Appendix A

Cultural Resources Coordination

Copy

DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
4101 JEFFERSON PLAZA NE
ALBUQUERQUE NM 87109-3435

October 8, 2008

Planning, Project and Program Management Division
Planning Branch
Environmental Resources Section

Honorable Levi Pesata
President, Jicarilla Apache Nation
Post Office Box 507
Dulce, New Mexico 87528

Dear President Pesata:

The U.S. Army Corps of Engineers (Corps), Albuquerque District, in cooperation with the Office of the State Engineer and the members of the Acequia del Llano, is planning a project to rehabilitate the Acequia del Llano in Santa Fe Canyon below Nichols Reservoir, Santa Fe County, New Mexico. The proposed work would replace 1920 feet of earthen ditch and intermittent sections of pipe with 6-inch diameter plastic polyvinyl chloride (PVC) irrigation pipe. The proposed construction period is six weeks and is expected to start in November 2008.

The Corps is soliciting comments from Federal, State, and local interests for compliance under the National Environmental Policy Act (NEPA). The Draft Environmental Assessment (DEA), entitled **"Aceqia del Llano Rehabilitation Project, Santa Fe County, New Mexico"** is electronically available for viewing and copying at the Albuquerque District website (under "FONSI/ Environmental Assessments") at http://www.spa.usace.army.mil or hard copies will be sent upon request.

Please review the DEA and provide any written comments to the above address, Attn: Ms. Dana Price, Environmental Resources Section. Written comments must be received **no later than November 7, 2008,** so that comments can be addressed and revisions made to the DEA in a timely manner. If we do not receive comments by this date, we will assume you have no concerns or have no objections to the project. You may also

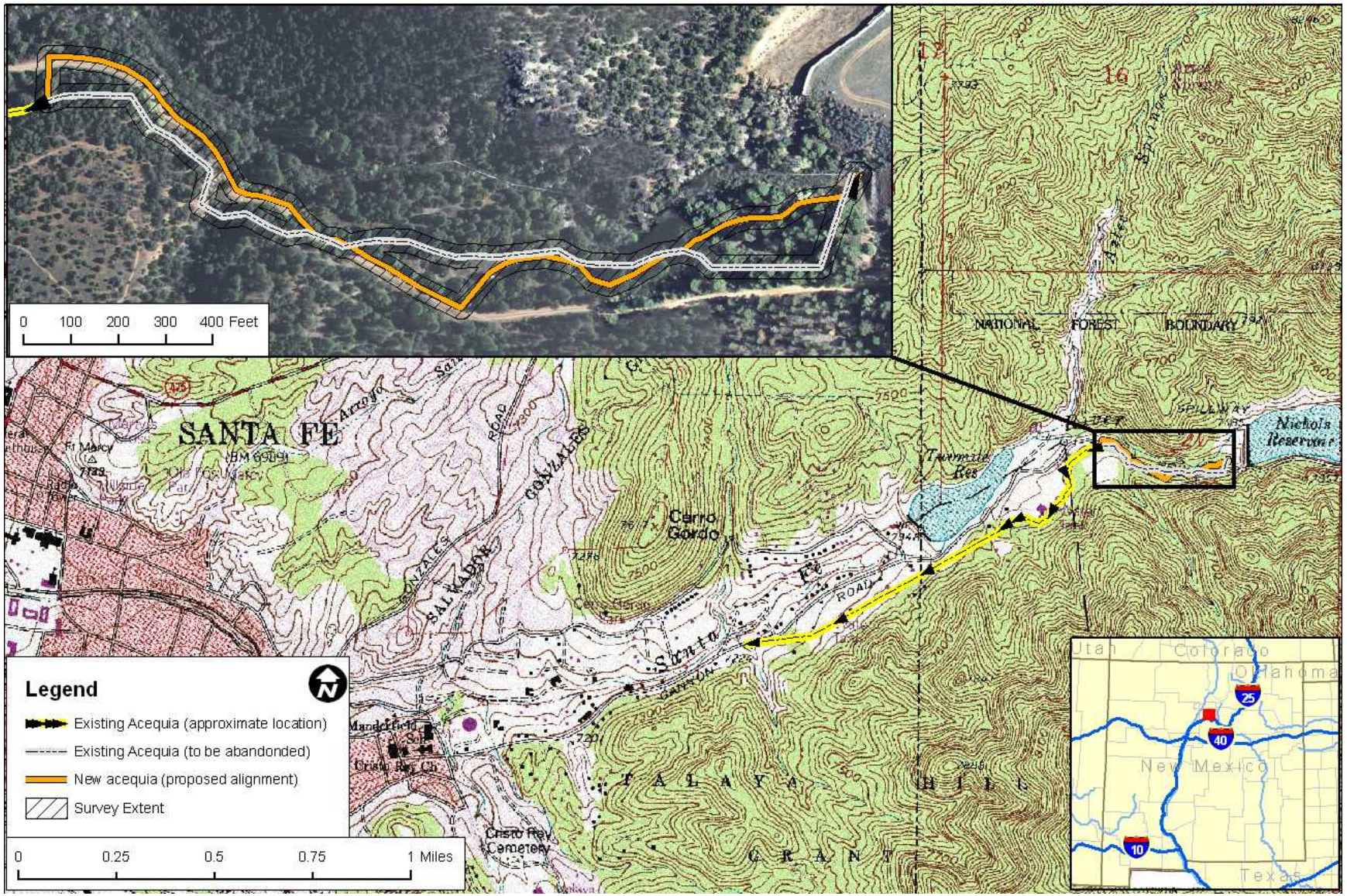
facsimile your correspondence to (505) 342-3668 or e-mail to Dana.m.price@usace.army.mil. If you have any questions or need additional information, please contact Ms. Dana Price at (505) 342-3378.

Sincerely,

Julie Alcon
Chief, Environmental Resources Section

Copies furnished:

Ms. Lorene Willis
Jicarilla Apache Nation
Office of Cultural Affairs
Post Office Box 507
Dulce, New Mexico 87528



Location Map for Proposed Acequia del Llano Rehabilitation Project, Santa Fe County, New Mexico

THE NAVAJO NATION

JOE SHRILEY, JR.
PRESIDENT

BEN SHELLY
VICE-PRESIDENT

October 22, 2008

Ms. Julie Alcon, Chief
Environmental Resources Section
Department of the Army
4101 Jefferson Plaza NE
Albuquerque, New Mexico 87109-3435

Subject: Tribal Consultation Request. Proposing to rehabilitate the Acequia del Llano including replacing 1920 feet of irrigation pipe in Santa Fe Canyon below Nichols Reservoir, Santa Fe County, New Mexico.

Dear Ms. Alcon:

Our apology for an oversight and missing the deadline date of our response to your request, please note that in reference to your letter of October 08, 2008, the Historic Preservation Department – Traditional Culture Program (HPD-TCP) received a request for consultation regarding the above undertaking and/or project. After reviewing your consultation documents, HPD-TCP has concluded the proposed undertaking/project area **will not impact** any Navajo traditional cultural properties or historical properties.

However, if there are any inadvertent discoveries made during the course of the undertaking, your agency shall cease all operations within the project area. HPD-TCP shall be notified by telephone within 24 hours and a formal letter be sent within 72 hours. All work shall be suspended until mitigation measures/procedures have been developed in consultation with the Navajo Nation.

The HPD-TCP appreciates your agency's consultation efforts, pursuant to 36 CFR Pt. 800.1 (c)(2)(iii). Should you have additional concerns and/or questions, do not hesitate to contact me. My contact information is listed below.

Sincerely,

Tony Joe, Program Manager
Historic Preservation Department – Traditional Culture Program

Tel: 928.871.7688 Fax: 928.871.7886 E-mail: tonyjoe@navajo.org

TCP 09-094
File: Office file/chrono

DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
4101 JEFFERSON PLAZA NE
ALBUQUERQUE NM 87109-3435

085633

October 28, 2008

Reid 12/11/08 LAC

Planning, Project and Program Management Division
Planning Branch
Environmental Resources Section

Ms. Katherine Slick
State Historic Preservation Officer
New Mexico Department of Cultural Affairs
Historic Preservation Division
Bataan Memorial Building
407 Galisteo Street, Suite 236
Santa Fe, New Mexico 87501

Dear Ms. Slick:

Pursuant to 36 CFR Part 800, the U.S. Army Corps of Engineers (Corps), Albuquerque District, is seeking your concurrence in our determination of "No Adverse Effect to Historic Properties" for a proposed rehabilitation of the Acequia Del Llano (Acequia). The Corps, at the request of the New Mexico State Engineer/Interstate Stream Commission and Acquia del Llano Association (Association), is planning a project that would rehabilitate a 1,920-foot segment of the Acequia. Work would be conducted under the Water Resources Development Act of 1986 (Public Law 99-662), as amended.

The Acequia is located in Santa Fe County, and is located to the east of Santa Fe in the Santa Fe River Canyon, with the acequia's diversion structure located at the toe of Nichol's Reservoir. The Acequia obtains water from the Santa Fe River, and the system as a whole provides water to 20 irrigators and approximately 30 acres of cultivated land.

The Corps proposes to rehabilitate the Acequia del Llano by installing approximately 1,920 linear feet of continuous PVC irrigation pipe from the inflow below Nichols Reservoir to the property boundary of the Randall Davey Audubon Center. The pipeline would follow the downhill (north) side of an unpaved access road from the bottom of Nichols Reservoir to the Santa Fe Watershed Road and then would follow the north side of the Watershed Road until near the project end, where it would cross the road to rejoin the present ditch at the Audubon Center

boundary. The objectives of the project are to improve water delivery efficiency by limiting seepage and to reduce the maintenance effort required to clean sediment from the ditch. Project construction is scheduled during the non-irrigation season beginning in November 2008 with an expected duration of about six weeks. The Acequia del Llano members would be responsible for assuring operation and maintenance upon project completion.

The Corps would provide 75 percent of construction funding and is, therefore, the lead Federal agency for this project in terms of Section 106 of the National Historic Preservation Act. The Office of the State Engineer is the project sponsor, and with the local ditch association, would be responsible for the remaining 25 percent of construction costs. Project design and inspection would be undertaken by the USDA Natural Resources Conservation Service (NRCS).

Pursuant to 36 CFR 800.2, consulting parties in the Section 106 process identified for the Undertaking include the Corps, the Association, and your office. Consistent with the Department of Defense's American Indian and Alaska Native Policy, signed by Secretary of Defense William S. Cohen on October 28, 1998, and based on the State of New Mexico Indian Affairs Department's 2008 Native American Consultations List, American Indian tribes that have indicated they have concerns in Santa Fe County were sent scoping letters regarding the proposed project. To date, the Corps has received no indication of tribal concerns that would impact this project.

Pursuant to 36 CFR 800.4, the Area of Potential Effects (APE) for the Undertaking is considered to be the construction footprint within the Association's right-of-way (ROW). Access and staging is provided by existing roads and facilities.

Pursuant to 36 CFR 800.4(b), historic properties were identified by Corps archaeologists on June 20, 2008, as presented in the enclosed cultural resources survey report titled A 4.07-Acre Cultural Resources Inventory for the Acequia Del Llano, Santa Fe County, New Mexico (Report no. CO-2008-011, NMCRIS No. 111825). The survey was conducted within Association (private) property.

No new archaeological sites or Isolated Occurrences were encountered during this survey in the project area, other than the acequia itself. Three historic properties intersect the current project: LA 120650 and LA 138426, both dirt roads used

to access Nichols Reservoir, and LA 138429, an abandoned ditch that provided water to the now-abandoned hydroelectric plant located 725 m downstream.

LA 120650 was previously recorded in 1997. The site form for LA 120650 indicates that the road dates to at least 1899, as it is on a surveyor's map from that year. It further states that the road was probably made by prison crews in the early 20th century to reach homesteads in the canyon and to access the reservoirs. The site continues in use today as the main route to access the reservoir, and is a well-graded dirt and gravel road in good maintenance. Your office determined that this property is eligible for listing in the NRHP under Criterion A (HPD Log 55321). This survey did not alter or add to this evaluation. This road serves as the primary route into the project area, and is crossed once by the Acequia del LLano. The new proposed alignment for the acequia would roughly follow this road for approximately 325 m.

LA 138426 was previously recorded in 2002. The site form for LA 138426 indicates that the road dates to at least 1883, as it is on a United States Government Land Office map from that year. The site continues in use today as a route to access the toe of Nichols Reservoir, and is a narrow dirt and gravel road in moderate maintenance. This road serves as the route to the acequia's diversion structure, and the acequia follows the road for approximately 150 m. The new proposed alignment for the acequia would roughly follow the existing alignment. Your office has stated that it requires additional information to consider the eligibility of this site (HPD Log 68039). The Corps does not find that sufficient information is available to evaluate the significance of the entire road, but the section in the Corps' project area is not, by itself, considered significant. The segment of this road in the project area is short and retains only an alignment that may be considered historic (i.e., no culverts, crossings, etc; it is a simple dirt road).

Both historic dirt roads (LA 120650 and LA 138426) will retain their integrity in terms of those characteristics that make them eligible for inclusion in the NRHP. No historic culverts or other features will be affected, and the road alignment and form will remain the same. No information potential or association with either road will be significantly affected. The Corps recommends that this project will have a minor, but non-adverse effect to LA 120650 and LA 138426.

LA 138429, the High Line Ditch, was previously recorded in 2002. LA 138429 served as the ditch to carry water to Two Mile Dam and Reservoir, for use by the Santa Fe hydroelectric plant. The High Line Ditch dates to 1902, and was abandoned in 1943. Your office determined that this property is eligible under Criterion D (HPD Log 68039). LA 138429 was not relocated during the current survey; as such, no statement of evaluation or significance is provided. Based on the ARMS map data, the Acequia del Llano crosses this site in two places, both of which coincide with road crossings. It is likely that the portions of this site in the project area have been obliterated by the roads and road maintenance activities. At any rate, the ditch was not observed in either the existing or the proposed alignment. The Corps recommends that this project will not have an adverse effect to LA 138429.

