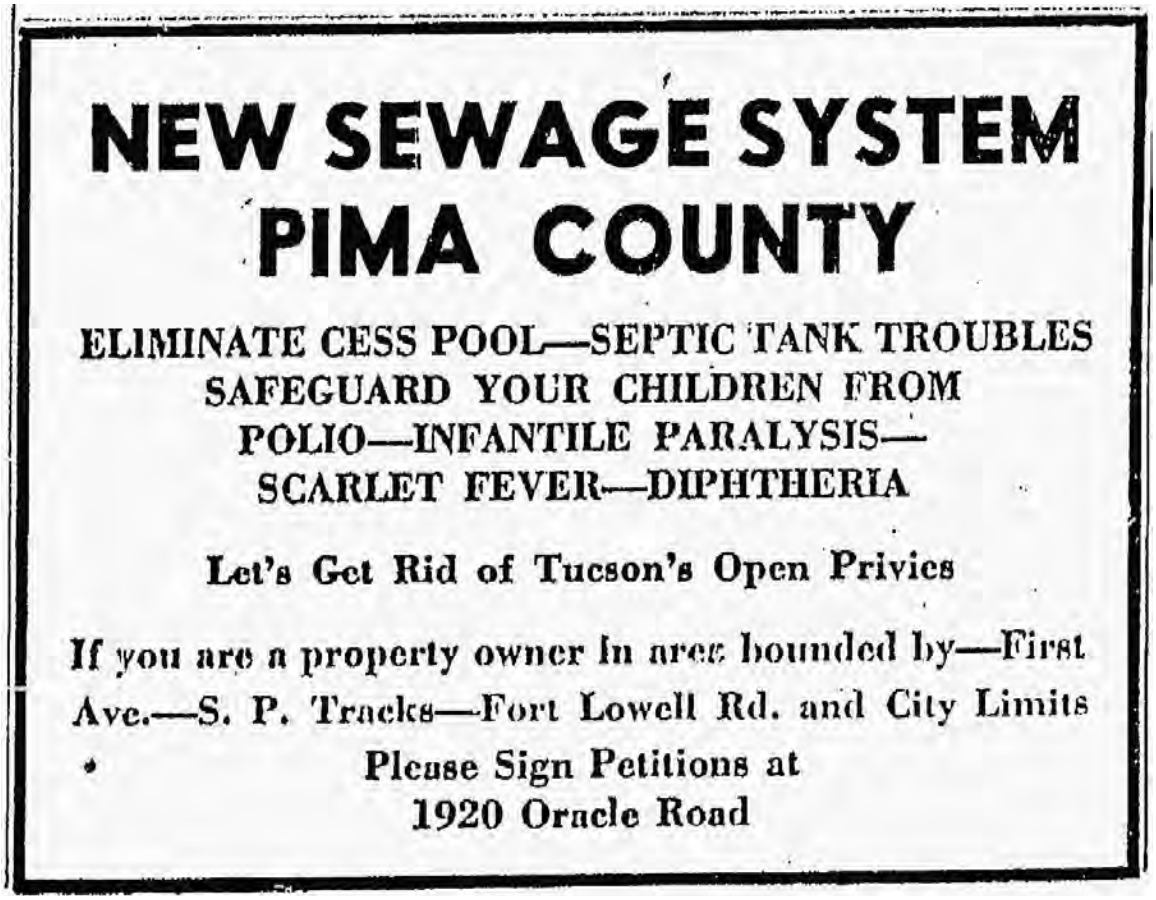
The fate of Martin's initial plan is unclear, but by June 1947 a more ambitious plan was under consideration. The city council and the county board of supervisors held a joint meeting to review a plan by John Carollo and William Williams of Headman, Ferguson and Carollo for a complete sewer system serving all of greater Tucson, including the city proper and outlying areas. With an estimated total cost of $9,579,000, the plan included new interceptor lines, an expansion of the existing sewer plant, and the construction of a new plant. Acceptance and funding of the plan were complicated by a state law that prohibited incorporated towns and cities from being enrolled in sanitary districts that extended beyond their corporate limits. This meant that two elections would be necessary to approve bonds for the work: one election for the City of Tucson, and another for the area beyond the city limits.

By August 1947, the city engineer was warning the city council that the existing sewage system was "approaching a danger point" and that no additional areas of the city could be added to the system until the existing plant was enlarged. Even the siphon that passed under the Santa Cruz River to carry sewage to the plant had to be enlarged soon or another siphon had to be built. The plan proposed by Headman, Ferguson and Carollo for a joint city-county sewer system seems to have met with general approval, but funding the project remained an issue. In late October 1947, the plan was finally dropped in favor of a new plan for a joint city-county system, also prepared by Headman, Ferguson and Carollo and presented to the city council and board of supervisors by John Carollo. The new plan consisted of two new outfall sewer lines and a new sewage treatment plant, with no provisions for updating the existing plant; most importantly, the estimated cost of the project was a more palatable $3,600,000. At the joint city-county meeting where the new plan was introduced, city engineer Sykes noted that the original $9,000,000 estimate included the construction of lateral sewer lines over the next 20 years, costs that in the new plan would have to be covered by the developers of new residential areas.

The new, less expensive plan still required that a sanitary district be organized to allow separate funding of the city and county portions of the project. The new plant, which would be constructed "about a mile and a half downstream from the existing city plant," would be owned and operated by the city but would treat all sewage from both the city and the sanitary district. In November 1947, the county board of supervisors met to come up with a plan to circulate the necessary petitions for organizing the district, which would encompass 33 square miles outside the city limits. The petitions, which were the necessary precursors to a ballot measure, would have to be signed by a majority of the property owners in the proposed district, and the board of supervisors would then have to approve them. George Grove, the county engineer, testified that the sanitary district was essential due to the rapid growth of the population in unincorporated areas, which now exceeded the population of Tucson proper, and that the then-current practice of using septic tanks and cesspools in these areas was dangerous to the water supply. Grove considered an adequate sewage system "an essential requirement for modern living."

Later in November, a public hearing was held in Tucson regarding the circulation of petitions to form the sanitary district. A committee of six members, chaired by Gilbert Ronstadt, was appointed by the board of supervisors to oversee the circulation of petitions, which would begin in January 1948. The total cost of the proposed sewer project was now estimated at $4,000,000, of which the city would be responsible for $1,400,000 and the county for $2,600,000. Once the sanitary district was approved by a ballot measure, the city and county could sell bonds to pay for the project. As the petitions circulated over the next several months, advertisements in support of a sanitary district appeared regularly in the local newspapers, and public opinion seemed unanimous in favor of its organization (Figures 10 and 11). In April, Ronstadt announced that the petitions were two-thirds complete and would be ready to present to the board of supervisors on May 15: "The acute need of the new sewage disposal plant is so obvious that almost no opposition has been encountered by those circulating petitions. The cost to individual property owners will be relatively small and is practically certain to be decreased as new properties are added to the tax rolls. Everybody will benefit" (TDC, 26 April 1948).

In May 1948, the required number of signatures (at least 6,409, or 51 percent of property owners) had been gathered, and Ronstadt asked the board of supervisors to call a meeting to form the district. By this time, city engineer Sykes, who often joined county engineer Grove and county health


NEW SEWAGE SYSTEM
PIMA COUNTY

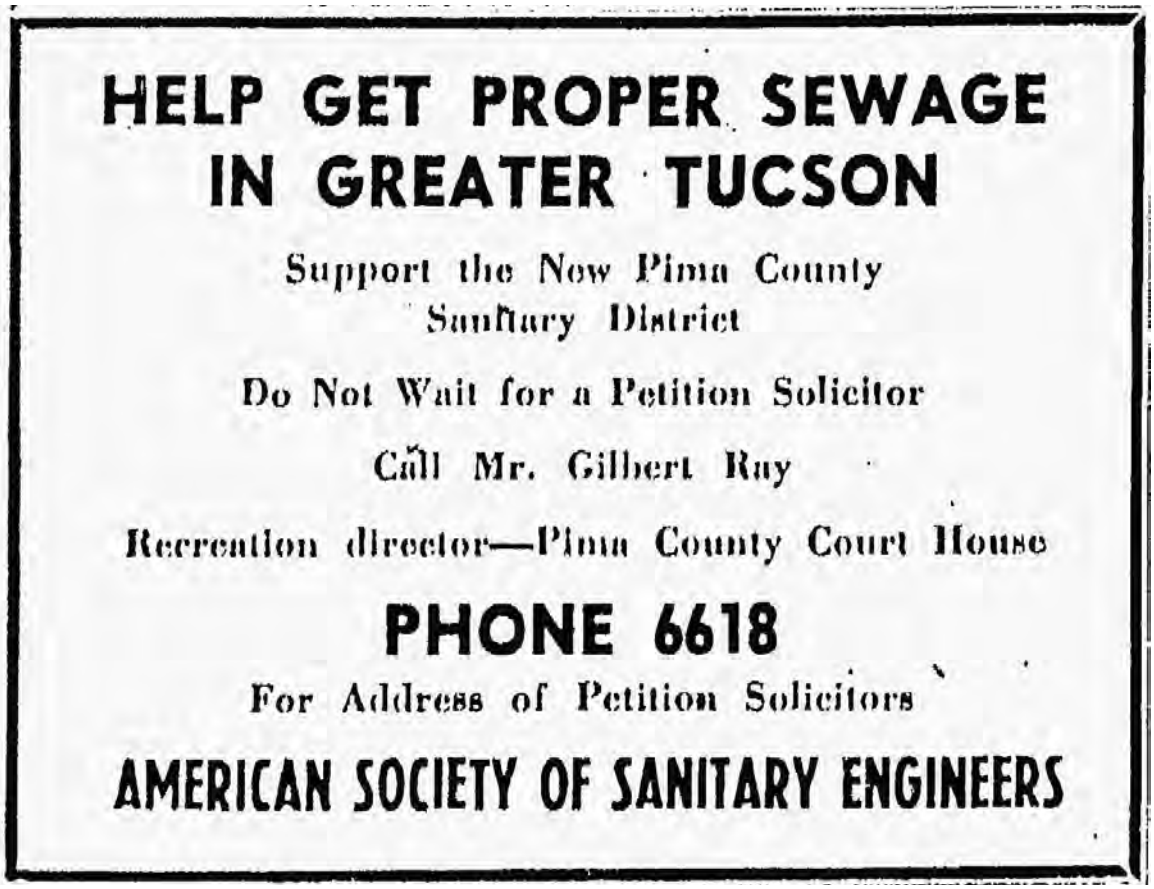
ELIMINATE CESS POOL—SEPTIC TANK TROUBLES
SAFEGUARD YOUR CHILDREN FROM
POLIO—INFANTILE PARALYSIS—
SCARLET FEVER—DIPHTHERIA

Let's Get Rid of Tucson's Open Privies

If you are a property owner in area bounded by—First Ave.—S. P. Tracks—Fort Lowell Rd. and City Limits

Please Sign Petitions at
1920 Oracle Road

Figure 10. Advertisement appearing in the *Tucson Daily Citizen*, January 29, 1948.


HELP GET PROPER SEWAGE
IN GREATER TUCSON

Support the New Pima County
Sanitary District

Do Not Wait for a Petition Solicitor

Call Mr. Gilbert Ray

Recreation director—Pima County Court House

PHONE 6618

For Address of Petition Solicitors

AMERICAN SOCIETY OF SANITARY ENGINEERS

Figure 11. Advertisement appearing in the *Tucson Daily Citizen*, March 23, 1948.

officer Dr. L. H. Howard in their warnings about the dangers of an inadequate sewage system, was reporting that the existing treatment plant had a capacity of 4,800,000 gallons per day, but city sewer lines were now carrying 9,000,000 gallons daily, which meant that "most of the sewage must by-pass the treatment plant or be inadequately treated" (TDC, 24 May 1948). Sykes's numbers seem higher than other estimates proffered at the time, but his basic point was not in dispute. It was clear to both city and county officials that the population of the greater Tucson area was growing at an unprecedented rate.

Organization of the sanitary district hit a few bumps. For example, the Southern Pacific Railroad argued that some of its right-of-way should be excluded from the proposed district (and so from district assessments) because the property could not possibly benefit from the district. An exemption was granted to the railroad, but in June 1948, Pima County Sanitary District No. 1 was officially organized with negligible opposition, and a three-member board of directors was appointed by the county board of supervisors. One of the directors was Gilbert Ronstadt, who had served as chairman of the committee that circulated petitions to organize the district. The directors were expected to call promptly for a special bond election to pay for the district's $2,500,000 share of the joint city-county system. George Marx, the state sanitary engineer, said of the formation of the district, "It is the most forward step ever taken in Arizona to protect public health from a sanitary sewer standpoint" (TDC, 17 June 1948).

A county bond election was scheduled for November 16, 1948, seeking approval of funding for the proposed city-county sewage project, and a city bond election for the same purpose was scheduled for the same day. The preceding three months saw various efforts by the city, the county, and other interested parties to win the support of the voting public. In August, engineer John Carollo of Headman, Ferguson and Carollo made a presentation about the proposed system to local American Legion members at a luncheon at the Santa Rita Hotel. Carollo emphasized the minimal cost of the $3,500,000 project (the estimated cost fluctuated somewhat in this period) when shared by all property owners, with the estimated cost per dwelling being about $350, to be paid over a period as long as 25 years (i.e., about $14 per dwelling per year). In November, at a meeting of the National City Government Heights Civic League in Tucson, W. R. DuBois, chairman of the newly formed Sanitary District No. 1, L. H. Howard, county-city health officer, and O. L. Fritz, head of the sanitation division, laid out the many reasons to vote yes on the sewage bonds in the upcoming elections. Like Carollo, they emphasized the low per-property cost of the project, but their most important reason was the growing health hazard posed by septic tanks and cesspools. The same concern was later expressed by private entities like the Pima County Medical Society. Just four days before the bond election, the *Tucson Daily Citizen* urged voters to approve the bond measure, for obvious reasons of health and quality of life:

> Today there will pass through the inadequate [existing sewage treatment] plant some 9,000,000 gallons of sewage—just 5,000,000 gallons more than its present capacity. Now when we say "passes through the plant" we are guilty of a gross error. This sewage half treated for the most part flows over the desert acres contiguous to the plant covering the land with nauseous stinking matter, which endangers the health of the community and constitutes an annoying nuisance (TDC, 12 November 1948).

Meanwhile, the growth of metropolitan Tucson continued apace, along with the growing need for expanded sewage service. In October 1948, the Del E. Webb Construction Company asked the city council for permission to connect its new subdivision, Pueblo Gardens, to existing city sewer lines. The request was denied. Council members noted that all other recent applications to connect to the existing system had also been denied because the system was already far over capacity. At the council meeting where the Pueblo Gardens decision was announced, city engineer Glenton Sykes was asked by Roy Drachman, the realtor representing Del Webb, his opinion of the request. Sykes replied that if the proposed city-county sewage project was approved by voters and constructed, then the request should be granted, but not before.

On November 16, 1948, the city and county sewer bond issues were both passed by large majorities of the vote (Figure 12). Of 4,037 votes cast in the two elections, only 559 were against the issues. The $4,000,000 expansion program designed by Headman, Ferguson and Carollo would be built, with the city paying $1,500,000 for an expansion of its system and the construction of a new treatment plant, and the county paying $2,500,000 for the construction of two new main sewer lines. Less than two weeks later, the board of directors of Sanitary District No. 1 met with Tucson mayor E. T. Houston and the city council regarding the project made possible by the bond elections. Headman, Ferguson and Carollo was asked to submit plans for the new plant and the two

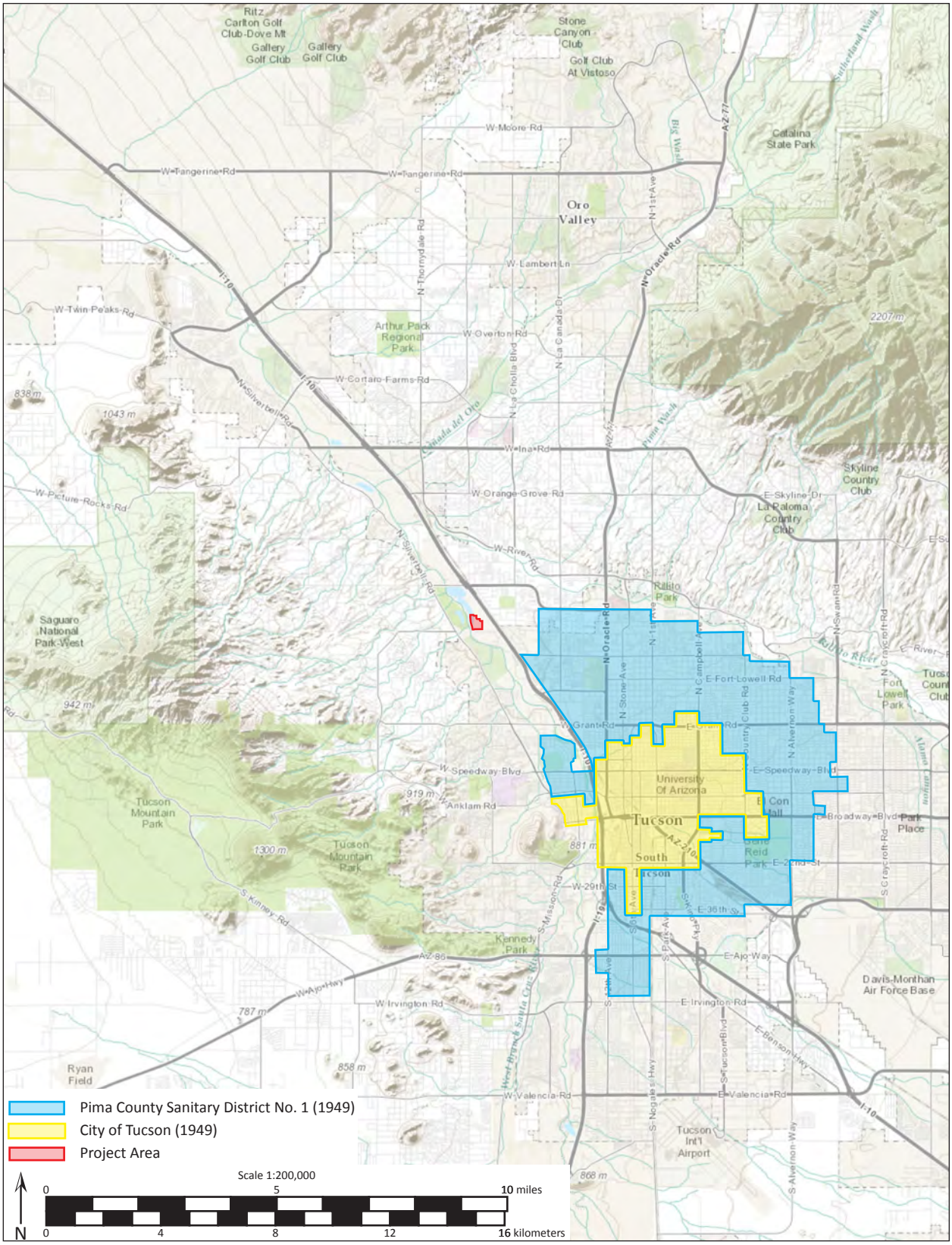


Figure 12. The limits of Pima County Sanitary District No. 1 and the City of Tucson in 1949 (adapted from City of Tucson 1949).

new main sewer lines, and Henry Dahlberg, city fiscal agent, discussed the selling of bonds. By April 1949, the district board and the city council were in complete agreement about joint control of the proposed sewage treatment plant and the sale of water from the plant for irrigation. The city and district were assured that the water from the new plant would be "safe to use for irrigation of all crops. In addition, it will be odorless" (TDC, 21 April 1949).

The rest of 1949 saw a flurry of activity related to the city-county sewage project. In June, a contract for the first 9,000-foot section of 48-inch main sewer line was awarded, and in July, Headman, Ferguson and Carollo delivered plans for the 9-mile-long Prince Road interceptor. By August, the city manager, Phil Martin, was reviewing plans submitted by the same firm for the new sewage treatment plant, the plans soon to be used in the construction of the Tucson Sewage Treatment Plant (City of Tucson 1949). In September, Sanitary District No. 1 released a list of ongoing and upcoming projects in the bond-funded sewage program and announced that the entire system was expected to be operational by January 1, 1950 (an overly optimistic statement, as it turned out; or perhaps a mistake by the reporting newspaper). Meanwhile, Mayor Houston, the city council, and the Sanitary District No. 1 board held a marathon meeting to reach an agreement on the construction and operation of the new treatment plant. By the end of September, a 20-year agreement for joint operation of the Tucson metropolitan area sewage disposal system had been signed by the city and Sanitary District No. 1, with the city taking responsibility for the new treatment plant and the sewage lines within city limits and the district taking responsibility for the sewage lines in unincorporated Pima County. The city almost immediately called for bids on the construction of the plant, which would be built on city-owned land along the east bank of the Santa Cruz, just off the Casa Grande highway—in other words, the location of the current Roger Road Wastewater Reclamation Facility. Also in September, the city council discussed plans for selling the treated water that would be discharged from the plant. A company headed by John Raskob Jr., which had recently bought (from Cortaro Farms) 2,600 acres of farmland downstream from the plant, asked to buy all of the water produced by the plant. Another plan under consideration would send much of the water just upstream to the 1,300-acre city farm.

Bids to build the new sewage treatment plant were opened at city hall on December 15, 1949. Of 12 companies submitting bids, the M. M. Sundt Construction Company had the lowest bid at $1,136,289, just $324 less than the next-lowest bidder, the Vinson Construction Company of Phoenix. Sundt was the only Tucson-based company to submit a bid; the other bids were submitted by companies based in California, Oregon, Texas, and Illinois. A contract was to be awarded after Headman, Ferguson and Carollo had tabulated all of the bids. "Construction of the plant, which will be the second largest in Arizona, will take approximately one year, according to the consulting engineers' estimate. When awarded, the contract will provide for completion within 365 days after the order to begin work is given" (TDC, 16 December 1949). In early January 1950, M. M. Sundt was awarded a contract to build the plant for $1,104,295, a lesser amount than the original bid because the city chose to remove a five-room superintendent's living quarters and office from the plans, expressing the opinion that the house could be built for less than the proposed amount. Although it was never built, the superintendent's house appears in the 1949 construction plans, sited about a quarter mile east of the plant and just west of the Casa Grande Highway (City of Tucson 1949). The first spadeful of earth for the plant was turned on January 19, 1950, by Mayor Houston.

By November 1950, construction of the Tucson Sewage Treatment Plant was 90 percent complete, and the plant was expected to begin operation by January 17, 1951. A newspaper article reporting the progress of construction noted that the site of the plant had been chosen because there was enough space available to expand the plant to double its size when the growth of the regional population demanded it, already a clear inevitability. The article also noted some important characteristics of the plant:

> All but one of the structures in the plant are built in duplicate. It was designed that way so that in case of trouble with any unit it could be closed and drained while the other section is in operation… One of the most amazing features of the plant is the entire absence of the use of chemicals. The entire treatment process is accomplished by natural bacteriological action, assisted by machinery, until the final treatment of the effluent with chlorine as a safety measure (TDC, 3 November 1950).

Even by December 1950, the issue of how to dispose of the water discharged from the plant had yet be resolved. A report prepared for the city by Headman, Ferguson and Carollo described three options: releasing the water into the Santa Cruz River channel; using the water on the city farm; and selling the water to farming operations downstream. "The treated water—an odorless liquid of spring-like clarity containing considerable amounts of dissolved organic plant food—is worth $2 an acre-foot at the plant" (TDC, 1 December 1950). The output was estimated at 12 acre-feet (about 4 million gallons) per day to start, with an inevitable increase to 36 acre-feet per day in 10 to 20 years. John Carollo, author of the report, told the city council that releasing the water into the river would be safe, but parties downstream might claim damage. Sending the water upstream to the city farm would require expensive pumping equipment. Selling the water to farms downstream was the best alternative, but no deal had yet been made with a buyer. The city manager asked that a call for bids to buy the water be made once again.

In early January 1951, about a week before the city's deadline for the completion of the treatment plant, the city council denied a request by M. M. Sundt for a 37-day extension on the construction contract. Instead, a 14-day extension was granted, changing the anticipated completion date to January 31, 1951. It is not clear if the city was able to enforce this deadline, but by March 1, 1951, the new sewage treatment plant had been inspected and tested and was almost ready to begin operation. It was expected to process 5,000,000 gallons daily at first, then to quickly approach its capacity of 12,000,000 gallons daily as newly constructed sewer lines were connected to the larger system. By this time, 53 miles of sewer lines were in place in Tucson and Sanitary District No. 1, and individual property owners were busy navigating permits and fees to connect to the system. Continuing its close involvement in all things sewage-related in the region, Headman, Ferguson and Carollo was awarded a contract for engineering supervision on 40 additional miles of sewer mains in District No. 1. But later in the year, the firm's luck took a different turn when the district decided to dispense with outside engineering consultants to run its system, which had been supervised by Headman, Ferguson and Carollo from the beginning.

The Evolution of the Tucson Sewage Treatment Plant, 1951–1975

The newly built Tucson Sewage Treatment Plant began full operation on April 2, 1951. A few weeks later, the city council officially accepted the completed plant from M. M. Sundt and authorized final payment. An article about the opening of the plant in the *Tucson Daily Citizen* described it as "the finest installation in the southwest" (TDC, 3 April 1951); another article provided an aerial view of the plant and a description of the treatment process. In Phoenix, George Marx, now director and chief engineer of the state Bureau of Sanitation, commended Tucson on its new metropolitan sewage system.

Construction had taken almost 15 months, but the fate of the effluent from the new plant had yet to be decided. It would be released into the Santa Cruz River pending other arrangements. In May 1951, the Cortaro Management Company, owner of 2,500 acres of farmland downstream from the new plant, offered to buy the entire effluent output, or about 4,000,000 gallons per day. Cortaro Management was apparently the same company, with a new name, that had made a similar offer about a year earlier. This time the company said it would consider building a ditch along the east bank of the Santa Cruz River to carry the effluent to its property. Other parties also expressed interest in the effluent, notably the Tucson Gas, Electric Light and Power Company, which filed a request with the city for access to the effluent for use as condenser cooling water in its generating plant. The utility planned to capture the water that remained after the effluent had been used for irrigation. The issue was still unresolved in August 1951, when the city once again called for bids to buy the effluent. By September, despite the interest expressed earlier by several parties, the city had received just one bid, from James Shumaker, a farmer in Jaynes. By November, the city had signed a 17-year contract with Shumaker, who would pay $1 per acre foot for all of the plant's effluent and use it for irrigation. The contract required the city to build a flow-equalizing reservoir near Ruthrauff Road, between the Casa Grande Highway and the Santa Cruz River, to make the effluent available to Shumaker at an even rate of flow. The city would also build a diversion channel to carry the effluent to the reservoir. A larger version of this reservoir, about 45 acres in area, is still present along the south side of Ruthrauff Road (now called Camino del Cerro west of Interstate 10), about a half mile north of the current project area. A portion of the alignment of the "diversion channel," which was probably a concrete-lined ditch, seems to be visible just north of the current project area in a recent aerial photograph, but it is not visible on the ground within the project area today.

In June 1951, just two months after the new city-county sewer system began full operation, came the first major hint that it would soon need expansion. The Hughes Tool Company, which was planning to build a large manufacturing plant on a site 7 miles south of Tucson, notified the city that it hoped to connect its new plant to district sewer lines. Engineers for the district were fearful that allowing Hughes to make the connection would overwhelm the system. Initially, both the city and the district agreed to the connection, but that was with the understanding that the Hughes plant would release about 40,000 gallons of sewage per day. Then Hughes changed its estimate to 1,000,000 gallons per day. A district representative was later quoted as saying, "If that happens the manhole covers along the Nogales highway will be popping like tiddly-winks" (TDC, 8 December 1951). The district urged the city to consider alternatives, such as installing a new 24-inch interceptor from the Hughes plant to Prince Road.

How the issue with the new Hughes manufacturing plant was worked out has not been researched, but the plant was in fact built and its sewage was accommodated by the city-county system. But the contribution of the Hughes plant was only part of a larger capacity problem that later in the decade was demanding resolution. In 1957, the city hired consulting engineer John Carollo, who had recently bought out his partners in Headman, Ferguson and Carollo (American Society of Civil Engineers [ASCE] 2002), to prepare a study of the sewage needs of the city and the sanitary district. In his report (City of Tucson 1957), Carollo concluded that $1,500,000 were needed to double the capacity of the existing sewage treatment plant, which was already over capacity some days of the year. A doubled capacity would serve the city and the district until 1966. The city council soon concluded that plans to expand the existing sewage treatment plant, as detailed by Carollo, would go ahead whether or not the expansion was approved in a proposed bond election. In December 1957, Mayor Don Hummel announced that the existing sewage treatment plant was exceeding capacity for about six hours almost every day, and that Tucson citizens would soon have to vote to approve the expansion being drawn up by Carollo. The estimated cost was now $1,330,000, of which the city would be responsible for about $1,000,000 and the sanitary district would be responsible for the balance.

By February 1958, the city council had approved an application for $250,000 in federal funds, made available under the Water Pollution Control Act of 1948, to help pay for the proposed sewage plant expansion. According to city manager Porter Homer, the plant was operating at 150 percent of capacity, and he believed that the existing connections of Davis-Monthan Air Force Base and Hughes Aircraft (a major federal contractor, formerly Hughes Tool) would make Tucson eligible for the funding. In April 1958, E. O. Dye, the superintendent of the sewage treatment plant, reported that the plant was now operating over capacity 12 to 16 hours of every day. Warnings about the plant by city and district officials continued until a bond election was finally held in early August. Three separate bond issues were included in the election, but the largest and most pressing was one for $1,260,000 for an expansion of the sewage treatment plant, which had been completed just seven years earlier. Turnout for the election was much higher than expected, and all three issues passed. A month later, the city was also awarded the $250,000 federal grant.

In October 1958, the city council called for bids to build the expansion, which would double the capacity of the existing plant. Carollo had designed three alternatives, any of which would be built to operate in parallel with the existing plant: (1) a simple doubling of the current capacity, using the same activated sludge method; (2) a trickling filter system; and (3) a system using filters manufactured by Infilco, Inc., of Tucson. In January 1959, Phoenix contractor Emil H. Krall submitted the lowest bid, $1,153,680, which used the trickling filter method. Another firm that submitted a bid, C. H. Leavell and Company, filed a complaint contending that Krall did not fulfill all of the bid requirements, but the complaint was rejected by the city. In February 1959, apparently after some modifications to the expansion plan, Krall was awarded a contract to build the expansion for $1,282,680.

By August 1959, construction was well along and three or four weeks ahead of schedule, with completion anticipated in January 1960. A few minor obstacles threatened to delay things. A nationwide steelworkers strike in August 1959 meant that prefabricated steel components for the

clarifiers and sludge-handling structures, manufactured by General Steel Corporation of Fort Worth, Texas (using designs by Infilco, Inc.), might arrive later than anticipated. But the delay never happened and all of the components arrived on schedule by train to nearby Jaynes Station. Less likely to cause a delay was the discovery of human skeletal remains at the plant in April 1959. During construction of the expansion, a "crematory urn" was uncovered during mechanical excavation at a depth of 6 feet; the precise location relative to new or existing structures at the plant was apparently not recorded. The discovery was reported to the Arizona State Museum by Emil Krall, the contractor, and E. O. Dye, the plant superintendent. University of Arizona archaeologist William Wasley, who examined the find, characterized the skeletal remains as those of a Hohokam adult and noted that the pottery vessel that held the remains was removed unbroken.

For unclear reasons, the originally anticipated completion of the expansion in January 1960 proved to be overly optimistic. In October 1960, with the expansion partly operational but still six weeks from completion, the power lines that served the plant were damaged by a collision between two tractor-trailers on the Casa Grande Highway. This would further delay the completion, a concern to the city mostly because of growing complaints about the odors from the inadequately treated effluent being used to irrigate fields downstream from the plant. The complaints began at least as early as August 1960, and residents were quickly assured by the city that the problem would go away once the ongoing expansion of the overloaded system was complete. By late October, the expanded plant was running near full capacity, but it would still take a while for the bacterial process to become fully established in the new facilities. Meanwhile, the city planned to alleviate part of the problem by spraying the sludge-drying beds at the plant with a deodorant, and steps were also being taken to improve conditions at the holding ponds on Albert Oshrin's farm, where the effluent was being used for irrigation. In early November, a group of Cortaro residents announced that they planned to sue the city over the fly, mosquito, and odor problems at Oshrin's farm, but apparently the fully operational plant expansion remedied the problem before a suit was filed. The city council officially accepted the completed expansion of the sewage treatment plant on November 6, 1960. By this time, the city was selling 16,000 acre-feet of effluent annually to nearby farmers for irrigation, and using the leftover residue (i.e., biosolids) as fertilizer in city parks.

In January 1959, just before the city awarded a contract to Emil Krall to build the proposed expansion to the sewage treatment plant, city manager Homer asked the Sanitary District No. 1 board to contribute $250,000 to the project, to cover the district's share of the projected use. The district manager, Kenneth Scharman, balked at the request, pointing out that because the city planned to annex a large portion of the area then served by the district, the district should be responsible for a smaller portion of the total cost of the expansion. This was an early indication of what proved to be a longstanding conflict between the city and the district (later the county) regarding which entity had the responsibility to provide sewage service to which local residents and the corresponding right to tax those residents to pay for the service. In March 1959, the city and the district seemed to reach a consensus that a single sewage authority would soon be necessary, because of the likelihood that the city would annex much of the area then taxed by the district, an opinion shared by many others in the region. But the district later argued that recent annexations by the city did not mean those areas were no longer part of the district, an opinion the city rejected. A dispute was growing about whether the city or the district was better suited to provide sewage service to the

metropolitan area. For the next year or more, as the sewage plant expansion was under construction, city and district officials argued their respective cases in joint meetings and presented differing plans for how a single metropolitan authority should look and operate.

Things were at an impasse, but a provisional agreement was finally reached in June 1960. The city would take over all sewer lines within city boundaries, which included a large area (21 square miles) annexed by the city in 1959. The area had been served by the district during the previous year but would now be served by the city. A long-term arrangement was left for an unspecified future date. The district wanted a metropolitan sewer authority, administered jointly by the city, the county, and the city-county health department. The city was opposed to the idea, arguing that city residents were already paying for sewer service as part of their general property tax and would not be willing to pay the additional tax that a metropolitan authority implied. Also, a metropolitan authority would bring a duplication of administrative costs. "The City Council has taken a firm stand that sewers inside the city will be operated under direct city administration" (TDC, 23 June 1960). City manager Homer wanted the city to be in charge of extending lines beyond the city limits where needed, and for homes added to the system to pay the service fee now paid by city residents.

The issue of how or when a single metropolitan sewage authority would be formed was still unresolved four years later when the Tucson Sewage Treatment Plant was once again in need of expansion. In March 1964, the city council voted to hire a Phoenix firm, Henningson, Durham and Richardson, to design a $1,000,000 addition to the plant. The firm and its Tucson affiliate, Gene Anderson Engineering, would be paid $121,760 for the design. This selection overruled a screening committee's recommendation that John Carollo and L. O. Henry, of Phoenix and Tucson, respectively, be awarded the contract. Carollo (evidently with Henry's assistance, though his name does not appear on construction plans) designed the first two stages of the plant. By July 1964, the design team was urging the city to construct a more substantial expansion costing $2,600,000, and to complete it by January 1967. By then, they calculated, the average daily flow into the plant would exceed its current capacity of 24 million gallons per day (mgd). Construction would require a bond issue, and then 15 months to complete, which meant a decision had to be made promptly. The team recommended that the expansion use the activated sludge method, which they chose for its compactness. This was the method used in the original plant, and the new expansion could be located adjacent to the existing plant and its first expansion. The methods considered by the designers were an activated sludge plant (10 mgd) similar to the original plant; a plant similar to the trickling filter plant of the first expansion (also 10 mgd); and an activated sludge plant built about 4 miles downstream from the current plant.

Also in July 1964, Wilfred C. Gilbert, director of public health engineering for the Arizona Department of Health, urged Mayor Lew Davis and the city council to approve the proposed expansion of the sewage treatment plant. He had examined the plan proposed by Henningson, Durham and Richardson and Gene Anderson and concurred with their recommendations. He noted that even if the plan was approved immediately, the expansion would not be complete before the existing capacity was severely exceeded. In August 1964, Henningson, Durham and Richardson and Gene Anderson were given notice to proceed with their design, which was now a 12.9 mgd expansion of the existing plant. The team would receive $88,382 for the design of the expansion, and $11,280

for the design of changes to the existing plant. The overall project, scheduled to be complete by January 1966, was expected to meet the needs of the city and the district until 1975.

The planned second expansion had its opponents. In September 1964, Albert Oshrin, the farmer who was buying effluent from the city to water his fields, urged the city council to build two new oxidation ponds to handle sewage instead of building the proposed expansion. His motives in opposing the plan are unclear, but Oshrin claimed that he just hoped to save the city money. A member of the council, James Kirk, told him, "When you get professionals of equal status to certify that these people (i.e., the design team) were wrong, then we can sit down and talk" (TDC, 9 September 1964). Oshrin repeated his opposition to the expansion as late as February 1965, but nothing seems to have come of it. By November 1964, city water director Paul Beerman was warning that the city needed to speed up its expansion of the sewage plant as well as the construction of new trunk sewers on Roger Road, 18th Street, and the west bank of the Santa Cruz River. He noted that the existing plant had exceeded full capacity several times during the preceding summer. He also noted that federal funds might be available to cover part of the cost, but the city needed to proceed with the project with or without federal funds. Bond issues needed to be passed quickly and construction needed to begin by the spring. In March 1965, assistant city manager John Urie recommended that the city council approve the sale of bonds to build the new trunk sewer lines, and it was agreed that a bond issue would be made later in the spring for the proposed sewage plant expansion.

Public sentiment was once again largely in support of the proposed sewage plant expansion. By October 1965, the funds necessary to expand the sewage plant were in hand, consisting of $2,000,000 from a city bond issue approved on June 1 and a $600,000 grant from the federal government. City water director Beerman announced that the design work was nearly complete, and that the expansion itself, which would increase the capacity of the plant from 24 mgd to 36 mgd, would be complete by mid-1967. A call for bids went out, and the bids were opened in January 1966. The low bidder was W. P. Harlin Construction Company of Salt Lake City, Utah, at $2,384,437 for a diffused aeration system or $2,453,436 for a mechanical aeration system (the former system was eventually chosen). Robert E. McKee Construction Company of El Paso, Texas, which had the second-lowest bid, called for an investigation into the bidding process, but it is not clear that an investigation ever took place. In July 1966, a ground-breaking ceremony for the expansion was held, and in November 1967, Mayor Lew Davis and Councilman G. Freeman Woods turned a large valve to begin operations at the newly completed expansion.

While the second expansion of the Tucson Sewage Treatment Plant was under construction, the question of whether a single metropolitan sewage authority should be organized, and whether the City of Tucson or Sanitary District No. 1 should be in charge of it, was raised once again. In February 1966, district chairman Richard E. Bailey stated that he favored a single metropolitan sewer district, which he thought should also handle water distribution. Deputy city manager Roger O'Mara agreed that an integrated system was desirable, but "if one were formed, then the city should run it," because the city was already handling 90 percent of the sewage in the metropolitan area (TDC, 16 February 1966). But the issue remained unresolved for a few more years. In August 1968, Sanitary District No. 1 was on the verge of disappearing, though not because the City of Tucson was about to absorb its duties. Rather, an election was to be held for residents of the district

to decide if the district would be dissolved and its responsibilities assumed by Pima County. Just before the election, both the county and the district assumed that the change would happen and argued that if voters decided otherwise, the funding of future sewer projects in the county would be unnecessarily complicated. The results of the election went the county and the district's way, and on September 1 the district was dissolved. Kenneth Scharman, the district manager, became the director of the overall county operation. The city and the county would argue for the next decade about which had the right and responsibility for sewage lines inside and outside the city limits. By October 1973, Scharman was urging sewage administrators in both governments to develop a proposal for a metropolitan water and sewer authority and not to wait for a decision by elected officials about who would run it.