The Acequia del Llano is considered eligible for inclusion to the NRHP under Criterion A for its association with events important to the growth and settlement of Santa Fe, and for its association with the use of traditional water irrigation in New Mexico. With the exception of the portion within the project area, the integrity of the system is good; the original form, function, and alignment have not significantly changed over the last century. In the project area, the form of the acequia has changed: the diversion structure was changed by the placement of Nichol's Reservoir in 1943, and about 1,000 feet of the acequia has been piped to deal with continual problems associated with the acequia's location in a steeply wooded canyon. Overall, the 1.5 mile acequia is approximately 80 percent intact.

This project involves the proposed rehabilitation of the Acequia del Llano. This project has the potential to adversely affect those characteristics of the property that qualify it for inclusion in the NRHP. The proposed project will involve piping approximately 26.7 percent of the acequia (1,920 feet), and will shift its alignment from the steep slopes of the forested canyon to the access roads. However, about half of this section of the acequia was previously piped by the acequia association, in response to repeated failures, clogs, and poor water delivery.

When considering adverse effects, the Corps considers acequias in the context of their historic use. Acequias, perhaps more than any other feature type, have throughout time been repeatedly modified in response to problems facing the acequia association. At the same time acequia association members available to undertake maintenance activities are, by past standards, few in number, and older. What is important to

the modern acequia members is that they are able to continue deliverance and use of the water in a traditional way. This project will help the acequia members continue to use this acequia, and the water delivered will be in the same form, function, and alignment when it reaches those acequia member's properties. The Corps' solution is consistent with the partial piping the acequia association—the historic users of the acequia—have already been engaged in at this problem section of the acequia.

The portion to be piped has been extensively modified, and no longer retains integrity. In addition, it is located—due to safety concerns related to Nichols Reservoir—in a secured area, inaccessible to the public. No member of the public, and few members of the acequia association, will even realize that a change has taken place.

For these reasons, the Corps considers that the basic integrity of this small acequia system will remain intact after this project. The acequia members will still receive their water in traditional ways, and areas of the acequia that have easier access will still need to be cleaned out by hand. Overall, approximately 73.3 percent of the acequia will retain integrity, and importantly all of that will be in those areas accessible to the public and/or the acequia members. For these reasons, the Corps considers the proposed impacts to the Acequia del Llano to not be adverse. Table 1 summarizes historic properties, their eligibility, and effects from the proposed project.

Table 1 Historic Property Evaluation

LA Number	Description	Existing Eligibility	Corps Eligibility	Project Effects
N/A	Acequia del Llano	N/A	Eligible Criterion A	No adverse
LA 120650	Santa Fe Watershed Prisoner's Road	Eligible Criterion A	Eligible Criterion A	No adverse
LA 138426	Old Santa Fe Watershed Road	Not Determined	Not Determined	No adverse
LA 138429	Ditch serving SF Hydroelectric Plant	Eligible Criterion D	Not relocated	No adverse

The USACE, therefore, is of the opinion that the proposed Acequia del Llano rehabilitation project will have "No Adverse Effect to Historic Properties." Should previously undiscovered artifacts or features be unearthed during construction, work will be stopped in the immediate vicinity of the find, a determination of significance made, and the Corps will consult with your office and with Native American groups that may have concerns in the project area as to the best course of action.

If you have questions or require additional information regarding the Acequia Del Llano rehabilitation project, please contact Lance Lundquist, archaeologist, at (505) 342-3671 or me at (505) 342-3281.

Sincerely,

Julie Alcon
Chief, Environmental Resources Section

11/25/08
Date

I CONCUR
FOR KATHERINE SLICK
NEW MEXICO STATE HISTORIC PRESERVATION OFFICER

Enclosures

NMCRIS No. 111825

A 4.07-ACRE CULTURAL RESOURCES INVENTORY FOR THE ACEQUIA DEL LLANO SANTA FE COUNTY, NEW MEXICO

Prepared by

Lance Lundquist

With contributions by

Dana Price

U.S. Army Corps of Engineers
Albuquerque District

Prepared for

U.S. Army Corps of Engineers, Albuquerque District
4101 Jefferson Plaza NE
Albuquerque, NM 87109-3435
Office: (505) 342-3283; Fax: (505) 342-3668

New Mexico Annual State General Permit No. NM-08-193

Report No. COE-2008-011

October 27, 2008

NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

1. NMCRIS Activity No.:	2a. Lead (Sponsoring) Agency:	2b. Other Permitting Agency(ies):	3. Lead Agency Report No.:
111825	USACE, Albuquerque District		COE-2008-011

4. Title of Report: A 4.07-ACRE CULTURAL RESOURCES INVENTORY FOR THE ACEQUIA DEL LLANO, SANTA FE COUNTY, NEW MEXICO.

Author(s) Lance Lundquist

5. Type of Report ☐ Negative ☒ Positive

6. Investigation Type

☐ Research Design ☒ Survey/Inventory ☐ Test Excavation ☐ Excavation ☐ Collections/Non-Field Study
☐ Overview/Lit Review ☐ Monitoring ☐ Ethnographic study ☐ Site specific visit ☐ Other

7. Description of Undertaking (what does the project entail?): The Corps is assisting the Acequia Del Llano Association with a proposed rehabilitation of 1,920' (26.7%) of the acequia, beginning at the diversion structure. The purposes of the acequia rehabilitation project are to improve water delivery efficiency by limiting seepage and evaporative loss and to reduce maintenance required to clean sediment from the ditch.

8. Dates of Investigation: (from: 6/20/2008 to: 6/20/2008)

9. Report Date: October 27, 2008

10. Performing Agency/Consultant: USACE, Albuquerque District
Principal Investigator: Lance Lundquist
Field Supervisor: Lance Lundquist
Field Personnel Names: Jonathan Van Hoose

11. Performing Agency/Consultant Report No.: COE-2008-011

12. Applicable Cultural Resource Permit No(s): NM-08-193

13. Client/Customer (project proponent): USACE
Contact: Lance Lundquist
Address:
U.S. Army Corps of Engineers, Albuquerque District
4101 Jefferson Plaza, NE
Albuquerque, NM 87109
Phone: (505) 342-3671

14. Client/Customer Project No.: N/A

15. Land Ownership Status ***(Must be indicated on project map):***

Land Owner	Acres Surveyed	Acres in APE
Acequia Association(private)	4.07	4.07
TOTALS	4.07	4.07

16 Records Search(es):

Date(s) of ARMS File Review 6/27/2008	Name of Reviewer(s) Lance Lundquist	
Date(s) of NR/SR File Review 6/27/2008	Name of Reviewer(s) Lance Lundquist	
Date(s) of Other Agency File Review 6/27/2008	Name of Reviewer(s) Lance Lundquist	Agency USACE

17. Survey Data:

a. Source Graphics ☒ NAD 27 ☐ NAD 83
☐ USGS 7.5' (1:24,000) topo map ☐ Other topo map, Scale:
☒ GPS Unit Accuracy ☐ <1.0m ☒ 1-10m ☐ 10-100m ☐ >100m

b. USGS 7.5' Topographic Map Name / USGS Quad Code

Santa Fe, NM (1993)	35105-F8

c. County(ies): Santa Fe

17. Survey Data (continued):

d. Nearest City or Town: Santa Fe, New Mexico

e. Legal Description:

Township (N/S)	Range (E/W)	Section	¼ ¼ ¼
17N	10E	21	SE, SE, NW.
17N	10E	21	SW, SW, NE.
17N	10E	21	SE, SW, NE.
17N	10E	21	NW, NW, SE.
17N	10E	21	NE, NW, SE.

Projected legal description? Yes [ ], No [x] Unplatted [ ]

f. Other Description (e.g. well pad footages, mile markers, plats, land grant name, etc.): The acequia's diversion structure (and start of project) is Nichols Reservoir, located on the Santa Fe River on the east side of Santa Fe.

18. Survey Field Methods:
Intensity: ☒ 100% coverage ☐ <100% coverage

Configuration: ☐ block survey units ☒ linear survey units (l x w): **1,920' x 15m** ☐ other survey units (specify):

Scope: ☒ non-selective (all sites recorded) ☐ selective/thematic (selected sites recorded)

Coverage Method: ☒ systematic pedestrian coverage ☐ other method (describe)

Survey Interval (m): 15 Crew Size: 2 Fieldwork Dates: 6/20/2008

Survey Person Hours: 8 Recording Person Hours: 2 Total Hours: 10

Additional Narrative: An acequia associate member drove the Corps archaeologists to the acequia's diversion structure/the toe of Nichols Reservoir. Lance Lundquist surveyed the existing line while Jonathan Van Hoose walked the proposed new line adjacent to the access road, while the acequia member drove the vehicle to the end point.

19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.): NRCS soil designation is 300 Arnor gravelly sandy loam, 2 to 8 percent slopes and 301 Enmedio-Atalaya-Rock outcrop complex, 5 to 60 percent slopes 14 inches precipitation average, 130-150 frost-free days. Vegetation is Great Basin Conifer Woodland. Elevation is 7,400 with steep (40+ degree) slopes.

20. a. Percent Ground Visibility: 75 b. Condition of Survey Area (grazed, bladed, undisturbed, etc.): Visibility overall good, although reduced in forested areas. Area undisturbed except for access roads and acequia.

21. CULTURAL RESOURCE FINDINGS ☒ Yes, See Page 3 ☐ No, Discuss Why:

22. Required Attachments (check all appropriate boxes):
☒ USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn
☒ Copy of NMCRIS Mapserver Map Check
☐ LA Site Forms - new sites (*with sketch map & topographic map*)
☒ LA Site Forms (update) - previously recorded & un-relocated sites (*first 2 pages minimum*)
☐ Historic Cultural Property Inventory Forms
☐ List and Description of isolates, if applicable
☐ List and Description of Collections, if applicable

23. Other Attachments:
☐ Photographs and Log
☒ Other Attachments
(Describe): HWDSIF

24. I certify the information provided above is correct and accurate and meets all applicable agency standards.

Principal Investigator/Responsible Archaeologist: Lance Lundquist

Signature _____ Date 10/27/2008 Title (if not PI):

25. Reviewing Agency: USACE, Albuquerque
Reviewer's Name/Date John D. Schelberg

Accepted (X) Rejected ( ) 29 October 2008

Tribal Consultation (if applicable): ☒ Yes ☐ No

26. SHPO
Reviewer's Name/Date:

HPD Log #:

SHPO File Location:

Date sent to ARMS:

CULTURAL RESOURCE FINDINGS

[fill in appropriate section(s)]

1. NMCRIS Activity No.:	2. Lead (Sponsoring) Agency:	3. Lead Agency Report No.:
111825	**USACE, Albuquerque District**	**COE-2008-011**

SURVEY RESULTS:

Sites discovered and registered: 0
Sites discovered and NOT registered: 0
Previously recorded sites revisited (*site update form required*): **2**
Previously recorded sites not relocated ***(site update form required):*** **1**
TOTAL SITES VISITED: 3
Total isolates recorded: 0 **Non-selective isolate recording?** ☐
Total structures recorded (*new and previously recorded, including acequias*): **1**

MANAGEMENT SUMMARY: The Corps, at the request of the New Mexico State Engineer/Interstate Stream Commission and Acquia Del Llano Association (Association), is planning a project that would rehabilitate a 1,920-foot segment of the Acequia. Work would be conducted under the Water Resources Development Act of 1986 (Public Law 99-662), as amended. The Acequia is located in Santa Fe County, and is located to the east of Santa Fe in the Santa Fe River Canyon, with the acequia's diversion structure located at the toe of Nichol's Reservoir. The Acequia obtains water from the Santa Fe River, and the system as a whole provides water to 20 irrigators and approximately 30 acres of cultivated land.

The Corps proposes to rehabilitate the Acequia Del Llano by installing approximately 1,920 linear feet of continuous PVC irrigation pipe from the inflow below Nichols Reservoir to the property boundary of the Randall Davey Audubon Center. The pipeline would follow the downhill (north) side of an unpaved access road from the bottom of Nichols Reservoir to the Santa Fe Watershed Road and then would follow the north side of the Watershed Road until near the project end, where it would cross the road to rejoin the present ditch at the Audubon Center boundary. The objectives of the project are to improve water delivery efficiency by limiting seepage and to reduce the maintenance effort required to clean sediment from the ditch. Project construction is scheduled during the non-irrigation season beginning in November 2008 with an expected duration of about six weeks. The Acequia Del Llano members would be responsible for assuring operation and maintenance upon project completion.

The Corps would provide 75 percent of construction funding and is, therefore, the lead Federal agency for this project in terms of Section 106 of the National Historic Preservation Act. The Office of the State Engineer is the project sponsor, and with the local ditch association, would be responsible for the remaining 25 percent of construction costs. Project design and inspection would be undertaken by the USDA Natural Resources Conservation Service (NRCS).

Pursuant to 36 CFR 800.2, consulting parties in the Section 106 process identified for the Undertaking include the Corps, the Association, and the SHPO. Consistent with the Department of Defense's American Indian and Alaska Native Policy, signed by Secretary of Defense William S. Cohen on October 28, 1998, and based on the State of New Mexico Indian Affairs Department's 2008 Native American Consultations List, American Indian tribes that have indicated they have concerns in Santa Fe County were sent scoping letters regarding the proposed project. To date, the Corps has received no indication of tribal concerns that would impact this project.

Pursuant to 36 CFR 800.4, the Area of Potential Effects (APE) for the Undertaking is considered to be the construction footprint within the Association's right-of-way (ROW). Access and staging is provided by existing roads and facilities. Pursuant to 36 CFR 800.4(b), historic properties were identified by Corps archaeologists on June 20, 2008, as presented in the enclosed cultural resources survey. The survey was

conducted within Association (private) property.