In 1972, further impetus for the development of a single metropolitan sewage authority came in the form of an amendment to the federal Water Pollution Control Act of 1948. Known as the Clean Water Act, the new law included a mandate to establish area-wide frameworks for the collection and treatment of sewage. The initial response to the law by the city and county came in 1974 in the form of a joint agency called Metropolitan Utilities Management (MUM). The agency was organized to facilitate the regional planning and management of both water distribution and sewage collection and treatment. But the city continued to administer and operate the sewage system within the city limits, and the county continued to administer and operate its own facilities in unincorporated areas. The new agency was dissolved just two years later, in 1976, as the U.S. Environmental Protection Agency (EPA) continued to press for a single authority to administer and operate wastewater treatment in the Tucson Basin. By this time, the Pima Association of Governments (PAG), a nonprofit association first organized in 1972 to address planning issues that crossed city and county jurisdictions, had been selected by the governor of Arizona as the designated planning agency for Pima County. In 1974, PAG had recommended the construction of a 25-mgd regional wastewater treatment facility along Ina Road, about 4 miles downstream from the Tucson Sewage Treatment Plant, on the site of existing county-owned sewage lagoons. The plant was completed in 1975, the same year that a 1.5-mgd plant was completed by the city at Randolph Park, east of downtown (City of Tucson and Pima County 2009; Price and Smith 1977; Schladweiler 2000).

In June 1979, the city and county sewage systems were finally joined into a single regional system with the passage of an intergovernmental agreement (IGA), known informally as the sewer merger. The Pima County Wastewater Management Department, which had adopted that name the year before, was given responsibility for the operation of all regional sewage facilities, including the Roger Road Wastewater Treatment Facility (the new name of the Tucson Sewage Treatment Plant), the Ina Road Wastewater Treatment Facility, 1,600 miles of sewer main, several wastewater pump stations within the City of Tucson, and various facilities serving outlying incorporated and unincorporated areas. The city transferred ownership of all city-owned facilities to the county without cost, but, in mutual recognition of the growing importance of treated effluent as a water supply, the City of Tucson was given rights to a majority of the effluent generated by the overall system. Meanwhile, even before the IGA was official, plans for a new expansion of the Roger Road plant were underway, including an upgrade of the trickling-filter plant of the first expansion, the addition of improved sludge digestion facilities, and the construction of a new single-point discharge to replace the three separate discharges of the original plant and its first two expansions.

The previously parallel but mostly independent processes of the original plant and its first two expansions were also merged into a single integrated process. The capacity of the newly expanded plant, which went into operation in 1982, was 30 mgd (City of Tucson 1979; City of Tucson and Pima County 2009; Schladweiler 2000).

After 1982, improvements to the Roger Road plant were frequent and diverse, ranging from upgrades of the sludge-handling facilities to the construction of a septage receiving station for material trucked from household septic tanks. In 1989, the Chicago firm of Consoer, Townsend and Associates was contracted by the county to design a major expansion of the plant from 30 mgd to 41 mgd, including additional clarifiers, digesters, and thickeners, improved chlorination and dechlorination facilities, and remodeling of the control, administration, and maintenance buildings. Construction of the expansion took place in three phases from 1989 to 1995 as funding became available. Other, smaller improvement projects have taken place since 1989, but the expansion to 41 mgd was largely responsible for the current layout and appearance of the plant, which is now officially known as the Roger Road Wastewater Reclamation Facility (City of Tucson and Pima County 2009; Pima County Wastewater Management Department 1984, 1985, 1989, 1995a, 1995b, 2005; Schladweiler 2000).

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CHAPTER 6

BUILDINGS AND STRUCTURES AT THE ROGER ROAD WASTEWATER RECLAMATION FACILITY

To document and evaluate the Roger Road Wastewater Reclamation Facility, WSA made an inventory of its extant buildings and structures using: a map of the current facility prepared by Pima County (referred to here as the RRWRF directory); recent aerial photographs of the area; aerial photographs of the area taken in 1953, 1960, 1967, 1973, and 1980; original construction plans for the facility and its many improvements; and a pedestrian survey of the facility by the author, guided by the current manager of the facility, Frank Gall. The inventory is the basis of a map of the current facility prepared by WSA, with each building and structure color-coded to reflect its age (Figure 13). Using the same sources, WSA created a table of the extant buildings and structures, including columns for original and current names, design years, and notes (Table 4). In addition to being included on the map and in the table, each building or structure at least 45 years old (i.e, built in 1968 or earlier) has been documented on a State of Arizona Historic Property Inventory Form (HPIF). The 32 completed HPIFs are included in this report as Appendix B.

Most of the text that appears in the HPIFs also appears below in the descriptions of individual buildings and structures at least 45 years old, which are presented in the order of the survey numbers assigned to them by WSA (see Table 4). For the most part, the survey numbers reflect the relative age of the building or structure (i.e., earlier buildings and structures have lower numbers, later ones have higher numbers). The names used below are the original names of the buildings and structures, many of which are different from the names currently used (see Table 4). Two entries in Table 4, the Lower and Upper ponds (WSA Survey Nos. 25 and 26), are both at least 45 years old but consist of simple artificial reservoirs created to hold irrigation water for landscaping at the facility. The ponds lack visible structural elements and have changed shape several times over the years. Neither pond has been documented in an HPIF or is discussed further here.

Each of the building and structure descriptions provided below is followed by an evaluation of the NRHP/ARHP eligibility of the individual building or structure. General comments about the NRHP/ARHP eligibility of the Roger Road Wastewater Reclamation Facility as a whole, and of groups of buildings and structures within the facility, are reserved for the final chapter.

In the following descriptions, references are made to the years that buildings and structures were designed or built without citing specific sources. Unless noted otherwise, this information comes from the original construction plans examined by WSA (City of Tucson 1949, 1958, 1965, 1979; Pima County Wastewater Management Department 1984, 1985, 1989, 1990, 1995a, 1995b, 2005) or from our review of contemporary newspaper articles, as discussed above and summarized in Appendix A. Although nearly all of the buildings and structures described below appear in drawings on one or more pages of the original construction plans, the large size of the plans and the level of technical detail they include made it difficult to reproduce them at a useful scale in this report. Original drawings are reproduced below only if they add to the discussion and are easily interpreted at a scale suitable for report-sized pages.

Figure 13. Map of the Roger Road Wastewater Reclamation Facility, showing the design year of individual buildings and structures.

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Table 4. Extant buildings and structures at the Roger Road Wastewater Reclamation Facility.

WSA Survey No.	RRWRF Directory No.[a]	Current Name[a]	Design Year[b]	Design Year of Notable Changes	Original Name or Function	Notes	NRHP/ARHP Recommendation	HPIF[d] Completed
1	11	Control and Administration Building	1949	ca. 1963, 1965, 1985	Control Building (1949); small extension on north of Control Building (ca. 1963); Administration Building (1965); interior improvements (1985)	Current footprint dates to ca. 1967; current interior dates to 1985 (with some later improvements).	Eligible (A)	Yes
2	15	Equalization Basins	1949		Primary Sedimentation Tanks Nos. 1–4	Treated as one structure here.	Eligible (A)	Yes
3	16	Aeration Basin No. 1	1949		Aerator No. 1	Northern of two.	Eligible (A)	Yes
4	16	Aeration Basin No. 2	1949		Aerator No. 2	Southern of two.	Eligible (A)	Yes
5	8	Final Clarifier No. 1	1949		Secondary Sedimentation Tank No. 1	Northern of two.	Eligible (A)	Yes
6	8	Final Clarifier No. 2	1949		Secondary Sedimentation Tank No. 2	Southern of two.	Eligible (A)	Yes
7	24	Digester No. 1	1949		Primary Digester	Eastern of two.	Not eligible	Yes
8	24	Digester No. 2	1949		Secondary Digester	Western of two.	Not eligible	Yes
9	24	Control House No. 1	1949	1979	Digester Control House (1949); addition (1979)		Not eligible	Yes
10	23	Warehouse/Maintenance Building	1949	1958, 1965, 1985	Garage and Shop (1949); Covered Storage (1958); Maintenance Building (1965); additions (1985)	Maintenance Building was addition to Covered Storage in 1965, Garage and Shop remained separate; additions in 1985 created a single large building; current footprint and interior date to 1985.	Not eligible	Yes
11	—	Old Drying Beds	1949		Sludge Beds	Original extent of Sludge Beds was much greater than current extent.	Not eligible	Yes
12	3	Primary Clarifier No. 5	1958		Primary Sedimentation Tank No. 5	Northern of two.	Not eligible	Yes
13	3	Primary Clarifier No. 6	1958		Primary Sedimentation Tank No. 6	Southern of two.	Not eligible	Yes
14	4	Biotower No. 1	1979		Biofilter No. 1	Northern of two; the current 1979 structure has the same footprint as the 1958 Trickling Filter No. 1 but is a completely different structure.	Not eligible	No
15	4	Biotower No. 2	1979		Biofilter No. 2	Southern of two; the current 1979 structure has the same footprint as the 1958 Trickling Filter No. 2 but is a completely different structure.	Not eligible	No
16	18	Thickener No. 1	1958	1965, 1979	Thickener No. 1	Northern of two. Improvements in 1965 included installation of roof over originally open tank. Improvements in 1979 included installation of large pre-cast concrete panels (with core layer of insulation) around the upper half of the exterior wall; and large, encircling pipework for odor control.	Not eligible	Yes
17	18	Thickener No. 2	1958	1965, 1979	Thickener No. 2	Southern of two. Improvements in 1965 included installation of roof over originally open tank. Improvements in 1979 included installation of large pre-cast concrete panels (with core layer of insulation) around the upper half of the exterior wall; and large, encircling pipework for odor control.	Not eligible	Yes

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Table 4. Extant buildings and structures at the Roger Road Wastewater Reclamation Facility (continued).

WSA Survey No.	RRWRF Directory No.[a]	Current Name[a]	Design Year[b]	Design Year of Notable Changes	Original Name or Function	Notes	NRHP/ARHP Recommendation	HPIF[d] Completed
18	25	Digester No. 3	1958		Digester No. 3		Not eligible	Yes
19	25	Control House No. 2	1958	1965	Control House No. 2	West half of current footprint built in 1958, east half in 1965 (in conjunction with Digesters Nos. 3 and 4, respectively).	Not eligible	Yes
20	9	Final Clarifier No. 3	1958		Secondary Sedimentation Tank No. 3	Northern of two.	Not eligible	Yes
21	9	Final Clarifier No. 4	1958		Secondary Sedimentation Tank No. 4	Southern of two.	Not eligible	Yes
22	1	Pump Station No. 1	1958		Pump Station No. 1		Not eligible	Yes
23	2	Pump Station No. 2	1958		Pump Station No. 2		Not eligible	Yes
24	4	Pump Station No. 4	1979		Pump Station No. 4 (1958); addition [?] (1979)	Footprint of current 1979 structure encompasses the footprint of the 1958 Pump Station No. 4, but the 1979 structure is a larger and completely different structure.	Not eligible	No
25	—	Lower Pond	1960c		Pond	1960 aerial photo shows this pond but not the Upper Pond.	Not eligible	No
26	—	Upper Pond	1965		Pond		Not eligible	No
27	5	Primary Clarifier No. 7	1965		Primary Clarifier No. 9	Northern of two.	Not eligible	Yes
28	5	Primary Clarifier No. 8	1965		Primary Clarifier No. 10	Southern of two.	Not eligible	Yes
29	36	Aeration Basins	1965	1979	Aeration Basins	"Nos. 3, 4, 5, 6" in legend on RRWRF directory map; designed as single structure and treated so here. In 1979 design, original splitter box on east side was replaced.	Not eligible	Yes
30	6	Final Clarifier No. 5	1965		Final Clarifier No. 7	Northern of two.	Not eligible	Yes
31	6	Final Clarifier No. 6	1965		Final Clarifier No. 8	Southern of two.	Not eligible	Yes
32	22	DAFT Building	1965		Flotation Thickener Building	DAFT stands for Dissolved Air Flotation Thickener.	Not eligible	Yes
33	25	Digester No. 4	1965		Digester No. 4		Not eligible	Yes
34	5	Pump Station No. 5	1965		Sludge Pump Station		Not eligible	Yes
35	6	Pump Station No. 6	1965		—	Considered part of 1965 Aeration Basins when built, not labeled separately that year.	Not eligible	Yes
36	35	Blower Building	1965		Blower Building		Not eligible	Yes
37	32	Welding Shop	1965	1979	Chlorine Building (1965); Welding Shop (1979)	Conversion to Welding Shop increased size of building (by addition of open-sided portion on west).	Not eligible	Yes

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Table 4. Extant buildings and structures at the Roger Road Wastewater Reclamation Facility (continued).

WSA Survey No.	RRWRF Directory No.[a]	Current Name[a]	Design Year[b]	Design Year of Notable Changes	Original Name or Function	Notes	NRHP/ARHP Recommendation	HPIF[d] Completed
38	30	Middle Warehouse	1973c		—	Absent on 1967 aerial photo, present on 1973 aerial photo; shed-roof carport present on north side in 2010 aerial photo.	Not eligible	No
39	33	Headworks	1979	1990	Headworks (1979); grit removal upgrade (1990)	Applies to four structures on RRWRF directory map; small structure northwest of main structure is labeled Yard Structure No. 1 on 1979 plans and is listed separately here.	Not eligible	No
40	—	—	1979		Yard Structure No. 1	Labeled on RRWRF directory map as part of Headworks; original name from 1979 plans.	Not eligible	No
41	10	Final Clarifier No. 7	1979		Final Clarifier No. 7	Located south of Pump Station No. 10.	Not eligible	No
42	10	Pump Station No. 10	1979		Pump Station No. 10		Not eligible	No
43	3	Pump Station No. 3	1979		Splitter Structure No. 1	Footprint of 1979 structure differs slightly from current footprint.	Not eligible	No
44	7	Pump Station No. 7	1979		Pump Station No. 7		Not eligible	No
45	8	Pump Station No. 8	1979		Pump Station No. 8		Not eligible	No
46	9	Pump Station No. 9	1979		Pump Station No. 9		Not eligible	No
47	—	—	1979		Pump Station No. 11	Inside Control Building; not on RRWRF directory map.	Not eligible	No
48	37	Chlorine Monitoring Building	1979		Chlorine Feed and Storage Building		Not eligible	No
49	39	Chlorine Contact Chamber	1979		Chlorine Contact Basin	Two separate squares on RRWRF directory map, but it is a single structure.	Not eligible	No
50	40	Process Water Pump Station	1979		Process Water Pump Station		Not eligible	No
51	42	Effluent Pump Station	1979		Effluent Pump Station		Not eligible	No
52	46	Outfall Structure	1979		Outfall Structure	Just outside APE provided by Pima County.	Not eligible	No
53	21	Generator Building	1979	1995	Mechanical Building (1979); expanded to south (1995)		Not eligible	No
54	26	Digester No. 5	1984		Digester No. 5		Not eligible	No
55	26	Control House No. 3	1984		Control House No. 3		Not eligible	No
56	27	Digester No. 6	1984		Digester No. 6		Not eligible	No
57	27	Control House No. 4	1984		[not labeled]		Not eligible	No

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Table 4. Extant buildings and structures at the Roger Road Wastewater Reclamation Facility (continued).

WSA Survey No.	RRWRF Directory No.[a]	Current Name[a]	Design Year[b]	Design Year of Notable Changes	Original Name or Function	Notes	NRHP/ARHP Recommendation	HPIF[d] Completed
58	10	Final Clarifier No. 8	1989		Final Clarifier No. 8		Not eligible	No
59	12	Final Clarifier No. 9	1990		Final Clarifier No. 9		Not eligible	No
60	12	Pump Station No. 12	1990		Pump Station No. 12		Not eligible	No
61	28	Sludge Pumping Station	1990		Sludge Pumping Station		Not eligible	No
62	43	Dechlorination Building	1990	1995	Dechlorination Building (1990); Dechlorination Feed Facility (1995)		Not eligible	No
63	48	Charter School Building	1990		Laboratory Office Building		Not eligible	No
64	13	Septage Receiving	1990		Septage Receiving Station		Not eligible	No
65	13	Pump Station No. 13	1990		Pump Station No. 13		Not eligible	No
66	—	—	1990		Equalization Basin	Part of Septage Receiving Station on RRWRF directory map but not labeled; immediately north of Pump Station No. 13.	Not eligible	No
67	13	—	1990		Odor Control Chemical Storage	On RRWRF directory map, labeled 13, but map key does not identify this particular structure.	Not eligible	No
68	37A	Storage Building	1990		Bulk Chlorine Facilities		Not eligible	No
69	47	Field Lab	1992[c]		—	Absent on 1980 aerial photo, present on 1992 aerial photo.	Not eligible	No
70	29	South Warehouse	1992[c]		—	Absent on 1980 aerial photo, present on 1992 aerial photo.	Not eligible	No
71	34	Construction Trailer	1992[c]		—	Absent on 1980 aerial photo, present on 1992 aerial photo; different portable structures (trailers) at this location since 1992.	Not eligible	No
72	44	North Stormwater [Basin]	1992[c]		—	Absent on 1980 aerial photo, present on 1992 aerial photo; shown as existing on 2005 plan (same year South Stormwater Basin was constructed).	Not eligible	No
73	14	Pump Station No. 14	1995		Pump Station No. 14		Not eligible	No
74	14	Primary Clarifier No. 9	1995		Primary Clarifier No. 9	Southern of two.	Not eligible	No
75	14	Primary Clarifier No. 10	1995		Primary Clarifier No. 10	Northern of two.	Not eligible	No
76	17	Chemical Storage	1995		Odor Control Chemical Storage		Not eligible	No
77	19	Thickener No. 3	1995		Gravity Thickener No.3	Northern, circular of two structures labeled 19 on RRWRF directory map.	Not eligible	No

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Table 4. Extant buildings and structures at the Roger Road Wastewater Reclamation Facility (continued).

WSA Survey No.	RRWRF Directory No.[a]	Current Name[a]	Design Year[b]	Design Year of Notable Changes	Original Name or Function	Notes	NRHP/ARHP Recommendation	HPIF[d] Completed
78	41A	Bulk Bisulfite Storage	1995[c]	2002	Emergency Scrubber Pad (1995); simple concrete pad became Bulk Bisulfite Storage (2002)	Absent on 1992 aerial photo, present on 1996 aerial photo; appears on 1995 plan as existing.	Not eligible	No
79	—	Bulk Oil Storage	1996[c]		—	Absent on 1992 aerial photo, present on 1996 aerial photo; appears on RRWRF directory map with label but without number.	Not eligible	No
80	23	Warehouse/Maintenance Trailer	1995[c]		Lunch Room/Shower Facility	Absent on 1980 aerial photo, present on 1992 aerial photo; different portable structures (trailers) at this location since 1992.	Not eligible	No
81	20	Meter Building	2002[c]		—	Absent on 1996 aerial photo, present on 2002 aerial photo.	Not eligible	No
82	31	North Warehouse	2002[c]		—	Absent on 1996 aerial photo, present on 2002 aerial photo.	Not eligible	No
83	38	Hypochlorite Feed Building	2003[c]		—	Absent on 2002 aerial photo, present on 2003 aerial photo.	Not eligible	No
84	41	Bisulfite Feed Building	2003[c]		—	Absent on 2002 aerial photo, present on 2003 aerial photo.	Not eligible	No
85	45	South Stormwater [Basin]	2005		Stormwater Retention Basin		Not eligible	No
86	19	Thickener No. 4	2006		Biosolids Thickening Facility	Southern, rectangular of two structures labeled 19 on RRWRF directory map.	Not eligible	No
87	38A	Bulk Sodium Hypochlorite Storage	2008[c]		—	Absent on 2006 aerial photo, present on 2008 aerial photo.	Not eligible	No
88	11	Operations Trailer	2008[c]		—	Absent on 2007 aerial photo, present on 2008 aerial photo; portable building.	Not eligible	No

[a]Numbers and names from current (2012) RRWRF directory map, where some numbers designate multiple features.

[b]Year of acceptance of design plans by City of Tucson or Pima County; construction was usually complete one or two years later.

[c]Approximate year of construction (latest possible date of construction); determined from aerial photographs (see Notes).

[d]HPIF = Historic Property Inventory Form

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1. Control Building

This building is the current Control and Administration Building of the Roger Road Wastewater Reclamation Facility (Figures 14–19). The north half of the building, originally known as the Control Building, was included in the original plans prepared in 1949 by the Phoenix engineering firm of Headman, Ferguson and Carollo for what was first known as the Tucson Sewage Treatment Plant. The Control Building was built in 1950–1951, along with the rest of the original treatment facility, by M. M. Sundt Construction Company of Tucson. As originally built, the Control Building included an office, a chlorinator room, a control room, a blower room, a pump room (located in a partial basement), and a laboratory. The laboratory was fully equipped for analyzing water samples from different stages in the treatment process. A newspaper article, written in 1950 as construction of the plant neared completion, described the laboratory as the "nerve center" of the plant, "where all controls, valves and checking instruments will be located. Here the superintendent and resident chemist will be able to keep a constant check on every part of the plant and samples can be drawn from every unit to determine the actions and progress of the sewage treatment" (*TDC,* 3 November 1950).

At some point after the original building was completed, a small, one-room addition was made to the north side of the building, near its northwest corner. The addition served as a receiving and storage room for water samples. No plans for the addition have been found by WSA. It does not appear on an aerial photograph of the plant taken in 1960 (see the discussion of aerial photographs at the end of this chapter), but it does appear on an aerial photograph taken in 1963 (a photographic print currently on display in the lobby of the Control and Administration Building), which must be close to its year of construction. The design of its exterior closely matches that of the original Control Building, with a gable-end tiled roof and an exposed concrete bond beam at the bottom of the gable.

The south half of the current building was designed in 1965 by Gene E. Anderson (Tucson) and Henningson, Durham & Richardson (Phoenix), the two-firm engineering team for a general expansion of the plant. The expansion, including this building, was built in 1966–1967 by the W. P. Harlin Construction Company of Salt Lake City. Originally called the Administrative Building, it had an ell-shaped plan and was joined to the original Control Building at the north end of the smaller arm of the ell. The longer, east-west arm of the ell was connected by sidewalk, running under an open-sided north-south breezeway canopy, to the original Control Building. The Administrative Building was built to provide additional office space, a kitchen, rest rooms, and a reception area. With the original building, it surrounded an open courtyard. The addition is, like the original building, of brick-faced, concrete-block construction on a concrete slab, but the roof is flat with built-up roofing rather than the tiled gable-end roof of the original Control Building. The original building and the addition have functioned as a single building since the addition was built. The footprint of the current Control and Administration Building is basically the same as the resulting 1967 overall footprint.

In 1985, improvements were made to the Administration Building (which referred to the overall building at the time) by Black & Veatch, consulting engineers and architects of Kansas City, Mis-

Figure 14. The Control Building (now the Control and Administration Building), view to the north.

Figure 15. The Control Building (now the Control and Administration Building), main entrance, view to the north.

Figure 16. The Control Building (now the Control and Administration Building), breezeway and courtyard, view to the northwest.

Figure 17. The Control Building (now the Control and Administration Building), cross-gable at east end of south facade, view to the north.

Figure 18. The Control Building (now the Control and Administration Building), west and south facades, view to the northeast.

Figure 19. The Control Building (now the Control and Administration Building), east and north facades, view to the southeast.

souri. The improvements included a reorganization of the interior of the original Control Building, converting much of it to administrative or office space. Some of the original windows were replaced or closed off with brick, but both the 1951 and 1967 portions of the building still retain some of the original steel awning windows, and the south facade of the east end of the original Control Building still has the original glass-block windows.

NRHP/ARHP Evaluation

The original 1951 Control Building has undergone major changes to its interior and is now part of a larger building with a primarily administrative rather than technical function, but it retains much of its original exterior appearance, including a distinctive red tile roof, and red brick walls with decorative pre-cast concrete elements. The style of the building is hard to specify, but the cross-gables of the east end of the building and the red tile roof are elements seen in Spanish Eclectic buildings of the first half of the twentieth century (McAlester and McAlester 2006:417–429). The 1967 addition of the Administrative Building to the south side of the Control Building created a single, much larger building with a much-changed footprint, but the addition also has a red brick exterior with decorative concrete elements, similar in style to the original Control Building. The addition has a more Modern look, with a flat roof rather than the gable-end roof of the original building, but together the two buildings form an integrated whole, surrounding a small, open courtyard. Changes to the exterior of the overall building over the years have included the closing off of some window openings and the replacement of some windows and doors with stylistically inappropriate units. But the overall building still retains the general appearance it had in the years just after the 1967 addition was made, and the earliest portion of the current building is still easily recognizable as the original 1951 Control Building. WSA recommends that the overall building be considered eligible for listing in the NRHP/ARHP under Criterion A for its association with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period.

In addition to having individual significance, the current Control and Administration Building is part of a small group of structures, including Primary Sedimentation Tanks Nos. 1–4, Aerators Nos. 1 and 2, and Secondary Sedimentation Tanks Nos. 1 and 2, that together represent a substantial intact portion of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. WSA recommends that the current Control and Administration Building also be considered eligible for listing in the NRHP/ARHP under Criterion A as part of this group of structures.

2. Primary Sedimentation Tanks Nos. 1–4

This set of four concrete tanks is currently known as the Equalization Basins of the Roger Road Wastewater Reclamation Facility. The four rectangular, open, side-by-side tanks are identical and were built at the same time; each tank shares walls with the tanks immediately adjacent, which makes the four tanks essentially a single structure (Figure 20). The upper surfaces of the structure are at grade, with walkways and hand rails separating the four tanks. The tanks were originally known as Primary Sedimentation Tanks Nos. 1–4 when the Tucson Sewage Treatment Plant was

Figure 20. Primary Sedimentation Tanks Nos. 1–4 (now the Equalization Basins), view to the west.

first built in 1950–1951. Raw sewage entered the plant from the east via a headworks that has since been removed. Equipment in the headworks removed grit and large debris from the sewage then routed it to the Primary Sedimentation Tanks, where sludge settled to the bottom and scum was skimmed from the top. The sludge, scum, and remaining effluent then exited the Primary Sedimentation Tanks to the next structures in the sequence. Primary Sedimentation Tanks Nos. 1–4 have been out of service and drained since ca. 1989 (the year of major improvements to the larger plant).

The overall footprint of the Primary Sedimentation Tanks is square, 132 feet by 132 feet. The depth of the tanks is 12 feet, with narrow channels set at intervals in the floor reaching 15 feet deep. The tanks are almost entirely of poured concrete, including the floors and walls of the tanks and a series of round pillars and square cross beams that form a grid across the structure. The pillars and beams support walkways that crisscross the structure and also once supported equipment that scraped sludge from the bottom of the tanks and skimmed scum from the top. This equipment has been removed, but the embedded steel rails that the equipment rode on are still in place in the floors of the tanks. The easternmost portion of the tanks, where sewage first entered, is separated from the rest of the tanks by a brick wall with regularly spaced openings that served as a baffle to slow the flow of incoming sewage.

NRHP/ARHP Evaluation

Except for minor elements such as plumbing connections and handrails that have been replaced or added over the years, Primary Sedimentation Tanks Nos. 1 and 4 are mostly unchanged from their

original appearance and in excellent condition. These tanks are utilitarian structures of a simple and very common design and by themselves they lack distinction. However, they are part of a small group of structures, including the Control House, Aerators Nos. 1 and 2, and Secondary Sedimentation Tanks Nos. 1 and 2, that together represent a substantial intact portion of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. WSA recommends that Primary Sedimentation Tanks Nos. 1 and 4, as part of this group of structures, be considered eligible for listing in the NRHP/ARHP under Criterion A for their association with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period.

3 and 4. Aerators Nos. 1 and 2

This set of two concrete tanks is currently known as the Aeration Basins of the Roger Road Wastewater Reclamation Facility. The two rectangular, open, side-by-side tanks were built at the same time, and the tanks share the wall that runs between them, which makes the two tanks essentially a single structure (Figure 21). The upper surfaces of the structure are at grade, with a central east-west walkway and hand rails separating the two tanks and sidewalks with handrails running along the outer sides of the tanks. The tanks were originally known as Aerators Nos. 1–2 when the Tucson Sewage Treatment Plant was first built in 1950–1951. Raw sewage entered the plant from the east via a headworks that has since been removed. Equipment in the headworks removed grit and large debris from the sewage then routed it to the Primary Sedimentation Tanks, just east of the Aerators. After the initial removal of sludge and scum in the Primary Sedimentation Tanks, the sewage entered the east end of the Aerators. In the Aerators, large nozzles set at intervals in the floor of the tanks injected forced air into the sewage to accelerate the bacterial breakdown of organic matter. The air originated from large blowers mounted in the blower room of the original Control Building. Aerators Nos. 1–2 have been out of service and drained since ca. 1989 (the year of major improvements to the larger plant).

The overall footprint of the Aerators is a long rectangle, 87 feet 6 inches north-south by 272 feet 9 inches east-west. The depth of the tanks is 16 feet 9 inches. The tanks are entirely of poured concrete, including the floors and walls of the tanks and a series of square pillars and square cross beams that form a grid across the structure. The pillars and beams support the central walkway that runs the length of the structure. A system of pipes is mounted on the walls and floors of the tanks to carry air from the blower room to the nozzles that aerated the sewage.

NRHP Evaluation

Except for minor elements such as plumbing connections and handrails that have been replaced or added over the years, Aerators Nos. 1 and 2 are mostly unchanged from their original appearance and in excellent condition. These tanks are utilitarian structures of a simple and very common design and by themselves they lack distinction. However, they are part of a small group of structures, including the Control House, Primary Sedimentation Tanks Nos. 1–4, and Secondary Sedimentation Tanks Nos. 1 and 2, that together represent a substantial intact portion of the original

Figure 21. Aerators Nos. 1 and 2 (now Aeration Basins Nos. 1 and 2), view to the west.

Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. WSA recommends that Aerators Nos. 1 and 2, as part of this group of structures, be considered eligible for listing in the NRHP/ARHP under Criterion A for their association with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period.

5. Secondary Sedimentation Tank No. 1

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Final Clarifier No. 1 of the Roger Road Wastewater Reclamation Facility (Figure 22). The tank was originally known as Secondary Sedimentation Tank No. 1 when the Tucson Sewage Treatment Plant was first built in 1950–1951. The tank originally received sewage from Aerators Nos. 1 and 2, located immediately to the east. The Aerators are no longer used, but Final Clarifier Nos. 1 and 2 are actively used components of the current treatment system and now receive sewage from other components. Sewage is routed to the Final Clarifiers from a gate box located between the basically identical structures (Figure 23). The gate box also dates to the original construction of the plant.

Secondary Sedimentation Tank No. 1 was built with a maximum diameter of 106 feet 8 inches and a maximum depth of 15 feet. The upper edge of the outer tank wall is about 6 inches above grade and supports a pipe hand rail around the full circumference of the tank. Just inside the upper tank wall is a channel, also of concrete, that measures 2 feet wide and 2 feet 8 inches deep and runs along the inside of the upper wall; its upper edge is 1 foot 6 inches lower than the upper edge of

Figure 22. Secondary Sedimentation Tank No. 1 (now Final Clarifier No. 1), view to the southeast.

Figure 23. Original (and actively used) gate box located between Secondary Sedimentation Tanks Nos. 1 and 2 (now Final Clarifiers Nos. 1 and 2), view to the west.

the outer wall. The upper edge of the inner wall has a notched steel weir plate bolted to its inner edge to regulate the flow of water in the tank into the channel, from which it is routed elsewhere for additional treatment. At the center of the tank is a pier, on which is mounted a secondary sludge collector and skimming arms that extend to the edges of the tank. A walkway extends to the pier from the north edge of the tank. The bottom of the tank slopes downward from the outer edges to the center where accumulated sludge is pumped elsewhere for additional treatment.

NRHP/ARHP Evaluation

Except for minor elements such as plumbing connections and handrails that have been replaced or added over the years, Secondary Sedimentation Tank No. 1 is mostly unchanged from its original appearance and in excellent condition. The tank is a utilitarian structure of a simple and very common design and by itself lacks distinction. However, it is part of a small group of structures, including the Control House, Primary Sedimentation Tanks Nos. 1–4, Aerators Nos. 1 and 2, and Secondary Sedimentation Tank No. 2, that together represent a substantial intact portion of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. WSA recommends that Secondary Sedimentation Tank No. 1, as part of this group of structures, be considered eligible for listing in the NRHP/ARHP under Criterion A for its association with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period.

6. Secondary Sedimentation Tank No. 2

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Final Clarifier No. 2 of the Roger Road Wastewater Reclamation Facility (Figure 24). The tank was originally known as Secondary Sedimentation Tank No. 2 when the Tucson Sewage Treatment Plant was first built in 1950–1951. The tank originally received sewage from Aerators Nos. 1 and 2, located immediately to the east. The Aerators are no longer used, but Final Clarifier Nos. 1 and 2 are actively used components of the current treatment system and now receive sewage from other components. Sewage is routed to the Final Clarifiers from a gate box located between the basically identical structures (see Figure 23). The gate box also dates to the original construction of the plant.

Secondary Sedimentation Tank No. 2 was built with a maximum diameter of 106 feet 8 inches and a maximum depth of 15 feet. The upper edge of the outer tank wall is about 6 inches above grade and supports a pipe hand rail around the full circumference of the tank. Just inside the upper tank wall is a channel, also of concrete, that measures 2 feet wide and 2 feet 8 inches deep and runs along the inside of the upper wall; its upper edge is 1 foot 6 inches lower than the upper edge of the outer wall. The upper edge of the inner wall has a notched steel weir plate bolted to its inner edge to regulate the flow of water in the tank into the channel, from which it is routed elsewhere for additional treatment. At the center of the tank is a pier, on which is mounted mechanical equipment, including a secondary sludge collector and skimming arms that extend to the edges of the tank. A walkway extends to the pier from the north edge of the tank. The bottom of the tank slopes downward from the outer edges to the center, where accumulated sludge is pumped elsewhere for additional treatment.

Figure 24. Secondary Sedimentation Tank No. 2 (now Final Clarifier No. 2), view to the east.

NRHP/ARHP Evaluation

Except for minor elements such as plumbing connections and handrails that have been replaced or added over the years, Secondary Sedimentation Tank No. 2 is mostly unchanged from its original appearance and in excellent condition. The tank is a utilitarian structure of a simple and very common design and by itself lacks distinction. However, it is part of a small group of structures, including the Control House, Primary Sedimentation Tanks Nos. 1–4, Aerators Nos. 1 and 2, and Secondary Sedimentation Tank No. 1, that together represent a substantial intact portion of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. This group of structures is eligible for listing in the NRHP/ARHP under Criterion A for its association with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period.

7. Primary Digester

This cylindrical, aboveground, closed concrete tank and accompanying mechanical equipment is currently known as Digester No. 1 of the Roger Road Wastewater Reclamation Facility (Figure 25). The tank was originally known as the Primary Digester when the Tucson Sewage Treatment Plant was first built in 1950–1951. The tank originally received sludge from Secondary Sedimentation Tanks Nos. 1 and 2, located to the southeast. Digester No. 1 is an actively used component of

the current treatment system and receives sludge from various components. It operates in tandem with Digester No. 2 (also built in 1950–1951 and originally known as the Secondary Digester), located just 30 feet to the west. The two Digesters are joined by Control House No. 1 (originally known as the Digester Control House), which houses the mechanical equipment associated with the operation of the Digesters (Figure 26).

The outer wall of the Primary Digester is 32 feet 6 inches high and 83 feet in diameter. As originally built, the structure had a floating cover that moved vertically within the wall of the tank in accordance with the volume of gas in the digester. The cover consisted of a steel-truss framework with a membrane stretched over it. The floor of the digester was concrete and sloped downward from the base of the wall to a central point, 6 feet 8 inches below grade, where a pipe was mounted to draw off sludge for recirculation. Various pipes to introduce or draw off sludge, supernatant liquid, and gas connected the tank to the Digester Control House. In 1979, during extensive improvements to the plant as a whole, the floating cover was replaced with a fixed cover. Various changes were also made in 1979 to the plumbing, electrical, and mechanical connections of the Primary Digester with the Digester Control House.

NRHP/ARHP Evaluation

The Primary Digester was part of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. It is physically connected to the Secondary Digester by the Digester Control House, which stands between the two digesters. All three structures were designed and built at the same time and are associated with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period. However, the Primary Digester lacks integrity of design and materials because its original floating cover was replaced with a fixed cover during plant improvements made in 1979. Its connection to the Digester Control House, a building that was expanded to twice its original size in the 1979 improvements, also contributes to its lack of integrity. WSA recommends that the Primary Digester be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

8. Secondary Digester

This cylindrical, aboveground, closed concrete tank and accompanying mechanical equipment is currently known as Digester No. 2 of the Roger Road Wastewater Reclamation Facility (Figure 27). The tank was originally known as the Secondary Digester when the Tucson Sewage Treatment Plant was first built in 1950–1951. The tank originally received sludge from Secondary Sedimentation Tanks Nos. 1 and 2, located to the southeast. Digester No. 2 is an actively used component of the current treatment system and receives sludge from various components. It operates in tandem with Digester No. 1 (also built in 1950–1951 and originally known as the Primary Digester), located just 30 feet to the west. The two Digesters are joined by Control House No. 1 (originally known as the Digester Control House), which houses the mechanical equipment associated with the operation of the Digesters (see Figure 26).

Figure 25. Primary Digester (now Digester No. 1), view to the south.

Figure 26. Primary Digester (left) and Secondary Digester (right) (now Digesters Nos. 1 and 2, respectively), view to the south. The Digester Control House (now Control House No. 1), which joins the two buildings, is obscured by the pipework in the foreground.

Figure 27. Secondary Digester (now Digester No. 2), view to the southwest.

The outer wall of the Secondary Digester is 32 feet 6 inches high and 83 feet in diameter. As originally built, the structure had a floating cover that moved vertically in accordance with the volume of gas in the digester. The cover consisted of a steel-truss framework with a membrane stretched over it. The floor of the digester was concrete and sloped downward from the base of the wall to a central point, 6 feet 8 inches below grade, where a pipe was mounted to draw off sludge for recirculation. Various pipes to introduce or draw off sludge, supernatant liquid, and gas connected the tank to the Digester Control House. In 1979, during extensive improvements to the plant as a whole, the floating cover was replaced with a fixed cover. Various changes were also made in 1979 to the plumbing, electrical, and mechanical connections of the Secondary Digester with the Digester Control House.

NRHP/ARHP Evaluation

The Secondary Digester was part of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. It is physically connected to the Primary Digester by the Digester Control House, which stands between the two digesters. All three structures were designed and built at the same time and are associated with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period. The Secondary Digester has good integrity and is mostly unchanged from its original appearance and design, but its connection to the Primary Digester and Digester Control House, both of which were significantly altered during plant improvements in 1979, detracts from its integrity. WSA recommends that the Secondary Digester be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

9. Digester Control House

This flat-roofed, rectangular-plan, single-story building is currently known as Control House No. 1 of the Roger Road Wastewater Reclamation Facility (Figures 28–30). The building was originally known as the Digester Control House when the Tucson Sewage Treatment Plant was first built in 1950–1951 (Figure 31). The building occupied the space between the Primary Digester and the Secondary Digester and was built to house the equipment used to operate the two digesters, which still function today and are known as Digesters Nos. 1 and 2. Control House No. 1 continues to serve the same function as the original Digester Control House, but various upgrades and changes have been made to the equipment it houses and to its connections with the adjacent digesters.

The original Digester Control House is entirely of poured-concrete construction, with a footprint measuring 30 feet 9 inches north-south by 36 feet east-west and a height of 16 feet. Because the building fills the space between the two cylindrical digesters, the curved walls of the digesters form the east and west walls of the building. Both the north and south facades of the building have the same combination of two window openings and one door opening. The window openings on both facades are 5 feet 8 inches high by 4 feet wide and hold stacked-four-light steel awning windows. The door opening on the north side is 7 feet 2 inches high by 6 feet 4 inches wide and has a set of double out-swing doors; the door opening on the south is 7 feet 2 inches high by 4 feet wide and has a single out-swing door.