No new archaeological sites or Isolated Occurrences were encountered during this survey in the project area, other than the acequia itself. Three historic properties intersect the current project: LA 120650 and LA 138426, both dirt roads used to access Nichols Reservoir, and LA 138429, an abandoned ditch that provided water to the now-abandoned hydroelectric plant located 725 m downstream.

LA 120650 was previously recorded in 1997. The site form for LA 120650 indicates that the road dates to at least 1899, as it is on a surveyor's map from that year. It further states that the road was probably made by prison crews in the early 20th century to reach homesteads in the canyon and to access the reservoirs. The site continues in use today as the main route to access the reservoir, and is a well-graded dirt and gravel road in good maintenance. This road serves as the primary route into the project area, and is crossed once by the Acequia Del Llano. The new proposed alignment for the acequia would roughly follow this road for approximately 325 m.

LA 138426 was previously recorded in 2002. The site form for LA 138426 indicates that the road dates to at least 1883, as it is on a United States Government Land Office map from that year. The site continues in use today as a route to access the toe of Nichols Reservoir, and is a narrow dirt and gravel road in moderate maintenance. This road serves as the route to the acequia's diversion structure, and the acequia follows the road for approximately 150 m. The new proposed alignment for the acequia would roughly follow the existing alignment. The SHPO has stated that it requires additional information to consider the eligibility of this site (HPD Log 68039). The Corps does not find that sufficient information is available to evaluate the significance of the entire road, but the section in the Corps' project area is not, by itself, considered significant. The segment of this road in the project area is short and retains only an alignment that may be considered historic (i.e., no culverts, crossings, etc; it is a simple dirt road).

Both historic dirt roads (LA 120650 and LA 138426) will retain their integrity in terms of those characteristics that make them eligible for inclusion in the NRHP. No historic culverts or other features will be affected, and the road alignment and form will remain the same. No information potential or association with either road will be significantly affected. The Corps recommends that this project will have a minor, but non-adverse effect to LA 120650 and LA 138426.

LA 138429, the High Line Ditch, was previously recorded in 2002. LA 138429 served as the ditch to carry water to Two Mile Dam and Reservoir, for use by the Santa Fe hydroelectric plant. The High Line Ditch dates to 1902, and was abandoned in 1943. LA 138429 was not relocated during the current survey; as such, no statement of evaluation or significance is provided. Based on the ARMS map data, the Acequia Del Llano crosses this site in two places, both of which coincide with road crossings. It is likely that the portions of this site in the project area have been obliterated by the roads and road maintenance activities. At any rate, the ditch was not observed in either the existing or the proposed alignment. The Corps recommends that this project will not have an adverse effect to LA 138429.

The Acequia Del Llano is considered eligible for inclusion to the NRHP under Criterion A for its association with events important to the growth and settlement of Santa Fe, and for its association with the use of traditional water irrigation in New Mexico. With the exception of the portion within the project area, the integrity of the system is good; the original form, function, and alignment have not significantly changed over the last century. In the project area, the form of the acequia was changed: the diversion structure has changed by the placement of Nichol's Reservoir in 1943, and about 1,000 feet of the acequia has been piped to deal with continual problems associated with the acequia's location in a steeply wooded canyon. Overall, the 1.5 mile acequia is approximately 80 percent intact.

This project involves the proposed rehabilitation of the Acequia Del Llano. This project has the potential to adversely affect those characteristics of the property that qualify it for inclusion in the NRHP. The proposed project will involve piping approximately 26.7 percent of the acequia (1,920 feet), and will shift its alignment from the steep slopes of the forested canyon to the access roads. However, about half of this section of the acequia was previously piped by the acequia association, in response to repeated failures, clogs, and poor water delivery.

When considering adverse effects, the Corps considers acequias in the context of their historic use. Acequias, perhaps more than any other feature type, have throughout time been repeatedly modified in response to problems facing the acequia association. At the same time acequia association members available to undertake maintenance activities are, by past standards, few in number, and older. What is important to the modern acequia members is that they are able to continue deliverance and use of the water in a traditional way. This project will help the acequia members continue to use this acequia, and the water delivered will be in the same form, function, and alignment when it reaches those acequia member's properties. The Corps' solution is consistent with the partial piping the acequia association—the historic users of the acequia—have already been engaged in at this problem section of the acequia. The portion to be piped has been extensively modified, and no longer retains integrity. In addition, it is located—due to safety concerns related to Nichols Reservoir—in a secured area, inaccessible to the public. No member of the public, and few members of the acequia association, will even realize that a change has taken place.

For these reasons, the Corps considers that the basic integrity of this small acequia system will remain intact after this project. The acequia members will still receive their water in traditional ways, and areas of the acequia that have easier access will still need to be cleaned out by hand. Overall, approximately 73.3 percent of the acequia will retain integrity, and importantly all of that will be in those areas accessible to the public and/or the acequia members. For these reasons, the Corps considers the proposed impacts to the Acequia Del Llano to not be adverse.

IF REPORT IS NEGATIVE YOU ARE DONE AT THIS POINT.

SURVEY LA NUMBER LOG

Sites Discovered:

LA No.	Field/Agency No.	Eligible? (Y/N, applicable criteria)

Previously recorded revisited sites:

LA No.	Field/Agency No.	Eligible? (Y/N, applicable criteria)
LA 120650		Y, Criterion A
LA 138426		Not determined

Site Not Relocated: LA 138429

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CHAPTER 1
INTRODUCTION AND PROJECT DESCRIPTION

Lance Lundquist and Dana Price

Purpose of the Survey and Project Background

The U.S. Army Corps of Engineers (Corps), Albuquerque District, in cooperation with, and at the request of, the New Mexico State Engineer's Office and the members of the Acequia Del Llano, is planning a project to rehabilitate the Acequia Del Llano, Santa Fe County, New Mexico.

The proposed rehabilitation work on the Acequia Del Llano would be conducted under Section 1113 of the Water Resources Development Act of 1986 (Public Law 99-662; 33 U.S.C. 2201 et. seq.), as amended. The Act authorizes the Acequia Rehabilitation Program for the restoration and rehabilitation of irrigation ditch systems (acequias) in New Mexico. The Acequia Del Llano rehabilitation project also qualifies under Section 215 of the Flood Control Act of 1968, Public Law 90-483, as amended. Section 215 provides that the Secretary of the Army may enter into an agreement to credit or reimburse the costs of certain work accomplished by States or political subdivisions thereof, which later is incorporated into an authorized project. The Secretary of the Army, acting through the Chief of Engineers, and, when he determines it to be in the public interest, may enter into agreements providing for reimbursement to States or political subdivisions thereof for work to be performed by such non-Federal public bodies at water resources development projects authorized for construction under the Secretary of the Army and the supervision of the Chief of Engineers.

Acequia Del Llano diverts water from the Santa Fe River at the Nichols Reservoir dam; the acequia's priority date for water appropriations rights is after 1877 and before 1907 (New Mexico Office of the State Engineer 1987; Snow 1988). At the bottom of the dam, an outlet structure and flow meter control water flow into a pipe that supplies the acequia. The main ditch is approximately 1.5 miles long. Approximately 1,000 feet of the main ditch, mainly in the proposed project area, has intermittent sections of plastic polyvinyl chloride (PVC) pipe or is (in limited high-problem areas) lined with concrete. The remaining length of the ditch, in particular near the properties that it serves, is earthen

The Acequia currently serves 18 families and two organizations: the Randall Davey Audubon Center and the City of Santa Fe Water Company. The Acequia irrigates approximately 30 acres of gardens and orchards; major crops include vegetables, apples, cherries, pears and peaches.

Project Description and Location

The Corps proposes to rehabilitate the Acequia Del Llano by installing approximately 1,920 linear feet of continuous PVC irrigation pipe from the inflow below Nichols Reservoir to the property boundary of the Randall Davey Audubon Center. The pipeline would follow the downhill (north) side of an unpaved access road from the bottom of Nichols Reservoir to the

Santa Fe Watershed Road and then would follow the north side of the Watershed Road until near the project end, where it would cross the road to rejoin the present ditch at the Audubon Center boundary (see Figure 1.1). The objectives of the project are to improve water delivery efficiency by limiting seepage and to reduce the maintenance effort required to clean sediment from the ditch. Project construction is scheduled during the non-irrigation season beginning in November 2008 with an expected duration of about six weeks. The Acequia Del Llano members would be responsible for assuring operation and maintenance upon project completion.

The Corps would provide 75 percent of construction funding and is, therefore, the lead Federal agency for this project in terms of Section 106 of the National Historic Preservation Act. The Office of the State Engineer is the project sponsor, and with the local ditch association, would be responsible for the remaining 25 percent of construction costs. Project design and inspection would be undertaken by the USDA Natural Resources Conservation Service (NRCS).

The primary objective of the acequia rehabilitation project is to improve the efficiency of water delivery to the acequia members by minimizing evaporative and seepage losses from the earthen ditch segments. A secondary benefit of the proposed project would be to reduce maintenance costs for the members of the acequia.

Acequia Del Llano traverses the steep slopes of Santa Fe Canyon. Currently, the earthen portions of the ditch experience water losses to seepage and evaporation. The sections of the ditch that have been placed in pipe are not continuous and also lose water to seepage. Maintenance of the earthen ditch is time-consuming and costly due to frequent accumulation of sediment and debris from the slope above the acequia.

The project area is located in Santa Fe Canyon below Nichols Reservoir and immediately east of the municipal boundary of the city of Santa Fe, New Mexico (Figure 1.1).

Land Ownership

Land in the project area is privately owned by members of the Del Llano Acequia. The land adjacent to the Acequia Del Llano in the project area is owned by the City of Santa Fe and by the Audubon Society.

Project Personnel and Schedule

Lance Lundquist and Jonathan Van Hoose, Corps archaeologists, conducted the survey on June 20, 2008. Lance Lundquist prepared this report, adapting and incorporating some material from an environmental assessment prepared by Corps biologist Dana Price (USACE 2008). John Schelberg, Corps archaeologist, peer-reviewed this document.

The project proponents would prefer construction between irrigation seasons, but prior to snowfall (i.e., November or early December) of 2008.

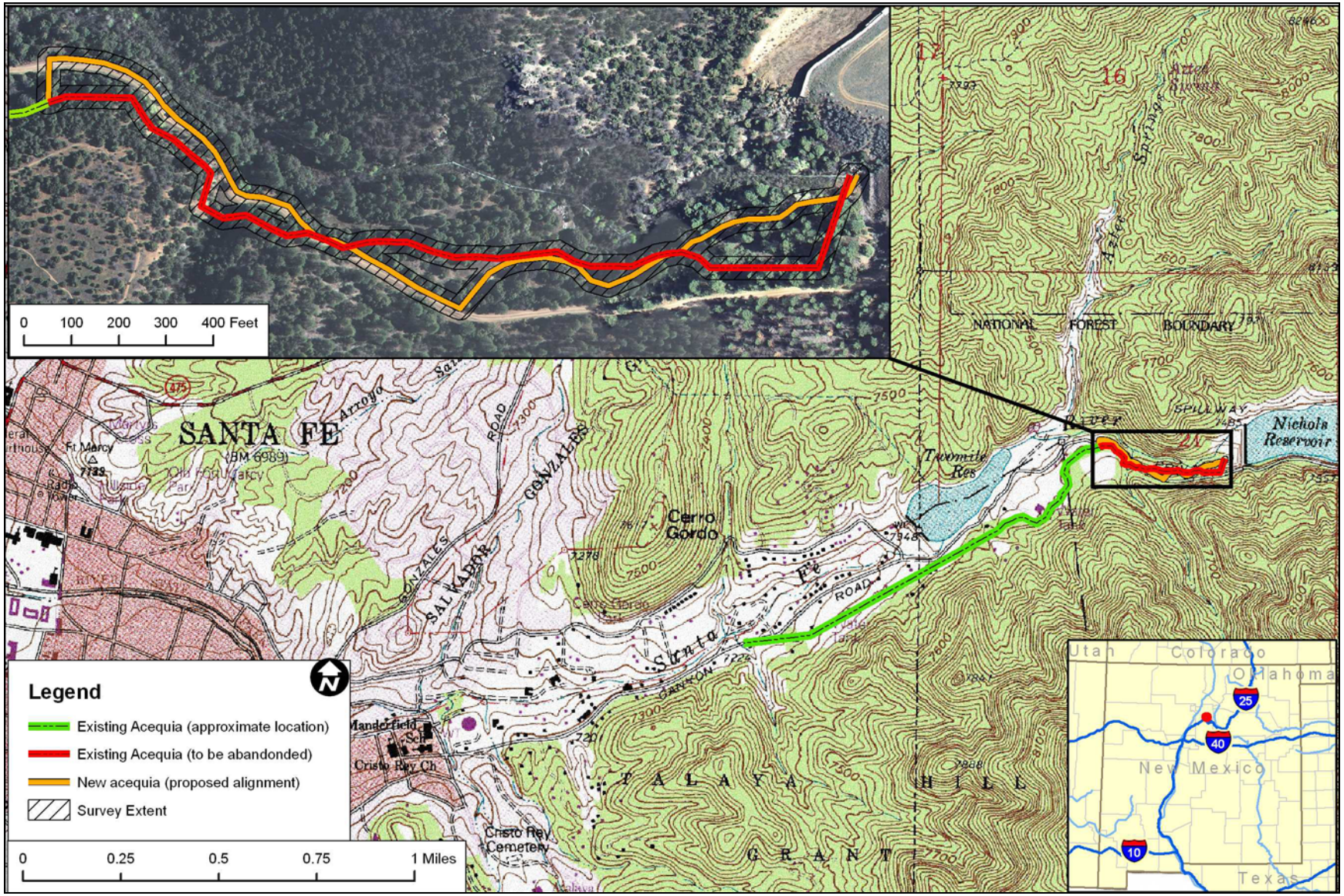

Figure 1.1 Location of proposed acequia project. USGS 7.5' Santa Fe, NM (1993) USGS 35105-f8 and 2004 aerial imagery.

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CHAPTER 2
ENVIRONMENTAL SETTING

Lance Lundquist and Dana Price

Natural and Cultural Environment

Santa Fe County's climate is semiarid but highly varied because of the wide range in elevation and the uneven topography. Elevations in the Santa Fe River watershed range from 12,408 feet above mean sea level at the top of Lake Peak to 5,220 feet at the Rio Grande. The elevation at the project site is about 7,400 feet. Slopes are extremely steep (often 40 degrees or greater) in the upper watershed from the ridgeline down to the zone where the pre-Cambrian rocks of the Sangre de Cristos are overlapped by the deep sediments of the Santa Fe Group (Grant 2002). The average temperature at Santa Fe in January is 30.3 degrees Fahrenheit; in July, the average is 70.7 degrees Fahrenheit. Daily variation in temperature is large and commonly exceeds 30 degrees Fahrenheit. Average annual precipitation ranges from about 9 to 20 inches within the county and is 14 inches in Santa Fe (U.S. Department of Agriculture 2008). However, precipitation is characterized by extremes, with large storms shaping the landscape (Goldman 2003). About one-third of the annual average precipitation falls during the "monsoon" months of July to September, with most falling as brief, generally heavy thunderstorms (U.S. Department of Agriculture 2008). Before construction of dams on the Santa Fe River watershed, heavy thunderstorms would cause destructive flooding in Santa Fe, as described by Goldman (2003).

Soils within the project area are mapped in two units (USDA 2008). The Santa Fe River floodplain is categorized as Morenda, Fiesta, and Espanola soils, 1 to 85 percent slopes. The side of the valley between the floodplain and Upper Santa Fe Watershed Road is mapped as Arnor gravelly sandy loam, 2 to 8 percent slopes.

Morenda, Fiesta and Espanola soils occur on floodplain, valley slopes and stream terraces. These soils consist of alluvium derived from granite, gneiss, and schist and are moderately well drained, nonsaline, and occasionally or never flooded. The depth to water table varies from about 39 to 59 inches in Morenda soils to more than 80 inches in Fiesta and Espanola soils.

Morenda soil is in the cottonwood-willow-sedge ecological site (*Populus fremontii/Salix/Carex*) and would not be affected by the proposed project because of its topographic position along the stream, below the area of action. Espanola soils are in the Ponderosa pine-Arizona fescue ecological site (*Pinus ponderosa/Festuca arizonica-Danthonia parryi*). Fiesta soils are associated with the Ponderosa pine/Rocky Mt. juniper/Gambel oak-mountain mahogany ecological site (*Pinus ponderosa-Juniperus scopulorum/Quercus gambelii-Cercocarpus montanus/Poa fendleriana-Muhlenbergia montana*). The vegetation observed on the site visit is similar to this ecological site description for the upstream portion of the proposed pipeline route.

Arnor gravely sandy loam is a well-drained, nonsaline soil with depth of 59 to 79 inches to paralithic bedrock. Depth to water table is more than 80 inches. The ecological site is pinyon-juniper (*Juniperus monosperma-Pinus edulis/Bouteloua gracilis*). This soil map unit

corresponds to the higher topographic positions along Santa Fe Watershed Road. The ecological site describes vegetation on the higher slopes of the project area and the portion of the pipeline route that follows Santa Fe Watershed Road.

The project area is part of the Great Basin Conifer Woodland biotic community (Brown and Lowe 1977; Brown 1982). Corps personnel visited the site on June 20, 2008. Photographs taken along the acequia route show the existing vegetation condition (Figure 2.1). Additional plants photographed by a Canyon resident may be viewed at the Canyon neighborhood website, http://www.sfcanyon.org/. More detailed information on the vegetation of the watershed is given in Grant (2002) and Goldman (2003). The Santa Fe River channel near the diversion point supports a riparian community of alder, willows, and birch, with an understory of sedges, rushes and horsetails. The canyon slopes are forested with ponderosa and pinyon pine in the lower canyon and pinyon-juniper on the higher slopes. The existing ditch supports a thin band of lush vegetation, including some riparian species. Immediately along the Watershed Road the vegetation is typical of a drier open roadside with the occasional prickly pear cactus, and dominant cover of grasses and forbs such as blue and sideoats grama, needle-and-thread grass, Western wheatgrass, penstemon, and various composites.

Figure 2.1 Project Area, overview. Picture taken from the west end of the project area.

A variety of mammals are known or expected to occur within the project area and the Great Basin Conifer Woodland biotic community. Mammals documented in Santa Fe Canyon by the Randall Davey Audubon Center include: Black Bear, Raccoon, Ringtail, Longtail and shorttail Weasels, Striped Skunk, Coyote, Gray Fox, Bobcat, Porcupine, Rock Squirrel, Red Squirrel, Abert's Squirrel, Least Chipmunk, Deer Mouse, White-throated Woodrat, Black-tailed Jack Rabbit, Mountain Cottontail, and Mule Deer.

Birds to be expected in the canyon in fall and winter include the White-winged Dove, Northern Flicker, Steller's jay, Western Scrub-jay, Black-billed Magpie, Common Raven, Bushtit, Black-capped and Mountain chickadees, White-breasted Nuthatch, Townsend's Solitaire, Spotted and Canyon Towhees, Dark-eyed Junco, and House Finch. More complete species lists are available for the area from Randall Davey Audubon Center at http://nm.audubon.org/center/Natural_History.html and The Nature Conservancy at http://www.nature.org/wherewework/northamerica/states/newmexico/files/santa_fe_canyon_bird_checklist.pdf.

Results of Records Check

An on-line records check of the New Mexico Office of Cultural Affairs, Historic Preservation Division, Archaeological Records Management Section's (ARMS) database was conducted by Lance Lundquist on June 27, 2008. Table 2.1 lists archaeological surveys that have been conducted within 0.5 miles of the project area. A screen-capture of the ARMS map server search is provided in Appendix A, Figure A.1.

Table 2.1 Surveys conducted within 0.5 miles of project area.

NMCRIS Number	Performing Agency	Survey End Date	Acres	Number of Sites	Survey Type
59303	Espanola Rd	1/21/1998	48	1	Intensive
70357	Espanola Rd	8/16/1999	12	0	Intensive
74406	Espanola Rd	4/23/2001	30	1	Intensive
85871	KAL	12/30/2003	2129	15	Intensive

According to the ARMS database and Corps' records, four surveys have been conducted within 0.5 miles of the project area. These surveys total 2,219 acres, and resulted in the recording of 17 historic properties. This translates into 0.77 historic properties per 100 acres surveyed, less than half the average for New Mexico. The Corps contacted ARMS staff for information, and as of November 6, 2006, approximately 12 percent of New Mexico has been surveyed, for a total 9,072,164 acres and 148,540 sites. This equals 1.64 sites per 100 acres. Probably due to the steep terrain, site density is lower in the project area than for the state in general, and the Santa Fe area in particular. Table 2.2 lists archaeological sites located within 0.5 miles of the project area.

Table 2.2 Known archaeological sites within 0.5 miles of project area.

LA Number	Site Type	Occupation Type	Site Size (acres)
143725	Structural	Historic	0.65
138429	Structural	Historic	3.21
114260	Structural	Historic	1.92
138426	Structural	Historic	0.77
120650	Structural	Historic	14.91

There are five known archaeological sites within one-half mile of the project area. All five sites date to the historic period, and all of the sites contain features. Three of the properties are shown to intersect the current project: LA 120650 and LA 138426, both dirt roads, and LA 138429, an abandoned ditch that provided water to the now-abandoned hydroelectric plant located 725 m downstream.

Results of Tribal Consultation

Consistent with the Department of Defense's American Indian and Alaska Native Policy, signed by Secretary of Defense William S. Cohen on October 28, 1998, and based on the State of New Mexico Indian Affairs Department's 2008 Native American Consultations List, American Indian tribes that have indicated they have concerns in Santa Fe have been contacted regarding the proposed project, including the Comanche Nation of Oklahoma, the Hopi Tribal Council, the Jicarilla Apache Nation, the Kiowa Tribe of Oklahoma, the Navajo Nation, Ohkay Owingeh, the Pueblo de Cochiti, the Pueblo of Isleta, the Pueblo of Nambe, the Pueblo of Pojoaque, the Pueblo of San Ildefonso, the Pueblo of Santa Clara, and the Pueblo of Santo Domingo. To date, the Corps has received no indication of tribal concerns that would impact this project.

Culture History and Literature Review

The following culture history overview provides a general context for the last 14,500 years of known occupation in the project area—from the Ice Age to the present—and is based largely on the works of Cordell (1979) and Stuart and Gauthier (1988). The proposed project is within the Santa Fe District of the Northern Rio Grande archaeological region (Crown et al. 1996). Specific citations are provided from other referenced sources.

The Paleoindian Period (c. 12,500 BC to 5500 BC)

Humans were present in North America by approximately 12,500 BC (Feidel 1999), and the Paleoindian period dates from this time to approximately 5500 BC. The most distinctive artifact types associated with the Paleoindian period are lanceolate spear points, many of which exhibit distinct basal flutes (large flake scars extending from the point base). Throughout the Great Plains and the Southwest, these points have been found associated with large ice-age mammal species such as mammoths, mastodons, and several extinct species of bison. While these finds have contributed to an image of Paleoindians as specialized big-game hunters, in reality they probably pursued more diverse subsistence strategies. The period appears to be characterized by low population densities and high mobility, resulting in Paleoindian sites being rare and having low archaeological visibility.

The Archaic Period (5500 BC to AD 400/600)

The Archaic Period extends from approximately 5500 BC to AD 400 and represents a continuation of a hunting-gathering lifestyle; however, the range of animal species is similar to those found today, without many of the larger species (e.g. mammoth, camels) that became extinct after the end of the last ice age (cf. Irwin-Williams 1973). This represents the primary difference from the preceding Paleo-Indian Period. During the Archaic, both large and small animals were hunted and trapped. Based on the increasing presence of manos and metates

(grinding stones usually used to grind corn or other seeds), it is clear that the processing of plants became more important later in the period. Towards the end of the Archaic, longer-term habitation sites that include shallow pithouses (structures at least partly dug into the ground) are found in central New Mexico.

Two major changes occurred towards the end of the Archaic. Indications of maize appear in the archaeological record by about 2000 BC; however, maize became relatively more common after 1000 BC. Finally, the bow and arrow appeared around AD 500 and replaced the spear as the primary weapon.

The Ancestral Pueblo Period (AD 400/600 to AD 1540)

The Archaic Period is followed by the Ancestral Pueblo Period. Depending on the location within New Mexico, between three and five major phases are recognized within this period and are based on a host of characteristics, including house forms and construction techniques, settlement patterns, pottery types, and other elements of material culture. One of the key new developments during this period is the appearance and proliferation of pottery; because stylistic changes in the ceramics over time are much better understood by archaeologists, the appearance of pottery makes Ancestral Pueblo sites much easier to place within a precise chronological sequence than preceramic sites.

The first chronological sequence developed for this period in the Southwest was the Pecos Classification (Kidder 1924: 84-88), which includes the Basketmaker III (AD 600-750), Pueblo I (AD 750-900), Pueblo II (AD 900-1100), Pueblo III (AD 1100-1300), and Pueblo IV (1300-1600) periods. Wendorf and Reed (1955) proposed an alternative sequence for the northern Rio Grande valley, which was defined largely on the basis of specific sets of changes in settlement pattern and site structure; these periods are termed Developmental (AD 400/600 to AD 1200), Coalition (AD 1200 to AD 1325), and Classic (AD 1325 to approximately AD 1540). The following discussion follows this classification scheme.

A number of general trends characterize the Ancestral Pueblo period in the northern Rio Grande valley. While hunting and gathering continued, reliance on agricultural products continually increased. Pithouse villages with larger communal structures indicate larger social groups living in one location for longer periods of time. Small living and storage rooms built on the ground surface (rather than into the ground, as with earlier pithouses) begin to appear early in this period, and increase in size and abundance. In later periods, above-ground architecture completely replaces pithouses for living and storage functions, with below-ground structures then being limited to communal and ceremonial use.

As populations increased, these small houses were replaced with large buildings of up to several hundred rooms made of rock and/or adobe. Not all of the rooms in these connected structures were necessarily occupied at once; often the large roomblocks grew by accretion, with older rooms being abandoned and new rooms being constructed over time. Overall, the Ancestral Pueblo period saw fundamental changes in architecture, shifts and growth in population, and agricultural reliance in the northern Rio Grande valley.

DEVELOPMENTAL PERIOD (AD 400/600 TO AD 1200)

The Developmental Period, dating between AD 400/600 and 1200, represents a time of gradual transition from the Archaic period, and includes the appearance and spread of new technologies including ceramics and the bow and arrow. It is also characterized by the construction of more elaborate, substantial pithouses (Cordell 1979:42; Schmader 1994). The period is often subdivided into Early (AD 600 to 900) and Late (AD 900 to 1200).

The Developmental period is characterized by increasing sedentism made possible by greater reliance on agriculture. Increased precipitation during this period made intensified maize cultivation possible. A more sedentary existence is suggested also by the presence of pottery and large pit structures that were occupied for longer periods during the year (Allen and McNutt 1955; Schmader 1994), and by increased numbers of storage cists both inside and outside pithouses (Schmader 1994). Early Developmental ceramics consist of pottery types widely distributed throughout the Southwest, including both locally manufactured wares and others associated with the Mogollon culture area to the south (Anschuetz 1984). Early in the period the associated ceramics are similar to those found throughout northern New Mexico; later in time the stylistic attributes, including paint, design, and temper, become more locally distinctive. Pithouses during this time were more substantial than before, with structural elements reflecting greater investment in domestic architecture than previously.