Figure 28. The Digester Control House (now Control House No. 1), view to the south.

Figure 29. The Digester Control House (now Control House No. 1), view to the northwest. This view shows the 1979 addition made to the south side of the original Digester Control House built in 1950–1951.

Figure 30. Interior of the original 1950–1951 portion of the Digester Control House (now Control House No. 1).

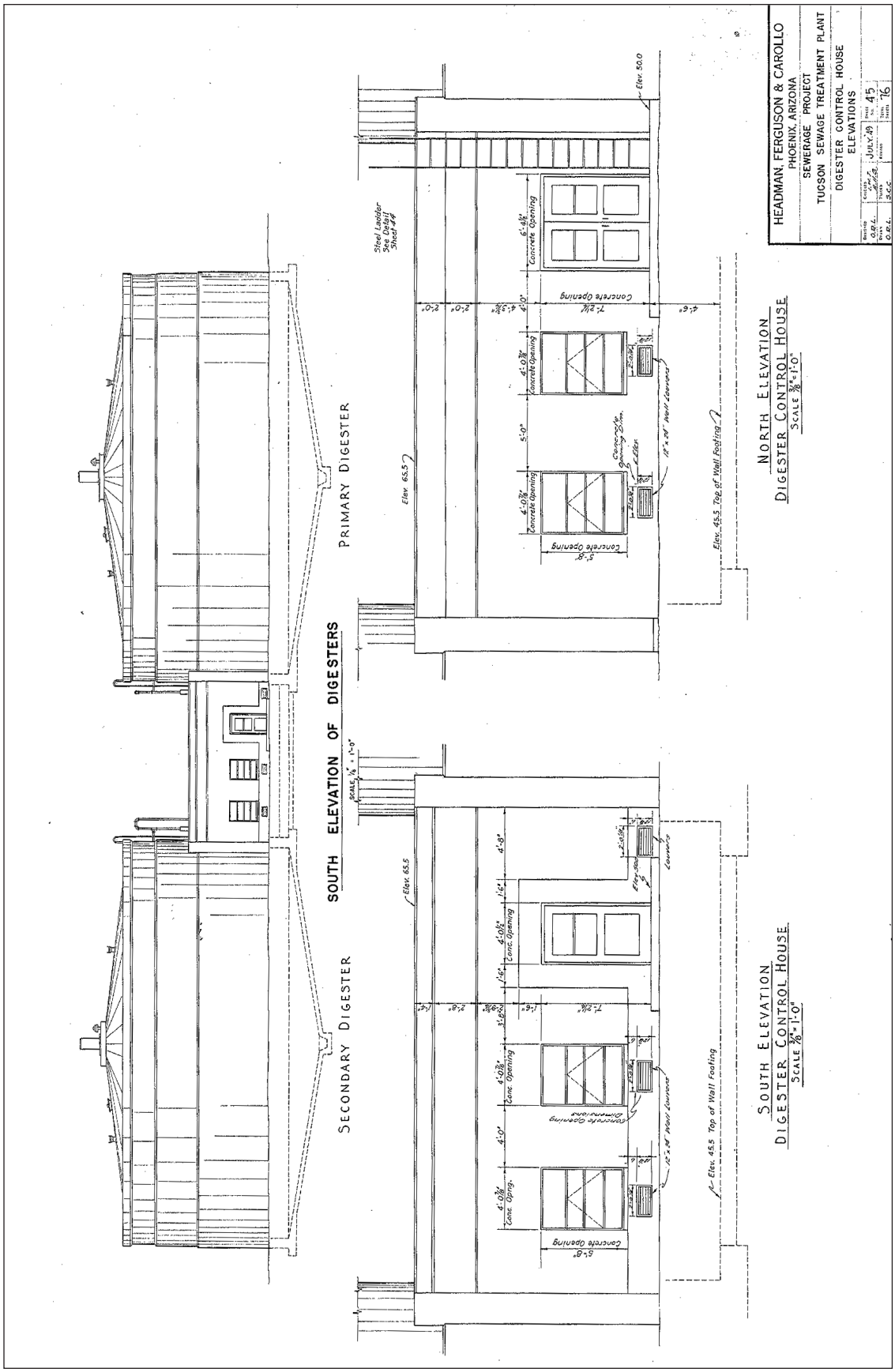

Figure 31. Original construction plans for the Digester Control House, 1949.

In 1979, extensive improvements to the plant as a whole included an addition to the south side of the Digester Control House to make room for additional digester-related equipment. The addition extended south from the original south wall of the Digester Control House, with the same height and a footprint measuring 31 feet 4 inches north-south by 28 feet 2 inches east–west. The floor and footers of the addition are poured concrete; the walls are concrete block in a stacked pattern, which is visible on the interior of the addition. The original construction plans called for a brick face on the block walls, but if brick was used it was later covered with concrete stucco, which is the visible finish on the addition today. Communication between the original building and the addition is via the south doorway of the original building. The addition has a central doorway on the south with double out-swing doors. Two tall, single-light windows are in the east wall of the addition near its southeast corner.

NRHP/ARHP Evaluation

The Digester Control House was part of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. It stands between the Primary and Secondary digesters and serves as the connection between them. All three structures were designed and built at the same time and are associated with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period. However, the Digester Control House lacks integrity. Both its original portion and the later addition are utilitarian in design and largely lack decorative embellishments, but despite the simple design, the 1979 addition does not fit well with the 1950–1951 original building: most notably, the tall, narrow, single-light windows on the addition contrast with the wider, more squat steel awning windows on the original building. WSA recommends that the Digester Control House be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

10. Garage and Shop/Covered Storage/Maintenance Building

This building is the current Warehouse/Maintenance Building of the Roger Road Wastewater Reclamation Facility (Figures 32 and 33). It was built in stages, beginning as the Garage and Shop of the original Tucson Sewage Treatment Plant built in 1950–1951. The building was sited just east of the original Primary and Secondary digesters, which today are Digesters Nos. 1 and 2. The original Garage and Shop survives as the southern portion of the current building. It was a single-story building with a low-pitch, gable-end roof and a rectangular floor plan measuring 71 feet 4 inches north-south by 41 feet 4 inches east-west. The foundation of the building was poured concrete footers and slab; the walls were brick-faced concrete block; and the roof was of wooden trusses capped with ceramic roof tiles. The northern 22 feet of the original building was shop space, with double out-swing doors on the west and windows on the north and east sides. The rest of the building was a drive-through two-bay garage with two 22-foot steel doors on both the east and west sides of the building and concrete pillars between the doors. The Garage and Shop had an appearance similar to the original Control Building, with red brick walls, concrete bond beams at the tops of the walls, and ceramic tile roof.

Figure 32. The Garage and Shop/Covered Storage/Maintenance Building (now the Warehouse/ Maintenance Building), view to the northwest.

Figure 33. The northern portion of the Garage/Covered Storage/Maintenance Building (now the Warehouse/Maintenance Building), view to the east.

In 1960, improvements to the sewage treatment plant included the construction of a small building sited just to the north of the original Garage and Shop. The new building, called Covered Storage, had a rectangular floor plan measuring 26 feet 6 inches north-south by 41 feet 6 inches east-west. A concrete slab covered the footprint of the building, with a small enclosed room at the east end of the slab and an open-sided storage area on the west. A gable-end, wooden-truss, ceramic tile roof covered the entire slab. The enclosed room had brick-faced, concrete-block walls, an out-swing door on the west, and two windows on the east. The red brick walls and ceramic tile roof made the Covered Storage similar in appearance to the Garage and Shop and the Control Building.

In 1967, a large addition was made to the north side of the Covered Storage to create a single Maintenance Building. The footprint and roof of the original Covered Storage were retained, but the open-sided storage area was enclosed, with doorways leading to the addition. The fully enclosed addition had a rectangular floor plan measuring 32 feet north-south by 117 feet 6 inches east-west. The addition had brick-faced, concrete-block walls, like the enclosed portion of the original Covered Storage, but it had a flat, steel-truss roof with built-up roofing rather than a gable-end pitch roof. Along the north exterior wall of the new Maintenance Building, a concrete ramp and loading dock were built.

The original Garage and Shop and the enlarged Maintenance Building remained separate buildings and unchanged until improvements designed in 1985 joined them. The 25 feet separating the two buildings was taken up by a northward extension of the original Garage and Shop, which met the portion of the Maintenance Building that was previously the Covered Storage building. The gable-end pitch roof of the Covered Storage building, its long axis running east-west, was removed and replaced with an extension of the pitch roof of the Garage and Shop. The single, elongated gable-end pitch roof, its long axis running north-south, now met the south edge of the flat roof of the northern portion of the Maintenance Building. A room addition was also made on the west end of the former Covered Storage, and another was made on the west end of the northern portion of the overall building; the former addition was built as an electrical shop, the latter as a paint shop. All of the new construction has an exterior face of red brick that matches the exterior of each earlier building, though seams are easily distinguished. Many changes in door and window openings were also made, including the closing off of the large bay doors of the original Garage and Shop. The interior of the new, larger building was completely reorganized and refinished as office, warehouse, and shop space. Today the building retains the overall 1985 design.

NRHP/ARHP Evaluation

The original Garage and Shop building was part of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. Thus, the current building has an association with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period. The Garage and Shop was an integral part of the original plant and was designed in the same style as the original Control Building. However, the many changes and additions made to the building over the last 60 years have greatly compromised its historic integrity. WSA recommends that the current Warehouse/Maintenance Building be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

11. Sludge Beds

The Sludge Beds, now called the Old Drying Beds at the Roger Road Wastewater Reclamation Facility, were an original component of the Tucson Sewage Treatment Plant first built in 1950–1951 (Figure 34). As originally built, the Sludge Beds covered an area measuring 690 feet north-south by 493 feet east-west, somewhat more than twice the area they currently cover. The remaining beds, which correspond to a portion of the eastern half of the original footprint of the beds, cover an area about 480 feet north-south by 200 feet east-west. As originally built, the Sludge Beds consisted of two side-by-side sets of 12 shallow, open, V-shaped beds, lined with concrete, with their long axes oriented east-west (Figure 35). Each set of 12 beds had a narrow, open, concrete "dosing trough" that ran north-south across the beds, with gates in both sides of the trough at the center of each bed. Sludge processed by the Primary and Secondary digesters, just to the south of the beds, was routed to the dosing troughs for discharge into the beds. The dried sludge was used by the City of Tucson as fertilizer in city parks.

In 1960, when an expansion of the original treatment plant was made, the area of the original Sludge Beds was approximately doubled by building two new sets of basically identical beds at the north end of the existing beds (Figure 36). Rather than extending due north from the existing beds, the footprint of the new beds angled northwestward, conforming to the bank of the Santa Cruz River. The existing dosing troughs were also extended the length of the new beds.

Figure 34. The Sludge Beds (now the Old Drying Beds), view to the north.

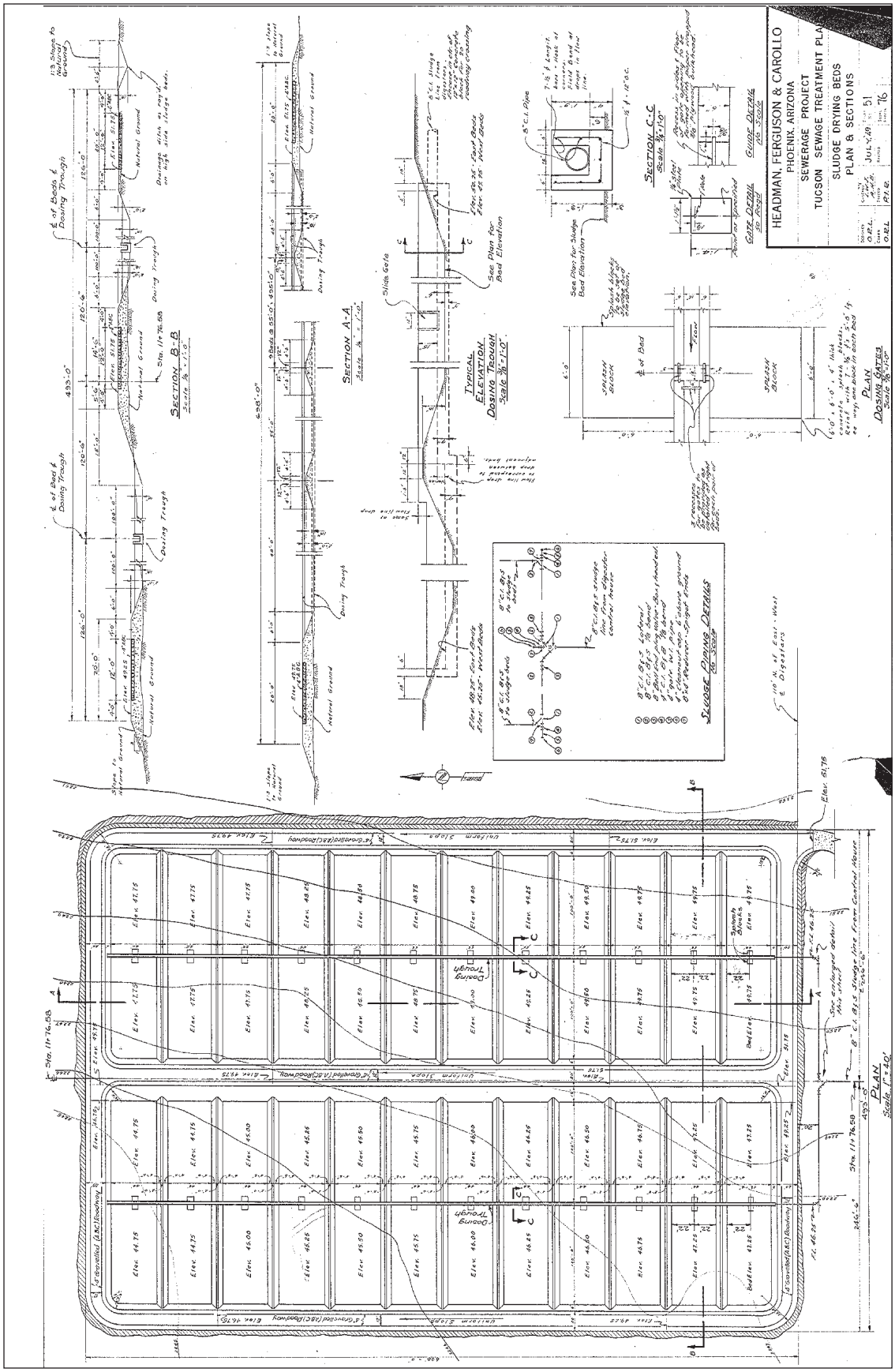

Figure 35. Original construction plans for the Sludge Beds, 1949.

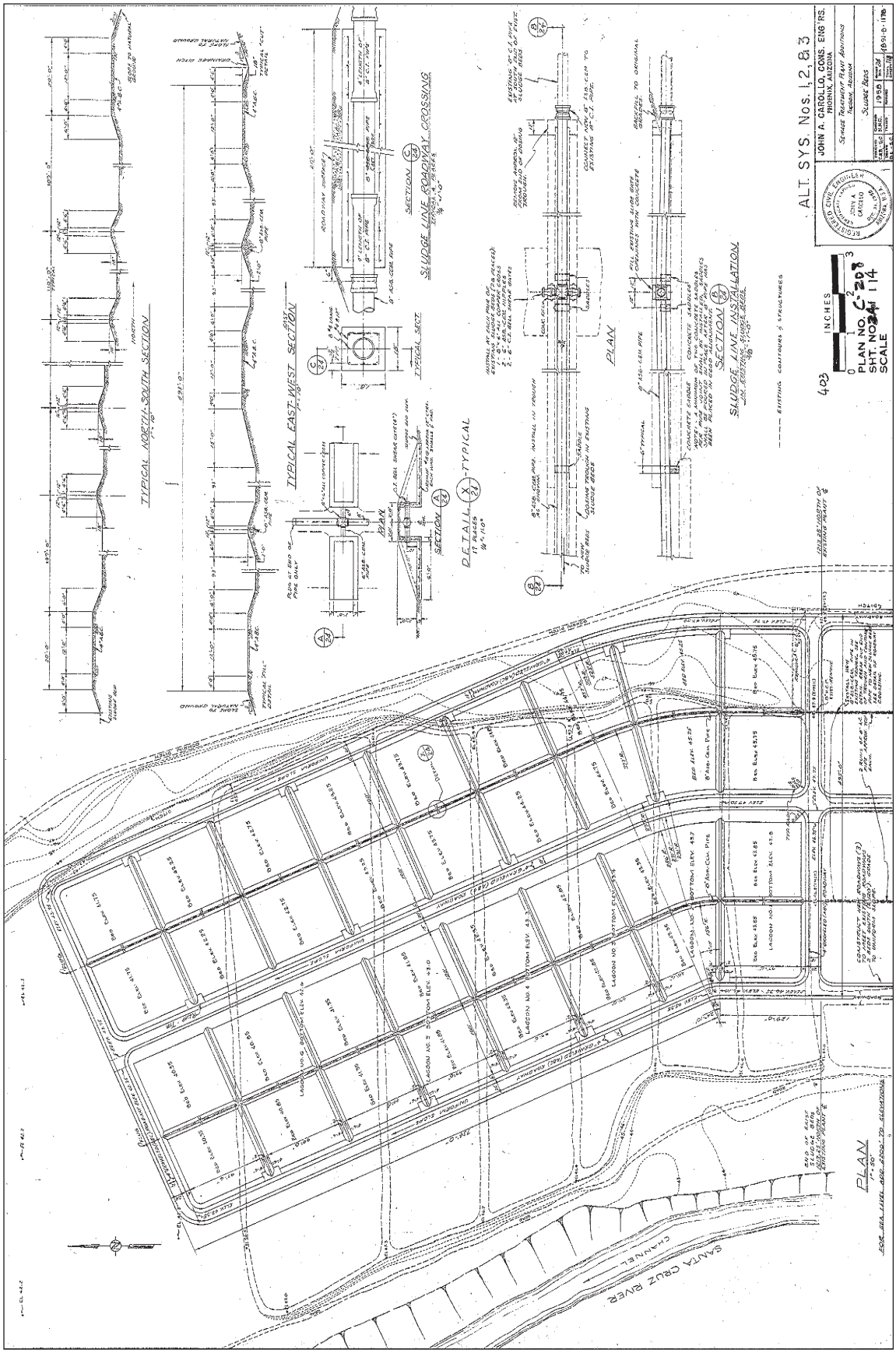

Figure 36. Construction plans for an expansion of the Sludge Beds, 1958.

The Sludge Beds remained in use until the 1980s, when a different sludge-processing system, designed to reduce the volume of sludge exiting the plant, was built. Since then, portions of the abandoned beds have been demolished as needed to make room for other sewage treatment facilities. The northern portion of the Sludge Beds, added in 1960, was completely eliminated before the ongoing construction of the new Roger Road Wastewater Reclamation Facility began.

NRHP/ARHP Evaluation

The Sludge Beds were part of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. Thus, these structures have an association with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period. However, much of the original extent of the Sludge Beds has been eliminated during improvement projects at the plant over the last 60 years, and the surviving portion of the Sludge Beds have been out of service for many years and are in poor condition. WSA recommends that the Sludge Beds be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

12. Primary Sedimentation Tank No. 5

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Primary Clarifier No. 5 of the Roger Road Wastewater Reclamation Facility (Figure 37). The tank was originally known as Primary Sedimentation Tank No. 5 when it was built as part of the 1959–1960 expansion of the original Tucson Sewage Treatment Plant. Primary Sedimentation Tank No. 6, now known as Primary Clarifier No. 6, was built at the same time and is a mirror image of this tank; both structures are actively used parts of the current treatment plant. As originally built, the two tanks received sewage from a headworks that was also constructed during 1959–1960 to replace the plant's original headworks; the current headworks, which now routes sewage to Primary Clarifiers Nos. 5 and 6, is a completely different structure dating to the 1970s.

The sewage treated by Primary Sedimentation Tanks Nos. 5 and 6 was originally routed westward to Trickling Filters Nos. 1 and 2, also built during the 1959–1960 expansion of the original 1950–1951 plant. The Trickling Filters were demolished entirely to build Biofilters Nos. 1 and 2 (with the same footprints as the Trickling Filters) in 1979; the Biofilters, now known as Biotowers Nos. 1 and 2, still exist and currently receive sewage from Primary Clarifiers Nos. 5 and 6.

Primary Sedimentation Tank No. 5 was built with a maximum diameter of 105 feet and a maximum depth of about 15 feet. The upper edge of the outer tank wall is about 6 inches above grade and supports a pipe hand rail around the full circumference of the tank. Just inside the upper tank wall is a channel, also of concrete, that measures 3 feet wide and 2 feet 8 inches deep and runs along the inside of the upper wall; its upper edge is 3 feet 6 inches lower than the upper edge of the outer wall. This channel was originally open, but it is now covered by black plastic panels, part of an odor-control effort of uncertain but recent date. The upper edge of the inner wall was fitted with

Figure 37. Primary Sedimentation Tank No. 5 (now Primary Clarifier No. 5), view to the east.

a notched steel weir plate bolted to its inner edge to regulate the flow of water in the tank into the channel. At the center of the tank is a pier, on which is mounted a skimming arm that extends to the edge of the tank. A walkway extends to the pier from the south edge of the tank. The bottom of the tank slopes downward from the outer edges to the center where accumulated sludge is pumped elsewhere for additional treatment.

Apart from mechanical, electrical, and plumbing changes made over the years as the treatment system as a whole was changed or upgraded, Primary Sedimentation Tank No. 5 is basically the same today as it was when it was built in 1959–1960.

NRHP/ARHP Evaluation

Primary Sedimentation Tank No. 5 was built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including Primary Sedimentation Tank No. 6 and Secondary Sedimentation Tanks Nos. 3 and 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Primary Sedimentation Tank No. 5 be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

13. Primary Sedimentation Tank No. 6

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Primary Clarifier No. 6 of the Roger Road Wastewater Reclamation Facility (Figure 38). The tank was originally known as Primary Sedimentation Tank No. 6 when it was built as part of the 1959–1960 expansion of the original Tucson Sewage Treatment Plant. Primary Sedimentation Tank No. 5, now known as Primary Clarifier No. 5, was built at the same time and is a mirror image of this tank; both structures are actively used parts of the current treatment plant. As originally built, the two tanks received sewage from a headworks that was also constructed during 1959–1960 to replace the plant's original headworks; the current headworks, which now routes sewage to Primary Clarifiers Nos. 5 and 6, is a completely different structure dating to the 1970s.

The sewage treated by Primary Sedimentation Tanks Nos. 5 and 6 was originally routed westward to Trickling Filters Nos. 1 and 2, also built during the 1959–1960 expansion of the original 1950–1951 plant. The Trickling Filters were demolished entirely to build Biofilters Nos. 1 and 2 (with the same footprints as the Trickling Filters) in 1979; the Biofilters, now known as Biotowers Nos. 1 and 2, still exist and currently receive sewage from Primary Clarifiers Nos. 5 and 6.

Primary Sedimentation Tank No. 6 was built with a maximum diameter of 105 feet and a maximum depth of about 15 feet. The upper edge of the outer tank wall is about 6 inches above grade and supports a pipe hand rail around the full circumference of the tank. Just inside the upper tank wall is a channel, also of concrete, that measures 3 feet wide and 2 feet 8 inches deep and runs

Figure 38. Primary Sedimentation Tank No. 6 (now Primary Clarifier No. 6), view to the northeast.

along the inside of the upper wall; its upper edge is 3 feet 6 inches lower than the upper edge of the outer wall. This channel was originally open, but it is now covered by black plastic panels, part of an odor-control effort of uncertain but recent date. The upper edge of the inner wall was fitted with a notched steel weir plate bolted to its inner edge to regulate the flow of water in the tank into the channel. At the center of the tank is a pier, on which is mounted a skimming arm that extends to the edge of the tank. A walkway extends to the pier from the south edge of the tank. The bottom of the tank slopes downward from the outer edges to the center where accumulated sludge is pumped elsewhere for additional treatment.

Apart from mechanical, electrical, and plumbing changes made over the years as the treatment system as a whole was changed or upgraded, Primary Sedimentation Tank No. 6 is basically the same today as it was when it was built in 1959–1960.

NRHP/ARHP Evaluation

Primary Sedimentation Tank No. 6 was built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including Primary Sedimentation Tank No. 5 and Secondary Sedimentation Tanks Nos. 3 and 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Primary Sedimentation Tank No. 6 be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

16. Thickener No. 1

This circular concrete tank and accompanying mechanical equipment is currently known as Thickener No. 1 of the Roger Road Wastewater Reclamation Facility (Figure 39). The original name of the structure was also Thickener No. 1 when it was built as part of the 1959–1960 expansion of the original Tucson Sewage Treatment Plant. Thickener No. 2, also in active use and bearing its original name, was built at the same time and is basically identical to this structure. The two structures stand just 16 feet apart and are joined by a nexus of pipes, electrical work, and mechanical equipment known as the Thickener Control Box (original and current name).

The two Thickeners originally received sludge from the two Trickling Filters of the 1959–1960 expansion but now receive sludge from Biotowers Nos. 1 and 2, which replaced the Trickling Filters in a 1979 plant upgrade. The Thickeners use separation by gravity to produce both a concentrated sludge with lower volume and a supernatant liquid relatively free of solids. The concentrated sludge is pumped from the bottom of each Thickener and sent to the Digesters. The supernatant liquid is recirculated to the Primary Clarifiers.

Thickener No. 1 was built of poured concrete and has a maximum diameter of 55 feet. The vertical exterior wall of the tank has a maximum height of about 12 feet. The bottom of the tank is conical,

Figure 39. Thickener No. 1 (still known as Thickener No. 1), view to the west.

with the outer base of the vertical wall at grade; the conical floor slopes downward to the center of the tank to a depth of about 8 feet below grade. A central pier supports the inlet for sludge at the top of the tank and the scraper arms that move sludge across the sloping bottom of the tank. Along the upper edge of the inner wall is a trough fitted with a notched steel weir plate that regulates the flow of supernatant liquid into the trough.

As originally built, Thickeners Nos. 1 and 2 were open tanks, but in 1967 both structures were provided with flat roofs consisting of steel joists and built-up roofing. In the 1979 plant upgrade, a ring of large, pre-cast, concrete panels (with a core layer of insulation) were installed around the upper half of the exterior wall, and large-diameter pipes were installed to encircle the lower portion of the wall. The panels apparently help regulate temperatures in the Thickeners; the pipework was part of an odor-control effort. Today the ring of pre-cast concrete panels and the pipework are prominent elements in the appearance of the structure. Mechanical, electrical, and plumbing changes have also been made to the Thickeners over the years as the treatment plant as a whole was changed or upgraded.

NRHP/ARHP Evaluation

Thickener No. 1 was built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It has also been modified (during 1967 and 1979 plant improvements) in ways that

compromise its integrity. Thickener No. 1 is part of a group of structures, including Primary Sedimentation Tanks Nos. 5 and 6, and Secondary Sedimentation Tanks Nos. 3 and 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Thickener No. 1 be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

17. Thickener No. 2

This circular concrete tank and accompanying mechanical equipment is currently known as Thickener No. 2 of the Roger Road Wastewater Reclamation Facility (Figure 40). The original name of the structure was also Thickener No. 2 when it was built as part of the 1959–1960 expansion of the original Tucson Sewage Treatment Plant. Thickener No. 1, also in active use and bearing its original name, was built at the same time and is basically identical to this structure. The two structures stand just 16 feet apart and are joined by a nexus of pipes, electrical work, and mechanical equipment known as the Thickener Control Box (original and current name).

The two Thickeners originally received sludge from the two Trickling Filters of the 1959–1960 expansion but now receive sludge from Biotowers Nos. 1 and 2, which replaced the Trickling Filters in a 1979 plant upgrade. The Thickeners use separation by gravity to produce both a concentrated sludge with lower volume and a supernatant liquid relatively free of solids. The concentrated

Figure 40. Thickener No. 2 (still known as Thickener No. 2), view to the northwest.

sludge is pumped from the bottom of each Thickener and sent to the Digesters. The supernatant liquid is recirculated to the Primary Clarifiers.

Thickener No. 2 was built of poured concrete and has a maximum diameter of 55 feet. The vertical exterior wall of the tank has a maximum height of about 12 feet. The bottom of the tank is conical, with the outer base of the vertical wall at grade; the conical floor slopes downward to the center of the tank to a depth of about 8 feet below grade. A central pier supports the inlet for sludge at the top of the tank and the scraper arms that move sludge across the sloping bottom of the tank. Along the upper edge of the inner wall is a trough fitted with a notched steel weir plate that regulates the flow of supernatant liquid into the trough.

As originally built, Thickeners Nos. 1 and 2 were open tanks, but in 1967 both structures were provided with flat roofs consisting of steel joists and built-up roofing. In the 1979 plant upgrade, a ring of large, pre-cast, concrete panels (with a core layer of insulation) were installed around the upper half of the exterior wall, and large-diameter pipes were installed to encircle the lower portion of the wall. The panels apparently help regulate temperatures in the Thickeners; the pipework was part of an odor-control effort. Today the ring of pre-cast concrete panels and the pipework are prominent elements in the appearance of the structure. Mechanical, electrical, and plumbing changes have also been made to the Thickeners over the years as the treatment plant as a whole was changed or upgraded.

NRHP/ARHP Evaluation

Thickener No. 2 was built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It has also been modified (during 1967 and 1979 plant improvements) in ways that compromise its integrity. Thickener No. 2 is part of a group of structures, including Primary Sedimentation Tanks Nos. 5 and 6, and Secondary Sedimentation Tanks Nos. 3 and 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Thickener No. 2 be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

18. Digester No. 3

This cylindrical concrete tank with accompanying mechanical equipment is currently known as Digester No. 3 of the Roger Road Wastewater Reclamation Facility (Figure 41). The original name of the structure was also Digester No. 3 when it was built as part of the 1959–1960 expansion of the original Tucson Sewage Treatment Plant. Digester No. 3 is similar in design to Digester No. 4, but Digester No. 4 was built in the later 1966–1967 expansion of the plant. Digester No. 3 still has its original fixed roof whereas Digester No. 4 was given a floating roof during plant improvements designed in 1979. Digesters Nos. 3 and 4 stand 66 feet apart and are connected by Control House No. 2 (original and current name), which was first built at the same time as Digester No. 3

Figure 41. Digester No. 3 (still known as Digester No. 3), view to the southwest.

but expanded when Digester No. 4 was built; it houses the mechanical equipment associated with the operation of the two digesters. Digesters Nos. 3 and 4 receive sludge from Thickeners Nos. 1 and 2, both built in the 1959–1960 expansion. Digesters use anaerobic bacterial action to further process thickened sludge and reduce its volume.

Digester No. 3 was built of poured concrete and has a maximum diameter of about 84 feet and a maximum height of about 36 feet. It is a closed cylinder with poured-concrete floor and roof. The bottom of the tank is basically flat with a slight downward pitch from north to south to allow drainage to a depressed hopper at the south end of the tank. The roof is also basically flat but has a raised central area about 28 feet in diameter and 3 feet high. The lower half of the wall is 22 inches thick whereas the upper half is 16 inches thick; the transition between the differing wall thicknesses is marked on the wall exterior by a narrow, slightly sloped shelf.

The basic structure of the Digester No. 3 tank has never been significantly altered, but in the 1979 design for general plant improvements a hand rail was added to the upper edge of the roof. Mechanical, electrical, and plumbing changes have also been made to the structure over the years as the treatment plant as a whole has been changed or upgraded.

NRHP/ARHP Evaluation

Digester No. 3 was built as part of the first expansion of the Tucson Sewage Treatment Plant in

1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. Digester No. 3 is part of a group of structures, including Primary Sedimentation Tanks Nos. 5 and 6, and Secondary Sedimentation Tanks Nos. 3 and 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Digester No. 3 be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

19. Control House No. 2

This building is currently known as Control House No. 2 of the Roger Road Wastewater Reclamation Facility (Figure 42). The original name of the structure was also Control House No. 2 when it was built as part of the 1959–1960 expansion of the original Tucson Sewage Treatment Plant. As originally built, Control House No. 2 was attached to the east side of Digester No. 3 (also built in 1959–1960) and housed the equipment necessary for the operation of the digester. It was a one-story, one-room, flat-roofed structure with poured-concrete slab foundation, poured-concrete walls, and built-up roofing over wood joists. The building measured 30 feet 3 inches north-south by 33 feet 6 inches east-west, with the west wall of the building formed by the curving outer wall of Digester No. 3. The south wall had double out-swing doors and a pair of steel awning windows; the north wall had a single out-swing door and a pair of steel awning windows. An open, steel staircase led from the ground on the north side of the building to its roof, and a second staircase, mounted on the roof, led to the roof of Digester No. 3. Apart from minor linear accents, the exterior walls of the building were unadorned, smooth concrete.

Another expansion of the Tucson Sewage Treatment Plant in 1966–1967 included both the construction of Digester No. 4, sited just east of Digester No. 3 and Control House No. 2, and the expansion of Control House No. 2 to create a single building extending between the two Digesters. The expansion was basically the same size and design as the original Control House No. 2, using the curved exterior wall of the new Digester No. 4 as the east wall of the expanded building and extending the north and south facades of the building. The new, expanded building measured 30 feet 3 inches north-south by about 68 feet east-west. The addition included a new single, out-swing door on the south but no windows on either the south or north walls. A doorway was cut in the east wall of the original building to connect it with the addition. A staircase was mounted on the roof of the addition leading to the roof of Digester No. 4. Apart from various subsequent changes in the mechanical, electrical, and plumbing systems of the building over the years, the enlarged building has not changed significantly since the 1966–1967 addition and continues in active use.

NRHP/ARHP Evaluation

Control House No. 2 was originally built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It was enlarged to twice its original size during the second expansion of

Figure 42. Control House No. 2 (still known as Control House No. 2), view to the south.

the Tucson Sewage Treatment Plant in 1967. With its original construction date, Control House No. 2 is part of a group of structures, including Primary Sedimentation Tanks Nos. 5 and 6, and Secondary Sedimentation Tanks Nos. 3 and 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Control House No. 2 be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

20. Secondary Sedimentation Tank No. 3

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Final Clarifier No. 3 of the Roger Road Wastewater Reclamation Facility (Figure 43). The tank was originally known as Secondary Sedimentation Tank No. 3 when it was built as part of an expansion of the Tucson Sewage Treatment Plant in 1959–1960. Secondary Sedimentation Tank No. 4, now known as Final Clarifier No. 4, was built at the same time as Secondary Sedimentation Tank No. 3 and is a mirror image of it. The two tanks originally received partially treated sewage from Trickling Filters Nos. 1 and 2, located immediately to the east. The Trickling Filters were replaced by Biofilters Nos. 1 and 2, now known as Biotowers Nos. 1 and 2, in a plant upgrade designed in 1979. The Biotowers now send partially treated sewage to Final Clarifiers Nos. 3 and 4, which are actively used components of the current treatment system.

Figure 43. Secondary Sedimentation Tank No. 3 (now Final Clarifier No. 3), view to the west-northwest.

Secondary Sedimentation Tank No. 3 was built with a maximum diameter of 115 feet and a maximum depth of 9 feet. The upper edge of the outer tank wall is about 6 inches above grade and supports a pipe hand rail around the full circumference of the tank. Just inside the upper tank wall is a trough, also of concrete, that measures 4 feet wide and 1 foot 8 inches deep and runs along the inside of the upper wall; its upper edge is 2 feet lower than the upper edge of the outer wall. The upper edge of the inner wall has a notched steel weir plate bolted to its inner edge to regulate the flow of water in the tank into the trough, from which it is routed elsewhere for additional treatment. At the center of the tank is a pier, on which is mounted a secondary sludge collector and skimming arms that extend to the edges of the tank. A walkway extends to the pier from the north edge of the tank. The bottom of the tank slopes downward from the outer edges to the center where accumulated sludge is pumped elsewhere for additional treatment.

Apart from various upgrades to its mechanical, electrical, and plumbing systems over the years, Secondary Sedimentation Tank No. 3 has not changed significantly since its original construction.

NRHP/ARHP Evaluation

Secondary Sedimentation Tank No. 3 was built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including Primary Sedimentation

Tanks Nos. 5 and 6, and Secondary Sedimentation Tank No. 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Secondary Sedimentation Tank No. 3 be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

21. Secondary Sedimentation Tank No. 4

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Final Clarifier No. 4 of the Roger Road Wastewater Reclamation Facility (Figure 44). The tank was originally known as Secondary Sedimentation Tank No. 4 when it was built as part of an expansion of the Tucson Sewage Treatment Plant in 1959–1960. Secondary Sedimentation Tank No. 3, now known as Final Clarifier No. 3, was built at the same time as Secondary Sedimentation Tank No. 4 and is a mirror image of it. The two tanks originally received partially treated sewage from Trickling Filters Nos. 1 and 2, located immediately to the east. The Trickling Filters were replaced by Biofilters Nos. 1 and 2, now known as Biotowers Nos. 1 and 2, in a plant upgrade designed in 1979. The Biotowers now send partially treated sewage to Final Clarifiers Nos. 3 and 4, which are actively used components of the current treatment system.

Secondary Sedimentation Tank No. 4 was built with a maximum diameter of 115 feet and a maximum depth of 9 feet. The upper edge of the outer tank wall is about 6 inches above grade and sup-

Figure 44. Secondary Sedimentation Tank No. 4 (now Final Clarifier No. 4), view to the west-southwest.

ports a pipe hand rail around the full circumference of the tank. Just inside the upper tank wall is a trough, also of concrete, that measures 4 feet wide and 1 foot 8 inches deep and runs along the inside of the upper wall; its upper edge is 2 feet lower than the upper edge of the outer wall. The upper edge of the inner wall has a notched steel weir plate bolted to its inner edge to regulate the flow of water in the tank into the trough, from which it is routed elsewhere for additional treatment. At the center of the tank is a pier, on which is mounted a secondary sludge collector and skimming arms that extend to the edges of the tank. A walkway extends to the pier from the north edge of the tank. The bottom of the tank slopes downward from the outer edges to the center where accumulated sludge is pumped elsewhere for additional treatment.

Apart from various upgrades to its mechanical, electrical, and plumbing systems over the years, Secondary Sedimentation Tank No. 4 has not changed significantly since its original construction.

NRHP/ARHP Evaluation

Secondary Sedimentation Tank No. 4 was built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including Primary Sedimentation Tanks Nos. 5 and 6, and Secondary Sedimentation Tank No. 3, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Secondary Sedimentation Tank No. 4 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

22. Pump Station No. 1

This building is an underground room built as part of an expansion of the Tucson Sewage Treatment Plant in 1959–1960 (Figures 45 and 46). It was originally known as Pump Station No. 1 and is still known by that name as a functioning part of the current Roger Road Wastewater Reclamation Facility. As originally built, Pump Station No. 1 housed large electric pumps associated with Secondary Sedimentation Tanks Nos. 3 and 4. The current Pump Station No. 1 continues in basically the same role, housing pumps associated with Final Clarifiers Nos. 3 and 4.

Pump Station No. 1 consists of a poured-concrete box built in an excavation that leaves about 2 feet of the height of the box exposed above grade. The floor of the pump station measures 20 feet north-south by 18 feet 8 inches east-west; the interior height is 8 feet. Wall and ceiling thickness is 6 inches; floor thickness is 18 inches. An open, poured-concrete staircase, 4 feet wide, descends from grade south to north along the west side of the pump station, ending at a door in the west wall of the structure. The floor of the pump station has three raised concrete platforms to mount the pumping equipment. Large pipes run from the pumps mounted on the floor through the east and west walls of the building.

Figure 45. Pump Station No. 1 (still known as Pump Station No. 1), view to the northeast.

Figure 46. Interior view of Pump Station No. 1.

During a general upgrade to the sewage treatment plant in 1979, the equipment and plumbing connections of Pump Station No. 1 were changed, but the structure is otherwise unchanged from its original appearance.

NRHP/ARHP Evaluation

Pump Station No. 1 was built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including Primary Sedimentation Tanks Nos. 5 and 6, and Secondary Sedimentation Tanks Nos. 3 and 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Pump Station No. 1 be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

23. Pump Station No. 2

This building is an underground room built as part of an expansion of the Tucson Sewage Treatment Plant in 1959–1960 (Figures 47 and 48). It was originally known as Pump Station No. 2 and is still known by that name as a functioning part of the current Roger Road Wastewater Reclamation Facility. As originally built, Pump Station No. 2 housed large electric pumps associated with Secondary Sedimentation Tanks Nos. 1 and 2. The current Pump Station No. 2 continues in basically the same role, housing pumps associated with Final Clarifiers Nos. 1 and 2.

Pump Station No. 2 consists of a poured-concrete box built in an excavation that leaves about 3 feet of the height of the box exposed above grade. The floor of the pump station measures 20 feet north-south by 20 feet east-west; the interior height is 8 feet. Wall and ceiling thickness is 6 inches; floor thickness is 18 inches. An open, poured-concrete staircase, 4 feet wide, descends from grade north to south along the east side of the pump station, ending at a door in the east wall of the structure. The floor of the pump station has four raised concrete platforms to mount the pumping equipment. Large pipes run from the pumps mounted on the floor through the north and south walls of the building.

During a general upgrade to the sewage treatment plant in 1979, the equipment and plumbing connections of Pump Station No. 2 were changed, but the structure is otherwise unchanged from its original appearance.

NRHP/ARHP Evaluation

Pump Station No. 2 was built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks

Figure 47. Pump Station No. 2 (still known as Pump Station No. 2), view to the west.

Figure 48. Interior view of Pump Station No. 2.

distinction. It is part of a group of structures, including Primary Sedimentation Tanks Nos. 5 and 6, and Secondary Sedimentation Tanks Nos. 3 and 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Pump Station No. 2 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

27. Primary Clarifier No. 9

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Primary Clarifier No. 7 of the Roger Road Wastewater Reclamation Facility (Figure 49). The tank was originally known as Primary Clarifier No. 9 when it was built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant. Primary Clarifier No. 10, now known as Primary Clarifier No. 8, was built at the same time and is a mirror image of this structure; both structures are actively used parts of the current treatment plant. As originally built, the two tanks received sewage from the headworks built during the 1959–1960 expansion, which replaced the plant's original headworks; the current headworks, which now routes sewage to Primary Clarifiers Nos. 7 and 8, is a completely different structure dating to the 1970s. The sewage treated by Primary Clarifiers Nos. 9 and 10 was originally routed westward to the Aeration Basins, also built during the 1966–1967 expansion, and today the same Aeration Basins receive sewage from Primary Clarifiers Nos. 7 and 8.

Figure 49. Primary Clarifier No. 9 (now Primary Clarifier No. 7), view to the north-northeast.

Primary Clarifier No. 9 was built with a maximum diameter of 112 feet 4 inches and a maximum depth of about 10 feet. The upper edge of the outer tank wall is from 6 to 24 inches above grade and supports a pipe hand rail around the full circumference of the tank. Just inside the upper tank wall is a trough, also of concrete, that measures 2 feet wide and 3 feet deep and runs along the inside of the upper wall; its upper edge is about 18 inches lower than the upper edge of the outer wall. This trough was originally open, but it is now covered by black plastic panels, part of an odor-control effort of uncertain but recent date. The upper edge of the inner wall was fitted with a notched steel weir plate bolted to its inner edge to regulate the flow of water in the tank into the channel. At the center of the tank is a pier, on which is mounted a skimming arm that extends to the edge of the tank. A walkway extends to the pier from the south edge of the tank. The bottom of the tank slopes downward from the outer edges to the center where accumulated sludge is pumped elsewhere for additional treatment.

Apart from mechanical, electrical, and plumbing changes made over the years as the treatment system as a whole was changed or upgraded, Primary Clarifier No. 9 is basically the same today as it was when it was built in 1966–1967.

NRHP/ARHP Evaluation

Primary Clarifier No. 9 was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that Primary Clarifier No. 9 be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

28. Primary Clarifier No. 10

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Primary Clarifier No. 8 of the Roger Road Wastewater Reclamation Facility (Figure 50). The tank was originally known as Primary Clarifier No. 10 when it was built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant. Primary Clarifier No. 9, now known as Primary Clarifier No. 7, was built at the same time and is a mirror image of this structure; both structures are actively used parts of the current treatment plant. As originally built, the two tanks received sewage from the headworks built during the 1959–1960 expansion, which replaced the plant's original headworks; the current headworks, which now routes sewage to Primary Clarifiers Nos. 7 and 8, is a completely different structure dating to the 1970s. The sewage treated by Primary Clarifiers Nos. 9 and 10 was originally routed westward to the Aeration Basins, also built during the 1966–1967 expansion, and today the same Aeration Basins receive sewage from Primary Clarifiers Nos. 7 and 8.

Primary Clarifier No. 10 was built with a maximum diameter of 112 feet 4 inches and a maximum depth of about 10 feet. The upper edge of the outer tank wall is from 6 to 24 inches above grade and

Figure 50. Primary Clarifier No. 10 (now Primary Clarifier No. 8), view to the northeast.

supports a pipe hand rail around the full circumference of the tank. Just inside the upper tank wall is a trough, also of concrete, that measures 2 feet wide and 3 feet deep and runs along the inside of the upper wall; its upper edge is about 18 inches lower than the upper edge of the outer wall. This trough was originally open, but it is now covered by black plastic panels, part of an odor-control effort of uncertain but recent date. The upper edge of the inner wall was fitted with a notched steel weir plate bolted to its inner edge to regulate the flow of water in the tank into the channel. At the center of the tank is a pier, on which is mounted a skimming arm that extends to the edge of the tank. A walkway extends to the pier from the south edge of the tank. The bottom of the tank slopes downward from the outer edges to the center where accumulated sludge is pumped elsewhere for additional treatment.

Apart from mechanical, electrical, and plumbing changes made over the years as the treatment system as a whole was changed or upgraded, Primary Clarifier No. 10 is basically the same today as it was when it was built in 1966–1967.

NRHP/ARHP Evaluation

Primary Clarifier No. 10 was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the

group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that Primary Clarifier No. 10 be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

29. Aeration Basins

This set of rectangular, open, concrete tanks and accompanying mechanical equipment are currently known as Aeration Basins Nos. 3–6 of the Roger Road Wastewater Reclamation Facility (Figure 51). The tanks were originally known simply as the Aeration Basins when they were built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant. The basins consist of eight basically identical, side-by-side, in-ground tanks that were built at the same time; each tank shares walls with the tanks immediately adjacent, which makes the eight tanks essentially a single structure. As originally built, the tanks received sewage from Primary Clarifiers Nos. 9 and 10 (now known as Primary Clarifiers Nos. 7 and 8), located immediately to the east, and the same process continues today. A splitter box, built along the east side of the Aeration Basins, distributes sewage to the eight side-by-side tanks (Figure 52). Air pumped from the Blower Building, also built in 1966–1967 and located at the southeast corner of the Aeration Basins, enters the tanks through diffuser tubes mounted at the bottom of the tanks. A mechanical rotor in each tank also distributes air in the tanks. Air injected into the sewage accelerates the bacterial breakdown of organic matter. From the Aeration Basins, the sewage passes next into Final Clarifiers Nos. 5 and 6 (originally known as Final Clarifiers Nos. 7 and 8).

The overall footprint of the Aeration Basins is 220 feet north-south by 134 feet east-west, with each of the eight subdivisions measuring 26 feet north-south by 134 feet east-west by 18 feet deep. The upper edge of the Aeration Basins as a whole is just a few inches above grade. A poured-concrete wall 18 inches thick stands between each pair of subdivisions. The upper portion of each dividing wall holds a concrete trough 6 feet wide and 4 feet deep with a V-shaped bottom. The troughs have a series of gates and valves that regulate the flow of sewage and air into the tanks. Each trough is covered by a heavy steel grating to form seven east-west walkways spaced at regular intervals, with handrails along the side of each walkway. The outer edges of the basins also have handrails and are skirted by a concrete sidewalk just a few inches above grade. At the center of the east side of the Aeration Basins is the splitter box, which today consists of a partly open, poured-concrete box built into the ground, with 3 feet of its height above grade. As originally built, the splitter box was fully enclosed and entered by a concrete staircase on its east side, but the box was redesigned in 1979 and replaced by the current open-topped box, which is surrounded by handrails and is accessed by a small steel staircase on the south side.

Apart from the replacement of the splitter box in 1979, along with mechanical, electrical, and plumbing changes made at different times over the years as the treatment system as a whole was changed or upgraded, the Aeration Basins are basically the same today as they were when they were built in 1966–1967.

Figure 51. Aeration Basins (still known as Aeration Basins), view to the northwest.

Figure 52. Splitter box designed in 1979, on east side of Aeration Basins, view to the northwest.

NRHP/ARHP Evaluation

The Aeration Basins were built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. They are utilitarian structures of a simple and very common design and by themselves lack distinction. They are part of a group of structures, including Primary Clarifiers Nos. 9 and 10 and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that the Aeration Basins be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

30. Final Clarifier No. 7

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Final Clarifier No. 5 of the Roger Road Wastewater Reclamation Facility (Figure 53). The tank was originally known as Final Clarifier No. 7 when it was built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant. Final Clarifier No. 8, now known as Final Clarifier No. 6, was built at the same time and is a mirror image of this structure; both structures are actively used parts of the current treatment plant. As originally built, the two tanks received partially treated sewage from the Aeration Basins, also built during the 1966–1967 expansion and located just to the east. The same process continues today.

Figure 53. Final Clarifier No. 7 (now Final Clarifier No. 5), view to the north-northeast.

Final Clarifier No. 7 was built with a maximum diameter of 112 feet 4 inches and a maximum depth of about 10 feet. The upper edge of the outer tank wall was about 12 inches above grade. Just inside the upper tank wall was a trough, also of concrete, that measured 2 feet wide and 2 feet deep and ran along the inside of the upper wall; its upper edge was about 18 inches lower than the upper edge of the outer wall. A separate weir trough, also about 3 feet wide and 2 feet deep, was mounted inside the first trough on concrete brackets mounted to the inside of the lower walls of the tank (Figure 54). The weir trough was assembled from 18 individual sections of pre-cast concrete trough, each 16 feet 6 inches in length and longitudinally straight rather than curved; the ends of the sections were mitered to allow assembly into what amounted to a circle. The upper edge of the weir trough was at the same level as the upper edge of the outer trough, but a space about 3 feet wide separated the outer trough from the weir trough. Both upper edges of the weir trough were fitted with a notched fiberglass weir plate to regulate the flow of water from the tank into the trough. At the center of the tank was a pier, on which was mounted a skimming arm that extended to the edge of the tank. A walkway extended to the pier from the south edge of the tank. The bottom of the tank sloped downward from the outer edges to the center where accumulated sludge was pumped elsewhere for additional treatment.

Improvements to the plant designed in 1979 included the removal of the outer portion of the outer trough, which made the inner weir trough, mounted to the inner wall of the tank, the only trough. Removal of the outer portion of the outer trough reduced the overall diameter of the tank to 105 feet. The 1979 improvements also included the installation of an aluminum handrail around the full circumference of the new outer edge of the tank. All of the improvements from the 1979 design are still in place today.

Figure 54. Portion of the interior of Final Clarifier No. 7 (now Final Clarifier No. 5) showing weir trough, view to the northwest.

NRHP/ARHP Evaluation

Final Clarifier No. 7 was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins and Primary Clarifiers Nos. 9 and 10, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that Final Clarifier No. 7 be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

31. Final Clarifier No. 8

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Final Clarifier No. 6 of the Roger Road Wastewater Reclamation Facility (Figure 55). The tank was originally known as Final Clarifier No. 8 when it was built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant. Final Clarifier No. 7, now known as Final Clarifier No. 5, was built at the same time and is a mirror image of this structure; both structures are actively used parts of the current treatment plant. As originally built, the two tanks received partially treated sewage from the Aeration Basins, also built during the 1966–1967 expansion and located just to the east. The same process continues today.

Final Clarifier No. 8 was built with a maximum diameter of 112 feet 4 inches and a maximum depth of about 10 feet. The upper edge of the outer tank wall was about 12 inches above grade. Just inside the upper tank wall was a trough, also of concrete, that measured 2 feet wide and 2 feet deep and ran along the inside of the upper wall; its upper edge was about 18 inches lower than the upper edge of the outer wall. A separate weir trough, also about 3 feet wide and 2 feet deep, was mounted inside the first trough on concrete brackets mounted to the inside of the lower walls of the tank (Figure 56). The weir trough was assembled from 18 individual sections of pre-cast concrete trough, each 16 feet 6 inches in length and longitudinally straight rather than curved; the ends of the sections were mitered to allow assembly into what amounted to a circle. The upper edge of the weir trough was at the same level as the upper edge of the outer trough, but a space about 3 feet wide separated the outer trough from the weir trough. Both upper edges of the weir trough were fitted with a notched fiberglass weir plate to regulate the flow of water from the tank into the trough. At the center of the tank was a pier, on which was mounted a skimming arm that extended to the edge of the tank. A walkway extended to the pier from the south edge of the tank. The bottom of the tank sloped downward from the outer edges to the center where accumulated sludge was pumped elsewhere for additional treatment.

Improvements to the plant designed in 1979 included the removal of the outer portion of the outer trough, which made the inner weir trough, mounted to the inner wall of the tank, the only trough. Removal of the outer portion of the outer trough reduced the overall diameter of the tank to 105 feet. The 1979 improvements also included the installation of an aluminum handrail around the full circumference of the new outer edge of the tank. All of the improvements from the 1979 design are still in place today.

Figure 55. Final Clarifier No. 8 (now Final Clarifier No. 6), view to the south-southwest.

Figure 56. Portion of the interior of Final Clarifier No. 8 (now Final Clarifier No. 6) showing weir trough, view to the southwest.

NRHP/ARHP Evaluation

Final Clarifier No. 8 was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins and Primary Clarifiers Nos. 9 and 10, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that Final Clarifier No. 8 be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

32. Flotation Thickener Building

This building, currently known as the DAFT (Dissolved Air Flotation Thickener) Building, was originally known as the Flotation Thickener Building when it was built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant (Figure 57). It was built to house two large flotation-thickener units and the associated equipment; it currently houses similar equipment of more recent date. The building has a single story and a simple rectangular floor plan measuring 65 feet north-south by 43 feet 2 inches east-west; the building is 19 feet high and has a flat roof. The foundation, floor, and walls are poured concrete; the roof is built-up roofing over plywood on lumber joists. Steel awning windows are present in the west, east, and south walls; the same three walls each have a single, steel, out-swing door. The north wall has double, steel, out-swing doors with a threshold at 2 feet 6 inches above grade; a concrete loading dock is present at the same height inside the doors. The exterior wall surfaces are unpainted, smooth, and seamless, except for vertical grooves that align with the sides of the window openings and run the height of the building. The interior of the building is a single open space except for a small room at the northeast corner that measures 9 feet 6 inches square, with concrete walls and a 10-foot-high concrete ceiling. This room originally held air compressors and now holds electrical equipment.

Apart from mechanical, electrical, and plumbing changes made when the equipment housed in the building was changed or upgraded, the Flotation Thickener Building is basically the same today as it was when it was built in 1966–1967.

NRHP/ARHP Evaluation

The Flotation Thickener Building was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian building of a simple design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins, Primary Clarifiers Nos. 9 and 10, and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that the Flotation Thickener Building be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

Figure 57. Flotation Thickener Building (now DAFT Building), view to the southeast.

33. Digester No. 4

This cylindrical concrete tank with accompanying mechanical equipment is currently known as Digester No. 4 of the Roger Road Wastewater Reclamation Facility (Figure 58). The original name of the structure was also Digester No. 4 when it was built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant. The original design of Digester No. 4 was similar to that of Digester No. 3, which was built in the earlier 1959–1960 expansion of the plant. Digesters Nos. 3 and 4 stand 66 feet apart and are connected by Control House No. 2 (original and current name), which was first built at the same time as Digester No. 3 but expanded when Digester No. 4 was built; it houses the mechanical equipment associated with the operation of the Digesters. Digesters Nos. 3 and 4 receive sludge from Thickeners Nos. 1 and 2, both built in the 1959–1960 expansion. Digesters use anaerobic bacterial action to further process thickened sludge and reduce its volume.

Digester No. 4 has a tank wall and floor of poured concrete, a maximum diameter of about 84 feet, and a maximum height of about 37 feet. As originally built, it had a fixed concrete roof, but this roof was replaced by a floating roof of steel and fiberglass during improvements designed in 1979. The steel guides that the floating roof rides on extend vertically several feet above the upper edge of the tank and are visible from the ground. The bottom of the tank is conical, with the deepest point at the center of the tank, 10 feet below the base of the tank wall, which is at grade. A steel pipe enters the tank at grade from Control House No. 2 and extends to the bottom of the tank to draw off digested sludge. The lower half of the wall is 22 inches thick whereas the upper half is 16

Figure 58. Digester No. 4 (still known as Digester No. 4), view to the north.

inches thick; the transition between the differing wall thicknesses is marked on the wall exterior by a narrow, slightly sloped shelf.

The basic structure of the Digester No. 4 tank has not been altered except for the change in roof type in 1979. The 1979 improvements also included various mechanical, electrical, and plumbing changes.

NRHP/ARHP Evaluation

Digester No. 4 was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins, Primary Clarifiers Nos. 9 and 10, and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that Digester No. 4 be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

34. Sludge Pump Station

This building is an underground room built as part of an expansion of the Tucson Sewage Treatment Plant in 1966–1967 (Figures 59 and 60). It was originally known as the Sludge Pump Station

Figure 59. Sludge Pump Station (now Pump Station No. 5), view to the northeast.

Figure 60. Interior view of the Sludge Pump Station (now Pump Station No. 5).

and is known today as Pump Station No. 5, a functioning part of the current Roger Road Wastewater Reclamation Facility. As originally built, the Sludge Pump Station housed electric pumps and pipework associated with Primary Clarifiers Nos. 9 and 10 (known today as Primary Clarifiers Nos. 7 and 8, which flank the Sludge Pump Station. The current Pump Station No. 5 continues in basically the same role as the original Sludge Pump Station, housing pumps and pipework associated with Primary Clarifiers Nos. 7 and 8.

The Sludge Pump Station consists of a poured-concrete box built in an excavation that leaves about 1 foot or less of the height of the box exposed above grade. The floor of the pump station measures 24 feet north-south by 22 feet east-west; the interior height is about 14 feet. Wall, ceiling, and floor thickness is 12 inches. An open, poured-concrete staircase, 4 feet wide, descends from grade south to north along the west side of the pump station, ending at a door in the east wall of the structure, which opens onto a concrete landing; a second, interior, concrete staircase descends from the landing north to south to the interior floor. The floor of the pump station has various raised concrete piers to mount equipment. The southeast and northeast corners of the interior are enclosed as small rooms to hold other equipment and pipework.

During a general upgrade to the sewage treatment plant in 1979, the equipment and plumbing connections of the Sludge Pump Station were modified, but the basic structure is otherwise unchanged from its original appearance.

NRHP/ARHP Evaluation

The Sludge Pump Station was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins, Primary Clarifiers Nos. 9 and 10, and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that the Sludge Pump Station be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

35. Pump Station No. 6

This building is an underground room built as part of an expansion of the Tucson Sewage Treatment Plant in 1966–1967 (Figures 61 and 62). It was originally an unnamed pump station included as part of the design of the Aeration Basins, which adjoin the east side of the structure. When major improvements to the plant were designed in 1979, the unnamed pump station became Pump Station No. 6, which continues as its name today. From its construction in 1966–1967 until today, the pump station has served to route partially treated sewage westward from the Aeration Basins to Final Clarifiers Nos. 7 and 8 (known today as Final Clarifiers Nos. 5 and 6).

This pump station consists of a poured-concrete box built in an excavation that leaves about 6 inches or less of the height of the box exposed above grade. The floor of the box measures about

Figure 61. Pump Station No. 6 (previously considered part of the Aeration Basins), view to the north.

Figure 62. Interior view of Pump Station No. 6.

52 feet north-south by 20 feet east-west; the interior height is about 21 feet. Wall, ceiling, and floor thickness is 12 inches. An open, poured-concrete staircase, 4 feet wide, descends from grade south to north along the west side of the pump station, ending at a door in the east wall of the structure, which opens onto a concrete landing; a second, interior, concrete staircase descends from the landing north to south to the interior floor. The floor of the pump station has various raised concrete piers to mount equipment. An area 18 feet north-south by 6 feet east-west along the center of the east wall of the room is enclosed as a small room to hold pipework.

During a general upgrade to the sewage treatment plant in 1979, the equipment and plumbing connections of this pump station were greatly modified, but the basic structure is mostly unchanged. The 1979 design also included a new splitter structure attached to the west side of the pump station, used to regulate the flow to the Final Clarifiers. The top of the splitter structure is flush with the top of the pump station and united with it by a continuous slab of concrete. The splitter structure has the appearance of an open rectangular trough.

NRHP/ARHP Evaluation

Pump Station No. 6 was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins, Primary Clarifiers Nos. 9 and 10, and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that Pump Station No. 6 be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

36. Blower Building

This building, currently known as the Blower Building, was known by the same name when it was built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant (Figure 63). It was built to house large, engine-driven blowers that forced air into the Aeration Basins, also built in 1966–1967 and located immediately northwest of the Blower Building. It continues to serve the same function today and houses similar equipment of more recent date. The building has a single story and a simple rectangular floor plan measuring 52 feet north-south by 46 feet east-west; the building has a flat roof and an interior height of 16 feet 6 inches. The foundation, floor, and walls are poured concrete; the roof is built-up roofing over plywood on lumber joists. Steel awning windows are present in the east and west walls; the north wall has double, steel, out-swing doors. Large openings with steel louvered panels are present in the east, west, and north walls. A steel staircase ascends from a small concrete pad at grade just north of the building to the flat roof. The exterior wall surfaces were unfinished concrete originally, but improvements to the plant in 1995 changed some of the wall penetrations for plumbing and electrical connections, which probably prompted the application of the stucco coating currently on the exterior walls. The interior of the building is a single open space.

Figure 63. Blower Building (still known as the Blower Building), view to the south-southeast.

Apart from the mechanical, electrical, and plumbing changes made when the equipment housed in the building was changed or upgraded in 1995, the Blower Building is basically the same today as it was when it was built in 1966–1967.

NRHP/ARHP Evaluation

The Blower Building was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins, Primary Clarifiers Nos. 9 and 10, and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that the Blower Building be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

37. Chlorine Building

This building, currently known as the Welding Shop, was originally known as the Chlorine Building when it was built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant (Figures 64–66). It was built to store chlorine and to house the equipment used to chlorinate the final effluent. The original building, now part of an expanded building, has a single story and a

Figure 64. Chlorine Building (now Welding Shop), view to the southwest.

Figure 65. Chlorine Building (now Welding Shop), view to the northwest.

Figure 66. Chlorine Building (now Welding Shop), view to the north-northeast. This portion of the building was added to the original building in 1979.

simple rectangular floor plan measuring 25 feet 4 inches north-south by 31 feet 4 inches east-west; it has a flat roof and an interior height of 10 feet. The foundation, floor, and walls are poured concrete; the roof is built-up roofing over plywood on steel joists. The north and south walls each have a steel awning window; the west wall has two separate 6-foot-wide doorways that are currently without doors; the kind of doors these openings originally held are unknown. The exterior wall surfaces were probably unfinished concrete originally, but improvements to the plant as a whole in 1995 probably prompted the application of the stucco coating currently on the exterior walls. The interior of the original building is a single open space.

In 1979, a covered, open-sided area was added to the west side of the original building; it measures 25 feet north-south by 75 feet east-west. The covered area is built of steel posts and beams with a flat, sheet-metal roof, at the same height as the original roof. The roof covers a concrete slab floor. At the west end of the covered area, the westernmost 18 feet of the floor are 3 feet lower than the rest of the slab, to allow vehicles to pass below the roof by a driveway and to provide a loading dock. Two parallel I-beam rails run from the original part of the building to its west end, mounted just below the roof; the rails serve to load equipment and supplies onto vehicles. At an undetermined time after 1979, a concrete block wall was raised to a height of about 6 feet along the long north and south sides of the covered, open-sided area, except for the lower loading area. The space above these walls and the open end at the driveway on the west were enclosed with chain-link fence to create a secure storage area.

The addition of the covered area to the original building in 1979 was accompanied by various changes to the mechanical, electrical, and plumbing connections of the building to the rest of the plant.

NRHP/ARHP Evaluation

The Chlorine Building was originally built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It was expanded during 1979 improvements to the plant and became what is now known as the Welding Shop. The original building was a utilitarian structure of a simple and very common design, and the same is true of the expanded building. Both versions of the building lack distinction. The Chlorine Building was part of a group of structures, including the Aeration Basins, Primary Clarifiers Nos. 9 and 10, and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that the Chlorine Building be considered not eligible for listing in the NRHP/ARHP under Criterion A or any other criterion.

Summary of Construction Phases at the Tucson Sewage Treatment Plant, 1949–1979

As noted in Chapter 5, the most detailed record of the major phases of construction at the Roger Road Wastewater Reclamation Facility is the set of construction plans kept by the Pima County Regional Wastewater Reclamation Department and made available to WSA at the start of the current project. The plans were an important source for the individual building and structure descriptions presented above, but most of the many pages of these plans would be difficult to reproduce in a useful format in this report. A better sense of construction phases at the plant over the years can be had from the relevant portions of aerial photographs of the area taken at six- or seven-year intervals during the plant's early decades (Cooper Aerial Surveys 1953, 1960, 1967, 1973, and 1980). Especially evident in the sequence of aerial photographs is the construction of the plant as three separate, parallel systems in 1950–1951, 1959–1960, and 1966–1967. Each system consisted of a series of structures aligned east to west, receiving sewage from a headworks on the east and discharging treated effluent into the Santa Cruz River on the west. Numerous additions and improvements at the plant during subsequent years changed its appearance, crowding the landscape around the original plant, but the basic flow scheme remains the same today.

In the 1953 aerial photograph (Figure 67), the original plant, designed in 1949 and built in 1950–1951, is in place and operational, with the alignment of the large, buried intake pipe entering the plant from the east and meeting the Headworks. From the Headworks, the major components are aligned east to west: Primary Sedimentation Tanks Nos. 1–4, Aerators Nos. 1 and 2, Secondary Sedimentation Tanks Nos. 1 and 2, and a chlorine contact basin (no longer extant), with an outfall ditch extending to the bank of the Santa Cruz River. The Primary and Secondary digesters stand farther to the north at the south end of the Sludge Beds (which extend north beyond the frame of Figure 67). The Control Building, along with its driveway and associated landscaping, is in place along the south side of the Aerators.

Figure 67. Detail from a 1953 aerial photograph of the current project vicinity, showing the Tucson Sewage Treatment Plant (Cooper Aerial Surveys 1953).

In the 1960 aerial photograph (Figure 68), the first plant expansion, designed in 1958 and built in 1959–1960, is largely in place. The original Headworks has been replaced with a new structure that divides the incoming sewage between the original plant and the new expansion. The major components of the expansion are again aligned east to west, parallel to the alignment of the original plant: Primary Sedimentation Tanks Nos. 5 and 6, Trickling Filters Nos. 1 and 2 (later replaced by Biofilters Nos. 1 and 2), and Sedimentation Tanks Nos. 3 and 4. Digester No. 3 now stands just south of the original Primary and Secondary digesters, and Thickeners Nos. 1 and 2 stand just northwest of the original Secondary Sedimentation Tanks.

In the 1967 aerial photograph (Figure 69), the second plant expansion, designed in 1965 and built in 1966–1967, is largely in place, and again the major components of the expansion are aligned east to west, parallel to the alignments of the original plant and the first expansion: Primary Clarifiers Nos. 9 and 10, the unnumbered Aeration Basins, Final Clarifiers Nos. 7 and 8, and a chlorine contact basin (no longer extant). A new structure, Digester No. 4, stands just east of the earlier Digester No. 3. The original Control Building has been expanded with the Administrative addition to its south side. Just northwest of the Primary Clarifiers is a round tank structure that is still extant and belongs to the City of Tucson. It currently serves as part of the city's reclaimed water system and takes effluent from the Roger Road plant. However, this structure falls outside the limits of the Roger Road Wastewater Reclamation Facility and was not researched in the current project. It does not appear in any of the construction plans provided to WSA by Pima County.

Figure 68. Detail from a 1960 aerial photograph of the current project vicinity, showing the Tucson Sewage Treatment Plant (Cooper Aerial Surveys 1960).

Figure 69. Detail from a 1967 aerial photograph of the current project vicinity, showing the Tucson Sewage Treatment Plant (Cooper Aerial Surveys 1967).

In the 1973 aerial photograph (Figure 70), the configuration of the plant visible in the 1967 aerial photograph is essentially unchanged, but the 1980 aerial photograph (Figure 71) shows the start of the modifications designed in 1979 and built in 1980–1982: Trickling Filters Nos. 1 and 2 have been removed and the foundations of their replacements, Biofilters Nos. 1 and 2, have been partially laid out with the same footprints; the new (and current) Chlorine Contact Basin is taking shape; the new (and current) Outfall Structure at the north end of the plant is under construction; and the new Mechanical (now Generator) Building is under construction. At the same time, neither the new Headworks built in this period nor Final Clarifier No. 7 have yet been laid out. It is also clear that most of the original Sludge Beds were abandoned by this time.

Historical Significance of the Tucson Sewage Treatment Plant

When the City of Tucson and Sanitary District No. 1 reached an agreement to build a new sewage treatment plant in 1948, several sewage treatment methods were available at the time, but none was as popular, or as successful in the treatment of sewage on the scale required by a city, as the activated sludge method, so it is not surprising that the plant built in 1950–1951 had an activated sludge design. The activated sludge method, today the most widely used sewage treatment method in cities around the world, was first developed in England in the early twentieth century. British and U.S. engineers began experimenting in the late nineteenth century with the aeration of sewage to foster the growth of microorganisms that would convert sewage to a relatively inoffensive liquid, but it was not until 1914 that two British engineers patented a process by which effluent that had already received primary treatment (screening and settling) was placed in a tank and subjected to aeration and the deliberate introduction of sewage solids. Microorganisms in the solids would feed on the organic contaminants in the effluent, then clump together and settle to the bottom, leaving a liquid largely clear of solids and a sludge teeming with even more microorganisms (various species of bacteria, protozoa, and fungi). A portion of this "activated sludge" was then recycled to treat additional effluent while excess sludge was routed elsewhere for disposal or additional treatment (Alleman and Prakasam 1983; Burian et al. 2000; Cooper 2001).

When the fully developed activated sludge method was first demonstrated in 1914, it was immediately recognized as superior to any other known method of sewage treatment. Activated sludge plants were quickly built in several cities in England and the United States. Among the first cities in the United States to build activated sludge plants were San Marcos, Texas (1916), Milwaukee, Wisconsin (1916), Indianapolis, Indiana (1925), and Chicago, Illinois (1927). In the absence of any other method that could be effectively engineered at a large scale, it appeared that activated sludge plants would quickly be in place in every city of any size, but the spread of the method in the United States was greatly slowed by patent litigation. The British firm that bought the patent rights to the method shortly after it was invented successfully filed suits against Chicago, Milwaukee, Cleveland, and other U.S. cities beginning in the 1920s. Many cities that had planned to build activated sludge plants instead built plants using one or another less satisfactory method; some cities paid substantial fees to the patent holders to keep their existing plants in operation; and still other cities decided to wait until the relevant patents expired. Because of the delays caused by litigation, "activated sludge did not truly find widespread application until the 1950s" (Alleman and Prakasam 1983:439).

Figure 70. Detail from a 1973 aerial photograph of the current project vicinity, showing the Tucson Sewage Treatment Plant (Cooper Aerial Surveys 1973).

Figure 71. Detail from a 1980 aerial photograph of the current project vicinity, showing the Tucson Sewage Treatment Plant (Cooper Aerial Surveys 1980).

Thus, the design of the Tucson Sewage Treatment Plant in 1949 and its construction in 1950–1951 took place at the beginning of a national trend in urban sewage treatment, namely the rise to dominance of the activated sludge method. In the case of Tucson, the need for the plant was directly linked to the rapid post–World War II growth in the regional population, and the same must have been true for many of the other U.S. cities building activated sludge plants at the time. (Interestingly, the City of Phoenix opened its first activated sludge plant, with a capacity of 15 mgd, in 1931 [Rawn 1937:278], before the British patents on the method had expired and well before the post–World War II population boom.)

The progressive decision by the city and the district to build an activated sludge plant can be attributed at least in part to Headman, Ferguson and Carollo, the firm hired by the city to design a sewage treatment plant. The firm began as a partnership in Phoenix in 1932, formed by engineers Sam Headman and Ben Ferguson, who were joined the next year by a third engineer, John Carollo. During the Depression, the firm built numerous water supply and distribution systems around Arizona in association with federally sponsored New Deal projects. After World War II, the firm grew quickly, specializing in water distribution and sewage systems and winning many projects with the City of Tucson and Sanitary District No. 1. John Carollo, who bought out his partners in the 1950s, played an instrumental role both in the original 1949 design of the Tucson Sewage Treatment Plant and in the 1958 design of its first expansion. Before coming to Arizona, Carollo had earned a B.S. degree in civil engineering at the University of Notre Dame and later studied at the Massachusetts Institute of Technology (MIT), where he was awarded an M.S. degree in the recently established field of sanitary engineering (American Society of Civil Engineers [ASCE] 2002; Institute of Electrical and Electronics Engineers [IEEE] 1954). It was probably Carollo who promoted the use of the activated sludge method, which would have been a prominent part of his training at MIT.

Despite the success of the original Tucson Sewage Treatment Plant, when it came time to expand the plant in the late 1950s the city chose a trickling filter design over the activated sludge method. The call for bids asked for prices on three different methods, including the activated sludge method, but the lowest bid was for a trickling filter design, and the city apparently decided cost was the determining factor. The new plant, built in parallel with the original activated sludge plant, was completed in 1960. The trickling filter method is similar to the activated sludge method in its dependence on microbial action for secondary treatment, but instead of introducing activated sludge into highly aerated sewage, the secondary treatment takes place in large tanks where sewage is trickled over a bed of microbe-colonized gravel. The trickling filter method has certain disadvantages compared to the activated sludge method, but it also has certain advantages, and the expansion seems to have been used successfully up until the influent volume of the plant exceeded its design capacity, which came just four years later.

One of the advantages of the activated sludge method over the trickling filter method is its relative compactness of design, and the design team for the second plant expansion recommended the activated sludge method for this reason. The new expansion was completed in 1967, just north of the first expansion and in parallel with the two existing systems. The three systems operated in parallel until the next major expansion of the plant, designed in 1979 and completed in 1982. This third expansion included the replacement of the two original Trickling Filters of the first expansion with

two much larger Biofilters, which used the same principle of microbial exposure but with an artificial plastic medium rather than gravel. Biofilters Nos. 1 and 2 (now called Biotowers Nos. 1 and 2) were built with the same footprints as the original Trickling Filters but with a much greater height (30 feet) and only after the complete removal of the Trickling Filters. Subsequent improvements to what is now the Roger Road Wastewater Reclamation Facility have largely preserved the three separate plants, but since 1982 the three plants have operated as part of a single integrated system.

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CHAPTER 7

EVALUATION AND RECOMMENDATIONS

As part of its Regional Optimization Master Plan (ROMP), the Pima County RWRD is constructing a new wastewater reclamation facility adjacent on the north to the existing Roger Road Wastewater Reclamation Facility in Tucson. The county plan includes the decommissioning and closure of the existing facility, followed by its demolition or sale. In order to determine whether the decommissioning and closure will adversely affect cultural resources within the 48-acre facility, the Pima County Office of Sustainability and Conservation, Cultural Resources and Historic Preservation Division, asked WSA to carry out a cultural resources inventory of the facility. The goal of the inventory was to identify and record all cultural resources with potential historic significance, including all prehistoric and historic-period archaeological sites and all buildings and structures at least 50 years old. WSA was also asked to evaluate the eligibility of all identified resources for listing in the NRHP and the ARHP, and to make recommendations for the mitigation of adverse effects to NRHP/ARHP–eligible resources. In addition, WSA was asked to conduct archaeological monitoring of soils testing and sampling at the facility related to its decommissioning and closure.

The results of a Class I records search by WSA showed that the Roger Road Wastewater Reclamation Facility includes within its limits small portions of two large prehistoric archaeological sites: AZ AA:12:90 (ASM), also known as the Wetlands site, and AZ AA:12:91 (ASM), also known as Los Pozos. The two sites are adjacent to one another and may represent a single large site occupying the Santa Cruz River floodplain immediately east and southeast of the facility. AZ AA:12:90 (ASM) is considered by its several previous investigators to be eligible for listing in the NRHP under Criterion D; AZ AA:12:91 (ASM) has been determined eligible for listing in the NRHP under the same criterion. WSA's Class III survey of the Roger Road Wastewater Reclamation Facility found no surface evidence of AZ AA:12:90 (ASM) and only a surface trace of AZ AA:12:91 (ASM) consisting of a sparse artifact scatter in a disturbed context in the northeastern corner of the facility. In archaeological monitoring of soils testing and sampling at scattered points on the facility, and of limited utility-location excavations just east of the facility, WSA did not observe any artifacts, features, or other evidence of archaeological deposits.

WSA's cultural resources inventory of the Roger Road Wastewater Reclamation Facility also included a survey aimed at determining the age, historical associations, and integrity of the many extant buildings and structures at the facility. Originally known as the Tucson Sewage Treatment Plant, the earliest part of the facility was built in 1950–1951. It underwent major expansions in 1959–1960 and 1966–1967, plus many later additions and improvements. It is now a mosaic of buildings and structures dating to many different stages of construction, and its earliest elements stand side by side with things built as recently as the last decade.

Archaeological Site Evaluations

The limited nature of the surface archaeological evidence found in WSA's Class III survey, along

with the extent of construction-related disturbances throughout the Roger Road Wastewater Reclamation Facility, might suggest that the potential for significant archaeological deposits within the facility is low. However, both the location of the facility and the history of archaeological work in its vicinity indicate just the opposite. The facility stands on a section of the Santa Cruz River floodplain known for its plentiful archaeological resources, and two large prehistoric sites—AZ AA:12:90 (ASM) and AZ AA:12:91 (ASM)—both with established depth, subsurface complexity, and integrity, are immediately adjacent to the facility. A small portion of the previously recorded extent of each site falls within the facility boundary. Previous archaeological investigations of AZ AA:12:90 (ASM) have not included excavation within the facility boundary, but archaeological trenching in the easternmost portion of the facility in 2007, at the western margin of AZ AA:12:91 (ASM), discovered a range of intact prehistoric features that are now part of that site. In view of the depth and density of these features, and the continuation of the same floodplain setting across the facility, it is highly probable that comparable features are present elsewhere within the facility boundary below the level of construction-related disturbances.

The results of WSA's Class III archaeological survey have added almost nothing to the site record of either AZ AA:12:90 (ASM) or AZ AA:12:91 (ASM), so the evaluation of each site's NRHP/ARHP eligibility by previous investigators remains unchanged: AZ AA:12:90 (ASM) is considered eligible for listing in the NRHP/ARHP under Criterion D, and AZ AA:12:91 (ASM) has been determined eligible for listing under the same criterion. If future subsurface investigations of the Roger Road facility discover additional features or deposits associated with either site or with a previously unrecorded site, a separate evaluation of the NRHP/ARHP eligibility of these discoveries will be necessary.

Building and Structure Evaluations

Despite a complicated construction history, the Roger Road Wastewater Reclamation Facility still retains a substantial part of the original 1950–1951 Tucson Sewage Treatment Plant. The buildings and structures now known as the Control and Administration Building, the Equalization Basins, Aeration Basins Nos. 1 and 2, and Final Clarifiers Nos. 1 and 2 all date to the original construction of the plant and are clustered in the southern portion of the facility (see Nos. 1–6 in Figure 13; see Table 4 for the original names). All six buildings and structures have integrity of location, design, setting, materials, workmanship, feeling, and association. WSA recommends that all six be considered eligible for listing in the National Register of Historic Places under Criterion A, for their association with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period.