Dispersed, seasonal settlements inhabited by people with fluid group memberships are believed to characterize this period. Surface structures appeared toward the end of the period, along with an increase in site size (Anschuetz 1984: 27; Wendorf and Reed 1955: 140).

The Developmental period also saw changes in climatic conditions. The Early Developmental period witnessed an overall increase in precipitation, but with short-term periodicity and great variance and unpredictability in precipitation levels. Anschuetz (1984) suggests that populations were growing and that this increased density constrained mobility and increased competition for limited subsistence resources. As a result, populations were forced to increase agricultural production, while uplands provided buffers against potential floods on the floodplain and would have allowed dispersion for dry farming during favorable periods of rainfall. During the eleventh century, rainfall patterns shifted to greater short-term predictability and longer-term periodicity. According to Anschuetz, this resulted in more intensive but seasonal use of upland areas, probably in response to increasing population densities.

COALITION PERIOD (AD 1200 TO 1325)

The Coalition Period, AD 1200 to 1325, is marked by a dramatic population increase in many portions of the northern Rio Grande region after around AD 1250, hypothesized to originate from an indeterminate combination of migration from other areas such as Mesa Verde, Chaco Canyon, or portions of west central New Mexico; and internal population growth. Crown et al. (1996) find strong evidence for population shifts throughout the region between AD 1150 and AD 1350; this was coincident with an overall trend toward increases in the number and density of sites, and a shift from dispersed habitations to aggregated residences. An important theme in the interpretation of this period is the relationship between a collapsing core area (the San Juan Basin) and its developing periphery (the Rio Grande valley) (Stuart and Gauthier 1988; Tainter 1987).

During this period, populations appear to shift throughout the northern Rio Grande. Other areas experience different degrees of population growth, likely stemming both from internal population increase and the arrival of groups from elsewhere. Regardless of the actual pace or trajectory of population growth, all regions experience aggregation (the consolidation of greater numbers of people into smaller numbers of communities) at more or less the same time between AD 1250 and AD 1300 (Crown et al. 1996). In some areas, this shift precedes population increase, but follows it in others. An apparent jump in the percentage of population living in aggregated settlements occurs around AD 1275 in all areas.

In general, Coalition period habitations continue the shift from pithouses to above-ground structures (Cordell 1979), and sites generally consist of linear or L-shaped room blocks (containing from two to 200 rooms, with structures containing between 13 and 30 rooms the most common) which tend to be located near major drainages (Stuart and Gauthier 1988). By their measure, Crown et al. (1996) note that nearly all habitation sites in the northern Rio Grande contained more than 50 rooms by AD 1300 (Crown et al. 1996: 199). In decorated ceramics, there is a shift from the use of mineral paint to organic paint represented by the appearance of Santa Fe Black-on-white (Cordell 1979).

Classic Period (AD 1325 to 1540)

Substantial social and technological change is evident during the Classic period, beginning around AD 1325 (Cordell 1979; Stuart and Gauthier 1988; Wendorf and Reed 1955). By this time, the majority of the northern Rio Grande population lived in large aggregated settlements (Crown et al. 1996), some containing more than 1,000 rooms (Stuart and Gauthier 1988). The development of glaze-paint pottery occurred during this period, allowing relatively fine-grained chronological placement based on a series of stylistic and technological changes in the Rio Grande Glaze sequence. Glaze wares replaced black-paint wares in most regions (with the exception of the Jemez area, where Jemez Black-on-white persists for some time), and the appearance of this technology has been interpreted as evidence for migration from the west (Shepard 1942:197–199), diffusion of ideas from the Zuni and Little Colorado areas (Wendorf and Reed 1955:150, 161), local development, or a combination of the three.

The end of the Classic period saw the arrival of the Spanish, first with Coronado's entrada of 1540, and then with the first establishment of a Spanish colony in 1598. By the time of European contact, some of the large Classic pueblos had already been abandoned for nearly a century. Theories on these abandonments include overpopulation, overexploitation of natural resources, drought, and conflict (Cordell 1979:45). End dates for the Classic period have been alternatively designated as 1540, the year of Coronado's entry into the area; and approximately 1600, a time when the establishment of a permanent colony (1598) began to impinge significantly on Pueblo life. This report uses the earlier date, while recognizing the inherently arbitrary nature of using this as a cutoff.

The Historic Period (AD 1540 to Present)

In general, this period in central and northern New Mexico is characterized by rapid change and acculturation (the exchange and adoption of cultural elements such as beliefs and behaviors between groups coming into contact with one another) among Indians, Spanish, Mexicans, and Anglo-Americans. This period, dating from about AD 1540 to the present, can be seen as a series

of phases reflecting aspects of social interaction between different groups. In broad outline, key elements of these include (in chronological sequence): Spanish exploration followed by colonization; the Pueblo Revolt; the post-Revolt colonial period under Spanish and then Mexican rule; the annexation of New Mexico as a United States territory; and U.S. statehood.

Currently, there are four major linguistic groups among the Pueblo Indians of the Southwest—Zuni, Uto-Aztecan (Hopi), Tanoan, and Keres. The Tanoan language family is divided into three primary subgroups: Tiwa, Tewa, and Towa.

Pueblo population throughout the northern Rio Grande region faced a general decline during this period as a result of multiple factors, including disease. In addition to missionary efforts to convert indigenous groups to Christianity, this period was also characterized by concerted efforts by the Spanish to consolidate control over Pueblo populations through strategies such as *reducción* (Spicer 1962), a policy of forced concentration of populations into a smaller number of more easily controlled settlements. In some portions of the Rio Grande, these efforts likely led in part to native dispersal into peripheral areas in order to escape Spanish control (Kulisheck 2002).

THE SPANISH COLONIAL PERIOD (AD 1540 TO 1821)

When Coronado entered New Mexico in 1540, he found a series of large, aggregated villages concentrated along the length of the Rio Grande valley; the Rio Grande is one of the few parts of the Southwest where such aggregated population centers persisted into the Historic period. Coronado's 1540–1542 entrada noted the province of Yuque-Yunque, incorporating the pueblo of Ohkay Owingeh as well as several other large villages in the Chama area, possibly including the large site of Sapawe (Schroeder 1979). Coronado's entry into the Southwest was followed by intermittent additional Spanish forays until 1598, when Juan de Oñate established a permanent colony, with his primary base in the vicinity of Ohkay Owingeh near the location of modern Española (Simmons 1979). In 1610, Pedro de Peralta moved Oñate's settlement to Santa Fe, the new capital of New Spain—and the site of the project area (Roberts and Roberts 1988:32).

The Pueblo Revolts of 1680 and 1696

The last decades of the seventeenth century were characterized by significant upheaval, as conflict escalated between indigenous populations and the Spanish colonial presence. The Pueblo Revolt of 1680 was a unified action on the part of several pueblos, in alliance with other indigenous groups including Apache and Navajo, who together successfully drove the Spanish out of New Mexico for more than a decade (Knaut 1995; Sando 1979). Twelve years later (AD 1692), Diego de Vargas led a Spanish contingent to retake New Mexico, beginning a process of reconquest that was intermittently violent between approximately 1692 and 1696. Continued resistance culminated in a second revolt in 1696, which was of smaller scale than the 1680 revolt and was not ultimately successful (Edelman 1979; Espinosa 1988). After the second revolt of 1696 was suppressed, there was never again such significant organized resistance by Rio Grande pueblos against Spanish rule.

Post-Revolt Period to 1821

Before the Pueblo Revolt of 1680, Spanish settlers generally maintained scattered estates (haciendas) in close proximity to Pueblo villages, which served as sources of labor (Cordell

1979:115), but after the reconquest this shifted to a focus on the greater security afforded by living in villages (ranchos). While the shift to rancho settlement is partly due to decreasing Pueblo population sizes and increasing Spanish population size (Cordell 1979:118), it was also likely a response to both perceived threat of Pueblo action, and to increasingly common raids on both Spanish and Pueblo communities by Apache, Navajo, and Comanche groups. Early in the eighteenth century, these ranchos were still fairly scattered, but increasing need for greater security encouraged the construction of defensible plazas later in the century (Cordell 1979: 118). Santa Fe remained Spain's provincial seat until the outbreak of the Mexican War of Independence in 1810 (Roberts and Roberts 1988).

The Mexican Period (AD 1821 to 1846)

The nineteenth century saw a series of geopolitical shifts resulting in New Mexico changing hands more than once. The Republic of Mexico was founded in 1821, but Mexican control over New Mexico only lasted a quarter of a century before New Mexico was annexed by the United States in 1846 (Cordell 1979; Weber 1982). Raiding on Pueblo and Hispanic communities by nomadic groups increased during the Mexican period, encouraging further aggregation for defense (Cordell 1979). Anglo settlers began to enter the area as well during this period, a pattern which intensified after annexation. Settlement and livestock grazing expanded into previously unoccupied regions (Pratt et al. 1988:53), and farming continued to be a central activity. Removing Spain's encumbrances on free trade opened trade networks, with Santa Fe the end-point of the Santa Fe Trail, which brought goods from the East, starting in Independence, Missouri, to the Southwest (Roberts and Roberts 1988:90–92).

The Territorial and Statehood Periods (AD 1846 to 1912 and AD 1912 to Present)

The nineteenth and twentieth centuries saw further economic and political changes affecting New Mexico, including an increase in trade between New Mexico and the United States, manifested in part in the development of the Santa Fe Trail; growth of mining activities; the advent and development of railroad networks; and lumber operations. In 1846, the United States declared war on Mexico, and General Stephen W. Kearny led the U.S. Army to claim the New Mexico Territory for the United States. By 1848 the United States officially gained New Mexico through the Treaty of Guadalupe Hidalgo (Roberts and Roberts 1988). Annexation by the United States also led to the establishment of American military outposts throughout New Mexico, as well as conflict with and relocation of various indigenous groups, and the creation of Indian reservations. New Mexico became a state in 1912, with Santa Fe as its capital. Recently Santa Fe is the seat of government, as well as an art capital and tourist destination.

The proposed project area is located on the eastern outskirts of Santa Fe, up the steep-sloped canyon of the Santa Fe River. There is little archaeological or historic evidence of significant use of the project area until 1800s—most of the history of the project area is centered on water for the growing city of Santa Fe. Significant developments include construction of Two Mile Dam in the early 1890s (with an associated hydroelectric plant and grain mills) followed by McClure Reservoir in 1928 and Nichols Reservoir in 1943 (HAER No. NM-4), as well as the Acequia Del Llano in the 1800s, the focus of this undertaking.

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CHAPTER 3
FIELD METHODS

Lance Lundquist

Size of the Survey Crew, Transect Interval(s) and Transect Method

The survey crew consisted of two Corps archaeologists, Lance Lundquist and Jonathan Van Hoose. Corps archaeologists walked the center of both the existing and the new alignment, for a total of 4.07 acres (Figure 1.1). Locational information was recorded with a Garmin GPS. Access and staging will use existing roads and facilities; no undisturbed ground will be required for either staging or access.

Field Conditions

Field conditions during the survey were sunny with high cloud cover, dry, and good visibility. Temperatures averaged approximately 84 degrees Fahrenheit, and ground visibility was fairly good over most of the study area, with occasional areas obscured under thick vegetation.

Methods of Site Location and Site Recording

Prior to going into the field, a high-resolution aerial image of the area was superimposed with ARMS site data. UTM grid coordinates every 100 m were placed on this map. Sites were located using previously recorded site information for pre-existing sites and the acequia, GPS coordinates, and pedestrian survey. No new sites were discovered as part of the survey. Sites were recorded on state-standardized site recording forms, using a GPS for locational information.

Photography and Documentation Methods

Digital photographs were taken at different points during the survey using an Olympus Stylus 400 4.0-megapixel camera set at a resolution of 2272 × 1704 pixels. Some of these photos have been incorporated into this document. Notes, photographs, and copies of the report are stored at the Corps' Albuquerque District office.

No artifacts were located or documented.

Strategies Employed for Collection or Limited Tests

No artifact collection or testing was conducted as part of this project.

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CHAPTER 4
RESULTS OF SURVEY

Lance Lundquist

Location of Cultural Properties

The public disclosure of the location of archaeological sites on state and private lands is prohibited by Section 18-6-11.1 NMSA 1978. Public disclosure of archaeological site locations is federally prohibited by 16 USC 470hh (36 CFR 296.18). *Confidential site location information is provided in Appendix A, which should be removed prior to public disclosure of this report*.

No new sites except for the acequia itself were identified during survey. No Isolated Occurrences were discovered. Three historic properties intersect the current project: LA 120650 and LA 138426, both dirt roads used to access Nichols Reservoir, and LA 138429, an abandoned ditch that provided water to the now-abandoned hydroelectric plant located 725 m downstream.

Acequia Del Llano

The Acequia Del Llano runs from east to west along the Santa Fe River (Figure 1.1). The diversion structure, and the start of the project, is located at Nichols Reservoir (Figure 4.1). The acequia then heads south, rising up into the forested canyon slope (Figure 4.2, Figure 4.3). The acequia transitions between forested hillslope and open meadow (Figure 4.4), crossing near existing roads. The project area ends near the border with the Randall Davey Audubon Center.

Overall, the system is quite small, with the water flow measuring less than one foot across and a few inches deep. Its priority date for water appropriations rights is after 1877 and before 1907 (New Mexico Office of the State Engineer 1987; Snow 1988). At the bottom of Nichols Reservoir (certainly one of the largest diversion structures for one of the smallest acequias!), an outlet structure and flow meter control water flow into a pipe that supplies the acequia. The main ditch is approximately 1.5 miles long. Approximately 1,000 feet of the main ditch, mainly in the proposed project area, has intermittent sections of plastic polyvinyl chloride (PVC) pipe or is (in limited high-problem areas) lined with concrete (Figure 4.5). The remaining length of the ditch, in particular near the properties that it serves, is earthen.

The Acequia currently serves 18 families and two organizations: the Randall Davey Audubon Center and the City of Santa Fe Water Company. The Acequia irrigates approximately 30 acres of gardens and orchards; major crops include vegetables, apples, cherries, pears and peaches.

Overall, the integrity of the acequia is good west of the project area, where it passes into and next to the 20 acequia member's properties. Within the steeply forested portion of the acequia, which requires special permission to enter (a Nichols Reservoir Safety precaution)—and which happens to coincide with the project area—the integrity of the acequia is poor. About half of the area has been piped, and the diversion structure was replaced with the most recent upgrades to Nichols Reservoir (which dates to 1943).

Figure 4.1 Diversion structure showing toe of Nichols Reservoir, intake water control structure to be left in place, and pipeline running uphill to existing ditch.

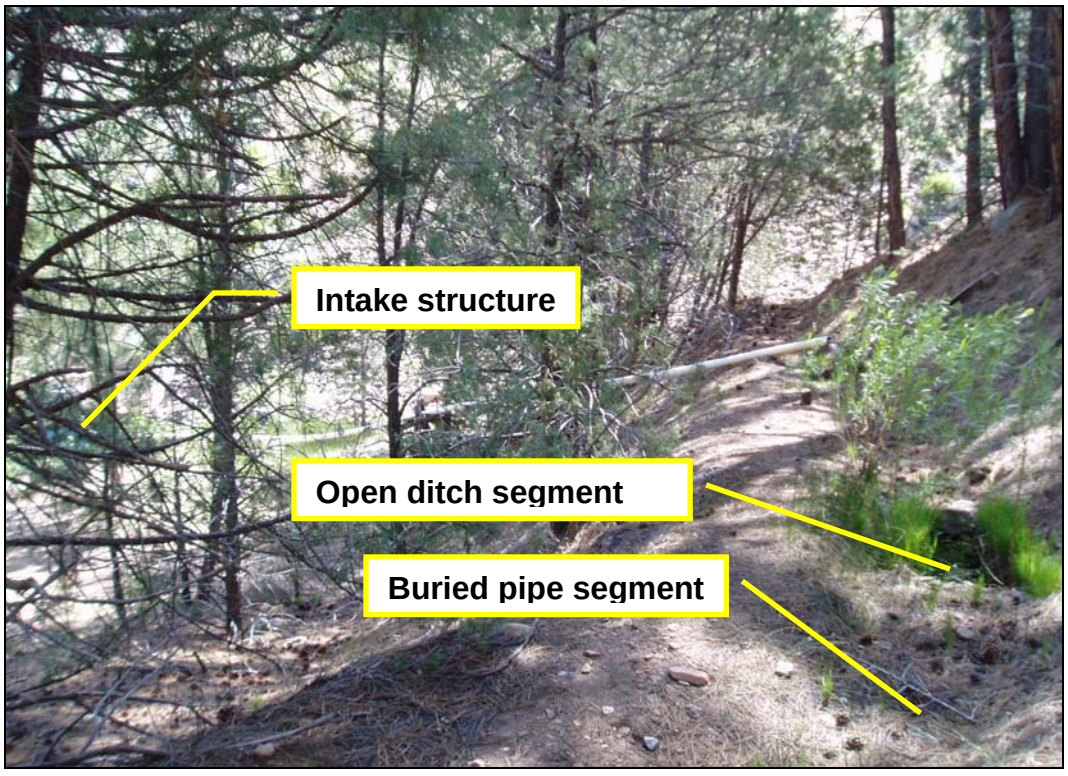

Figure 4.2 View along ditch facing upstream, showing intake pipe and small segment of open ditch.

Figure 4.3 View of open, un-piped portion of the acequia in the forested hillslope.

Figure 4.4 View of an open meadow portion of the acequia.

Figure 4.5 View of partially buried, partially concrete-lined portion of the acequia.

Description of Other Archaeological Sites

No new archaeological sites were encountered during this survey in the project area, other than the acequia itself, described in this chapter. Three historic properties intersect the current project: LA 120650 and LA 138426, both dirt roads used to access Nichols Reservoir, and LA 138429, an abandoned ditch that provided water to the now-abandoned hydroelectric plant located 725 m downstream. These properties are described in the following paragraphs.

LA 120650 (relocated)

LA 120650 was previously recorded in 1997 and 1998 (Martine 1998a, b). The site form for LA 120650 indicates that the road dates to at least 1899, as it is on a surveyor's map from that year. It further states that the road was probably made by prison crews in the early 20th century to reach homesteads in the canyon and to access the reservoirs. The site continues in use today as the main route to access the reservoir, and is a well-graded dirt and gravel road in good maintenance (Figure 4.6). Martine (1998a, b) described the original road as being poorly preserved and that road maintenance had obliterated nearly all of the components of the site. The New Mexico State Historic Preservation Office (SHPO) determined that this property is eligible for listing in the National Register of Historic Places under Criterion A (HPD Log 55321). This road serves as the primary route into the project area, and is crossed once by the Acequia Del Llano. The new proposed alignment for the acequia would roughly follow this road for approximately 325 m.

Figure 4.6 LA 120650, Santa Fe Watershed Prisoner Road, looking east from the west end of the project area.

LA 138426 (relocated)

LA 138426 was previously recorded in 2002 (Stull and Dosh 2003). The site form for LA 138426 indicates that the road dates to at least 1883, as it is on a United States Government Land Office map from that year. The site continues in use today as a route to access the toe of Nichols Reservoir, and is a narrow dirt and gravel road in moderate maintenance (Figure 4.7). The New Mexico State Historic Preservation Office (SHPO) requires additional information to consider the eligibility of this site (HPD Log 68039). This road serves as the route to the acequia's

diversion structure, and the acequia follows the road for approximately 150 m. The new proposed alignment for the acequia would roughly follow the existing alignment.

Figure 4.7 LA 138426, Old Santa Fe Watershed Road, looking west at the juncture between it and LA 120650, the Santa Fe Watershed Prisoner Road.

LA 138429 (not relocated)

LA 138429, the High Line Ditch, was previously recorded in 2002 (Stull and Dosh 2003). LA 138429 served as the ditch to carry water to Two Mile Dam and Reservoir, for use by the Santa Fe hydroelectric plant. Two Mile Dam was constructed in 1893 (HAER No. NM-4), and the hydroelectric plant was completed in February 1895 (HAER No. NM-4, p. 14–15). The High Line Ditch dates to 1902, and was abandoned in 1943 (Goldman 2003:29). Stull and Dosh (2003) describe the ditch to be mostly intact. The New Mexico State Historic Preservation Office (SHPO) determined that this property is eligible under Criterion D (HPD Log 68039). LA 138429 was not relocated during survey. Based on the ARMS map data, the Acequia Del Llano crosses this site in two places, both of which coincide with road crossings. It is likely that the portions of this site in the project area have been obliterated by the roads and road maintenance activities. At any rate, the ditch was not observed in either the existing or the proposed alignment. Details on the High Line Ditch are quoted from Goldman (2003:28–29):

> To provide a hydrostatic head (water pressure) for the plant, a small concrete reservoir was built on a hill 160 feet above the plant and 1/4 mile away (Photo 8). Talaya Reservoir was filled by a 15-inch pipe that brought water by gravity from Two-Mile. Water was then piped under pressure from Talaya to the plant's

generators below. Having turned the turbines, the water flowed into an adjacent service basin, which stilled the discharge. From the basin the water flowed into mains of the city water system and to its users. The new hydroelectric plant generated 100 kilowatts, about four times the electricity of the steam generator it replaced.

In 1902, after this plumbing system had served for seven years, the power plant's reach was extended. A ditch, called the High Line, was dug into the hillside about 100 feet above Two-Mile Reservoir and extended up the canyon to tap the river at what would later become the site of Nichols Dam. At its lower end, on the hill above Two-Mile Dam, its water flowed down to the pipe that supplied Talaya Reservoir.

When the hydroelectric plant was dismantled, if not before, Talaya became the water supply for the surrounding higher elevation section of Santa Fe. This part of town was higher than the primary water distribution system and could not be efficiently supplied by it. But Talaya, being 160 feet above the plant and filled by gravity flow from Two-Mile, could do so. Abandoned in 1943, the High Line ditch is still visible from Upper Canyon Road near Two-Mile Dam. In 1970, the hydroelectric plant's service basin was replaced by a five-million-gallon tank. It serves today as the final reservoir and a flow regulator into the distribution system.

Isolated Occurrences

No Isolated Occurrences were discovered during survey.

Interpretive Summary

The location of the site is in a very steep forested canyon, and as such was not likely to include significant prehistoric presence, and indeed, no prehistoric artifacts or features were identified during survey. During the historic period, the focus of the project area has been on capturing and controlling water from the Santa Fe River for the growing needs of the city. To this end, historic properties recorded and properties in the immediate vicinity all reflect this, from access roads to the dams, the actual dams themselves, the High Line ditch, and the Acequia Del Llano.

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CHAPTER 5
SUMMARY AND RECOMMENDATIONS

Lance Lundquist

Evaluation and Statement of Significance

Four properties have been previously identified within the project area, including two road segments and one historic ditch, and the Acequia Del Llano. Evaluations of the properties eligibility for listing on the National Register of Historic Places (NRHP) is provided in Table 5.1. Statements of significance follow.

Table 5.1 Historic Property Evaluation

LA Number	Description	Existing Eligibility	Corps Eligibility
N/A	Acequia Del Llano	N/A	Eligible Criterion A
LA 120650	Santa Fe Watershed Prisoner's Road	Eligible Criterion A	Eligible Criterion A
LA 138426	Old Santa Fe Watershed Road	Not Determined	Not Determined
LA 138429	Ditch serving SF Hydroelectric Plant	Eligible Criterion D	Not Relocated

The **Acequia Del Llano** is considered eligible for inclusion to the NRHP under Criterion A for its association with events important to the growth and settlement of Santa Fe, and for its association with the use of traditional water irrigation in New Mexico. With the exception of the portion within the project area, the integrity of the system is good; the original form, function, and alignment have not significantly changed over the last century. In the project area, the form of the acequia has changed: the diversion structure has changed by the placement of Nichol's Reservoir in 1943, and about 1,000 feet of the acequia has been piped to deal with continual problems associated with the acequia's location in a steeply wooded canyon. Overall, the 1.5 mile acequia is approximately 80 percent intact.

LA 120650, the Santa Fe Watershed Prisoner's Road, has previously been considered eligible for listing to the NRHP by the New Mexico State Historic Preservation Office (NMSHPO) under Criterion A (HPD 55321). This survey did not alter or add to this evaluation. This road is a well-graded road that serves as primary access to Nichols Reservoir.

La 138426, the Old Santa Fe Watershed Road, has been given a "not determined" eligibility status by the NMSHPO (HPD Log 68039). This road is primary access to the Acequia Del Llano's diversion structure and the toe of Nichols Reservoir. Although the road itself may be eligible for inclusion to the NRHP (most likely under Criterion A), the segment of this road in the project area is short and retains only an alignment that may be considered historic (i.e., no culverts, crossings, etc; it is a simple dirt road). The Corps does not find that sufficient information is available to evaluate the significance of the entire road, but the section in the Corps' project area is not, by itself, considered significant.

LA 138429, a ditch that carried water to the hydroelectric plant located downstream, was determined eligible for listing to the NRHP under Criterion D (HPD Log 68039). The property

was not relocated during the current survey; as such, no statement of evaluation or significance is provided.

Effect Determination

Under 36 CFR 800.5, Assessment of Adverse Effects, examples are provided in subsection (2) and include seven examples of adverse effects to historic properties. This project has the potential to affect all four properties in the project area (the Acequia Del Llano, LA 120650, LA 138426, and LA 138429). The criteria of adverse effect pursuant to the seven examples of types of adverse effects as listed in 36 CFR 800.5 (a)(2) are applied below.

(i) Physical destruction of or damage to all or part of the property;

All four properties are within the project area, and may be subject to some form of physical destruction. For the two roads, **LA 120650 and LA 138426**, the plan is to place the Acequia Del Llano adjacent to the road. In parts, the acequia already follows the road, but the proposed plan is to place the majority of the 1,920-foot section next to the existing access roads, which happen to also be historic properties. However, the alignment for both of these roads will remain the same, and the historic significance of the roads will not be adversely affected.

In terms of the **Acequia Del Llano**, the proposed project plans to relocate 1,920 feet of the acequia from its current location in the steep-sloped forest canyon to be adjacent to the access roads. This will change the alignment of the acequia. In addition, the form of the acequia for this portion will be changed from open ditch and piping to all buried pipe for the 1,920 feet of the project. This means that approximately 920 feet of open ditch will be converted to piped acequia.

In terms of **LA 138429**, the ditch that used to deliver water to the hydroelectric plant, it is unclear if this property will be affected, because it was not relocated during survey. However, it is unlikely that any portions of this site that retain integrity be affected, because the current project proposes placing the acequia in the existing disturbed roadway, limiting disturbance to already disturbed areas.

(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines;

The act of altering the **Acequia Del Llano** so that it can carry water to its users more efficiently can be considered rehabilitation under 36 CFR 68. Under 36 CFR 68 Part 2(b), rehabilitation:

> means the act or process of making possible an efficient compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values

The rehabilitation of this acequia is consistent with most of the Standards set forth at 36 CFR 68 Part 3(b), with the possible exception of CFR 68 Part 3(b)(6):

> (6) Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

The "new" feature (piping and alignment change) will not "match the old in design, color, texture, and, where possible, materials". These standards, obviously written for historic structures such as buildings, are not 100 percent applicable to a linear earthen ditch feature.