The first expansion of the Tucson Sewage Treatment Plant, which took place in 1959–1960, is represented at the facility today by a range of buildings and structures, including Primary Clarifiers Nos. 5 and 6, Final Clarifiers Nos. 3 and 4, and Thickeners Nos. 1 and 2 (see Nos. 12, 13, 16, 17, 20, and 21 in Figure 13; see Table 4 for the original names). Although all of these structures are at least 50 years old, their construction as an integrated group is no longer as visually evident at the facility as that of the major components of the original plant, primarily because Trickling Filters

Nos. 1 and 2, major components of the 1959–1960 expansion, were wholly replaced by the much larger Biotowers Nos. 1 and 2 in 1979. WSA recommends that the buildings and structures of the 1959–1960 expansion of the Tucson Sewage Treatment Plant be considered ineligible for listing in the National Register of Historic Places under any criterion.

The second expansion of the Tucson Sewage Treatment Plant, in 1966–1967, is also represented at the facility today by a range of buildings and structures, including Primary Clarifiers Nos. 7 and 8, the Aeration Basins, Final Clarifiers Nos. 5 and 6, the DAFT Building, Digester No. 4, the Blower Building, and the Welding Shop. All of these components are associated with a relatively early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that the buildings and structures of the 1966–1967 expansion of the Tucson Sewage Treatment Plant be considered ineligible for listing in the National Register of Historic Places under any criterion.

Adverse Effects and Mitigation Recommendations

Pima County's decommissioning and closure of the Roger Road Wastewater Reclamation Facility has the potential to adversely affect the NRHP/ARHP–eligible cultural resources within its boundary, because decommissioning and closure may lead to the partial or complete demolition of the facility, or its modification and adaptive reuse, either by the county or by a subsequent owner. Any ground-disturbing activity, including the use of equipment to remove or modify extant buildings or structures without intentional ground disturbance, has the potential to adversely effect both the previously recorded archaeological sites that fall partly within the facility and any unrecorded subsurface archaeological sites with NRHP/ARHP eligibility. Demolition of any of the six NRHP/ARHP–eligible buildings and structures is, of course, an adverse effect, but any modification of these buildings and structures for any purpose may also constitute an adverse effect. Any plan for adaptive reuse of the six NRHP/ARHP–eligible buildings and structures should preserve as much of their historic fabric as possible, in consultation with the SHPO and the appropriate federal or state agencies.

Any proposed demolition, modification, or reuse of any part of the Roger Road Wastewater Reclamation Facility may require the issuance of federal, state, or county permits. Any federal permit, such as a permit under Section 404 of the Clean Water Act, or any other federal nexus, will require compliance with Section 106 of the National Historic Preservation Act, 16 U.S.C. 470, which may involve: additional archaeological investigation to determine the extent of previously unrecorded subsurface archaeological features and deposits; evaluation of any archaeological discoveries for NRHP eligibility; development of a plan for the mitigation of adverse effects to NRHP-eligible archaeological discoveries; and either the avoidance of NRHP-eligible buildings and structures or the mitigation of adverse effects to them. Avoidance should be considered a preferred mitigation strategy for the NRHP-eligible buildings and structures, but if avoidance is not possible, mitigation should include documentation of the NRHP-eligible buildings and structures to the standards of the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) of the National Park Service. The Section 106 process as a whole will require ongoing consulta-

tion among the lead federal agency for the proposed action, the Arizona State Historic Preservation Office (SHPO), and the appropriate Native American tribal entities.

Any state permit or other state nexus will require compliance with the Arizona State Historic Preservation Act, A.R.S. §41-861 et seq., which will involve a process of archaeological investigation, ARHP eligibility evaluation, and mitigation similar to the federal Section 106 process. Pima County cultural resource regulations may also apply to any modification or development of the facility after it leaves county ownership.

The buildings and structures recorded by WSA at the Roger Road Wastewater Reclamation Facility and recommended as ineligible for listing in the NRHP/ARHP are not protected by federal, state, or county laws or other cultural resource regulations. The same is true of any archaeological features or deposits yet to be discovered within the facility once they have been determined to be NRHP/ARHP ineligible. Any proposed action with the potential to disturb NRHP/ARHP–ineligible resources can proceed without prior mitigation. It is important to emphasize that as the currently ineligible buildings and structures approach 50 years of age, they should be considered as potential historic properties. Their NRHP/ARHP eligibility will need to be reevaluated, and the potential effects of any proposed action will need to be considered.

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1946 Orders County Sewer Survey. 23 October:14.

1947 Sewage Plant to Be Doubled Soon. 7 May:5.

1947 Favor Unified Sewage System. 24 June:1, 6.

1947 Sensible Cooperation. 2 July:16.

1947 Council Says Tax Rate Low. 19 August:1.

1947 Push Sanitation District Program. 6 October:1, 17.

1947 Study City-Wide Sewage Disposal. 25 October:2.

1947 Supervisors, Council Plan Joint Conference. 29 October:9.

1947 Sewage System Prospects Bright. 30 October:8.

1947 Sewer Petition Meeting Called. 22 November:1, 4.

1947 Groundwork Laid For Sewage Drive. 26 November:3.

1947 Sanitary Drive Starts Jan. 2. 29 November:4.

1948 Sewer Petitions In Circulation. 13 January:18.

1948 Grove Stresses Sewage Needs. 28 January:2.

1948 New Sewage System Pima County. 29 January:19.

1948 Help Get Proper Sewage In Greater Tucson. 23 March:6.

1948 Many Signing For Sewage District. 26 April:2.

1948 Sanitary Plans Are Imperiled By Annexation. 10 May:20.

1948 Finish Petitions For Sanitation. 19 May:2.

1948 Sanitation, Water Supplies Most Needed for Growth. 24 May:2.

1948 Setting Up Of Sanitary Area Here Delayed. 16 June:2.

1948 Sanitary District Formally Created. 17 June:2.

1948 Grove Resigns County Office; Ellis Goes In. 29 June:5.

1948 Sewage Setup Plans Shown. 3 August:12.

1948 Sewer Request Lost By Webb. 26 October:1, 11.

1948 Sewage Bond Election Will Be On Nov. 16. 8 November:2.

1948 Cite Reasons For Favoring Sewage Bonds. 9 November:3.

1948 Pima Medical Society Okays Sewage Bonds. 12 November:2.

1946 Sewer Plan Heard For North Side. 15 January:1, 7.

1948 Vote For The Bond Issues. 12 November:12.

1948 Bond Issues Get Approval. 17 November:1, 13.

1948 Sewer Plans Will Be Made. 23 November:3.

1948 Seek Working Agreement On Sewage Plant. 27 November:3.

1949 City, Council Divide Waste Of New Sewers. 21 April:2.

1949 Sewer Bids To Be Opened At 4 On Thursday. 25 May:22.

1949 Contract Awarded For Sewage System. 1 June:13.

1949 Sewer Plans Are Sent To District. 8 July:11.

1949 Costs Are Studied For Sewage Project. 13 August:1.

1949 Sewer Session Lasts All Night. 9 September:1, 9.

1949 Disposal Plant Water For Sale. 13 September:1, 11.

1949 Sewage Pact Now Complete. 29 September:3.

1949 Sewage Plant Bid Of Sundt. Co. Low. 16 December:14.

1950 Council Lets Huge Sewer To Sundt. 4 January:1.

1950 Sewage Plant Construction Is Under Way. 20 January:19.

1950 Another Problem Answered. 3 November:7.

1950 City's Problem Is Too Much Water. 1 December:3.

1950 Disposal Of Sewage Treatment Waste Studied. 13 December:19.

1951 Valley Bank Gets Low Bid For La Reforma Refinancing. 11 January:6.

1951 Sanitary District Set For Action. 26 January:9.

1951 New Sewage Disposal Plant Inspected. 1 March:19.

1951 Engineering Contract Let. 30 March:11.

1951 New Sewage Plant Starts. 3 April:7.

1951 Untitled article about new City of Tucson sewage treatment plant. 16 April:7.

1951 Council Reads Bids On Sewer. 24 April:7.

1951 Offer Renews Effluent Study. 18 May:8.

1951 Power Utility Seeks Effluent. 1 June:22.

1951 Hughes Sewer Overload Seen. 8 June:22.

1951 Sewage Water Bids Sought. 8 August:18.

1951 Runoff Offer Nets Single Bid. 5 September:3.

1951 Manhole Cover Mortality Rate Worries Sewer Experts. 12 September:13.

1951 County Prepares New Sewage Ordinance Outlawing Cesspools. 4 October:3.

1951 City Sewage Sale Planned. 15 November:27.

1951 District Lops Off Engineers. 16 November:8.

1951 Troubles Predicted: Industry Development South Of City To Cause Heavy Overload In District. 8 December:1.

1957 City Faces Big Outlay On Sewage. 16 September:1.

1957 Sewage Plant Expansion Plans Given Go-Ahead. 17 September:26.

1957 City Plans $1 Million Bond Issue. 13 December:1.

1958 City To Ask U.S. Funds For Sewage. 4 February:3.

1958 City Sewage Plant Said Overburdened. 12 April:5.

1958 Tax For 3 City Sewage Plants Seen. 16 May:5.

1958 Services Important Part Of City's Operations. 30 July:12.

1958 Heavy Vote Unexpected. 6 August:1.

1958 U.S. Aids Sewage Plant Expansion. 23 September:11.

1958 Sewage Plant Bids Authorized. 28 October:13.

1959 Sanitary District 1 Balks At City's Bill. 13 January.

1959 Phoenix Firm Apparent Low Bidder On City's Treatment Plant. 16 January:15.

1959 Sign Issue Again Slated For Council. 31 January:28.

1959 Krall Gets City Sewage Plant Job. 13 Feburary:2.

1959 City-County Sanitary Merger Appears Imminent. 18 March:2.

1959 Sanitary District Has Served Purpose Well. 20 March:14.

1959 City Fight Shaping With District. 28 March:10.

1959 If Stuck With Duck, Check This! 2 April:2.

1959 Ancient Burial Urn Holds Remains Of Hohokam Adult. 10 April:5.

1959 Builders Ask Sewage Issue Consultation. 17 April:29.

1959 Sewage Utility Setup In Area Is Proposed. 29 July:10.

1959 Sewage Plant Ahead of Schedule. 26 August:23.

1960 Sewage Plant Wants Ducks, Chickens. 22 April:18.

1960 Sanitary District Problem Can't Be Solved Overnight. 27 April:10.

1960 Sewer System Consolidation Ruled Out Until Next Year. 23 June:9.

1960 Patience, Northsiders, Stench To Go. 20 August:4.

1960 Sewage Facility Grows With City. 7 October:14.

1960 Sewer Odor Relief May Be Delayed. 12 October:8.

1960 City Will Perfume Sludge. 18 October:2.

1960 Stench, Flies, Mosquitos; Cortaro Folk To Sue Tucson. 4 November:4.

1960 East Side Fire Station Design OK'd. 7 November:12.

1964 Phoenix Firm Hired For Sewer Project. 17 March:7.

1964 City Urged To Build Addition To Sewage Plant. 7 July:11.

1964 Fast Action Urged On Sewage Plant. 22 July:2.

1964 Action Set On Sewage Plant Design. 14 August:14.

1964 Sewage Plant Oxidation Ponds Urged. 9 September:11.

1964 Sewage Plant Speedup Is Urged. 30 November:4.

1965 Mostly About Ducks This January Day. 4 January:16.

1965 City Sewer Bonds Held Unnecessary. 25 Feburary:7.

1965 Urie Asks Sale Of Sewer Bonds. 4 March:34.

1965 As Tucson Grows, So Does Need For Sewer Facilities. 26 May:4.

1965 City Sewage Plant Funds Are In Hand. 1 October:24.

1966 Salt Lake Firm Low On Sewage Plant. 11 January:10.

1966 McKee Asks For Checkup On Sewage Addition Bids. 15 January:14.

1966 Metro Water Setup Favored. 17 Feburary:35.

1966 Sewage Plant Groundbreaking. 13 July:10.

1967 New Plant Begins Operation. 15 November:2.

1968 County Sanitary District 1 Voters Face Election To Switch Operations. 15 August:4.

1968 Sanitary Unit Begins Switch To County. 19 August:9.

1968 Bell Tolls At Midnight For Sanitary District. 31 August:4.

1973 Get To Work Now On Sewer Draft, Scharman Urges. 2 October:23.

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APPENDIX A.

NEWSPAPER REFERENCES TO THE ROGER ROAD WASTEWATER RECLAMATION FACILITY, 1942–1973

Appendix A. Newspaper References to the Roger Road Wastewater Reclamation Facility, 1942–1973.

Note: The summary of each cited newspaper article includes only the information relevant to the Roger Road Wastewater Reclamation Facility. Some articles include other, unrelated information not summarized here.

Abbreviations: ADS, Arizona Daily Star; AR, Arizona Republic; TDC, Tucson Daily Citizen. See the References Cited for the full citations.

Reference	Notes
TDC, 9 September 1942	City council authorizes city manager to sign a contract with Headman, Ferguson and Carollo to prepare plans and specifications for a $100,000 sewage disposal plant, to be paid for by the U.S. Army (because sewer lines at Davis-Monthan Field will be connected to the city system).
TDC, 15 January 1946	City council hears preliminary report by Glenton Sykes, city engineer, on sewage situation in northern part of city and adjoining county areas. Sykes notes need for new outfall line to connect new subdivisions to the sanitary plant. City manager Phil Martin notes need to study possible expansion of plant before sewage disposal plans are finalized.
TDC, 23 October 1946	Pima County supervisors hires Headman, Ferguson and Carollo to make a survey and recommendations for the expansion of sewer service in the area just north of Tucson.
TDC, 7 May 1947	City manager Phil Martin takes steps to prepare plans for doubling the capacity of the existing sewage plant, from 4,000,000 gallons a day to 8,000,000 gallons a day. Plant is currently overloaded, receiving 4,500,000 gallons a day. The increase in capacity is needed because of a population increase, from 36,000 in 1940 to 55,000 at present. A federal loan of $11,500 for plans and specifications will be used. Total cost of project is estimated at $250,000.
TDC, 24 June 1947	City council and county supervisors hold a joint meeting to consider a plan prepared by John Carollo and William Williams, Phoenix engineers, for a complete sewer system serving all of greater Tucson, including the city proper and outlying areas. Estimated total cost is $9,579,000. The plan includes new interceptor lines, an expansion of the existing municipal sewer plant, and the construction of a new plant. The issue is complicated by an Arizona law that prohibits incorporated towns and cities from being enrolled in sanitary districts. This means two elections would be necessary to approve bonds for the work: one for the City of Tucson and one for the area beyond city limits.
TDC, 2 July 1947	The editors of the TDC laud the plan for a joint city-county sewer system and urge voters to approve the plan when it is brought to an election.
TDC, 19 August 1947	City engineer Glenton Sykes tells the city council that the existing sewage system is “approaching a danger point.” No additional areas of the city can be added to the system until the existing plant is enlarged. In addition, the siphon that carries sewage under the Santa Cruz River to the plant must be enlarged soon, or an additional siphon must be constructed.
TDC, 6 October 1947	Pima County supervisors consider a report submitted on May 28 by Headman, Ferguson and Carollo, detailing a plan for a city-county joint sewer system. Carrying out the plan, which will cost an estimated $9,000,000, will require voter approval of sanitary district bonds.
TDC, 25 October 1947	Tucson mayor E. T. Houston, engineer John Carollo of Headman, Ferguson and Carollo, and city engineer Glenton Sykes meet to discuss a plan for two new outfall sewer lines and a new sewage treatment plant, to alleviate the ever-worsening sewage situation in the city and adjacent areas. The joint city-county plan will cost an estimated $3,600,000 (far less than the $9,000,000 plan mentioned in earlier articles).

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Reference	Notes
TDC, 29 October 1947	A joint meeting of the city council and the county board of supervisors will be held to hear engineer John Carollo of Headman, Ferguson and Carollo discuss the proposed joint sewage system.
TDC, 30 October 1947	The joint city-county meeting is held, with favorable response by both sides for the $3,600,000 plan presented by engineer John Carollo. City engineer Glenton Sykes notes that the original $9,000,000 estimate included the subsequent construction of laterals over the next 20 years. He notes that costs beyond the basic $3,600,000 plan should be covered by the developers of new areas.
TDC, 22 November 1947	A meeting of the county board of supervisors is scheduled, to come up with a plan to circulate the necessary petitions for organizing a sanitary district. The plan by Headman, Ferguson, and Carollo for two main outfall lines and a new plant is reiterated. The new plant will be constructed "about a mile and a half downstream from the existing city plant." The district will encompass 33 square miles. At least 51 percent of property owners in the proposed district must sign the petitions, then the board of supervisors must approve it. George Grove, county engineer, is quoted as saying that the district is essential due to the rapid growth of the Tucson-area population, and that existing septic tanks and cesspools are "dangerous" to the water supply.
TDC, 26 November 1947	A public hearing was held regarding the circulation of petitions to have a ballot measure to form a sanitary district including Tucson and surrounding areas of the county. A committee of six members was appointed by the county board of supervisors to oversee the circulation of petitions; the committee chair is Gilbert Ronstadt. Total cost of the project is now estimated at $4,000,000, of which the city will be responsible for $1,400,000 and the county for $2,600,000. The plan calls for the abandonment of the existing sewage treatment plant and the construction of a new one a mile and a half downstream. Once the district is approved and formed, bonds can be sold to pay for the plan.
TDC, 29 November 1947	The committee to oversee the circulation of petitions for the proposed sanitary district meets and decides to begin the circulation on January 2.
TDC, 13 January 1948	The petitions for the proposed sanitary district are in circulation.
TDC, 28 January 1948	County engineer George Grove notes that the petitions for the proposed sanitary district are in circulation. He emphasizes how important a single sewage system is to Tucson and the surrounding area, where the population outside the city now exceeds the population within the city. And he emphasizes once again the dangers of septic tanks and cesspools. An adequate sewage system is "an essential requirement for modern living."
TDC, 29 January 1948	An advertisement for the new sewage system in Pima County, asking people to sign the petitions currently circulating; the sponsor of the advertisement is not indicated.
TDC, 23 March 1948	An advertisement placed by the American Society of Sanitary Engineers for the new sewage system in Pima County, asking people to sign the petitions currently circulating.

Appendix A. Newspaper References to the Roger Road Wastewater Reclamation Facility, 1942–1973.

Reference	Notes
TDC, 26 April 1948	Gilbert Ronstadt, chairman of the petitions committee, notes that the petitions are two-thirds complete and will be ready to present to the board of supervisors on May 15. Ronstadt declares, "The acute need of the new sewage disposal plant is so obvious that almost no opposition has been encountered by those circulating petitions. The cost to individual property owners will be relatively small and is practically certain to be decreased as new properties are added to the tax rolls. Everybody will benefit."
TDC, 10 May 1948	Gilbert Ronstadt, described as chairman of the proposed sanitary district, is quoted as saying that South Tucson's proposed annexation of an area south of Tucson will cut the area off from the sanitary district. A South Tucson spokesman disagrees. The importance of the proposed district and the new sewage treatment plant are reiterated by city engineer Glenton Sykes, county engineer George Grove, and county health officer Dr. L. H. Howard. According to the engineers, the new treatment plant will produce "a nuisance-free liquid that can be used for irrigation purposes."
TDC, 19 May 1948	The required number of signatures has been gathered on the sanitary district petitions. The requirement was at least 51 percent of property owners, or 6,409 signatures. Gilbert Ronstadt, chairman of the petitions committee, has asked the board of supervisors to call a meeting to form the district.
TDC, 24 May 1948	Sanitation improvements head the list of needs identified for Tucson by city administrators planning for rapid population growth. City engineer Glenton Sykes is quoted once again regarding the essential nature of an improved sewer system, which the pending formation of a sanitary district and the construction of a new plant will address. According to Sykes, the existing plant has a capacity of 4,800,000 gallons per day, but 9,000,000 gallons pass daily through city sewer lines, which means "most of the sewage must by-pass the treatment plant or be inadequately treated."
TDC, 16 June 1948	At a county board of supervisors meeting, the Southern Pacific Railroad (SPRR) argues that certain of its trackage in Tucson should be excluded from the proposed district and its assessments because it cannot possibly benefit from the district. Board chairman J. Homer Boyd asks county engineer George Grove, county attorney Odin Dodd, and consulting engineer John Carollo to prepare recommendations about the possible exclusion of the SPRR property.
TDC, 17 June 1948	Pima County Sanitary District No. 1 is formally created by resolution of the county board of supervisors. A three-member board of directors is appointed, including Gilbert Ronstadt, who acted as chairman of the district during the circulation of petitions for its formation. The SPRR is granted exemption for some of its right-of-way in the district. George Marx, the state sanitary engineer, is quoted as saying about the formation of the district, "It is the most forward step ever taken in Arizona to protect public health from a sanitary sewer standpoint." The district board of directors is expected to call a special election for a $2,500,000 bond to pay for its share of the joint city-county system.
TDC, 29 June 1948	County engineer George Grove resigns to take a position with Headman, Ferguson and Carollo, the consulting firm that designed the new sanitary district, including the new sewage treatment plant. Bruce Ellis, Grove's first assistant, will take Grove's place as county engineer.
TDC, 3 August 1948	John Carollo, engineer with Headman, Ferguson and Carollo, displayed and discussed plans for the proposed city-county sewage system to local American Legion members at a luncheon at the Santa Rita Hotel in Tucson. He said the estimated cost per dwelling for the $3,500,000 project is approximately $350, to be paid over a period as long as 25 years.

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Reference	Notes
TDC, 26 October 1948	The Del E. Webb Construction Company is denied its request to the Tucson city council to connect its new subdivision, Pueblo Gardens, to the existing city sewer system. Council members state that all other recent applications to connect have also been denied because the system is already far over capacity. City engineer Glenton Sykes is asked by Roy Drachman, the realtor representing Del Webb at the meeting, his opinion on the Del Webb request. Sykes states that if the proposed city-county system expansion is approved by voters and is constructed, then the request should be granted, but not before.
TDC, 8 November 1948	A Pima County bond election is scheduled for November 16 to pay for the proposed county sanitary sewer project. It will coincide with a City of Tucson bond election to pay for the city's portion of the improvements. The total estimated cost is $4,000,000, with the county's portion being $2,500,000 and the city's $1,500,000.
TDC, 9 November 1948	At a meeting of the National City Government Heights Civic League in Tucson, W. R. DuBois, chairman of the Pima County Sanitary District No. 1, L. H. Howard, county-city health officer, and O. L. Fritz, head of the sanitation division, laid out the many reasons for voters to vote yes on the sewage bonds in the upcoming November 16 city and county bond elections. The biggest reason is the growing health hazard posed by the use of septic tanks and cesspools. Another reason is the relative cost per property owner compared to the continued use of septic tanks and cesspools.
TDC, 12 November 1948	The Pima County Medical Society endorses the proposed bonds to finance the construction of a sewer system for greater Tucson.
TDC, 12 November 1948	The editors of the TDC urge all voters to approve the sewer bond issues in the November 16 election. "Today there will pass through the inadequate [existing sewage treatment] plant some 9,000,000 gallons of sewage—just 5,000,000 gallons more than its present capacity. Now when we say 'passes through the plant' we are guilty of a gross error. This sewage half treated for the most part flows over the desert acres contiguous to the plant covering the land with nauseous stinking matter, which endangers the health of the community and constitutes an annoying nuisance."
TDC, 17 November 1948	The city and county sewer bond issues on the November 16 ballot were passed by large majorities of the vote. Of 4,037 votes cast, only 559 were against the issues. The $4,000,000 expansion program designed by Headman, Ferguson, and Carollo will be built, with the city paying $1,500,000 for an expansion of its system and the construction of a new treatment plant, and the county paying $2,500,000 for the construction of two new main sewer lines.
TDC, 23 November 1948	The board of Sanitary District No. 1 will meet with the Tucson mayor and city council to discuss plans for laying out the two new main sewer lines and construction of the new sewage treatment plant.
TDC, 27 November 1948	The board of Sanitary District No. 1 met with Tucson mayor E. T. Houston and city council regarding the sewage improvements made possible by the recent bond elections. Headman, Ferguson and Carollo are asked to submit plans for the new plant and the two new main sewer lines. Henry Dahlberg, city fiscal agent, discussed the selling of bonds.
TDC, 21 April 1949	At a meeting of the Sanitary District No. 1 board with city officials, there was complete agreement over joint control of the proposed sewage treatment plant and the sale of water from the plant for irrigation. According to the representatives at the meeting, the water from the plant will be "safe to use for irrigation of all crops. In addition, it will be odorless."

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Reference	Notes
TDC, 25 May 1949	Brief article indicating that bids for the first 9,000-foot section of 48-inch main sewer line, made possible by the recent bond election, will be opened.
TDC, 1 June 1949	Pioneer Contractors is awarded a contract for $145,963 to build the first section of 48-inch main sewer line.
TDC, 8 July 1949	Headman, Ferguson and Carollo delivers plans for the 9-mile-long Prince Road interceptor and indicates that plans for other components of the system, including the new treatment plant, will be ready soon.
TDC, 13 August 1949	Plans for the new sewage treatment plant are now being reviewed by the city manager, Phil Martin, and will be submitted soon to the mayor and council.
TDC, 9 September 1949	Mayor E. T. Houston, the city council, and the Sanitary District No. 1 board hold a marathon meeting to reach an agreement on the construction and operation of the new sewage treatment plant. No agreement has yet been reached.
TDC, 13 September 1949	At a city council meeting, plans for selling the water from the new sewage treatment plant are discussed. A company headed by John Raskob Jr., which recently bought 2,600 acres from Cortaro Farms, would like to buy all of the water produced by the plant. Another plan would send much of the water to the 1,300-acre city farm, where the city leases land for farming.
TDC, 22 September 1949	Sanitary District No. 1 releases a list of ongoing and upcoming projects in the bond-funded city-county sewage program. The entire system is expected to be operational by January 1, 1950. The city is "rushing to completion its new disposal plant on the Casa Grande highway."
TDC, 29 September 1949	A 20-year agreement for joint operation of the Tucson metropolitan area sewage disposal system has been signed by the city and Sanitary District No. 1. (Contradicting the statement in the September 22 article that the entire system will be operational by January 1, 1950, here "The city is preparing to call for bids on construction of the plant…")
TDC, 16 December 1949	Bids to build the new city sewage treatment plant on Casa Grande highway were opened at city hall on December 15. Of 12 companies submitting bids, the M. M. Sundt Construction Company had the lowest bid, at $1,136,288.99, just $324 less than the next-lowest bidder, the Vinson Construction Company of Phoenix. Sundt was the only Tucson-based company to submit a bid; other bids were submitted by companies based in California, Oregon, Texas, and Illinois. A contract will not be awarded until consulting engineers Headman, Ferguson and Carollo have tabulated all of the bids. "Construction of the plant, which will be the second largest in Arizona, will take approximately one year, according to the consulting engineers' estimate. When awarded, the contract will provide for completion within 365 days after the order to begin work is given."
TDC, 4 January 1950	M. M. Sundt Construction Company is awarded a contract for $1,104,295 to build the new city-county sewage disposal plant. The contract amount was less than the original bid because the city chose to remove the construction of a five-room superintendent's living quarters and office from the plans, expressing the opinion that the house could be built for less than the proposed amount.
TDC, 20 January 1950	Construction of the new city-county sewage disposal plant is underway. The first spadeful of earth was turned yesterday by Mayor E. T. Houston. The plant will handle 12 million gallons of sewage daily and will be "one of the most modern plants in the country," reducing sewage to "a colorless, odorless liquid suitable for irrigation purposes."

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Reference	Notes
TDC, 3 November 1950	Construction of the new sewage plant is 90 percent complete and expected to begin operation by January 17, 1951. The article notes that the site of the plant was chosen because enough room existed there to expand the plant to double its size in response to expected population growth. "All but one of the structures in the plant are built in duplicate. It was designed that way so that in case of trouble with any unit it could be closed and drained while the other section is in operation…One of the most amazing features of the plant is the entire absence of the use of chemicals. The entire treatment process is accomplished by natural bacteriological action, assisted by machinery, until the final treatment of the effluent with chlorine as a safety measure."
TDC, 1 December 1950	The article discusses a recently released report by Headman, Ferguson and Carollo that considers how to best dispose of the water produced by the soon-to-open sewage treatment plant. The three options described in the report are: releasing the water into the Santa Cruz River channel; using the water on the city farm; and selling the water to farming operations downstream. "The treated water—an odorless liquid of spring-like clarity containing considerable amounts of dissolved organic plant food—is worth $2 an acre-foot at the plant, according to the report." The output is estimated at 12 acre-feet per day to start, increasing to 36 acre-feet per day in 10 to 20 years. Issues exist with the first two options, and the third is the preferred alternative, but no deal has yet been made with a buyer.
TDC, 13 December 1950	The city council meets with John Carollo, author of the report on the disposal of water from the new sewage treatment plant. Releasing it into the river would be safe, but parties downstream may claim damage; using the water on the city farm would require construction of expensive pumping equipment (the city farm is upstream of the plant); selling the water to farming interests downstream is the best alternative. The city manager asks that a call for bids to buy the water be made once again.
TDC, 11 January 1951	The city council denies a request by M. M. Sundt Construction Company for a 37-day extension on the sewage disposal plant contract. A 14-day extension is granted, changing the anticipated completion date to January 31, 1951.
TDC, 26 January 1951	An update on the status of sanitary district construction indicates that 53 miles of sewer lines are now in place. The article discusses the permits and fees necessary for individual property owners to connect to the system.
TDC, 1 March 1951	The new sewage disposal plant is inspected and tested, almost ready to begin operation. It will process 5,000,000 gallons daily at first but will quickly approach its capacity of 12,000,000 gallons daily as newly constructed sewer lines are connected to the larger system.
TDC, 30 March 1951	Headman, Ferguson and Carollo are awarded a contract for engineering supervision on 40 additional miles of sewer mains in Sanitary District No. 1.
TDC, 3 April 1951	The new city-county sewage disposal plant opened officially on April 2, "the finest installation in the southwest." Construction took almost 15 months. The article notes that the old plant, which was expanded by the federal government during the war to handle the sewage of the Davis-Monthan air base, was drastically over its capacity of 3,500,000 gallons a day. People living in the city or the sanitation district can now connect to the sewer system at any time. No final plan for the effluent from the plant has yet been made and it will be released into the Santa Cruz River for the time being.

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Reference	Notes
TDC, 16 April 1951	A short article with an aerial photograph of the new sewage disposal plant, describing the steps in the process of treating sewage.
TDC, 24 April 1951	A short article mentioning, among other city council business, that the council officially accepted the new sewage treatment plant from the contractor and authorized final payment.
AR, 24 April 1951	An article describing the new sewage treatment plant at Tucson, including an aerial photograph of the plant. The article notes that George Marx, director and chief engineer of the state bureau of sanitation, "commended Tucson on installation of a sewerage system to serve the metropolitan area…"
TDC, 18 May 1951	The Cortaro Management Company, which owns 2,500 acres of farmland downstream from the new sewage treatment plant, offers to buy the entire effluent output of the plant, currently amounting to 4,000,000 gallons per day. This is apparently the same company, with a new name, that made an offer earlier (see entry for September 13, 1949). Other parties also express interest. Cortaro Management indicates that it will consider building a ditch along the east bank of the Santa Cruz River to carry the effluent to its property.
TDC, 1 June 1951	Tucson Gas, Electric Light and Power Company files a request with the city for access to effluent to use as condenser cooling water in its generating plant. The utility plans to capture tail water after the effluent has been used for irrigation.
TDC, 8 June 1951	The Hughes Tool Company hopes to connect its new plant, proposed for a site 7 miles south of Tucson, to sanitary district sewer lines. District engineers say that the connection will overload the lines.
TDC, 8 August 1951	The city will issue a second call for bids to buy discharge water from the new sewage treatment plant. An earlier call for bids went out in July 1950, but there were no bidders. The current daily discharge is 4,500,000 gallons, which is expected to rise to 12,000,000 gallons per day within 10 years.
TDC, 5 September 1951	The city receives a single bid for the plant effluent, from James Shumaker, a farmer in Jaynes.
TDC, 12 September 1951	The directors of Sanitary District No. 1 are fearful that the pending connection of the Hughes Tool Company plant to district lines will overwhelm the system. The city and county originally agreed to the connection, but that plan was based on the assumption that the Hughes plant would release about 40,000 gallons per day. Now plant officials estimate 1,000,000 gallons will be released per day. A district representative is quoted as saying that if Hughes is connected to the system, "manhole covers will be popping off like tiddley winks." The district urges the city to consider alternatives, such as a new 24-inch interceptor from the Hughes plant to Prince Road.
TDC, 4 October 1951	The county health board is preparing legislation to outlaw cesspools and strictly limit private septic systems, with an eye to protecting drinking water sources.
TDC, 15 November 1951	The city council approves a 17-year contract with James Shumaker for effluent from the new sewage treatment plant. Shumaker will pay $1 per acre foot and use the water for irrigation. The contract requires the city to build a "flow equalizing reservoir" near Ruthrauff Road, between the Casa Grande Highway and the Santa Cruz River, to make the effluent available to Shumaker at an even rate of flow. The city will also build a diversion channel to carry the effluent to the reservoir.

Appendix A. Newspaper References to the Roger Road Wastewater Reclamation Facility, 1942–1973.

Reference	Notes
TDC, 16 November 1951	For economic reasons, Sanitary District No. 1 decides to dispense with outside engineering consultants to run its system, which has been supervised by Headman, Ferguson and Carollo from the beginning.
TDC, 8 December 1951	Reiteration of the sanitary district's concern that the new Hughes plant will overload existing sewer lines. "If that happens the manhole covers along the Nogales highway will be popping like tiddly-winks," a district official is quoted as saying.
TDC, 16 September 1957	Consulting engineer John Carollo tells the city council that $1,500,000 is needed to double the capacity of the existing sewage treatment plant. The doubled capacity would serve the city and sanitary district until 1966. The existing plant is already over capacity some days of the year.
TDC, 17 September 1957; ADS, 17 September 1957	The city council indicates that plans to expand the existing sewage treatment facilities as detailed by consulting engineer John Carollo will go ahead whether or not the expansion is approved in a proposed bond election.
TDC, 13 December 1957	Tucson mayor Don Hummel states that the existing sewage treatment plant is exceeding capacity for about six hours almost every day, and Tucson citizens will soon have to vote to approve the expansion currently being drawn up by consulting engineer John Carollo. The estimated cost is $1,330,000, of which the city will be responsible for about $1,000,000 and the sanitary district the rest.
TDC, 4 February 1958	The city council approves an application for $250,000 in federal funds (under the water pollution control act) to help pay for the proposed sewage plant expansion. The plant is now operating at 150 percent of capacity, according to city manager Porter Homer. Homer believes the presence of Davis-Monthan Air Force Base and Hughes Aircraft will make Tucson eligible for the federal funding.
TDC, 12 April 1958	Another statement of the need for an expansion of the existing sewage treatment plant. The estimated cost is $1,560,000, of which the sanitary district would contribute $250,000. The expansion would meet demand until 1966, when more expansion may be necessary. E. O. Dye, plant superintendent, is cited as saying that the plant is currently over capacity 12 to 16 hours of every day. John Carollo will have plans for the expansion ready in July. This article has a folksy but accurate description of the general process of treatment at the plant.
TDC, 16 May 1958	City manager Porter Homer, speaking at the annual meeting of the Arizona Sewage and Waterworks Association, stated that the present sewage treatment plant is overburdened at least 50 percent of the time, and that city engineers say the plant should be expanded by 100 percent. The engineers also say an additional expansion will be needed by 1966, based on current population growth.
TDC, 30 July 1958	The editors of the TDC urge voters to vote for three bond issues in the upcoming bond election, including the largest, $1,260,000 for an expansion of the sewage disposal plant.
TDC, 6 August 1958	Turnout for the bond election was much higher than expected, and all three issues passed, including the most pressing, an expansion of the existing sewage disposal plant.
TDC, 23 September 1958	The City of Tucson has been awarded a federal grant of $250,000 to help pay for the proposed expansion of the existing sewage disposal plant. The grant was made because of the presence of federally controlled facilities in Tucson, such as Davis-Monthan Air Force Base and Hughes Aircraft.

Appendix A. Newspaper References to the Roger Road Wastewater Reclamation Facility, 1942–1973.

Reference	Notes
TDC, 28 October 1958	The city council calls for bids to double the capacity of the existing sewage treatment plant. Three methods of treatment have been designed by Phoenix engineer John A. Carollo and are being considered: (1) a simple doubling of capacity using the current method; (2) a trickling filter system; and (3) a system using filters manufactured by Infilco Company of Tucson.
TDC, 13 January 1959	City manager Porter Homer asks Sanitary District No. 1 to contribute $250,000 to expand the sewage treatment plant, to cover its share of projected use. The district manager, Kenneth Scharman, balks at the request, stating that the city plans to annex much of the area served by the district, so the district should be responsible for a smaller portion of the total cost of the expansion.
TDC, 16 January 1959	Phoenix contractor Emil H. Krall submits the lowest bid for a proposed expansion of the city sewage plant, using the trickling filter method. Award of the contract is expected in 30 days; construction is expected to take 18 months. The winning bid was $1,153,680.
TDC, 31 January 1959	The city council will consider a complaint by C. H. Leavell and Company that Emil H. Krall did not fulfill all bid requirements in the winning bid.
TDC, 13 February 1959	Emil H. Krall is awarded a contract for $1,282,680 by the city to build the proposed sewage plant expansion.
TDC, 18 March 1959	A meeting of officials of Sanitary District No. 1 and the City of Tucson Sewage Department ends with a general consensus that a merger of the two into a single authority would soon be necessary, because of the likelihood that the city will annex much of the area now taxed by the district.
TDC, 20 March 1959	The editors of the TDC argue that there is no need for the governmental duplication represented by the county sanitary district and the city sewage department, and that the two should merge.
TDC, 28 March 1959	The county sanitary district argues that recent annexations by the city do not mean the areas are no longer part of the district, while the city begs to differ. An argument grows about whether the city or the district is better suited to provide sewage service to the metropolitan area.
TDC, 2 April 1959	E. O. Dye, superintendent of the city sewage treatment plant, announces that he is accepting unwanted pet ducks, chicks, and rabbits left over from Easter, to keep at the sewage treatment plant, where there are 40 acres of land and a 4-acre pond, and where “sheep and ducks already abound.” No dogs or cats, please.
TDC, 10 April 1959	A “crematory urn” with skeletal remains was unexpectedly uncovered at the sewage treatment plant during construction of the new expansion. The discovery, made by “mechanical scoop” at a depth of 6 feet, was reported to the Arizona State Museum by Emil Krall, the contractor, and E. O. Dye, the plant superintendent. University of Arizona archaeologist William Wasley, who examined the find, characterized the remains as a Hohokam adult and noted that the vessel was removed unbroken.
TDC, 17 April 1959	The Tucson Home Builders Association asks to be included in any discussion of a merger of Sanitary District No. 1 and the city sewage department. The association wants to have a voice “so we can be sure there is no exorbitant charge for connecting sewers in new (housing) areas.”

Appendix A. Newspaper References to the Roger Road Wastewater Reclamation Facility, 1942–1973.

Reference	Notes
TDC, 29 July 1959	Paul McIntosh, chairman of the board of Sanitary District No. 1, outlines a plan for a metropolitan sewage utility, with property owners paying a monthly fee for sewage service. He emphasizes the need for a single consolidated sewage district.
TDC, 26 August 1959	Brief article noting that the sewage plant expansion is three to four weeks ahead of schedule. Prefabricated steel for the clarifiers and sludge-handling structures, manufactured by General Steel Corporation of Fort Worth, Texas, using designs by Infilco, Inc., just arrived by train to Jaynes Station. A steelworkers strike threatened to delay the delivery but did not. Plant completion is anticipated for January 1960.
TDC, 22 April 1960	Another notice that E. O. Dye, sewage plant superintendent, is accepting unwanted rabbits, chickens, and ducks (from Easter) to live at the plant. "Dye has slowly collected an extensive menagerie of farm animals to help keep the grass trimmed and lend character to the place."
TDC, 27 April 1960	An editorial by the Citizen editors notes that Sanitary District No. 1 is "fighting for its life" because recent annexations by the city have removed so much of its tax base. The district wants a metropolitan sewer authority created, the city wants to take over the district, and things are at an impasse. The district claims it can operate with things as they are for another year, and the editors believe that's what should happen for now.
TDC, 23 June 1960	The city and Sanitary District No. 1 reach an agreement that for the next year the city will take over all sewer lines within city boundaries. A large area (21 square miles) annexed by the city in 1959 has been served by the district for the last year but will now be served by the city. The long-term solution has not yet been determined. The district wants a metropolitan sewer authority, administered jointly by the city, the county, and the city-county health department. The city is opposed to this idea, arguing that city residents already pay for sewer service as part of their general property tax and would not be willing to pay the additional tax a metropolitan authority implies. Also, a metropolitan authority would bring a duplication of administrative costs. "The City Council has taken a firm stand that sewers inside the city will be operated under direct city administration." The city manager, Porter Homer, wants the city to be in charge of extending lines beyond the city limits where needed, and homes added to the system would pay the service fee now paid by city residents.
TDC, 20 August 1960	City sewage officials ask residents of the northwest part of Tucson to be patient with the ongoing odor problem at the sewage plant. The problem will be solved once the ongoing expansion of the overloaded system is complete. "A little over three miles north of the city plant is a new Sanitary District pond and some people thought odors might be emanating from it. However, a check there revealed a very clear final product without any odor."
TDC, 7 October 1960	The newly expanded sewage treatment plant will enter full operation in a few days. Officials already say that the expanded plant will be overburdened by 1966. Article notes, "Much of the specialized equipment for the new trickle down filter processing equipment was designed and supplied by Infilco Inc., of Tucson." The new facilities provide a different method of treatment from the original plant. The aeration basins of the original plant are replaced by trickling filters in the new plant, but the incoming sewage, after being screened for grit and debris through a new headworks, is split between the old and new plants, which operate side by side. The city sells the effluent (16,000 acre feet annually) to nearby farmers for irrigation; the final residue (i.e., biosolids) is used as fertilizer in city parks.

Appendix A. Newspaper References to the Roger Road Wastewater Reclamation Facility, 1942–1973.

Reference	Notes
TDC, 12 October 1960	The power lines that serve the sewage treatment plant were damaged by a collision between two tractor-trailers on the Casa Grande Highway. This will delay the city's efforts to raise the level of purification of the water exiting the plant to irrigate fields, and also delay an improvement in the odor problem that Cortaro residents have complained so bitterly about. The expanded plant is still about six weeks away from completion.
TDC, 18 October 1960	The city plans to spray the sludge-drying beds at the plant with a deodorant, to lessen the foul odors that local residents have complained about for the last two months. Steps are also being taken to improve conditions of holding ponds on the Oshrin farm, where the effluent is used for irrigation. The expanded plant is now running at near full capacity, but it will take a while for the bacterial process to be fully established.
TDC, 4 November 1960	Residents of Cortaro plan to sue the city over the fly, mosquito, and odor problems at Al Oshrin's farm, where water from the sewage plant is stored in holding tanks before use on fields. City manager Porter Homer says the problem comes in part from the period when the plant was operating at above capacity and partially treated sewage was sent to the holding tanks. The expanded capacity of the plant will soon remedy the problem.
TDC, 7 November 1960	Among other business at its meeting, the city council accepts the new $1,300,000 expansion of the sewage treatment plant.
TDC, 17 March 1964	The city council votes to hire a Phoenix firm, Henningson, Durham and Richardson, to design a $1,000,000 addition to the sewage treatment plant. The firm and its local affiliate, Gene Anderson Engineering, will be paid $121,760 for the design. This selection overruled a screening committee's recommendation that John Carollo and L. O. Henry, Phoenix and Tucson, receive the contract. Carollo and Henry designed the first two stages of the plant. A degree of conflict between certain members of the council and the screening committee is discussed.
TDC, 7 July 1964	Henningson, Durham and Richardson and Gene Anderson Engineering, the firms designing an expansion of the sewage treatment plant, urge the city to construct the expansion by January 1, 1967, at a cost of $2,600,000. By then, the average daily flow will exceed the current capacity of 24 million gallons a day. Construction will require a bond issue, plus 15 months to complete, so a decision must be made. The recommended expansion will use the activated sludge method, chosen for its compactness, and be located adjacent to the existing plant. Methods considered by the designers were a 10-mgd activated sludge plant similar to the original plant; a 10-mgd plant similar to the trickling filter plant of the first expansion; and an activated sludge plant built about 4 miles downstream from the current plant.
TDC, 22 July 1964	Wilfred C. Gilbert, director of public health engineering for the Arizona Department of Health, urges Tucson Mayor Lew Davis and the city council to approve the proposed expansion of the sewage treatment plant. He has examined the plan proposed by Henningson, Durham and Richardson and Gene Anderson and concurs with their recommendations. He notes that even if the plan is approved immediately, the expansion won't be complete before the existing capacity is severely exceeded.

Appendix A. Newspaper References to the Roger Road Wastewater Reclamation Facility, 1942–1973.

Reference	Notes
TDC, 14 August 1964	Henningson, Durham and Richardson and Gene Anderson are given the green light to proceed with their design of the 12.9 mgd expansion of the sewage treatment plant. The two firms will receive $88,382 for design of the expansion and $11,280 for design of changes to the existing plant. The expansion is scheduled to be complete by January 1966. Engineers estimate that the plant will handle Tucson's needs until 1975.
TDC, 9 September 1964	Albert Oshrin, who buys effluent from the city to water his farmland, urges the city council to build two new oxidation ponds to handle sewage instead of building the expansion designed by Henningson, Durham and Richardson and Gene Anderson. Oshrin says he is just trying to save the city money. Councilman James Kirk tells Oshrin, "When you get professionals of equal status to certify that these people were wrong, then we can sit down and talk."
TDC, 30 November 1964	City water director Paul Beerman warns that the city needs to speed up its expansion of the sewage plant and the construction of new trunk sewers on Roger Road, 18th Street, and the west bank of the Santa Cruz River. He notes that the existing plant exceeded full capacity several times over the preceding summer. Federal funds may be available for part of the cost, but the city needs to proceed with or without the funds. Bond issues need to be passed quickly, and construction needs to begin by the spring.
TDC, 4 January 1965	E. O. Dye, sewage plant superintendent, is forced to relocate some of the many ducks he has taken on at the plant to the plant's new 40-acre pond near Ruthrauff Road. But by the next morning they are back at the plant. This human-interest story notes that Dye also has burros and rabbits on the plant grounds.
TDC, 25 February 1965	Albert Oshrin, who buys effluent from the city to water his farmland, argues that an expansion of the city sewage plant is unnecessary, and that a metropolitan sanitary district is needed.
TDC, 4 March 1965	Assistant city manager John Urie recommends that the city council approve the sale of bonds to build new trunk sewer lines. A bond issue will be made in the spring for the proposed sewage plant expansion.
TDC, 26 May 1965	An editorial by a Citizen writer who discusses all of the sewage projects underway and proposed for the Tucson area, all of which he considers necessary.
TDC, 1 October 1965	The $2,600,000 necessary to expand the sewage plant are now in hand, including a $600,000 grant from the federal government and $2,000,000 from a $22,000,000 city bond issue approved on June 1. City water director Paul Beerman says the design work is nearly complete and the expansion will be complete by mid-1967. The expansion will increase capacity from 24 mgd to 36 mgd.
TDC, 11 January, 1966	Bids on the proposed sewage plant expansion are opened and the low bidder is W. P. Harlin Construction Company of Salt Lake City, Utah, at $2,384,437 for a diffused aeration system and $2,453,436 for a mechanical aeration system.
TDC, 15 January, 1966	Robert E. McKee Construction Company of El Paso, Texas, which had the second-lowest bid on the proposed sewage plant expansion among four bidders, calls for an investigation into the bidding process.

Appendix A. Newspaper References to the Roger Road Wastewater Reclamation Facility, 1942–1973.

Reference	Notes
TDC, 16 February 1966	Sanitary District No. 1 chairman Richard E. Bailey says he favors a metropolitan sewer district, which should also handle water distribution. Deputy city manager Roger O'Mara agrees that an integrated system is desirable, but "if one were formed, then the city should run it," because the city already handles 90 percent of the sewage.
TDC, 13 July 1966	A photograph with caption but no accompanying article shows a line of officials at the ground-breaking ceremony for the sewage plant expansion. The men include city council members Kirk Storch and James Corbett Jr.; E. O. Dye, plant superintendent; Sam Phillips, engineer; W. P. Harlin, head of W. P. Harlin Construction; and Gene Anderson, engineer.
TDC, 15 November 1967	A photograph with caption but no accompanying article shows Mayor Lew Davis and councilman G. Freeman Woods turning a large valve to begin operations at the newly completed expansion of the sewage treatment plant.
TDC, August 15, 1968	A brief article about the upcoming election for residents in Sanitary District No. 1. The election will decide if the district will be dissolved and its responsibilities assumed by the county. The article notes that both the county and district assume that the change will happen, and if the voters decide elsewise, it will complicate the funding of upcoming sewer projects.
TDC, August 19, 1968	Residents of Sanitary District No. 1 have voted to dissolve the district and place its responsibilities with the county, which will happen officially on September 1. District manager Kenneth Scharman laments the poor voter turnout.
TDC, August 31, 1968	Sanitary District No. 1 will be dissolved effective at midnight. District manager Kenneth Scharman will remain director of the overall operation.
ADS, 19 August 1971	In an interview with the *Arizona Daily Star*, E. O. Dye, sewage plant superintendent, who began in his job in 1951, discusses the nature of sewage treatment and its problems in Tucson.
TDC, 2 October 1973	Pima County manager Kenneth Scharman urges the city and county to develop a proposal for a metropolitan water and sewer authority and not to wait for a decision by elected officials about who will run it. The city and county continue to argue about who has the right and responsibility for sewage lines inside and outside the city limits.

Appendix B.

State of Arizona Historic Property Inventory Forms

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Control Building (1951); Administration Building (1967)
(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497597 Northing 3571561 USGS 7.5' quad map: Jaynes (1995)

Architect: Headman, Ferguson & Carollo (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Sundt Construction Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1950–1951 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.
Control and administration building for wastewater treatment plant (1951–2013).

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: April 24, 2012

View Direction (*looking towards*) North

Negative No.: Roger Road 11-0001

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
Addition of small extension on north side of original building (ca. 1963); addition of administrative space to south side of original building (1967); major interior changes and improvements (1985).

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Concrete block with face brick Foundation: Concrete Roof: Ceramic roof tiles and built-up
Windows: Steel casement; fixed single-light; glass block
If the windows have been altered, what were they originally? All windows were steel awning originally.
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)
1951 portion has pre-cast concrete corner blocks and bond beams; 1967 addition has pre-cast concrete coping and dentils.

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☑ is ☐ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Control Building (1951); Administration Building (1967) Continuation Sheet No. 1

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This building is the current Control and Administration Building of the Roger Road Wastewater Reclamation Facility. The north half of the building, originally known as the Control Building, was included in the original plans prepared in 1949 by the Phoenix engineering firm of Headman, Ferguson & Carollo for what was first known as the Tucson Sewage Treatment Plant. The Control Building was built in 1950–1951, along with the rest of the original treatment facility, by M. M. Sundt Construction Company of Tucson. As originally built, the Control Building included an office, a chlorinator room, a control room, a blower room, a pump room (located in a partial basement), and a laboratory. The laboratory was fully equipped for analyzing water samples from different stages in the treatment process. A newspaper article, written in 1950 as construction of the plant neared completion, described the laboratory as the "nerve center" of the plant, "where all controls, valves and checking instruments will be located. Here the superintendent and resident chemist will be able to keep a constant check on every part of the plant and samples can be drawn from every unit to determine the actions and progress of the sewage treatment" (Tucson Daily Citizen, 3 November 1950, p. 3).

At some point after the original building was completed, a small, one-room addition was made to the north side of the building, near its northwest corner. The addition served as a receiving and storage room for water samples. No plans for the addition have been found. It does not appear on an aerial photograph of the plant taken in 1960, but it does appear on an aerial photograph taken in 1963, which must be close to its year of construction. The design of its exterior closely matches that of the original Control Building, with a gable-end tiled roof and an exposed concrete bond beam at the bottom of the gable.

The south half of the current building was designed in 1965 by Gene E. Anderson (Tucson) and Henningson, Durham & Richardson (Phoenix), the two-firm engineering team for a general expansion of the plant. The expansion, including this building, was built in 1966–1967 by the W. P. Harlin Construction Company of Salt Lake City. Originally called the Administrative Building, it had an ell-shaped plan and was joined to the original Control Building at the north end of the smaller arm of the ell. The longer, east-west arm of the ell was connected by sidewalk, running under an open-sided north-south breezeway canopy, to the original Control Building. The Administrative Building was built to provide additional office space, a kitchen, rest rooms, and a reception area. With the original building, it surrounded an open courtyard. The addition is, like the original building, of brick-faced, concrete-block construction on a concrete slab, but the roof is flat with built-up roofing rather than the tiled gable-end roof of the original Control Building. The original building and the addition have functioned as a single building since the addition was built. The footprint of the current Control and Administration Building is basically the same as the resulting 1967 overall footprint.

In 1985, improvements were made to the Administration Building (which referred to the overall building at the time) by Black & Veatch, consulting engineers and architects of Kansas City, Missouri. The improvements included a reorganization of the interior of the original Control Building, converting much of it to administrative or office space. Some of the original windows were replaced or closed off with brick, but both the 1951 and 1967 portions of the building still retain some of the original steel awning windows, and the south facade of the east end of the original Control Building still has the original glass-block windows.

NRHP Evaluation: The original 1951 Control Building has undergone major changes to its interior and is now part of a larger building with a primarily administrative rather than technical function, but it retains much of its original exterior appearance, including a distinctive red tile roof, and red brick walls with decorative pre-cast concrete elements. The style of the building is hard to specify, but the cross-gables of the east end of the building and the red tile roof are elements seen in Spanish Eclectic buildings of the first half of the twentieth century (McAlester and McAlester 2006:417–429). The 1967 addition of the Administrative Building to the south side of the Control Building created a single, much larger building with a much-changed footprint, but the addition also has a red brick exterior with decorative concrete elements, similar in style to the original Control Building. The addition has a more Modern look, with a flat roof rather than the gable-end roof of the original building, but together the two buildings form an integrated

whole, surrounding a small, open courtyard. Changes to the exterior of the overall building over the years have included the closing off of some window openings and the replacement of some windows and doors with stylistically inappropriate units. But the overall building still retains the general appearance it had in the years just after the 1967 addition was made, and the earliest portion of the current building is still easily recognizable as the original 1951 Control Building. WSA recommends that the overall building be considered eligible for listing in the NRHP under Criterion A for its association with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period.

In addition to having individual significance, the current Control and Administration Building is part of a small group of structures, including Primary Sedimentation Tanks Nos. 1–4, Aerators Nos. 1 and 2, and Secondary Sedimentation Tanks Nos. 1 and 2, that together represent a substantial intact portion of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. WSA recommends that the current Control and Administration Building also be considered eligible for listing in the NRHP under Criterion A as part of this group of structures.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

McAlester, Virginia, and Lee McAlester
2006 A Field Guide to American Houses. New York, Alfred A. Knopf.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

Pima County Wastewater Management Department
1985 Administration and Maintenance Building Modifications/Additions. Pima County, Arizona. Roger Road WWTP Improvements [construction drawings]. Prepared for the Pima County Wastewater Management Department by Black and Veatch, Engineers and Architects, Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Control Building (1951); Administration Building (1967) Continuation Sheet No. 3

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1. Roger Road 11-0002: Main entrance, view to the north (April 24, 2012).

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Control Building (1951); Administration Building (1967) Continuation Sheet No. 4

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2. Roger Road 11-0017: Breezeway and courtyard, view to the northwest (April 24, 2012).

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Control Building (1951); Administration Building (1967) Continuation Sheet No. 5

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3. WSA 2013-69-004: Cross-gable at east end of south facade, view to the north (October 4, 2013).

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Control Building (1951); Administration Building (1967) Continuation Sheet No. 6

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4. WSA 2013-69-008: West and south facades, view to the northeast (October 4, 2013).

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Control Building (1951); Administration Building (1967) Continuation Sheet No. 7

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5. WSA 2013-69-013: East and north facades, view to the southeast (October 4, 2013).

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Primary Sedimentation Tanks Nos. 1–4

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497650 Northing 3571604 USGS 7.5' quad map: Jaynes (1995)

Architect: Headman, Ferguson & Carollo (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Sundt Construction Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1950–1951 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Primary treatment of sewage (1951–ca. 1989)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) West

Negative No.: WSA 2013-69-017

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to tanks themselves, but changes to overall system at sewage treatment plant led to the abandonment of the tanks ca. 1989. Hand rails and other minor safety features were added in 1975.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: N/A Roof: N/A
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)
_____

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Primary Sedimentation Tanks Nos. 1–4 Continuation Sheet No. 1

==========

This set of four concrete tanks is currently known as the Equalization Basins of the Roger Road Wastewater Reclamation Facility. The four rectangular, open, side-by-side tanks are identical and were built at the same time; each tank shares walls with the tanks immediately adjacent, which makes the four tanks essentially a single structure. The upper surfaces of the structure are at grade, with walkways and hand rails separating the four tanks. The tanks were originally known as Primary Sedimentation Tanks Nos. 1–4 when the Tucson Sewage Treatment Plant was first built in 1950–1951. Raw sewage entered the plant from the east via a headworks that has since been removed. Equipment in the headworks removed grit and large debris from the sewage then routed it to the Primary Sedimentation Tanks, where sludge settled to the bottom and scum was skimmed from the top. The sludge, scum, and remaining effluent then exited the Primary Sedimentation Tanks to the next structures in the sequence. Primary Sedimentation Tanks Nos. 1–4 have been out of service and drained since ca. 1989 (the year of major improvements to the larger plant).

The overall footprint of the Primary Sedimentation Tanks is square, 132 feet by 132 feet. The depth of the tanks is 12 feet, with narrow channels set at intervals in the floor reaching 15 feet deep. The tanks are almost entirely of poured concrete, including the floors and walls of the tanks and a series of round pillars and square cross beams that form a grid across the structure. The pillars and beams support walkways that criss-cross the structure and also once supported equipment that scraped sludge from the bottom of the tanks and skimmed scum from the top. This equipment has been removed, but the embedded steel rails that the equipment rode on are still in place in the floors of the tanks. The easternmost portion of the tanks, where sewage first entered, is separated from the rest of the tanks by a brick wall with regularly spaced openings that served as a baffle to slow the flow of incoming sewage.

NRHP Evaluation: Except for minor elements such as plumbing connections and handrails that have been replaced or added over the years, Primary Sedimentation Tanks Nos. 1 and 4 are mostly unchanged from their original appearance and in excellent condition. These tanks are utilitarian structures of a simple and very common design and by themselves they lack distinction. However, they are part of a small group of structures, including the Control House, Aerators Nos. 1 and 2, and Secondary Sedimentation Tanks Nos. 1 and 2, that together represent a substantial intact portion of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. WSA recommends that Primary Sedimentation Tanks Nos. 1 and 4, as part of this group of structures, be considered eligible for listing in the NRHP under Criterion A for their association with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Aerators Nos. 1 and 2

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497576 Northing 3571604 USGS 7.5' quad map: Jaynes (1995)

Architect: Headman, Ferguson & Carollo (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Sundt Construction Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1950–1951 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Primary treatment of sewage (1951–ca. 1989)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) West

Negative No.: WSA 2013-69-031

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to tanks themselves, but changes to overall system at sewage treatment plant led to the abandonment of the tanks ca. 1989. Hand rails and other minor safety features were added in 1975.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: N/A Roof: N/A
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)
_____

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Aerators Nos. 1 and 2 Continuation Sheet No. 1

==========

This set of two concrete tanks is currently known as the Aeration Basins of the Roger Road Wastewater Reclamation Facility. The two rectangular, open, side-by-side tanks were built at the same time, and the tanks share the wall that runs between them, which makes the two tanks essentially a single structure. The upper surfaces of the structure are at grade, with a central east-west walkway and hand rails separating the two tanks and sidewalks with handrails running along the outer sides of the tanks. The tanks were originally known as Aerators Nos. 1–2 when the Tucson Sewage Treatment Plant was first built in 1950–1951. Raw sewage entered the plant from the east via a headworks that has since been removed. Equipment in the headworks removed grit and large debris from the sewage then routed it to the Primary Sedimentation Tanks, just east of the Aerators. After the initial removal of sludge and scum in the Primary Sedimentation Tanks, the sewage entered the east end of the Aerators. In the Aerators, large nozzles set at intervals in the floor of the tanks injected forced air into the sewage to accelerate the bacterial breakdown of organic matter. The air originated from large blowers mounted in the blower room of the original Control Building. Aerators Nos. 1–2 have been out of service and drained since ca. 1989 (the year of major improvements to the larger plant).

The overall footprint of the Aerators is a long rectangle, 87 feet 6 inches north-south by 272 feet 9 inches east-west. The depth of the tanks is 16 feet 9 inches. The tanks are entirely of poured concrete, including the floors and walls of the tanks and a series of square pillars and square cross beams that form a grid across the structure. The pillars and beams support the central walkway that runs the length of the structure. A system of pipes is mounted on the walls and floors of the tanks to carry air from the blower room to the nozzles that aerated the sewage.

NRHP Evaluation: Except for minor elements such as plumbing connections and handrails that have been replaced or added over the years, Aerators Nos. 1 and 2 are mostly unchanged from their original appearance and in excellent condition. These tanks are utilitarian structures of a simple and very common design and by themselves they lack distinction. However, they are part of a small group of structures, including the Control House, Primary Sedimentation Tanks Nos. 1–4, and Secondary Sedimentation Tanks Nos. 1 and 2, that together represent a substantial intact portion of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. WSA recommends that Aerators Nos. 1 and 2, as part of this group of structures, be considered eligible for listing in the NRHP under Criterion A for their association with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary.*** *Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Secondary Sedimentation Tank No. 1

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497511 Northing 3571584 USGS 7.5' quad map: Jaynes (1995)

Architect: Headman, Ferguson & Carollo (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Sundt Construction Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1950–1951 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Secondary treatment of sewage (1951–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) Southeast

Negative No.: WSA 2013-69-044

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to the tank itself. Various mechanical, electrical, and plumbing upgrades have taken place over the years.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: N/A Roof: N/A
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Secondary Sedimentation Tank No. 1 Continuation Sheet No. 1

==========

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Final Clarifier No. 1 of the Roger Road Wastewater Reclamation Facility. The tank was originally known as Secondary Sedimentation Tank No. 1 when the Tucson Sewage Treatment Plant was first built in 1950–1951. The tank originally received sewage from Aerators Nos. 1 and 2, located immediately to the east. The Aerators are no longer used, but Final Clarifier Nos. 1 and 2 are actively used components of the current treatment system and now receive sewage from other components. Sewage is routed to the Final Clarifiers from a gate box located between the basically identical structures. The gate box also dates to the original construction of the plant.

Secondary Sedimentation Tank No. 1 was built with a maximum diameter of 106 feet 8 inches and a maximum depth of 15 feet. The upper edge of the outer tank wall is about 6 inches above grade and supports a pipe hand rail around the full circumference of the tank. Just inside the upper tank wall is a channel, also of concrete, that measures 2 feet wide and 2 feet 8 inches deep and runs along the inside of the upper wall; its upper edge is 1 foot 6 inches lower than the upper edge of the outer wall. The upper edge of the inner wall has a notched steel weir plate bolted to its inner edge to regulate the flow of water in the tank into the channel, from which it is routed elsewhere for additional treatment. At the center of the tank is a pier, on which is mounted a secondary sludge collector and skimming arms that extend to the edges of the tank. A walkway extends to the pier from the north edge of the tank. The bottom of the tank slopes downward from the outer edges to the center where accumulated sludge is pumped elsewhere for additional treatment.

NRHP Evaluation: Except for minor elements such as plumbing connections and handrails that have been replaced or added over the years, Secondary Sedimentation Tank No. 1 is mostly unchanged from its original appearance and in excellent condition. The tank is a utilitarian structure of a simple and very common design and by itself lacks distinction. However, it is part of a small group of structures, including the Control House, Primary Sedimentation Tanks Nos. 1–4, Aerators Nos. 1 and 2, and Secondary Sedimentation Tank No. 2, that together represent a substantial intact portion of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. WSA recommends that Secondary Sedimentation Tank No. 1, as part of this group of structures, be considered eligible for listing in the NRHP under Criterion A for its association with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Secondary Sedimentation Tank No. 1 Continuation Sheet No. 2

==========

1. WSA 2013-69-085: Original (and actively used) gate box located between Secondary Sedimentation Tanks Nos. 1 and 2, view to the west (October 4, 2013). (The Secondary Sedimentation Tanks are known today as Final Clarifiers Nos. 1 and 2.)

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Secondary Sedimentation Tank No. 2

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497511 Northing 3571623 USGS 7.5' quad map: Jaynes (1995)

Architect: Headman, Ferguson & Carollo (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Sundt Construction Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1950–1951 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Secondary treatment of sewage (1951–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) East

Negative No.: WSA 2013-69-046

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to the tank itself. Various mechanical, electrical, and plumbing upgrades have taken place over the years.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: N/A Roof: N/A
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Secondary Sedimentation Tank No. 2 Continuation Sheet No. 1

==========

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Final Clarifier No. 2 of the Roger Road Wastewater Reclamation Facility. The tank was originally known as Secondary Sedimentation Tank No. 2 when the Tucson Sewage Treatment Plant was first built in 1950–1951. The tank originally received sewage from Aerators Nos. 1 and 2, located immediately to the east. The Aerators are no longer used, but Final Clarifier Nos. 1 and 2 are actively used components of the current treatment system and now receive sewage from other components. Sewage is routed to the Final Clarifiers from a gate box located between the basically identical structures. The gate box also dates to the original construction of the plant.

Secondary Sedimentation Tank No. 2 was built with a maximum diameter of 106 feet 8 inches and a maximum depth of 15 feet. The upper edge of the outer tank wall is about 6 inches above grade and supports a pipe hand rail around the full circumference of the tank. Just inside the upper tank wall is a channel, also of concrete, that measures 2 feet wide and 2 feet 8 inches deep and runs along the inside of the upper wall; its upper edge is 1 foot 6 inches lower than the upper edge of the outer wall. The upper edge of the inner wall has a notched steel weir plate bolted to its inner edge to regulate the flow of water in the tank into the channel, from which it is routed elsewhere for additional treatment. At the center of the tank is a pier, on which is mounted mechanical equipment, including a secondary sludge collector and skimming arms that extend to the edges of the tank. A walkway extends to the pier from the north edge of the tank. The bottom of the tank slopes downward from the outer edges to the center, where accumulated sludge is pumped elsewhere for additional treatment.

NRHP Evaluation: Except for minor elements such as plumbing connections and handrails that have been replaced or added over the years, Secondary Sedimentation Tank No. 2 is mostly unchanged from its original appearance and in excellent condition. The tank is a utilitarian structure of a simple and very common design and by itself lacks distinction. However, it is part of a small group of structures, including the Control House, Primary Sedimentation Tanks Nos. 1–4, Aerators Nos. 1 and 2, and Secondary Sedimentation Tank No. 1, that together represent a substantial intact portion of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. This group of structures is eligible for listing in the NRHP under Criterion A for its association with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Secondary Sedimentation Tank No. 1 Continuation Sheet No. 2

==========

1. WSA 2013-69-085: Original (and actively used) gate box located between Secondary Sedimentation Tanks Nos. 1 and 2, view to the west (October 4, 2013). (The Secondary Sedimentation Tanks are known today as Final Clarifiers Nos. 1 and 2.)

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Primary Digester

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497394 Northing 3571698 USGS 7.5' quad map: Jaynes (1995)

Architect: Headman, Ferguson & Carollo (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Sundt Construction Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1950–1951 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Sewage sludge processing (1951–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) South

Negative No.: WSA 2013-69-056

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to the concrete tank itself, but the original floating cover was replaced with a fixed cover in 1979. Various upgrades to mechanical, electrical, and plumbing connections were also made in 1979 and in later years.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: N/A Roof: N/A
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)
_____

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Primary Digester Continuation Sheet No. 1

==========

This cylindrical, aboveground, closed concrete tank and accompanying mechanical equipment is currently known as Digester No. 1 of the Roger Road Wastewater Reclamation Facility. The tank was originally known as the Primary Digester when the Tucson Sewage Treatment Plant was first built in 1950–1951. The tank originally received sludge from Secondary Sedimentation Tanks Nos. 1 and 2, located to the southeast. Digester No. 1 is an actively used component of the current treatment system and receives sludge from various components. It operates in tandem with Digester No. 2 (also built in 1950–1951 and originally known as the Secondary Digester), located just 30 feet to the west. The two Digesters are joined by Control House No. 1 (originally known as the Digester Control House), which houses the mechanical equipment associated with the operation of the Digesters.

The outer wall of the Primary Digester is 32 feet 6 inches high and 83 feet in diameter. As originally built, the structure had a floating cover that moved vertically in accordance with the volume of gas in the digester. The cover consisted of a steel-truss framework with a membrane stretched over it. The floor of the digester was concrete and sloped downward from the base of the wall to a central point, 6 feet 8 inches below grade, where a pipe was mounted to draw off sludge for recirculation. Various pipes to introduce or draw off sludge, supernatant liquid, and gas connected the tank to the Digester Control House. In 1979, during extensive improvements to the plant as a whole, the floating cover was replaced with a fixed cover. Various changes were also made in 1979 to the plumbing, electrical, and mechanical connections of the Primary Digester with the Digester Control House.

NRHP Evaluation: The Primary Digester was part of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. It is physically connected to the Secondary Digester by the Digester Control House, which stands between the two digesters. All three structures were designed and built at the same time and are associated with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period. However, the Primary Digester lacks integrity of design and materials because its original floating cover was replaced with a fixed cover during plant improvements made in 1979. Its connection to the Digester Control House, a building that was expanded to twice its original size in the 1979 improvements, also contributes to its lack of integrity. WSA recommends that the Primary Digester be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Primary Digester Continuation Sheet No. 2

==========

1. Roger Road 24-0001: Primary Digester (left) and Secondary Digester (right), known today as Digesters Nos. 1 and 2, view to the south (April 24, 2012). The Digester Control House (known today as Control House No. 1), which joins the two buildings, is obscured by the pipework in the foreground.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Secondary Digester

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497394 Northing 3571698 USGS 7.5' quad map: Jaynes (1995)

Architect: Headman, Ferguson & Carollo (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Sundt Construction Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1950–1951 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Sewage sludge processing (1951–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) Southwest

Negative No.: WSA 2013-69-058

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to the concrete tank itself, but the original floating cover was replaced with a fixed cover in 1979. Various upgrades to mechanical, electrical, and plumbing connections were also made in 1979 and in later years.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: N/A Roof: N/A
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)
_____

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Secondary Digester Continuation Sheet No. 1

==========

This cylindrical, aboveground, closed concrete tank and accompanying mechanical equipment is currently known as Digester No. 2 of the Roger Road Wastewater Reclamation Facility. The tank was originally known as the Secondary Digester when the Tucson Sewage Treatment Plant was first built in 1950–1951. The tank originally received sludge from Secondary Sedimentation Tanks Nos. 1 and 2, located to the southeast. Digester No. 2 is an actively used component of the current treatment system and receives sludge from various components. It operates in tandem with Digester No. 1 (also built in 1950–1951 and originally known as the Primary Digester), located just 30 feet to the west. The two Digesters are joined by Control House No. 1 (originally known as the Digester Control House), which houses the mechanical equipment associated with the operation of the Digesters.

The outer wall of the Secondary Digester is 32 feet 6 inches high and 83 feet in diameter. As originally built, the structure had a floating cover that moved vertically in accordance with the volume of gas in the digester. The cover consisted of a steel-truss framework with a membrane stretched over it. The floor of the digester was concrete and sloped downward from the base of the wall to a central point, 6 feet 8 inches below grade, where a pipe was mounted to draw off sludge for recirculation. Various pipes to introduce or draw off sludge, supernatant liquid, and gas connected the tank to the Digester Control House. In 1979, during extensive improvements to the plant as a whole, the floating cover was replaced with a fixed cover. Various changes were also made in 1979 to the plumbing, electrical, and mechanical connections of the Secondary Digester with the Digester Control House.

NRHP Evaluation: The Secondary Digester was part of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. It is physically connected to the Primary Digester by the Digester Control House, which stands between the two digesters. All three structures were designed and built at the same time and are associated with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period. The Secondary Digester has good integrity and is mostly unchanged from its original appearance and design, but its connection to the Primary Digester and Digester Control House, both of which were significantly altered during plant improvements in 1979, detracts from its integrity. WSA recommends that the Secondary Digester be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Secondary Digester Continuation Sheet No. 2

==========

1. Roger Road 24-0001: Primary Digester (left) and Secondary Digester (right), known today as Digesters Nos. 1 and 2, view to the south (April 24, 2012). The Digester Control House (known today as Control House No. 1), which joins the two buildings, is obscured by the pipework in the foreground.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Digester Control House

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497377 Northing 3571698 USGS 7.5' quad map: Jaynes (1995)

Architect: Headman, Ferguson & Carollo (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Sundt Construction Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1950–1951 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Sewage sludge processing (1951–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) South

Negative No.: WSA 2013-69-055

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
In 1979, the original poured-concrete building of 1950–1951 was expanded with a concrete-block addition on the south. Various upgrades to mechanical, electrical, and plumbing connections to adjacent Digesters were also made in 1979 and in later years.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete/concrete block Foundation: Poured concrete Roof: Poured concrete
Windows: Steel awning
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)
_____

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Digester Control House Continuation Sheet No. 1

==========

This flat-roofed, rectangular-plan, single-story building is currently known as Control House No. 1 of the Roger Road Wastewater Reclamation Facility. The building was originally known as the Digester Control House when the Tucson Sewage Treatment Plant was first built in 1950–1951. The building occupied the space between the Primary Digester and the Secondary Digester and was built to house the equipment used to operate the two digesters, which still function today and are known as Digesters Nos. 1 and 2. Control House No. 1 continues to serve the same function as the original Digester Control House, but various upgrades and changes have been made to the equipment it houses and to its connections with the adjacent digesters.

The original Digester Control House is entirely of poured-concrete construction, with a footprint measuring 30 feet 9 inches north-south by 36 feet east-west and a height of 16 feet. Because the building fills the space between the two cylindrical digesters, the curved walls of the digesters form the east and west walls of the building. Both the north and south facades of the building have the same combination of two window openings and one door opening. The window openings on both facades are 5 feet 8 inches high by 4 feet wide and hold stacked-four-light steel awning windows. The door opening on the north side is 7 feet 2 inches high by 6 feet 4 inches wide and has a set of double out-swing doors; the door opening on the south is 7 feet 2 inches high by 4 feet wide and has a single out-swing door.

In 1979, extensive improvements to the plant as a whole included an addition to the south side of the Digester Control House to make room for additional digester-related equipment. The addition extended south from the original south wall of the Digester Control House, with the same height and a footprint measuring 31 feet 4 inches north-south by 28 feet 2 inches east-west. The floor and footers of the addition are poured concrete; the walls are concrete block in a stacked pattern, which is visible on the interior of the addition. The original construction plans called for a brick face on the block walls, but if brick was used it was later covered with concrete stucco, which is the visible finish on the addition today. Communication between the original building and the addition is via the south doorway of the original building. The addition has a central doorway on the south with double out-swing doors. Two tall, single-light windows are in the east wall of the addition near its southeast corner.

NRHP Evaluation: The Digester Control House was part of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. It stands between the Primary and Secondary digesters and serves as the connection between them. All three structures were designed and built at the same time and are associated with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period. However, the Digester Control House lacks integrity. Both its original portion and the later addition are utilitarian in design and largely lack decorative embellishments, but despite the simple design, the 1979 addition does not fit well with the 1950–1951 original building: most notably, the tall, narrow, single-light windows on the addition contrast with the wider, more squat steel awning windows on the original building. WSA recommends that the Digester Control House be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Digester Control House Continuation Sheet No. 2

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1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Digester Control House Continuation Sheet No. 3

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1. WSA 2013-69-053: The Digester Control House, known today as Control House No. 1, view to the northwest (October 4, 2013). This view shows the 1979 addition made to the south side of the original Digester Control House built in 1950–1951.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Digester Control House Continuation Sheet No. 4

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2. Roger Road 24-0003: Interior of the original 1950–1951 portion of the Digester Control House, known today as Control House No. 1 (April 24, 2012).

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Digester Control House Continuation Sheet No. 5

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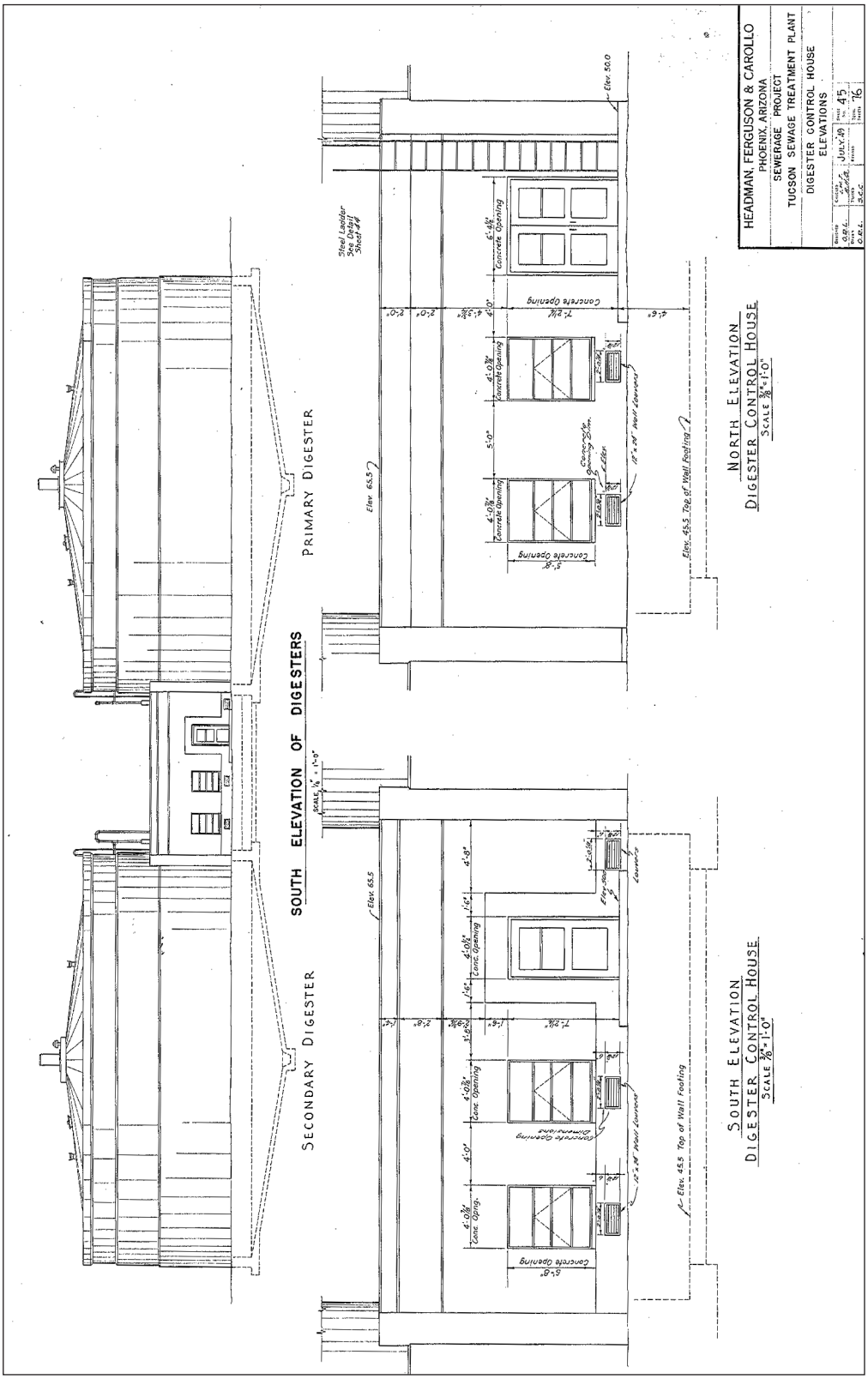

3. Original construction plans for the Digester Control House, 1949.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Garage and Shop (1951); Covered Storage (1960); Maintenance Building (1967)
(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497426 Northing 3571723 USGS 7.5' quad map: Jaynes (1995)

Architect: Headman, Ferguson & Carollo (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Sundt Construction Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1950–1951 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.
Garage, shop, and storage for maintenance functions of sewage treatment plant, 1951–present

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) Northwest

Negative No.: WSA 2013-69-051

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
Garage and Shop (1950–1951) and Covered Storage (1960) were separate buildings. Maintenance Building (1967) was an expansion of Covered Storage. Maintenance Building and Garage and Shop became single building in 1985 (see Continuation).