This category does not apply to the roads, **LA 120650 and LA 138426**, or to **LA 138429**, the ditch used to deliver water to the hydroelectric power plant.

(iii) Removal of the property from its historic location;

This category does not apply to this project.

(iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;

The one potentially applicable change relates to the **Acequia Del Llano**; changing the ditch alignment and changing from open earth ditch to piping is a character of the property's use.

(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;

This category does not apply to this project.

(vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and

This category does not apply to this project.

(vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

This category does not apply to this project.

Summary and Recommendations

This project involves the proposed rehabilitation of 1,920 feet of ditch from the Acequia Del Llano, currently located in the steep forested slopes along the Santa Fe River, to a piped ditch located along the access roads to the diversion structure/Nichols Reservoir. This project, therefore, has the potential to adversely affect historic properties, in this case the Acequia Del Llano, as well as two access roads, one of which has been determined historic (LA 120650), and one of which may be historic (LA 138426). A fourth historic property, LA 138429, a ditch that at one time provided water to the hydroelectric plant downstream, could not be relocated and is unlike to be affected by this project.

All properties involved are linear. As linear features, the question is whether or not the proposed undertaking will, pursuant to 36 CFR 800.5(a)(1), "alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register *in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feelings, or association*" (italics added).

Both historic dirt roads (LA 120650 and LA 138426) will retain their integrity in terms of those characteristics that make them eligible for inclusion in the NRHP. No historic culverts or other features will be affected, and the road alignment and form will remain the same. No information potential or association with either road will be significantly affected. The Corps recommends that this project will have a minor, but non-adverse effect to the roads.

The historic ditch that provided water to the hydroelectric plant, LA 138429, could not be relocated and will not be adversely affected by this project. It is likely that the portion of this property that intersects with the undertaking has already been altered by access road maintenance activities. The Corps recommends that this project will not have an adverse effect to LA 138429.

Regarding the Acequia Del Llano, this project has the potential to adversely affect those characteristics of the property that qualify it for inclusion in the NRHP. The proposed project will involve piping approximately 26.7 percent of the acequia (1,920 feet), and will shift its alignment from the steep slopes of the forested canyon to the access roads. However, about half of this section of the acequia was previously piped by the acequia association, in response to repeated failures, clogs, and poor water delivery.

When considering adverse effects, the Corps considers acequias in the context of their historic use (Ackerly 1996). Acequias, perhaps more than any other feature type, have throughout time been repeatedly modified in response to problems facing the acequia association. At the same time acequia association members available to undertake maintenance activities are, by past standards, few in number, and older. What is important to the modern acequia members is that they are able to continue deliverance and use of the water in a traditional way. This project will help the acequia members continue to use this acequia, and the water delivered will be in the same form, function, and alignment when it reaches those acequia member's properties. The Corps' solution is consistent with the partial piping the acequia association—the historic users of the acequia—have already been engaged in at this problem section of the acequia.

The portion to be piped has been extensively modified, and no longer retains integrity. In addition, it is located—due to safety concerns related to Nichols Reservoir—in a secured area,

inaccessible to the public. No member of the public, and few members of the acequia association, will even realize that a change has taken place.

For these reasons, the Corps considers that the basic integrity of this small acequia system will remain intact after this project. The acequia members will still receive their water in traditional ways, and areas of the acequia that have easier access will still need to be cleaned out by hand. Overall, approximately 73.3 percent of the acequia will retain integrity, and importantly all of that will be in those areas accessible to the public and/or the acequia members. For these reasons, the Corps considers the proposed impacts to the Acequia Del Llano to not be adverse.

No prehistoric archaeological sites are known to occur within or in the immediate vicinity of the project area. Consistent with the Department of Defense American Indian and Alaska Native Policy, signed by Secretary of Defense William S. Cohen on October 28, 1998, tribes indicating an interest in activities in Santa Fe County (based on the State of New Mexico Indian Affairs Department's 2008 Native American Consultations List) were sent a scoping letter to assess if there were any potential tribal concerns with the project. To date, no tribal concerns have been identified, and no traditional cultural properties are known to occur within or in the vicinity of the project area.

The USACE, therefore, is of the opinion that the proposed Acequia Del Llano rehabilitation project will have "No Adverse Effect to Historic Properties." Should previously undiscovered artifacts or features be unearthed during construction, work will be stopped in the immediate vicinity of the find, a determination of significance made, and a mitigation plan formulated in coordination with the New Mexico State Historic Preservation Officer and with Native American groups that may have concerns in the project area.

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APPENDIX A

CONFIDENTIAL SITE LOCATION DATA

— FOR OFFICIAL USE ONLY —

The public disclosure of the location of archaeological sites on state and private lands is prohibited by Section 18-6-11.1 NMSA 1978. Public disclosure of archaeological site locations is federally prohibited by 16 USC 470hh (36 CFR 296.18).

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Appendix B

Biological Resources Coordination

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DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
4101 JEFFERSON PLAZA NE
ALBUQUERQUE NM 87109-3435

October 8, 2008

Planning, Project and Program Management Division
Planning Branch
Environmental Resources Section

Mr. Wally Murphy
Field Supervisor
U.S. Fish and Wildlife Service
NM Ecological Services Field Office
2105 Osuna Road NE
Albuquerque, NM 87113

Dear Mr. Murphy:

The U.S. Army Corps of Engineers (Corps), Albuquerque District, in cooperation with the Office of the State Engineer and the members of Acequia del Llano, is planning a project to rehabilitate the Acequia del Llano in Santa Fe Canyon below Nichols Reservoir, Santa Fe County, New Mexico. The proposed work would replace 1920 feet of earthen ditch and intermittent sections of pipe with 6-inch diameter plastic polyvinyl chloride (PVC) irrigation pipe. The proposed construction period is nine months and is expected to start in November 2008.

Enclosed for your review is the Draft Environmental Assessment (DEA), entitled **"Aceqia del Llano Rehabilitation Project, Santa Fe County, New Mexico"**. The Corps is sending copies of the DEA to solicit comments from Federal, State, and local interests to comply with the National Environmental Policy Act and the Endangered Species Act.

The Corps would appreciate information on endangered and threatened animal species or species of concern within Santa Fe County and the proposed project area that could be affected by the proposed project. **Please see Section 3.8 for Special Status Species.**

Please review the DEA and provide any written comments to the above address, Attn: Ms. Dana Price, Environmental Resources Section. Written comments must be received **no later than November 7, 2008,** so that comments can be addressed and

revisions made to the DEA in a timely manner. If we do not receive comments by this date, we will assume you have no concerns or have no objections to the project. You may also facsimile your correspondence to (505) 342-3668 or e-mail to dana.m.price@usace.army.mil. If you need additional information, please contact Ms. Dana Price at (505) 342-3378.

Sincerely,

Julie Alcon
Chief, Environmental Resources Section

Enclosure

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113
Phone: (505) 346-2525 Fax: (505) 346-2542

October 16, 2009

Cons. # 22420-2009-FA-0002

Ms. Julie Alcon
Chief, Environmental Resources
Department of the Army
Albuquerque District, Corps of Engineers
4101 Jefferson Plaza NE
Albuquerque, New Mexico 87109-3435

Dear Ms. Alcon:

Thank you for your October 8, 2009, letter requesting comments on the Draft Environmental Assessment "Aceqia del Llano Rehabilitation Project, Santa Fe County, New Mexico." The U.S. Army Corps of Engineers has requested information on endangered and threatened species or species of concern within Santa Fe County. The information you requested concerning endangered, threatened, and species of concern can be found at the following website < http://www.fws.gov/southwest/es/newmexico/SBC_intro.cfm>. Under the Endangered Species Act, as amended, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the U. S. Fish and Wildlife Service (Service) further. Similarly, it is the responsibility of the action agency or project proponent, not the Service, to make "no effect" determinations.

We recommend that you include the mountain lion (*Felis concolor*) and the Rocky Mountain elk (*Cervus elaphus*) in section 3.8 Wildlife. Both species occur in the proposed project area.

Thank you for your concern for endangered species and New Mexico's wildlife habitats. We appreciate the analyses provided in the draft environmental Assessment and your efforts to protect endangered and threatened species. In future communications regarding this project please refer to Consultation #22420-2009-FA-0002. If you have any questions, please contact Santiago Gonzales of my staff at the letterhead address or at (505) 761-4720.

Sincerely,

Eric Hein
Acting Field Supervisor

cc:
Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico

Appendix C

Notice of Availability and Public Review Letters

October 7, 2008

Planning, Project and Program Management Division
Planning Branch
Environmental Resources Section

XXXXXX

Dear :

The U.S. Army Corps of Engineers (Corps), Albuquerque District, in cooperation with the Office of the State Engineer and the members of the Acequia del Llano, is planning a project to rehabilitate the Acequia del Llano in Santa Fe Canyon below Nichols Reservoir, Santa Fe County, New Mexico. The proposed work would replace 1920 feet of earthen ditch and intermittent sections of pipe with 6-inch diameter plastic polyvinyl chloride (PVC) irrigation pipe. The proposed construction period is six weeks and is expected to start in November 2008.

The Corps is soliciting comments from Federal, State, and local interests for compliance under the National Environmental Policy Act (NEPA). The Draft Environmental Assessment (DEA), entitled **"Aceqia del Llano Rehabilitation Project, Santa Fe County, New Mexico"** is electronically available for viewing and copying at the Albuquerque District website (under "FONSI/ Environmental Assessments") at http://www.spa.usace.army.mil or hard copies will be sent upon request.

Please review the DEA and provide any written comments to the above address, Attn: Ms. Dana Price, Environmental Resources Section. Written comments must be received **no later than November 7, 2008,** so that comments can be addressed and revisions made to the DEA in a timely manner. If we do not receive comments by this date, we will assume you have no concerns or have no objections to the project. You may also facsimile your correspondence to (505) 342-3668 or e-mail to Dana.m.price@usace.army.mil. If you have any questions or need additional information, please contact Ms. Dana Price at (505) 342-3378.

Sincerely,

Julie Alcon
Chief, Environmental Resources Section

Notice of Availability
Draft Environmental Assessment for the
Acequia del Llano Rehabilitation Project, Santa Fe County, New Mexico

Pursuant to the Council on Environmental Quality regulations that implement the National Environmental Policy Act, the U.S. Army Corps of Engineers (USACE), Albuquerque District, completed a draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) for a proposal to rehabilitate the Acequia del Llano in Santa Fe County, New Mexico. The project area is located in the Santa Fe River watershed east of the City of Santa Fe, New Mexico and below Nichols Reservoir.

The USACE proposes to rehabilitate the Acequia del Llano by replacing 1920 feet of earthen ditch and intermittent sections of pipe with 6-inch diameter plastic polyvinyl chloride (PVC) irrigation pipe. General project components include: 1) installing approximately 1920 linear feet of 6-inch diameter PVC irrigation pipe along and below the existing earthen ditch; and 2) constructing a reinforced concrete outlet structure with a drainage gate where the pipeline will rejoin the existing earthen ditch.

Public review of the draft EA/FONSI will begin on October 8, 2008 and will run for 30 days until November 7, 2008. The document will be available on the Corps web site at http://www.spa.usace.army.mil/fonsi/. A hard copy will be sent upon request. Comments on the draft EA/FONSI should be sent to:

U.S. Army Corps of Engineers, Albuquerque District
Environmental Resources Section
Attn: CESPA-PM-LE (Dana Price)
4101 Jefferson Plaza NE
Albuquerque, New Mexico 87109-3435

Paper copies of this document are also available for review at:

Santa Fe Public Library
145 Washington Street
Santa Fe, NM 87501

For more information please contact Dana Price, USACE, (505) 342-3378 or dana.m.price@usace.army.mil
#####

THE SANTA FE
NEW MEXICAN
Founded 1849

Dana Price
US Army Corps of Engineers
4104 Jefferson Plaza NE
Albuquerque, NM 87109

ALTERNATE ACCOUNT: 89504
AD NUMBER: 00270085 ACCOUNT: 00027282
LEGAL NO: 86123 P.O. #:
103 LINES 1 TIME(S) 90.16
AFFIDAVIT: 7.00
TAX: 7.71
TOTAL: 104.87

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO
COUNTY OF SANTA FE

I, L. Paquin, being first duly sworn declare and say that I am Legal Advertising Representative of THE SANTA FE NEW MEXICAN, a daily newspaper published in the English language, and having a general circulation in the Counties of Santa Fe and Los Alamos, State of New Mexico and being a newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937; that the publication # 86123 a copy of which is hereto attached was published in said newspaper 1 day(s) between 10/10/2008 and 10/10/2008 and that the notice was published in the newspaper proper and not in any supplement; the first date of publication being on the 10th day of October, 2008 and that the undersigned has personal knowledge of the matter and things set forth in this affidavit.

/S/ L. Paquin
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this 13rd day of October, 2008

Notary Pamela Anne Beach

Commission Expires: May 31, 2011

OFFICIAL SEAL
Pamela Anne Beach
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: 5-31-11

Notice of Availability Draft Environmental Assessment for the Acequia del Llano Rehabilitation Project, Santa Fe County, New Mexico

Pursuant to the Council on Environmental Quality regulations that implement the National Environmental Policy Act, the U.S. Army Corps of Engineers (USACE), Albuquerque District, completed a draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) for a proposal to rehabilitate the Acequia del Llano in Santa Fe County, New Mexico. The project area is located in the Santa Fe River watershed east of the City of Santa Fe, New Mexico and below Nichols Reservoir.