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Concrete block with face brick Foundation: Concrete Roof: Ceramic roof tiles and built-up
Windows: Aluminum awning
If the windows have been altered, what were they originally? Steel awning
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)

_____

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Garage and Shop/Covered Storage/Maintenance Building Continuation Sheet No. 1

==========

This building is the current Warehouse/Maintenance Building of the Roger Road Wastewater Reclamation Facility. It was built in stages, beginning as the Garage and Shop of the original Tucson Sewage Treatment Plant built in 1950–1951. The building was sited just east of the original Primary and Secondary digesters, which today are Digesters Nos. 1 and 2. The original Garage and Shop survives as the southern portion of the current building. It was a single-story building with a low-pitch, gable-end roof and a rectangular floor plan measuring 71 feet 4 inches north-south by 41 feet 4 inches east-west. The foundation of the building was poured concrete footers and slab; the walls were brick-faced concrete block; and the roof was of wooden trusses capped with ceramic roof tiles. The northern 22 feet of the original building was shop space, with double out-swing doors on the west and windows on the north and east sides. The rest of the building was a drive-through two-bay garage with two 22-foot steel doors on both the east and west sides of the building and concrete pillars between the doors. The Garage and Shop had an appearance similar to the original Control Building, with red brick walls, concrete bond beams at the tops of the walls, and ceramic tile roof.

In 1960, improvements to the sewage treatment plant included the construction of a small building sited just to the north of the original Garage and Shop. The new building, called Covered Storage, had a rectangular floor plan measuring 26 feet 6 inches north-south by 41 feet 6 inches east-west. A concrete slab covered the footprint of the building, with a small enclosed room at the east end of the slab and an open-sided storage area on the west. A gable-end, wooden-truss, ceramic tile roof covered the entire slab. The enclosed room had brick-faced, concrete-block walls, an out-swing door on the west, and two windows on the east. The red brick walls and ceramic tile roof made the Covered Storage similar in appearance to the Garage and Shop and the Control Building.

In 1967, a large addition was made to the north side of the Covered Storage to create a single Maintenance Building. The footprint and roof of the original Covered Storage were retained, but the open-sided storage area was enclosed, with doorways leading to the addition. The fully enclosed addition had a rectangular floor plan measuring 32 feet north-south by 117 feet 6 inches east-west. The addition had brick-faced, concrete-block walls, like the enclosed portion of the original Covered Storage, but it had a flat, steel-truss roof with built-up roofing rather than a gable-end pitch roof. Along the north exterior wall of the new Maintenance Building, a concrete ramp and loading dock were built.

The original Garage and Shop and the enlarged Maintenance Building remained separate buildings and unchanged until improvements designed in 1985 joined them. The 25 feet separating the two buildings was taken up by a northward extension of the original Garage and Shop, which met the portion of the Maintenance Building that was previously the Covered Storage building. The gable-end pitch roof of the Covered Storage building, its long axis running east-west, was removed and replaced with an extension of the pitch roof of the Garage and Shop. The single, elongated gable-end pitch roof, its long axis running north-south, now met the south edge of the flat roof of the northern portion of the Maintenance Building. A room addition was also made on the west end of the former Covered Storage, and another was made on the west end of the northern portion of the overall building; the former addition was built as an electrical shop, the latter as a paint shop. All of the new construction has an exterior face of red brick that matches the exterior of each earlier building, though seams are easily distinguished. Many changes in door and window openings were also made, including the closing off of the large bay doors of the original Garage and Shop. The interior of the new, larger building was completely reorganized and refinished as office, warehouse, and shop space. Today the building retains the overall 1985 design.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Garage and Shop/Covered Storage/Maintenance Building Continuation Sheet No. 2

==========

NRHP Evaluation: The original Garage and Shop building was part of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. Thus, the current building has an association with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period. The Garage and Shop was an integral part of the original plant and was designed in the same style as the original Control Building. However, the many changes and additions made to the building over the last 60 years have greatly compromised its historic integrity. WSA recommends that the current Warehouse/Maintenance Building be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

Pima County Wastewater Management Department
1985 Administration and Maintenance Building Modifications/Additions. Pima County, Arizona. Roger Road WWTP Improvements [construction drawings]. Prepared for the Pima County Wastewater Management Department by Black and Veatch, Engineers and Architects, Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Garage and Shop/Covered Storage/Maintenance Building Continuation Sheet No. 3

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1. WSA 2013-69-059: The northern portion of the Garage/Covered Storage/Maintenance Building, known today as the Warehouse/Maintenance Building, view to the east (October 4, 2013).

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Sludge Beds

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497413 Northing 3571849 USGS 7.5' quad map: Jaynes (1995)

Architect: Headman, Ferguson & Carollo (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Sundt Construction Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1950–1951 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☐ Good (*well maintained, no serious problems apparent*)

☑ Fair (*some problems apparent*) Describe: Concrete lining is weathered and cracked, or obscured by sediment.

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Drying area for sludge from sewage treatment (1951–ca. 1980s)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) North

Negative No.: WSA 2013-69-061

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
Basic design has not changed, but the total area occupied by sludge beds at the plant has been greatly reduced. Once abandoned, the area of some beds has been used for the construction of other plant facilities.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): N/A Foundation: Concrete Roof: N/A
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)
_____

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Sludge Beds Continuation Sheet No. 1

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The Sludge Beds, now called the Old Drying Beds at the Roger Road Wastewater Reclamation Facility, were an original component of the Tucson Sewage Treatment Plant first built in 1950–1951. As originally built, the Sludge Beds covered an area measuring 690 feet north-south by 493 feet east-west, somewhat more than twice the area they currently cover. The remaining beds, which correspond to a portion of the eastern half of the original footprint of the beds, cover an area about 480 feet north-south by 200 feet east-west. As originally built, the Sludge Beds consisted of two side-by-side sets of 12 shallow, open, V-shaped beds, lined with concrete, with their long axes oriented east-west. Each set of 12 beds had a narrow, open, concrete "dosing trough" that ran north-south across the beds, with gates in both sides of the trough at the center of each bed. Sludge processed by the Primary and Secondary digesters, just to the south of the beds, was routed to the dosing troughs for discharge into the beds. The dried sludge was used by the City of Tucson as fertilizer in city parks.

In 1960, when an expansion of the original treatment plant was made, the area of the original Sludge Beds was approximately doubled by building two new sets of basically identical beds at the north end of the existing beds. Rather than extending due north from the existing beds, the footprint of the new beds angled northwestward, conforming to the bank of the Santa Cruz River. The existing dosing troughs were also extended the length of the new beds.

The Sludge Beds remained in use until the 1980s, when a different sludge-processing system, designed to reduce the volume of sludge exiting the plant, was built. Since then, portions of the abandoned beds have been demolished as needed to make room for other sewage treatment facilities. The northern portion of the Sludge Beds, added in 1960, were completely eliminated before the ongoing construction of the new Roger Road Wastewater Reclamation Facility began.

NRHP Evaluation: The Sludge Beds were part of the original Tucson Sewage Treatment Plant, designed in 1949 and built in 1950–1951. Thus, these structures have an association with the development of Tucson's first fully integrated sewage collection and treatment system in the early post–World War II period. However, much of the original extent of the Sludge Beds has been eliminated during improvement projects at the plant over the last 60 years, and the surviving portion of the Sludge Beds have been out of service for many years and are in poor condition. WSA recommends that the Sludge Beds be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Sludge Beds Continuation Sheet No. 2

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1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

Pima County Wastewater Management Department
1984 Roger Road WWTF Sludge Management Facilities [construction drawings]. Prepared for the Pima County Wastewater Management Department by Carmen F. Guarino Engineers, Ltd., Philadelphia, Pennsylvania. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Sludge Beds Continuation Sheet No. 3

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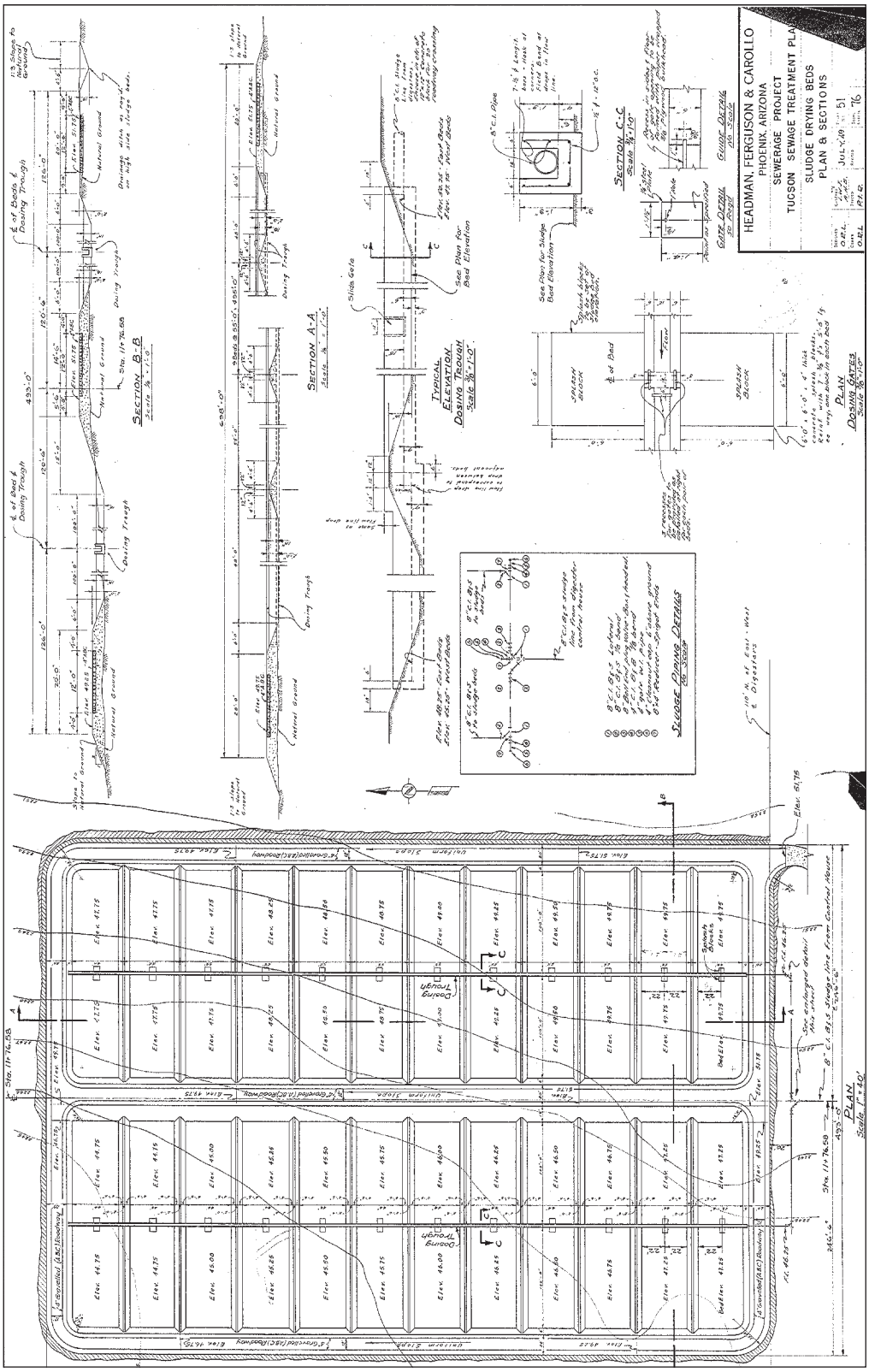

1. Original construction plans for the Sludge Beds, 1949.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Sludge Beds Continuation Sheet No. 4

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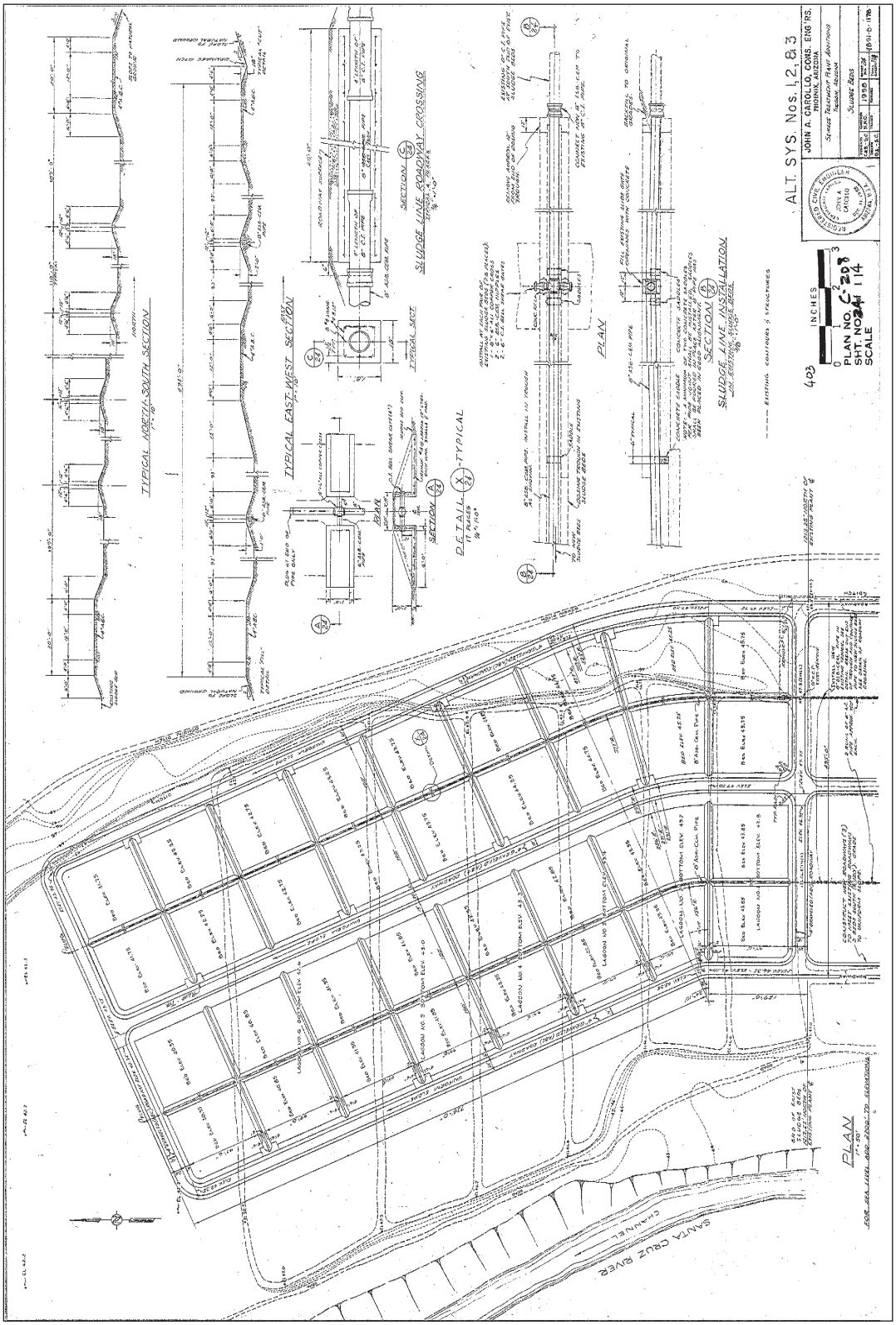

2. Construction plans for an expansion of the Sludge Beds, 1958.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Primary Sedimentation Tank No. 5

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497631 Northing 3571723 USGS 7.5' quad map: Jaynes (1995)

Architect: John A. Carollo Consulting Engineers (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Emil H. Krall Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1959–1960 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Primary treatment of sewage (1960–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) East

Negative No.: WSA 2013-69-064

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to the tank itself. Various mechanical, electrical, and plumbing upgrades have taken place over the years.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: N/A Roof: N/A
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Primary Sedimentation Tank No. 5 Continuation Sheet No. 1

==========

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Primary Clarifier No. 5 of the Roger Road Wastewater Reclamation Facility. The tank was originally known as Primary Sedimentation Tank No. 5 when it was built as part of the 1959–1960 expansion of the original Tucson Sewage Treatment Plant, which was first built in 1950–1951. Primary Sedimentation Tank No. 6, now known as Primary Clarifier No. 6, was built at the same time and is a mirror image of this tank; both structures are actively used parts of the current treatment plant. As originally built, the two tanks received sewage from a headworks that was also constructed during 1959–1960 to replace the plant's original headworks; the current headworks, which now routes sewage to Primary Clarifiers Nos. 5 and 6, is a completely different structure dating to the 1970s.

The sewage treated by Primary Sedimentation Tanks Nos. 5 and 6 was originally routed westward to Trickling Filters Nos. 1 and 2, also built during the 1959–1960 expansion of the original 1950–1951 plant. The Trickling Filters were demolished entirely to build Biofilters Nos. 1 and 2 (with the same footprints as the Trickling Filters) in 1979; the Biofilters, now known as Biotowers Nos. 1 and 2, still exist and currently receive sewage from Primary Clarifiers Nos. 5 and 6.

Primary Sedimentation Tank No. 5 was built with a maximum diameter of 105 feet and a maximum depth of about 15 feet. The upper edge of the outer tank wall is about 6 inches above grade and supports a pipe hand rail around the full circumference of the tank. Just inside the upper tank wall is a channel, also of concrete, that measures 3 feet wide and 2 feet 8 inches deep and runs along the inside of the upper wall; its upper edge is 3 feet 6 inches lower than the upper edge of the outer wall. This channel was originally open, but it is now covered by black plastic panels, part of an odor-control effort of uncertain but recent date. The upper edge of the inner wall was fitted with a notched steel weir plate bolted to its inner edge to regulate the flow of water in the tank into the channel. At the center of the tank is a pier, on which is mounted a skimming arm that extends to the edge of the tank. A walkway extends to the pier from the south edge of the tank. The bottom of the tank slopes downward from the outer edges to the center where accumulated sludge is pumped elsewhere for additional treatment.

Apart from mechanical, electrical, and plumbing changes made over the years as the treatment system as a whole was changed or upgraded, Primary Sedimentation Tank No. 5 is basically the same today as it was when it was built in 1959–1960.

NRHP Evaluation: Primary Sedimentation Tank No. 5 was built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including Primary Sedimentation Tank No. 6 and Secondary Sedimentation Tanks Nos. 3 and 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Primary Sedimentation Tank No. 5 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Primary Sedimentation Tank No. 5 Continuation Sheet No. 2

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1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Primary Sedimentation Tank No. 6

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497631 Northing 3571681 USGS 7.5' quad map: Jaynes (1995)

Architect: John A. Carollo Consulting Engineers (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Emil H. Krall Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1959–1960 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Primary treatment of sewage (1960–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) Northeast

Negative No.: WSA 2013-69-066

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to the tank itself. Various mechanical, electrical, and plumbing upgrades have taken place over the years.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: N/A Roof: N/A
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Primary Sedimentation Tank No. 6 Continuation Sheet No. 1

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This circular, open, concrete tank and accompanying mechanical equipment is currently known as Primary Clarifier No. 6 of the Roger Road Wastewater Reclamation Facility. The tank was originally known as Primary Sedimentation Tank No. 6 when it was built as part of the 1959–1960 expansion of the original Tucson Sewage Treatment Plant, which was first built in 1950–1951. Primary Sedimentation Tank No. 5, now known as Primary Clarifier No. 5, was built at the same time and is a mirror image of this tank; both structures are actively used parts of the current treatment plant. As originally built, the two tanks received sewage from a headworks that was also constructed during 1959–1960 to replace the plant's original headworks; the current headworks, which now routes sewage to Primary Clarifiers Nos. 5 and 6, is a completely different structure dating to the 1970s.

The sewage treated by Primary Sedimentation Tanks Nos. 5 and 6 was originally routed westward to Trickling Filters Nos. 1 and 2, also built during the 1959–1960 expansion of the original 1950–1951 plant. The Trickling Filters were demolished entirely to build Biofilters Nos. 1 and 2 (with the same footprints as the Trickling Filters) in 1979; the Biofilters, now known as Biotowers Nos. 1 and 2, still exist and currently receive sewage from Primary Clarifiers Nos. 5 and 6.

Primary Sedimentation Tank No. 6 was built with a maximum diameter of 105 feet and a maximum depth of about 15 feet. The upper edge of the outer tank wall is about 6 inches above grade and supports a pipe hand rail around the full circumference of the tank. Just inside the upper tank wall is a channel, also of concrete, that measures 3 feet wide and 2 feet 8 inches deep and runs along the inside of the upper wall; its upper edge is 3 feet 6 inches lower than the upper edge of the outer wall. This channel was originally open, but it is now covered by black plastic panels, part of an odor-control effort of uncertain but recent date. The upper edge of the inner wall was fitted with a notched steel weir plate bolted to its inner edge to regulate the flow of water in the tank into the channel. At the center of the tank is a pier, on which is mounted a skimming arm that extends to the edge of the tank. A walkway extends to the pier from the south edge of the tank. The bottom of the tank slopes downward from the outer edges to the center where accumulated sludge is pumped elsewhere for additional treatment.

Apart from mechanical, electrical, and plumbing changes made over the years as the treatment system as a whole was changed or upgraded, Primary Sedimentation Tank No. 6 is basically the same today as it was when it was built in 1959–1960.

NRHP Evaluation: Primary Sedimentation Tank No. 6 was built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including Primary Sedimentation Tank No. 5 and Secondary Sedimentation Tanks Nos. 3 and 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Primary Sedimentation Tank No. 6 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Primary Sedimentation Tank No. 6 Continuation Sheet No. 2

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1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Thickener No. 1

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497466 Northing 3571654 USGS 7.5' quad map: Jaynes (1995)

Architect: John A. Carollo Consulting Engineers (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Emil H. Krall Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1959–1960 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Sewage sludge processing (1960–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) West

Negative No.: WSA 2013-69-080

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to basic tank structure. In 1967, originally open tank was given a roof. In 1979 design, large pre-cast concrete panels were added to upper exterior wall, and large odor-control pipes were added, encircling lower wall.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: Poured concrete Roof: Built-up over steel joists
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Thickener No. 1 Continuation Sheet No. 1

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This circular concrete tank and accompanying mechanical equipment is currently known as Thickener No. 1 of the Roger Road Wastewater Reclamation Facility. The original name of the structure was also Thickener No. 1 when it was built as part of the 1959–1960 expansion of the original Tucson Sewage Treatment Plant, which was first built in 1950–1951. Thickener No. 2, also in active use and bearing its original name, was built at the same time and is basically identical to this structure. The two structures stand just 16 feet apart and are joined by a nexus of pipes, electrical work, and mechanical equipment known as the Thickener Control Box (original and current name).

The two Thickeners originally received sludge from the two Trickling Filters of the 1959–1960 expansion but now receive sludge from Biotowers Nos. 1 and 2, which replaced the Trickling Filters in a 1979 plant upgrade. The Thickeners use separation by gravity to produce both a concentrated sludge with lower volume and a supernatant liquid relatively free of solids. The concentrated sludge is pumped from the bottom of each Thickener and sent to the Digesters. The supernatant liquid is recirculated to the Primary Clarifiers.

Thickener No. 1 was built of poured concrete and has a maximum diameter of 55 feet. The vertical exterior wall of the tank has a maximum height of about 12 feet. The bottom of the tank is conical, with the outer base of the vertical wall at grade; the conical floor slopes downward to the center of the tank to a depth of about 8 feet below grade. A central pier supports the inlet for sludge at the top of the tank and the scraper arms that move sludge across the sloping bottom of the tank. Along the upper edge of the inner wall is a trough fitted with a notched steel weir plate that regulates the flow of supernatant liquid into the trough.

As originally built, Thickeners Nos. 1 and 2 were open tanks, but in 1967 both structures were provided with flat roofs consisting of steel joists and built-up roofing. In the 1979 plant upgrade, a ring of large, pre-cast, concrete panels (with a core layer of insulation) were installed around the upper half of the exterior wall, and large-diameter pipes were installed to encircle the lower portion of the wall. The panels apparently help regulate temperatures in the Thickeners; the pipework was part of an odor-control effort. Today the ring of pre-cast concrete panels and the pipework are prominent elements in the appearance of the structure. Mechanical, electrical, and plumbing changes have also been made to the Thickeners over the years as the treatment plant as a whole was changed or upgraded.

NRHP Evaluation: Thickener No. 1 was built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It has also been modified (during 1967 and 1979 plant improvements) in ways that compromise its integrity. Thickener No. 1 is part of a group of structures, including Primary Sedimentation Tanks Nos. 5 and 6, and Secondary Sedimentation Tanks Nos. 3 and 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Thickener No. 1 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Thickener No. 1 Continuation Sheet No. 2

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1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Thickener No. 2

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497466 Northing 3571631 USGS 7.5' quad map: Jaynes (1995)

Architect: John A. Carollo Consulting Engineers (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Emil H. Krall Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1959–1960 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Sewage sludge processing (1960–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) Northwest

Negative No.: WSA 2013-69-081

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to basic tank structure. In 1967, originally open tank was given a roof. In 1979 design, large pre-cast concrete panels were added to upper exterior wall, and large odor-control pipes were added, encircling lower wall.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: Poured concrete Roof: Built-up over steel joists
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Thickener No. 2 Continuation Sheet No. 1

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This circular concrete tank and accompanying mechanical equipment is currently known as Thickener No. 2 of the Roger Road Wastewater Reclamation Facility. The original name of the structure was also Thickener No. 2 when it was built as part of the 1959–1960 expansion of the original Tucson Sewage Treatment Plant, which was first built in 1950–1951. Thickener No. 1, also in active use and bearing its original name, was built at the same time and is basically identical to this structure. The two structures stand just 16 feet apart and are joined by a nexus of pipes, electrical work, and mechanical equipment known as the Thickener Control Box (original and current name).

The two Thickeners originally received sludge from the two Trickling Filters of the 1959–1960 expansion but now receive sludge from Biotowers Nos. 1 and 2, which replaced the Trickling Filters in a 1979 plant upgrade. The Thickeners use separation by gravity to produce both a concentrated sludge with lower volume and a supernatant liquid relatively free of solids. The concentrated sludge is pumped from the bottom of each Thickener and sent to the Digesters. The supernatant liquid is recirculated to the Primary Clarifiers.

Thickener No. 2 was built of poured concrete and has a maximum diameter of 55 feet. The vertical exterior wall of the tank has a maximum height of about 12 feet. The bottom of the tank is conical, with the outer base of the vertical wall at grade; the conical floor slopes downward to the center of the tank to a depth of about 8 feet below grade. A central pier supports the inlet for sludge at the top of the tank and the scraper arms that move sludge across the sloping bottom of the tank. Along the upper edge of the inner wall is a trough fitted with a notched steel weir plate that regulates the flow of supernatant liquid into the trough.

As originally built, Thickeners Nos. 1 and 2 were open tanks, but in 1967 both structures were provided with flat roofs consisting of steel joists and built-up roofing. In the 1979 plant upgrade, a ring of large, pre-cast, concrete panels (with a core layer of insulation) were installed around the upper half of the exterior wall, and large-diameter pipes were installed to encircle the lower portion of the wall. The panels apparently help regulate temperatures in the Thickeners; the pipework was part of an odor-control effort. Today the ring of pre-cast concrete panels and the pipework are prominent elements in the appearance of the structure. Mechanical, electrical, and plumbing changes have also been made to the Thickeners over the years as the treatment plant as a whole was changed or upgraded.

NRHP Evaluation: Thickener No. 2 was built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It has also been modified (during 1967 and 1979 plant improvements) in ways that compromise its integrity. Thickener No. 2 is part of a group of structures, including Primary Sedimentation Tanks Nos. 5 and 6, and Secondary Sedimentation Tanks Nos. 3 and 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Thickener No. 2 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Thickener No. 2 Continuation Sheet No. 2

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1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Digester No. 3

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497360 Northing 3571656 USGS 7.5' quad map: Jaynes (1995)

Architect: John A. Carollo Consulting Engineers (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Emil H. Krall Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1959–1960 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Sewage sludge processing (1960–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) Southwest

Negative No.: WSA 2013-69-095

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to basic tank structure. In 1979, a hand rail was added to the upper edge of roof and various changes in electrical, plumbing, and mechanical systems were made.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: Poured concrete Roof: Poured concrete
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)
_____

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Digester No. 3 Continuation Sheet No. 1

==========

This cylindrical concrete tank with accompanying mechanical equipment is currently known as Digester No. 3 of the Roger Road Wastewater Reclamation Facility. The original name of the structure was also Digester No. 3 when it was built as part of the 1959–1960 expansion of the original Tucson Sewage Treatment Plant, which was first built in 1950–1951. Digester No. 3 is similar in design to Digester No. 4, but Digester No. 4 was built in the later 1966–1967 expansion of the plant. Digester No. 3 still has its original fixed roof whereas Digester No. 4 was given a floating roof during plant improvements designed in 1979. Digesters Nos. 3 and 4 stand 66 feet apart and are connected by Control House No. 2 (original and current name), which was first built at the same time as Digester No. 3 but expanded when Digester No. 4 was built; it houses the mechanical equipment associated with the operation of the Digesters. Digesters Nos. 3 and 4 receive sludge from Thickeners Nos. 1 and 2, both built in the 1959–1960 expansion. Digesters use anaerobic bacterial action to further process thickened sludge and reduce its volume.

Digester No. 3 was built of poured concrete and has a maximum diameter of about 84 feet and a maximum height of about 36 feet. It is a closed cylinder with poured-concrete floor and roof. The bottom of the tank is basically flat with a slight downward pitch from north to south to allow drainage to a depressed hopper at the south end of the tank. The roof is also basically flat but has a raised central area about 28 feet in diameter and 3 feet high. The lower half of the wall is 22 inches thick whereas the upper half is 16 inches thick; the transition between the differing wall thicknesses is marked on the wall exterior by a narrow, slightly sloped shelf.

The basic structure of the Digester No. 3 tank has never been significantly altered, but in the 1979 design for general plant improvements a hand rail was added to the upper edge of the roof. Mechanical, electrical, and plumbing changes have also been made to the structure over the years as the treatment plant as a whole has been changed or upgraded.

NRHP Evaluation: Digester No. 3 was built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. Digester No. 3 is part of a group of structures, including Primary Sedimentation Tanks Nos. 5 and 6, and Secondary Sedimentation Tanks Nos. 3 and 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Digester No. 3 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Digester No. 3 Continuation Sheet No. 2

==========

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Control House No. 2

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497381 Northing 3571656 USGS 7.5' quad map: Jaynes (1995)

Architect: John A. Carollo Consulting Engineers (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Emil H. Krall Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1959–1960 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Sewage sludge processing (1960–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) South

Negative No.: WSA 2013-69-094

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
Original 1960 building was expanded eastward in 1967, doubling the floor area. Various changes in electrical, plumbing, and mechanical systems have been made over the years.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: Poured concrete Roof: Poured concrete
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)
_____

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Control House No. 2 Continuation Sheet No. 1

==========

This building is currently known as Control House No. 2 of the Roger Road Wastewater Reclamation Facility. The original name of the structure was also Control House No. 2 when it was built as part of the 1959–1960 expansion of the original Tucson Sewage Treatment Plant, which was first built in 1950–1951. As originally built, Control House No. 2 was attached to the east side of Digester No. 3 (also built in 1959–1960) and housed the equipment necessary for the operation of the digester. It was a one-story, one-room, flat-roofed structure with poured-concrete slab foundation, poured-concrete walls, and built-up roofing over wood joists. The building measured 30 feet 3 inches north-south by 33 feet 6 inches east-west, with the west wall of the building formed by the curving outer wall of Digester No. 3. The south wall had double out-swing doors and a pair of steel awning windows; the north wall had a single out-swing door and a pair of steel awning windows. An open, steel staircase led from the ground on the north side of the building to its roof, and a second staircase, mounted on the roof, led to the roof of Digester No. 3. Apart from minor linear accents, the exterior walls of the building were unadorned, smooth concrete.

Another expansion of the Tucson Sewage Treatment Plant in 1966–1967 included both the construction of Digester No. 4, sited just east of Digester No. 3 and Control House No. 2, and the expansion of Control House No. 2 to create a single building extending between the two Digesters. The expansion was basically the same size and design as the original Control House No. 2, using the curved exterior wall of the new Digester No. 4 as the east wall of the expanded building and extending the north and south facades of the building. The new, expanded building measured 30 feet 3 inches north-south by about 68 feet east-west. The addition included a new single, out-swing door on the south but no windows on either the south or north walls. A doorway was cut in the east wall of the original building to connect it with the addition. A staircase was mounted on the roof of the addition leading to the roof of Digester No. 4. Apart from various subsequent changes in the mechanical, electrical, and plumbing systems of the building over the years, the enlarged building has not changed significantly since the 1966–1967 addition and continues in active use.

NRHP Evaluation: Control House No. 2 was originally built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It was enlarged to twice its original size during the second expansion of the Tucson Sewage Treatment Plant in 1967. With its original construction date, Control House No. 2 is part of a group of structures, including Primary Sedimentation Tanks Nos. 5 and 6, and Secondary Sedimentation Tanks Nos. 3 and 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Control House No. 2 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Control House No. 2 Continuation Sheet No. 2

==========

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Secondary Sedimentation Tank No. 3
(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497528 Northing 3571722 USGS 7.5' quad map: Jaynes (1995)

Architect: John A. Carollo Consulting Engineers (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Emil H. Krall Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1959–1960 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.
Secondary treatment of sewage (1960–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) West-northwest

Negative No.: WSA 2013-69-074

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to the tank itself. Various mechanical, electrical, and plumbing upgrades have taken place over the years.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: N/A Roof: N/A
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Secondary Sedimentation Tank No. 3 Continuation Sheet No. 1

==========

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Final Clarifier No. 3 of the Roger Road Wastewater Reclamation Facility. The tank was originally known as Secondary Sedimentation Tank No. 3 when it was built as part of an expansion of the Tucson Sewage Treatment Plant in 1959–1960. Secondary Sedimentation Tank No. 4, now known as Final Clarifier No. 4, was built at the same time as Secondary Sedimentation Tank No. 3 and is a mirror image of it. The two tanks originally received partially treated sewage from Trickling Filters Nos. 1 and 2, located immediately to the east. The Trickling Filters were replaced by Biofilters Nos. 1 and 2, now known as Biotowers Nos. 1 and 2, in a plant upgrade designed in 1979. The Biotowers now send partially treated sewage to Final Clarifiers Nos. 3 and 4, which are actively used components of the current treatment system.

Secondary Sedimentation Tank No. 3 was built with a maximum diameter of 115 feet and a maximum depth of 9 feet. The upper edge of the outer tank wall is about 6 inches above grade and supports a pipe hand rail around the full circumference of the tank. Just inside the upper tank wall is a trough, also of concrete, that measures 4 feet wide and 1 foot 8 inches deep and runs along the inside of the upper wall; its upper edge is 2 feet lower than the upper edge of the outer wall. The upper edge of the inner wall has a notched steel weir plate bolted to its inner edge to regulate the flow of water in the tank into the trough, from which it is routed elsewhere for additional treatment. At the center of the tank is a pier, on which is mounted a secondary sludge collector and skimming arms that extend to the edges of the tank. A walkway extends to the pier from the north edge of the tank. The bottom of the tank slopes downward from the outer edges to the center where accumulated sludge is pumped elsewhere for additional treatment.

Apart from various upgrades to its mechanical, electrical, and plumbing systems over the years, Secondary Sedimentation Tank No. 3 has not changed significantly since its original construction.

NRHP Evaluation: Secondary Sedimentation Tank No. 3 was built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including Primary Sedimentation Tanks Nos. 5 and 6, and Secondary Sedimentation Tank No. 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Secondary Sedimentation Tank No. 3 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Secondary Sedimentation Tank No. 3 Continuation Sheet No. 2

==========

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Secondary Sedimentation Tank No. 4
(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497528 Northing 3571680 USGS 7.5' quad map: Jaynes (1995)

Architect: John A. Carollo Consulting Engineers (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Emil H. Krall Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1959–1960 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.
Secondary treatment of sewage (1960–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) West-southwest

Negative No.: WSA 2013-69-073

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to the tank itself. Various mechanical, electrical, and plumbing upgrades have taken place over the years.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: N/A Roof: N/A
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Secondary Sedimentation Tank No. 4 Continuation Sheet No. 1

==========

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Final Clarifier No. 4 of the Roger Road Wastewater Reclamation Facility. The tank was originally known as Secondary Sedimentation Tank No. 4 when it was built as part of an expansion of the Tucson Sewage Treatment Plant in 1959–1960. Secondary Sedimentation Tank No. 3, now known as Final Clarifier No. 3, was built at the same time as Secondary Sedimentation Tank No. 4 and is a mirror image of it. The two tanks originally received partially treated sewage from Trickling Filters Nos. 1 and 2, located immediately to the east. The Trickling Filters were replaced by Biofilters Nos. 1 and 2, now known as Biotowers Nos. 1 and 2, in a plant upgrade designed in 1979. The Biotowers now send partially treated sewage to Final Clarifiers Nos. 3 and 4, which are actively used components of the current treatment system.

Secondary Sedimentation Tank No. 4 was built with a maximum diameter of 115 feet and a maximum depth of 9 feet. The upper edge of the outer tank wall is about 6 inches above grade and supports a pipe hand rail around the full circumference of the tank. Just inside the upper tank wall is a trough, also of concrete, that measures 4 feet wide and 1 foot 8 inches deep and runs along the inside of the upper wall; its upper edge is 2 feet lower than the upper edge of the outer wall. The upper edge of the inner wall has a notched steel weir plate bolted to its inner edge to regulate the flow of water in the tank into the trough, from which it is routed elsewhere for additional treatment. At the center of the tank is a pier, on which is mounted a secondary sludge collector and skimming arms that extend to the edges of the tank. A walkway extends to the pier from the north edge of the tank. The bottom of the tank slopes downward from the outer edges to the center where accumulated sludge is pumped elsewhere for additional treatment.

Apart from various upgrades to its mechanical, electrical, and plumbing systems over the years, Secondary Sedimentation Tank No. 4 has not changed significantly since its original construction.

NRHP Evaluation: Secondary Sedimentation Tank No. 4 was built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including Primary Sedimentation Tanks Nos. 5 and 6, and Secondary Sedimentation Tank No. 3, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Secondary Sedimentation Tank No. 4 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Secondary Sedimentation Tank No. 4 Continuation Sheet No. 2

==========

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Pump Station No. 1

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497502 Northing 3571694 USGS 7.5' quad map: Jaynes (1995)

Architect: John A. Carollo Consulting Engineers (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Emil H. Krall Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1959–1960 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Secondary treatment of sewage (1960–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) Northeast

Negative No.: WSA 2013-69-078

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to the basic structure. Mechanical, electrical, and plumbing upgrades have taken place over the years.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: Poured concrete Roof: Poured concrete
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Pump Station No. 1 Continuation Sheet No. 1

==========

This building is an underground room built as part of an expansion of the Tucson Sewage Treatment Plant in 1959–1960. It was originally known as Pump Station No. 1 and is still known by that name as a functioning part of the current Roger Road Wastewater Reclamation Facility. As originally built, Pump Station No. 1 housed large electric pumps associated with Secondary Sedimentation Tanks Nos. 3 and 4. The current Pump Station No. 1 continues in basically the same role, housing pumps associated with Final Clarifiers Nos. 3 and 4.

Pump Station No. 1 consists of a poured-concrete box built in an excavation that leaves about 2 feet of the height of the box exposed above grade. The floor of the pump station measures 20 feet north-south by 18 feet 8 inches east-west; the interior height is 8 feet. Wall and ceiling thickness is 6 inches; floor thickness is 18 inches. An open, poured-concrete staircase, 4 feet wide, descends from grade south to north along the west side of the pump station, ending at a door in the west wall of the structure. The floor of the pump station has three raised concrete platforms to mount the pumping equipment. Large pipes run from the pumps mounted on the floor through the east and west walls of the building.

During a general upgrade to the sewage treatment plant in 1979, the equipment and plumbing connections of Pump Station No. 1 were changed, but the structure is otherwise unchanged from its original appearance.

NRHP Evaluation: Pump Station No. 1 was built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including Primary Sedimentation Tanks Nos. 5 and 6, and Secondary Sedimentation Tanks Nos. 3 and 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Pump Station No. 1 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Pump Station No. 1 Continuation Sheet No. 2

==========

1. Roger Road 01-0003: Interior of Pump Station No. 1 (April 24, 2012).

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Pump Station No. 2

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497483 Northing 3571611 USGS 7.5' quad map: Jaynes (1995)

Architect: John A. Carollo Consulting Engineers (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: Emil H. Krall Company (Tucson) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1959–1960 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Secondary treatment of sewage (1960–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: April 24, 2012

View Direction (*looking towards*) West

Negative No.: Roger Road 02-0002

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to the basic structure. Mechanical, electrical, and plumbing upgrades have taken place over the years.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: Poured concrete Roof: Poured concrete
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Pump Station No. 2 Continuation Sheet No. 1

==========

This building is an underground room built as part of an expansion of the Tucson Sewage Treatment Plant in 1959–1960. It was originally known as Pump Station No. 2 and is still known by that name as a functioning part of the current Roger Road Wastewater Reclamation Facility. As originally built, Pump Station No. 2 housed large electric pumps associated with Secondary Sedimentation Tanks Nos. 1 and 2. The current Pump Station No. 2 continues in basically the same role, housing pumps associated with Final Clarifiers Nos. 1 and 2.

Pump Station No. 2 consists of a poured-concrete box built in an excavation that leaves about 3 feet of the height of the box exposed above grade. The floor of the pump station measures 20 feet north-south by 20 feet east-west; the interior height is 8 feet. Wall and ceiling thickness is 6 inches; floor thickness is 18 inches. An open, poured-concrete staircase, 4 feet wide, descends from grade north to south along the east side of the pump station, ending at a door in the east wall of the structure. The floor of the pump station has four raised concrete platforms to mount the pumping equipment. Large pipes run from the pumps mounted on the floor through the north and south walls of the building.

During a general upgrade to the sewage treatment plant in 1979, the equipment and plumbing connections of Pump Station No. 2 were changed, but the structure is otherwise unchanged from its original appearance.

NRHP Evaluation: Pump Station No. 2 was built as part of the first expansion of the Tucson Sewage Treatment Plant in 1959–1960. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including Primary Sedimentation Tanks Nos. 5 and 6, and Secondary Sedimentation Tanks Nos. 3 and 4, that together represented an important early phase in the development of the plant, but the integrity of the group was greatly compromised by the 1979 demolition of the original Trickling Filters Nos. 1 and 2, to be wholly replaced by the current Biotowers Nos. 1 and 2. WSA recommends that Pump Station No. 2 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Pump Station No. 2 Continuation Sheet No. 2

==========

1. Roger Road 02-0003: Interior of Pump Station No. 2 (April 24, 2012).

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Primary Clarifier No. 9

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497631 Northing 3571849 USGS 7.5' quad map: Jaynes (1995)

Architect: Gene E. Anderson, Inc. (Tucson), and Henningson, Durham and Richardson, Inc. (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: W. P. Harlin Construction Company (Salt Lake City) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1966–1967 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Primary treatment of sewage (1967–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) North-northeast

Negative No.: WSA 2013-69-102

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to the tank itself. Various mechanical, electrical, and plumbing upgrades have taken place over the years.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: N/A Roof: N/A
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Primary Clarifier No. 9 Continuation Sheet No. 1

==========

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Primary Clarifier No. 7 of the Roger Road Wastewater Reclamation Facility. The tank was originally known as Primary Clarifier No. 9 when it was built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant. Primary Clarifier No. 10, now known as Primary Clarifier No. 8, was built at the same time and is a mirror image of this structure; both structures are actively used parts of the current treatment plant. As originally built, the two tanks received sewage from the headworks built during the 1959–1960 expansion, which replaced the plant's original headworks; the current headworks, which now routes sewage to Primary Clarifiers Nos. 7 and 8, is a completely different structure dating to the 1970s. The sewage treated by Primary Clarifiers Nos. 9 and 10 was originally routed westward to the Aeration Basins, also built during the 1966–1967 expansion, and today the same Aeration Basins receive sewage from Primary Clarifiers Nos. 7 and 8.

Primary Clarifier No. 9 was built with a maximum diameter of 112 feet 4 inches and a maximum depth of about 10 feet. The upper edge of the outer tank wall is from 6 to 24 inches above grade and supports a pipe hand rail around the full circumference of the tank. Just inside the upper tank wall is a trough, also of concrete, that measures 2 feet wide and 3 feet deep and runs along the inside of the upper wall; its upper edge is about 18 inches lower than the upper edge of the outer wall. This trough was originally open, but it is now covered by black plastic panels, part of an odor-control effort of uncertain but recent date. The upper edge of the inner wall was fitted with a notched steel weir plate bolted to its inner edge to regulate the flow of water in the tank into the channel. At the center of the tank is a pier, on which is mounted a skimming arm that extends to the edge of the tank. A walkway extends to the pier from the south edge of the tank. The bottom of the tank slopes downward from the outer edges to the center where accumulated sludge is pumped elsewhere for additional treatment.

Apart from mechanical, electrical, and plumbing changes made over the years as the treatment system as a whole was changed or upgraded, Primary Clarifier No. 9 is basically the same today as it was when it was built in 1966–1967.

NRHP Evaluation: Primary Clarifier No. 9 was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that Primary Clarifier No. 9 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Primary Clarifier No. 9 Continuation Sheet No. 2

==========

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Primary Clarifier No. 10

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497631 Northing 3571806 USGS 7.5' quad map: Jaynes (1995)

Architect: Gene E. Anderson, Inc. (Tucson), and Henningson, Durham and Richardson, Inc. (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: W. P. Harlin Construction Company (Salt Lake City) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1966–1967 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Primary treatment of sewage (1967–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: April 24, 2012

View Direction (*looking towards*) Northeast

Negative No.: Roger Road 05-0009

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to the tank itself. Various mechanical, electrical, and plumbing upgrades have taken place over the years.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: N/A Roof: N/A
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Primary Clarifier No. 10 Continuation Sheet No. 1

==========

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Primary Clarifier No. 8 of the Roger Road Wastewater Reclamation Facility. The tank was originally known as Primary Clarifier No. 10 when it was built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant. Primary Clarifier No. 9, now known as Primary Clarifier No. 7, was built at the same time and is a mirror image of this structure; both structures are actively used parts of the current treatment plant. As originally built, the two tanks received sewage from the headworks built during the 1959–1960 expansion, which replaced the plant's original headworks; the current headworks, which now routes sewage to Primary Clarifiers Nos. 7 and 8, is a completely different structure dating to the 1970s. The sewage treated by Primary Clarifiers Nos. 9 and 10 was originally routed westward to the Aeration Basins, also built during the 1966–1967 expansion, and today the same Aeration Basins receive sewage from Primary Clarifiers Nos. 7 and 8.

Primary Clarifier No. 10 was built with a maximum diameter of 112 feet 4 inches and a maximum depth of about 10 feet. The upper edge of the outer tank wall is from 6 to 24 inches above grade and supports a pipe hand rail around the full circumference of the tank. Just inside the upper tank wall is a trough, also of concrete, that measures 2 feet wide and 3 feet deep and runs along the inside of the upper wall; its upper edge is about 18 inches lower than the upper edge of the outer wall. This trough was originally open, but it is now covered by black plastic panels, part of an odor-control effort of uncertain but recent date. The upper edge of the inner wall was fitted with a notched steel weir plate bolted to its inner edge to regulate the flow of water in the tank into the channel. At the center of the tank is a pier, on which is mounted a skimming arm that extends to the edge of the tank. A walkway extends to the pier from the south edge of the tank. The bottom of the tank slopes downward from the outer edges to the center where accumulated sludge is pumped elsewhere for additional treatment.

Apart from mechanical, electrical, and plumbing changes made over the years as the treatment system as a whole was changed or upgraded, Primary Clarifier No. 10 is basically the same today as it was when it was built in 1966–1967.

NRHP Evaluation: Primary Clarifier No. 10 was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that Primary Clarifier No. 10 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Primary Clarifier No. 10 Continuation Sheet No. 2

==========

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Primary Clarifier No. 9

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497631 Northing 3571849 USGS 7.5' quad map: Jaynes (1995)

Architect: Gene E. Anderson, Inc. (Tucson), and Henningson, Durham and Richardson, Inc. (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: W. P. Harlin Construction Company (Salt Lake City) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1966–1967 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Primary treatment of sewage (1967–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: April 26, 2012

View Direction (*looking towards*) Northwest

Negative No.: Roger Road 36-0002

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to the basins themselves. Various mechanical, electrical, and plumbing upgrades have taken place over the years. Improvements designed in 1979 including a newly designed splitter box on the east side of the basins.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: N/A Roof: N/A
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)
_____

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Aeration Basins Continuation Sheet No. 1

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This set of rectangular, open, concrete tanks and accompanying mechanical equipment are currently known as Aeration Basins Nos. 3–6 of the Roger Road Wastewater Reclamation Facility. The tanks were originally known simply as the Aeration Basins when they were built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant. The basins consist of eight basically identical, side-by-side, in-ground tanks that were built at the same time; each tank shares walls with the tanks immediately adjacent, which makes the eight tanks essentially a single structure. As originally built, the tanks received sewage from Primary Clarifiers Nos. 9 and 10 (now known as Primary Clarifiers Nos. 7 and 8), located immediately to the east, and the same process continues today. A splitter box, built along the east side of the Aeration Basins, distributes sewage to the eight side-by-side tanks. Air pumped from the Blower Building, also built in 1966–1967 and located at the southeast corner of the Aeration Basins, enters the tanks through diffuser tubes mounted at the bottom of the tanks. A mechanical rotor in each tank also distributes air in the tanks. Air injected into the sewage accelerates the bacterial breakdown of organic matter. From the Aeration Basins, the sewage passes next into Final Clarifiers Nos. 5 and 6 (originally known as Final Clarifiers Nos. 7 and 8).

The overall footprint of the Aeration Basins is 220 feet north-south by 134 feet east-west, with each of the eight subdivisions measuring 26 feet north-south by 134 feet east-west by 18 feet deep. The upper edge of the Aeration Basins as a whole is just a few inches above grade. A poured-concrete wall 18 inches thick stands between each pair of subdivisions. The upper portion of each dividing wall holds a concrete trough 6 feet wide and 4 feet deep with a V-shaped bottom. The troughs have a series of gates and valves that regulate the flow of sewage and air into the tanks. Each trough is covered by a heavy steel grating to form seven east-west walkways spaced at regular intervals, with handrails along the side of each walkway. The outer edges of the basins also have handrails and are skirted by a concrete sidewalk just a few inches above grade. At the center of the east side of the Aeration Basins is the splitter box, which today consists of a partly open, poured-concrete box built into the ground, with 3 feet of its height above grade. As originally built, the splitter box was fully enclosed and entered by a concrete staircase on its east side, but the box was redesigned in 1979 and replaced by the current open-topped box, which is surrounded by handrails and is accessed by a small steel staircase on the south side.

Apart from the replacement of the splitter box in 1979, along with mechanical, electrical, and plumbing changes made at different times over the years as the treatment system as a whole was changed or upgraded, the Aeration Basins are basically the same today as they were when they were built in 1966–1967.

NRHP Evaluation: The Aeration Basins were built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. They are utilitarian structures of a simple and very common design and by themselves lack distinction. They are part of a group of structures, including Primary Clarifiers Nos. 9 and 10 and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that the Aeration Basins be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Aeration Basins Continuation Sheet No. 2

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1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Aeration Basins Continuation Sheet No. 3

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1. Roger Road 36-0003: Splitter box designed in 1979, on east side of Aeration Basins, view to the northwest (April 26, 2012).

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Final Clarifier No. 7

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497528 Northing 3571849 USGS 7.5' quad map: Jaynes (1995)

Architect: Gene E. Anderson, Inc. (Tucson), and Henningson, Durham and Richardson, Inc. (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: W. P. Harlin Construction Company (Salt Lake City) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1966–1967 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Secondary treatment of sewage (1967–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) North-northeast

Negative No.: WSA 2013-69-112

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
Outer trough of original tank was removed in 1979 design. Other mechanical, electrical, and plumbing upgrades have taken place over the years.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: N/A Roof: N/A
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)
_____

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Final Clarifier No. 7 Continuation Sheet No. 1

==========

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Final Clarifier No. 5 of the Roger Road Wastewater Reclamation Facility. The tank was originally known as Final Clarifier No. 7 when it was built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant. Final Clarifier No. 8, now known as Final Clarifier No. 6, was built at the same time and is a mirror image of this structure; both structures are actively used parts of the current treatment plant. As originally built, the two tanks received partially treated sewage from the Aeration Basins, also built during the 1966–1967 expansion and located just to the east. The same process continues today.

Final Clarifier No. 7 was built with a maximum diameter of 112 feet 4 inches and a maximum depth of about 10 feet. The upper edge of the outer tank wall was about 12 inches above grade. Just inside the upper tank wall was a trough, also of concrete, that measured 2 feet wide and 2 feet deep and ran along the inside of the upper wall; its upper edge was about 18 inches lower than the upper edge of the outer wall. A separate weir trough, also about 3 feet wide and 2 feet deep, was mounted inside the first trough on concrete brackets mounted to the inside of the lower walls of the tank. The weir trough was assembled from 18 individual sections of pre-cast concrete trough, each 16 feet 6 inches in length and longitudinally straight rather than curved; the ends of the sections were mitered to allow assembly into what amounted to a circle. The upper edge of the weir trough was at the same level as the upper edge of the outer trough, but a space about 3 feet wide separated the outer trough from the weir trough. Both upper edges of the weir trough were fitted with a notched fiberglass weir plate to regulate the flow of water from the tank into the trough. At the center of the tank was a pier, on which was mounted a skimming arm that extended to the edge of the tank. A walkway extended to the pier from the south edge of the tank. The bottom of the tank sloped downward from the outer edges to the center where accumulated sludge was pumped elsewhere for additional treatment.

Improvements to the plant designed in 1979 included the removal of the outer portion of the outer trough, which made the inner weir trough, mounted to the inner wall of the tank, the only trough. Removal of the outer portion of the outer trough reduced the overall diameter of the tank to 105 feet. The 1979 improvements also included the installation of an aluminum handrail around the full circumference of the new outer edge of the tank. All of the improvements from the 1979 design are still in place today.

NRHP Evaluation: Final Clarifier No. 7 was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins and Primary Clarifiers Nos. 9 and 10, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that Final Clarifier No. 7 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Final Clarifier No. 7 Continuation Sheet No. 2

==========

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Final Clarifier No. 7 Continuation Sheet No. 3

==========

1. WSA 2013-69-114: Portion of the interior of Final Clarifier No. 7, known today as Final Clarifier No. 5, showing weir trough, view to the northwest (October 4, 2013).

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Final Clarifier No. 8

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497528 Northing 3571806 USGS 7.5' quad map: Jaynes (1995)

Architect: Gene E. Anderson, Inc. (Tucson), and Henningson, Durham and Richardson, Inc. (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: W. P. Harlin Construction Company (Salt Lake City) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1966–1967 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Secondary treatment of sewage (1967–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) South-southwest

Negative No.: WSA 2013-69-113

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
Outer trough of original tank was removed in 1979 design. Other mechanical, electrical, and plumbing upgrades have taken place over the years.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: N/A Roof: N/A
Windows: N/A
If the windows have been altered, what were they originally? N/A
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)
_____

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Final Clarifier No. 8 Continuation Sheet No. 1

==========

This circular, open, concrete tank and accompanying mechanical equipment is currently known as Final Clarifier No. 6 of the Roger Road Wastewater Reclamation Facility. The tank was originally known as Final Clarifier No. 8 when it was built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant. Final Clarifier No. 7, now known as Final Clarifier No. 5, was built at the same time and is a mirror image of this structure; both structures are actively used parts of the current treatment plant. As originally built, the two tanks received partially treated sewage from the Aeration Basins, also built during the 1966–1967 expansion and located just to the east. The same process continues today.

Final Clarifier No. 8 was built with a maximum diameter of 112 feet 4 inches and a maximum depth of about 10 feet. The upper edge of the outer tank wall was about 12 inches above grade. Just inside the upper tank wall was a trough, also of concrete, that measured 2 feet wide and 2 feet deep and ran along the inside of the upper wall; its upper edge was about 18 inches lower than the upper edge of the outer wall. A separate weir trough, also about 3 feet wide and 2 feet deep, was mounted inside the first trough on concrete brackets mounted to the inside of the lower walls of the tank. The weir trough was assembled from 18 individual sections of pre-cast concrete trough, each 16 feet 6 inches in length and longitudinally straight rather than curved; the ends of the sections were mitered to allow assembly into what amounted to a circle. The upper edge of the weir trough was at the same level as the upper edge of the outer trough, but a space about 3 feet wide separated the outer trough from the weir trough. Both upper edges of the weir trough were fitted with a notched fiberglass weir plate to regulate the flow of water from the tank into the trough. At the center of the tank was a pier, on which was mounted a skimming arm that extended to the edge of the tank. A walkway extended to the pier from the south edge of the tank. The bottom of the tank sloped downward from the outer edges to the center where accumulated sludge was pumped elsewhere for additional treatment.

Improvements to the plant designed in 1979 included the removal of the outer portion of the outer trough, which made the inner weir trough, mounted to the inner wall of the tank, the only trough. Removal of the outer portion of the outer trough reduced the overall diameter of the tank to 105 feet. The 1979 improvements also included the installation of an aluminum handrail around the full circumference of the new outer edge of the tank. All of the improvements from the 1979 design are still in place today.

NRHP Evaluation: Final Clarifier No. 8 was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins and Primary Clarifiers Nos. 9 and 10, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that Final Clarifier No. 8 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Final Clarifier No. 8 Continuation Sheet No. 2

==========

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Final Clarifier No. 8 Continuation Sheet No. 3

==========

1. Roger Road 06-0003: Portion of the interior of Final Clarifier No. 8, known today as Final Clarifier No. 6, showing weir trough, view to the southwest (April 24, 2012).

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Flotation Thickener Building
(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497429 Northing 3571655 USGS 7.5' quad map: Jaynes (1995)

Architect: Gene E. Anderson, Inc. (Tucson), and Henningson, Durham and Richardson, Inc. (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: W. P. Harlin Construction Company (Salt Lake City) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1966–1967 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.
Secondary treatment of sewage (1967–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) Southeast

Negative No.: WSA 2013-69-097

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
No known alterations to the building itself. Mechanical, electrical, and plumbing upgrades have taken place over the years.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: Poured concrete Roof: Built-up
Windows: Steel awning
If the windows have been altered, what were they originally?_____
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Flotation Thickener Building Continuation Sheet No. 1

==========

This building, currently known as the DAFT (Dissolved Air Flotation Thickener) Building, was originally known as the Flotation Thickener Building when it was built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant. It was built to house two large flotation-thickener units and the associated equipment; it currently houses similar equipment of more recent date. The building has a single story and a simple rectangular floor plan measuring 65 feet north-south by 43 feet 2 inches east-west; the building is 19 feet high and has a flat roof. The foundation, floor, and walls are poured concrete; the roof is built-up roofing over plywood on lumber joists. Steel awning windows are present in the west, east, and south walls; the same three walls each have a single, steel, out-swing door. The north wall has double, steel, out-swing doors with a threshold at 2 feet 6 inches above grade; a concrete loading dock is present at the same height inside the doors. The exterior wall surfaces are unpainted, smooth, and seamless, except for vertical grooves that align with the sides of the window openings and run the height of the building. The interior of the building is a single open space except for a small room at the northeast corner that measures 9 feet 6 inches square, with concrete walls and a 10-foot-high concrete ceiling. This room originally held air compressors and now holds electrical equipment.

Apart from mechanical, electrical, and plumbing changes made when the equipment housed in the building was changed or upgraded, the Flotation Thickener Building is basically the same today as it was when it was built in 1966–1967.

NRHP Evaluation: The Flotation Thickener Building was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian building of a simple design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins, Primary Clarifiers Nos. 9 and 10, and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that the Flotation Thickener Building be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Digester No. 4

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497404 Northing 3571655 USGS 7.5' quad map: Jaynes (1995)

Architect: Gene E. Anderson, Inc. (Tucson), and Henningson, Durham and Richardson, Inc. (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: W. P. Harlin Construction Company (Salt Lake City) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1966–1967 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Sewage sludge processing (1967–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) North

Negative No.: WSA 2013-69-089

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
Improvements designed in 1979 included conversion of the original fixed roof to a floating roof plus various mechanical, electrical, and plumbing changes.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: Poured concrete Roof: Steel and fiberglass (floating)
Windows: N/A
If the windows have been altered, what were they originally?_____
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)
_____

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Digester No. 4 Continuation Sheet No. 1

==========

This cylindrical concrete tank with accompanying mechanical equipment is currently known as Digester No. 4 of the Roger Road Wastewater Reclamation Facility. The original name of the structure was also Digester No. 4 when it was built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant. The original design of Digester No. 4 was similar to that of Digester No. 3, which was built in the earlier 1959–1960 expansion of the plant. Digesters Nos. 3 and 4 stand 66 feet apart and are connected by Control House No. 2 (original and current name), which was first built at the same time as Digester No. 3 but expanded when Digester No. 4 was built; it houses the mechanical equipment associated with the operation of the Digesters. Digesters Nos. 3 and 4 receive sludge from Thickeners Nos. 1 and 2, both built in the 1959–1960 expansion. Digesters use anaerobic bacterial action to further process thickened sludge and reduce its volume.

Digester No. 4 has a tank wall and floor of poured concrete, a maximum diameter of about 84 feet, and a maximum height of about 37 feet. As originally built, it had a fixed concrete roof, but this roof was replaced by a floating roof of steel and fiberglass during improvements designed in 1979. The steel guides that the floating roof rides on extend vertically several feet above the upper edge of the tank and are visible from the ground. The bottom of the tank is conical, with the deepest point at the center of the tank, 10 feet below the base of the tank wall, which is at grade. A steel pipe enters the tank at grade from Control House No. 2 and extends to the bottom of the tank to draw off digested sludge. The lower half of the wall is 22 inches thick whereas the upper half is 16 inches thick; the transition between the differing wall thicknesses is marked on the wall exterior by a narrow, slightly sloped shelf.

The basic structure of the Digester No. 4 tank has not been altered except for the change in roof type in 1979. The 1979 improvements also included various mechanical, electrical, and plumbing changes.

NRHP Evaluation: Digester No. 4 was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins, Primary Clarifiers Nos. 9 and 10, and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that Digester No. 4 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Digester No. 4 Continuation Sheet No. 2

==========

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Sludge Pump Station

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497627 Northing 3571827 USGS 7.5' quad map: Jaynes (1995)

Architect: Gene E. Anderson, Inc. (Tucson), and Henningson, Durham and Richardson, Inc. (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: W. P. Harlin Construction Company (Salt Lake City) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1966–1967 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Primary sewage treatment (1967–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) Northeast

Negative No.: WSA 2013-69-110

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)

various mechanical, electrical, and plumbing changes.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: Poured concrete Roof: Poured concrete
Windows: N/A
If the windows have been altered, what were they originally?_____
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Sludge Pump Station Continuation Sheet No. 1

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This building is an underground room built as part of an expansion of the Tucson Sewage Treatment Plant in 1966–1967. It was originally known as the Sludge Pump Station and is known today as Pump Station No. 5, a functioning part of the current Roger Road Wastewater Reclamation Facility. As originally built, the Sludge Pump Station housed electric pumps and pipework associated with Primary Clarifiers Nos. 9 and 10 (known today as Primary Clarifiers Nos. 7 and 8, which flank the Sludge Pump Station. The current Pump Station No. 5 continues in basically the same role as the original Sludge Pump Station, housing pumps and pipework associated with Primary Clarifiers Nos. 7 and 8.

The Sludge Pump Station consists of a poured-concrete box built in an excavation that leaves about 1 foot or less of the height of the box exposed above grade. The floor of the pump station measures 24 feet north-south by 22 feet east-west; the interior height is about 14 feet. Wall, ceiling, and floor thickness is 12 inches. An open, poured-concrete staircase, 4 feet wide, descends from grade south to north along the west side of the pump station, ending at a door in the east wall of the structure, which opens onto a concrete landing; a second, interior, concrete staircase descends from the landing north to south to the interior floor. The floor of the pump station has various raised concrete piers to mount equipment. The southeast and northeast corners of the interior are enclosed as small rooms to hold other equipment and pipework.

During a general upgrade to the sewage treatment plant in 1979, the equipment and plumbing connections of the Sludge Pump Station were modified, but the basic structure is otherwise unchanged from its original appearance.

NRHP Evaluation: The Sludge Pump Station was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins, Primary Clarifiers Nos. 9 and 10, and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that the Sludge Pump Station be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Sludge Pump Station Continuation Sheet No. 2

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1. Roger Road 05-0008: Interior of the Sludge Pump Station, known today as Pump Station No. 5 (April 24, 2012).

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Unnamed pump station for the Aeration Basins

(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497554 Northing 3571827 USGS 7.5' quad map: Jaynes (1995)

Architect: Gene E. Anderson, Inc. (Tucson), and Henningson, Durham and Richardson, Inc. (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: W. P. Harlin Construction Company (Salt Lake City) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1966–1967 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Secondary sewage treatment (1967–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) North

Negative No.: WSA 2013-69-111

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
Basic structure unchanged; improvements designed in 1979 involved major mechanical, electrical, and plumbing changes.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: Poured concrete Roof: Poured concrete
Windows: N/A
If the windows have been altered, what were they originally?_____
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Unnamed pump station for the Aeration Basins Continuation Sheet No. 1

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This building is an underground room built as part of an expansion of the Tucson Sewage Treatment Plant in 1966–1967. It was originally an unnamed pump station included as part of the design of the Aeration Basins, which adjoin the east side of the structure. When major improvements to the plant were designed in 1979, the unnamed pump station became Pump Station No. 6, which continues as its name today. From its construction in 1966–1967 until today, the pump station has served to route partially treated sewage westward from the Aeration Basins to Final Clarifiers Nos. 7 and 8 (known today as Final Clarifiers Nos. 5 and 6).

This pump station consists of a poured-concrete box built in an excavation that leaves about 6 inches or less of the height of the box exposed above grade. The floor of the box measures about 52 feet north-south by 20 feet east-west; the interior height is about 21 feet. Wall, ceiling, and floor thickness is 12 inches. An open, poured-concrete staircase, 4 feet wide, descends from grade south to north along the west side of the pump station, ending at a door in the east wall of the structure, which opens onto a concrete landing; a second, interior, concrete staircase descends from the landing north to south to the interior floor. The floor of the pump station has various raised concrete piers to mount equipment. An area 18 feet north-south by 6 feet east-west along the center of the east wall of the room is enclosed as a small room to hold pipework.

During a general upgrade to the sewage treatment plant in 1979, the equipment and plumbing connections of this pump station were greatly modified, but the basic structure is mostly unchanged. The 1979 design also included a new splitter structure attached to the west side of the pump station, used to regulate the flow to the Final Clarifiers. The top of the splitter structure is flush with the top of the pump station and united with it by a continuous slab of concrete. The splitter structure has the appearance of an open rectangular trough.

NRHP Evaluation: Pump Station No. 6 was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins, Primary Clarifiers Nos. 9 and 10, and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that Pump Station No. 6 be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Unnamed pump station for the Aeration Basins Continuation Sheet No. 2

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O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Unnamed pump station for the Aeration Basins Continuation Sheet No. 3

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1. Roger Road 06-0021: Interior of the previously unnamed pump station associated with the Aeration Basins and known today as Pump Station No. 6 (April 24, 2012).

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Blower Building
(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497608 Northing 3571787 USGS 7.5' quad map: Jaynes (1995)

Architect: Gene E. Anderson, Inc. (Tucson), and Henningson, Durham and Richardson, Inc. (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: W. P. Harlin Construction Company (Salt Lake City) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1966–1967 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.

Primary treatment of sewage (1967–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) South-southeast

Negative No.: WSA 2013-69-107

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
Basic building is unchanged. Mechanical, electrical, and plumbing upgrades were made as part of the 1995 plant improvements, which apparently included a finish coat of stucco on the exterior.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: Poured concrete Roof: Built-up
Windows: Steel awning
If the windows have been altered, what were they originally?_____
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)
_____

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Blower Building Continuation Sheet No. 1

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This building, currently known as the Blower Building, was known by the same name when it was built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant. It was built to house large, engine-driven blowers that forced air into the Aeration Basins, also built in 1966–1967 and located immediately northwest of the Blower Building. It continues to serve the same function today and houses similar equipment of more recent date. The building has a single story and a simple rectangular floor plan measuring 52 feet north-south by 46 feet east-west; the building has a flat roof and an interior height of 16 feet 6 inches. The foundation, floor, and walls are poured concrete; the roof is built-up roofing over plywood on lumber joists. Steel awning windows are present in the east and west walls; the north wall has double, steel, out-swing doors. Large openings with steel louvered panels are present in the east, west, and north walls. A steel staircase ascends from a small concrete pad at grade just north of the building to the flat roof. The exterior wall surfaces were unfinished concrete originally, but improvements to the plant in 1995 changed some of the wall penetrations for plumbing and electrical connections, which probably prompted the application of the stucco coating currently on the exterior walls. The interior of the building is a single open space.

Apart from the mechanical, electrical, and plumbing changes made when the equipment housed in the building was changed or upgraded in 1995, the Blower Building is basically the same today as it was when it was built in 1966–1967.

NRHP Evaluation: The Blower Building was built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It is a utilitarian structure of a simple and very common design and by itself lacks distinction. It is part of a group of structures, including the Aeration Basins, Primary Clarifiers Nos. 9 and 10, and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that the Blower Building be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
2013 A Cultural Resources Inventory and Archaeological Monitoring for the Proposed Closure of the Roger Road Wastewater Reclamation Facility, Pima County, Arizona. WSA Technical Report No. 2013-54. William Self Associates, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Blower Building Continuation Sheet No. 2

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Pima County Wastewater Management Department
1990 Roger Road WWTP, 11 MGD Expansion. Phase II [construction drawings]. Prepared for the Pima County Wastewater Management Department by Consoer, Townsend and Associates, Tucson. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1995a Roger Road WWTP, 11 MGD Expansion. Phase III [construction drawings]. Prepared for the Pima County Wastewater Management Department by Consoer, Townsend and Associates, Tucson. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1995b Roger Road WWTP, Dechlorination Facilities and System Improvements. [construction drawings]. Prepared for the Pima County Wastewater Management Department by Consoer, Townsend and Associates, Tucson. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA **HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property. ***Use continuation sheets where necessary****. Send completed form to: State Historic Preservation Office, 1300 W. Washington, Phoenix, AZ 85007*

PROPERTY IDENTIFICATION

For properties identified through survey: Site No: N/A Survey Area: Roger Road Wastewater Reclamation Facility

Historic Name(s): Chlorine Building
(*Enter the name(s), if any, that best reflects the property's historic importance.*)

Address: 2600 West Sweetwater Drive, Tucson AZ 85705

City or Town: Tucson ☐ vicinity County: Pima Tax Parcel No. 103 - 06 - 092H

Township: 13 South Range: 13 East Section: 21 Quarter Section: SW Acreage: 55

Block: N/A Lot(s): N/A Plat (Addition): N/A Year of plat (addition): N/A

UTM reference: Zone 12S Easting 497519 Northing 3571751 USGS 7.5' quad map: Jaynes (1995)

Architect: Gene E. Anderson, Inc. (Tucson), and Henningson, Durham and Richardson, Inc. (Phoenix) ☐ not determined ☑ known (source: Original construction plans)

Builder: W. P. Harlin Construction Company (Salt Lake City) ☐ not determined ☑ known (source: Original construction plans)

Construction Date: 1966–1967 ☑ known ☐ estimated (source: Original construction plans)

STRUCTURAL CONDITION

☑ Good (*well maintained, no serious problems apparent*)

☐ Fair (*some problems apparent*) Describe:

☐ Poor (*major problems; imminent threat*) Describe:

☐ Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use.
Chlorine storage (1967–1979); welding shop for plant maintenance (1979–present)

Sources: Construction plans, administrative documents, newspaper articles.

PHOTO INFORMATION

Date of photo: October 4, 2013

View Direction (*looking towards*) Southwest

Negative No.: WSA 2013-69-120

SIGNIFICANCE

To be eligible for the National Register of Historic Places, a property must represent an important part of the history or architecture of an area. Note: a property need only be significant under one of the areas below to be eligible for the National Register.

A. HISTORIC EVENTS/TRENDS (*On a continuation sheet describe how the property is associated either with a significant historic event, or with a trend or pattern of events important to the history of the nation, the state, or a local community.*)

B. PERSON (*On a continuation sheet describe how the property is associated with the life of a person significant in the past.*)

C. ARCHITECTURE (*On a continuation sheet describe how the property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work or a master, or possesses high artistic values.*)

Outbuildings: (*Describe any other buildings or structures on the property and whether they may be considered historic.*)
N/A

INTEGRITY

To be eligible for the National Register, a property must have integrity, that is, it must be able to visually convey its importance. Provide detailed information below about the property's integrity. Use continuation sheets if necessary.

1. LOCATION ☑ Original Site ☐ Moved (date_____) Original Site:_____

2. DESIGN (*Describe alterations from the original design, including dates—known or estimated—when alterations were made*)
Original building was expanded in 1979 by addition of a covered, open-sided shop area on west; original function of building changed from chlorine storage building to welding shop.

3. SETTING (*Describe the natural and/or built environment around the property*) Former agricultural fields on floodplain of Santa Cruz River; surrounding area is mostly undeveloped, with a few wastewater-related facilities adjacent to plant.

Describe how the setting has changed since the property's period of significance: Buildings and structures added to the plant in stages; some structures modified or removed.

4. MATERIALS (*Describe the materials used in the following elements of the property)*
Walls (structure): Poured concrete Foundation: Poured concrete Roof: Built-up
Windows: Steel awning
If the windows have been altered, what were they originally?_____
Wall Sheathing: N/A
If the sheathing has been altered, what was it originally?_____

5. WORKMANSHIP (*Describe the distinctive elements, if any, of craftsmanship or method of construction*)

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

☐ Individually listed; ☐ Contributor ☐ Noncontributor to _____ Historic District
Date Listed:_____ ☐ Determined eligible by Keeper of National Register (date:_____)

RECOMMENDATIONS OF ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property ☐ is ☑ is not eligible individually.
Property ☐ is ☑ is not eligible as a contributor to a potential historic district.
☐ More information needed to evaluate.
If not considered eligible, state reason:_____

FORM COMPLETED BY:

Name and Affiliation: Scott O'Mack, William Self Associates, Inc. Date: November 4, 2013
Mailing Address: 2424 East Broadway Boulevard, Suite 100, Tucson AZ 85719 Phone No.: 520-624-0101

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Chlorine Building Continuation Sheet No. 1

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This building, currently known as the Welding Shop, was originally known as the Chlorine Building when it was built as part of the 1966–1967 expansion of the Tucson Sewage Treatment Plant. It was built to store chlorine and to house the equipment used to chlorinate the final effluent. The original building, now part of an expanded building, has a single story and a simple rectangular floor plan measuring 25 feet 4 inches north-south by 31 feet 4 inches east-west; it has a flat roof and an interior height of 10 feet. The foundation, floor, and walls are poured concrete; the roof is built-up roofing over plywood on steel joists. The north and south walls each have a steel awning window; the west wall has two separate 6-foot-wide doorways that are currently without doors; the kind of doors these openings originally held are unknown. The exterior wall surfaces were probably unfinished concrete originally, but improvements to the plant as a whole in 1995 probably prompted the application of the stucco coating currently on the exterior walls. The interior of the original building is a single open space.

In 1979, a covered, open-sided area was added to the west side of the original building; it measures 25 feet north-south by 75 feet east-west. The covered area is built of steel posts and beams with a flat, sheet-metal roof, at the same height as the original roof. The roof covers a concrete slab floor. At the west end of the covered area, the westernmost 18 feet of the floor are 3 feet lower than the rest of the slab, to allow vehicles to pass below the roof by a driveway and to provide a loading dock. Two parallel I-beam rails run from the original part of the building to its west end, mounted just below the roof; the rails serve to load equipment and supplies onto vehicles. At an undetermined time after 1979, a concrete block wall was raised to a height of about 6 feet along the long north and south sides of the covered, open-sided area, except for the lower loading area. The space above these walls and the open end at the driveway on the west were enclosed with chain-link fence to create a secure storage area.

The addition of the covered area to the original building in 1979 was accompanied by various changes to the mechanical, electrical, and plumbing connections of the building to the rest of the plant.

NRHP Evaluation: The Chlorine Building was originally built as part of the second expansion of the Tucson Sewage Treatment Plant in 1966–1967. It was expanded during 1979 improvements to the plant and became what is now known as the Welding Shop. The original building was a utilitarian structure of a simple and very common design, and the same is true of the expanded building. Both versions of the building lack distinction. The Chlorine Building was part of a group of structures, including the Aeration Basins, Primary Clarifiers Nos. 9 and 10, and Final Clarifiers Nos. 7 and 8, associated with an early phase in the development of the plant, but the group is not yet 50 years old and is not distinctive enough to convey a special association with the period it represents. WSA recommends that the Chlorine Building be considered not eligible for listing in the NRHP under Criterion A or any other criterion.

References

City of Tucson
1949 Tucson Sewage Treatment Plant. Sewerage Project. Contract No. 2 [construction drawings]. Prepared for the City of Tucson by Headman, Ferguson and Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1958 City of Tucson, Arizona. Sewage Treatment Plant Additions [construction drawings]. Prepared for the City of Tucson by John A. Carollo, Consulting Engineers, Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

1965 Plans for Sewage Treatment Facilities. City of Tucson, Arizona [construction drawings]. Prepared for the City of Tucson by Gene E. Anderson, Inc., Tucson, and Henningson, Durham and Richardson, Inc., Phoenix. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Chlorine Building Continuation Sheet No. 2

==========

1979 Drawings for Sewerage Improvements. Tucson, Arizona. Roger Road Wastewater Treatment Plant. Contract No. 1 [construction drawings]. Prepared for the City of Tucson [?] by Black and Veatch, Consulting Engineers, Denver, Colorado, and Kansas City, Missouri. On file, Pima County Regional Wastewater Reclamation Department, Tucson.

O'Mack, Scott
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STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Chlorine Building Continuation Sheet No. 3

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1. WSA 2013-69-119: The Chlorine Building, known today as the Welding Shop, view to the northwest (October 4, 2012).

STATE OF ARIZONA

HISTORIC PROPERTY INVENTORY FORM
CONTINUATION SHEET

name of property Chlorine Building Continuation Sheet No. 4

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2. Roger Road 32-0001: The Chlorine Building, known today as the Welding Shop, view to the north-northeast (October 4, 2012). This portion of the building was added to the original building in 1979.