The USACE proposes to rehabilitate the Acequia del Llano by replacing 1920 feet of earthen ditch and intermittent sections of pipe with 6-inch diameter plastic polyvinyl chloride (PVC) irrigation pipe. General project components include: 1) installing approximately 1920 linear feet of 6-inch diameter PVC irrigation pipe along and below the existing earthen ditch; and 2) constructing a reinforced concrete outlet structure with a drainage gate where the pipeline will rejoin the existing earthen ditch.

Public review of the draft EA/FONSI will begin on October 7, 2008 and will run for 30 days until November 6, 2008. The document will be available on the Corps web site at http://www.spa.usace.army.mil/fonsi/. A hard copy will be sent upon request. Comments on the draft EA/FONSI should be sent to:

U.S. Army Corps of Engineers, Albuquerque District
Environmental Resources Section
Attn: CESPA-PM-LE (Dana Price)
4101 Jefferson Plaza NE
Albuquerque, New Mexico 87109-3435

Paper copies of this document are also available for review at:

Santa Fe Public Library
145 Washington Street
Santa Fe, NM 87501

For more information please contact Dana Price, USACE, (505) 342-3378 or dana.m.price@usace.army.mil
#####
Legal No. 86123
Pub. Oct. 10, 2008

Notice of Availability Draft Environmental Assessment for the Acquia del Llano Rehabilitation Project, Santa Fe County, New Mexico

Pursuant to the Council on Environmental Quality regulations that implement the National Environmental Policy Act, the U.S. Army Corps of Engineers (USACE), Albuquerque District, completed a draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) for a proposal to rehabilitate the Acequia del Llano in Santa Fe County, New Mexico. The project area is located in the Santa Fe River watershed east of the City of Santa Fe, New Mexico and below Nichols Reservoir.

The USACE proposes to rehabilitate the Acquia del Llano by replacing 1920 feet of earthen ditch and intermittent sections of pipe with 6-inch diameter plastic polyvinyl chloride (PVC) irrigation pipe. General project components include: 1) installing approximately 1920 linear feet of 6-inch diameter PVC irrigation pipe along and below the existing earthen ditch; and 2) constructing a reinforced concrete outlet structure with a drainage gate where the pipeline will rejoin the existing earthen ditch.

Public review of the draft EA/FONSI will begin on October 8, 2008 and will run for 30 days until November 7, 2008. The document will be available on the Corps web site at www.spa.usace.army.mil/fonsi/. A hard copy will be sent upon request. Comments on the draft EA/FONSI should be sent to:

U.S. Army Corps of Engineers, Albuquerque District
Environmental Resources Section
Attn: CESPA-PM-LE (Dana Price)
4101 Jefferson Plaza NE
Albuquerque, New Mexico 87109-3435

Paper copies of this document are also available for review at:
Santa Fe Public Llibrary
145 Washington Street
Santa Fe, NM 87501

For more information please contact Dana Price, USACE, 505-342-3378 or dana.m.price@usace.army.mil

AFFIDAVIT OF PUBLICATION
STATE OF NEW MEXICO
COUNTY OF SANTA FE

I, Anna Maggiore, being first duly sworn, declare and say that I am Legal Advertising Manager of the SANTA FE REPORTER, a weekly newspaper published in the English language, and having a general circulation in the Counties of Santa Fe, Rio Arriba and Los Alamos, State of New Mexico, and being a Newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937: that the publication, a copy of which is hereto attached, was published in said newspaper once each week for 1 consecutive week(s) and that the notice was published in the newspaper proper and not in any supplement; the first publication being on the 8th day of October, 2008, and the last date of publication being on the 8th day of October, 2008, and that the undersigned has personal knowledge of the matter and things set forth in this affidavit.

Anna L. Maggiore
LEGAL ADVERTISING MANAGER

Subscribed and sworn to before me on this 9th day of October A. D., 2008

Notary Ruth Segura

Commission expires 01/31/2011

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Agua Fria Village Association

2073 Camino Samuel Montoya
Santa Fe, NM 87507

Ms. Dana M. Price
dana.m.price@usace.army.mil
U.S. Army Corps of Engineers, Albuquerque District
Environmental Resources Section
Attn: CESPA-PM-LE (Dana Price)
4101 Jefferson Plaza NE
Albuquerque, New Mexico 87109-3435

November 3, 2008

Re: Comments on the Environmental Assessment

Dear Ms. Price:

The Agua Fria Village Association (AFVA) on behalf of the Agua Fria Village Traditional Historic Community (THC) and other county residents in our southwest sector of Santa Fe supports the plans of the Acequia del Llano to replace its water supply, in the October 2008 Draft Environmental Assessment.

The plans to replace 1920 feet of earthen ditch and intermittent sections of pipe with 6-inch diameter plastic polyvinyl chloride (PVC) irrigation pipe will greatly reduce water evaporation and possible contamination. This greatly complements the plans and goals of the Santa Fe Watershed Association for establishing a "Living River" for the Santa Fe River area.[i] Many of our AFVA members are also members of the Watershed Association and we support its "Mission."[ii]

Agua Fria Village has historically been completely dependent on the flow of the Santa Fe River. Today the flow of the River is just as important to the recharge of our wells and use of the acequias. To these ends, the AFVA actually supports "the Living River" concept of the Watershed Association. This renovation by Acequia del Llano fits into the greater conservation efforts being led by the City and County of Santa Fe, and will allow for acequia usage and the fruition of the Living River Concept.

Agua Fria Village became a place of modern recorded settlement when Sergeant Major Garcia was given a land grant in 1693 by General Don Diego de Vargas for his service in the 1692 Reconquest. Other land grants were given and the acequias were extended and the flat lands of Agua Fria became the breadbasket of the City of Santa Fe.

Agua Fria has also had a rich prehistoric record, and the Indians in the area of Agua Fria Village raised animals and farmed in abundance using river diversions and collection systems from the surrounding hills.[iii]

The Village of Agua Fria population in 1776 was 29 families and 257 people, according to a study conducted by Fray Francisco Dominquez. The study referred to the Village of Agua Fria as "Quemado" and also identified active springs in the area. It was not until the 1800s however, that the small Village was referred to as Agua Fria. The church of San Isidro was built in 1835 and derives its name from the patron saint of farmers, an appropriate icon for the area's major profession.

The State Engineer's 1914 Acequia maps show that 254 acres of land in the area were under cultivation. Typical crops included a variety of vegetables, wheat, alfalfa, etc. Of the 170 fields within the surveyed area, 93 percent were less than five acres each. The study titled: *The Village of Agua Fria, Ours Today, Ours Tomorrow* by Jane Whitmore, was submitted to the Historic Preservation Division and illustrated the Traditional Village of Agua Fria's strong attachment to the land and its connection to the river which extends back in time through many generations.

The Santa Fe Watershed Association has documented the history of the Santa Fe River and a great portion of this history is in Agua Fria.[iv] Many of our members have memories of a flowing river that brought literally life to our sleepy little Village. Our oldest Village elder, Mr. Herman Montoya, age 96, a former Mayordomo of the Acequia Madre and Acequia de los Pinos, vividly remembers how the fields in Agua Fria supported and supplied the City of Santa Fe with food and livestock. But being downstream, it was only a matter of time before the competition for water destroyed the Village's livelihood and almost its existence. Any proposal to do water conservation can possibly help in creating the Living River and allows us a second chance in the recharge of our wells without litigation.[v]

The one issue that we have is that the six inch pipe may be too small for future uses of the Acequia Madre and Acequia de los Pinos. A pipe 8-12 inches in diameter would be more appropriate.

Thank you for your attention to this matter and your willingness to hear us out.

Sincerely,

William Henry Mee, President AFVA
(505) 473-3160
WilliamHenryMee@aol.com

CC:

AGUA FRIA ASSOCIATION MEMBERS:
Melinda Romero-Pike, melindapike@earthlink.net
Rep. Jim Trujillo District 45, jimtrujillo@msn.com

ENDNOTES:
Much of this historical information can be found in the Agua Fria Village's community plan developed in conjunction with Santa Fe County:
http://www.santafecounty.org/find/documents/Agua_Fria_Community_Plan_as_adopted_by_Resolution_2006_116.pdf.

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[i] The Concept:
"The Santa Fe Watershed Association invites your support and participation in reviving the Santa Fe River from the dry ditch that we see today to a flowing, vibrant perennial stream that brings life to our community.

Our dream is a flowing, meandering, tree-lined stream where fish and frogs can swim, children can play, and all of us can enjoy. The beauty of this river will also have a practical side. The restored river and its tributary arroyos will retain more water during floods and keep more water in the aquifer where it can be recovered through wells. A healthy river system might deliver water all the way to the Rio Grande to replace some of the water which Santa Fe City pumps from the Rio Grande acquifer upstream in the Buckman well field."

The water for the river can be obtained from conservation, the purchase of water rights, and from diverting new sources of water.

[ii] Mission:

The Santa Fe Watershed Association works to return the Santa Fe River to a living river, from the headwaters in the Sangre de Cristo Mountains to the Rio Grande, balancing human uses with natural resource protection and restoring the heart to our community.

- Our goal is to protect the long-term integrity of the Santa Fe River's watershed.
- We engage in education, research, and on-the-ground projects of riparian and watershed restoration, as well as provide input into governmental planning, permits and projects.
- We strive to find common ground among different points of view regarding uses of the river and its watershed.
- We advocate surface and groundwater resource management that balances human use with natural resource protection.

We encourage government and community leaders to place high priority on sustaining seasonal stream flow in the Santa Fe River, yielding hydrologic, recreational, aesthetic and environmental value to the community. We believe that this goal can coexist with providing a reasonable supply for human use.

[iii] Agua Fria was originally named Ca-Tee-Ka meaning "cold water" by Tewa and Tano Indians along the Rio Grande. There are at least two major Late Puebloan archaeological sites in the area, one identified as the Agua Fria Schoolhouse Site (LA 2) and one identified as Pindi Pueblo (LA 1). The name Pindi, meaning "turkey" in Tewa, was apparently used because the Indians in the area of Agua Fria Village raised animals and farmed in abundance using river diversions and collection systems from the surrounding hills. Additionally, the Agua Fria area became known as Quemado (which means burnt in Spanish) because the older Pueblo on the north bank of the river suffered a big fire.

Pindi Pueblo was located on the south bank of the Santa Fe River in the Village of Agua Fria and much of this area is still unexcavated. The Pindi Pueblo is both a prehistoric and historic settlement. Pindi remains the oldest and largest coalition site, which dates back to from A.D. 1150 to the mid 1500's.

The pueblo was abandoned because of the drought, although the indigenous population returned in the seventeenth century and later abandoned the area after the arrival of the Spaniards.

The Village of Agua Fria population in 1776 was 29 families and 257 people, according to a study conducted by Fray Francisco Dominquez. The study referred to the Village of Agua Fria as "Quemado" and also identified active springs in the area. It was not until the 1800s however, that the small Village was referred to as Agua Fria. The Agua Fria area was later described as homesteads with adjacent farm lands (from the book by Adams and Chavez in 1956). Lands to the south and north of the one mile long agricultural strip probably running 1 to 2 miles in length on each side were used for the grazing of livestock. These small holding claims typically ran from Arroyo de Los Frijoles (now in Las Companas) to Arroyo de los Chamisos near the Santa Fe Place (Villa Linda) Mall, a distance of about five miles.

The Village of Agua Fria lies on the Historic "El Camino Real", meaning the "Royal Road", and was a historic trade route. El Camino Real began thousands of years ago as a series of Indian footpaths. Agua Fria served as a paraje, or stopping place, for travelers on El Camino Real trail between Mexico City and Santa Fe.

The church of San Isidro was built in 1835 and derives its name from the patron saint of farmers. The church served as a protector from nomadic Indian raids. In summary, this area was occupied from the beginning of the coalition period until the present, although a short hiatus in occupation may have occurred between the abandonment of La Cieneguilla in the 1500s until the arrival of the Spanish in 1610.

Agua Fria was largely an agricultural area at the time of statehood. The State Engineer's 1914 Acequia maps show that 254 acres of land in the area were under cultivation. Typical crops included a variety of vegetables, wheat, alfalfa, etc. Of the 170 fields within the surveyed area, 93 percent were less than five acres each. In 1914, the residents of the area participated in the construction of a schoolhouse for Agua Fria. The Agua Fria elementary school was completed by the Works Progress Administration with the cooperation of the County School Board in 1936. The study titled: *The Village of Agua Fria, Ours Today, Ours Tomorrow* by Jane Whitmore, was submitted to the Historic Preservation Division by Landmarks Preservation Consultants on May 12, 1983. This study illustrates several factors that comprise the Traditional Village of Agua Fria's strong attachment to the land and its connection to water which extends back in time through many generations.

[iv] From the Watershed Association's website:
http://www.santafewatershed.org/index.php?option=com_content&task=view&id=80&Itemid=224
"It is a matter of debate whether the Santa Fe River was perennial throughout its length prior to the middle of the twentieth century. There is considerable evidence that the stream was fed by numerous springs through the historic plaza area, at Frenchy's Park, Agua Fria, La Cieneguilla and in the Santa Fe Canyon above La Bajada. Spiegel and Baldwin (1963; the source for this section except as otherwise indicated) cite archaeological evidence that the four Native American pueblos that occurred along the river prior to founding of the City of Santa Fe in 1610 were located near perennial springs that better served their needs than the larger but more variable flow of the river. R.E. Twitchell, 1925 (cited in Spiegel and Baldwin) describes a tributary to the Santa Fe River called the Rio Chiquito, which had its source in a large spring in the Archbishop's garden adjacent to the cathedral, and flowed down the present Water Street to a confluence with the Santa Fe River near the Santuario de Guadalupe. Twitchell gives numerous other examples of springs and marshes in the downtown area; several Santa Fe elders recall these wetlands being active well into the first half of the 20th century. All

are now defunct, although several large buildings in the downtown area, including the PERA Building opposite the State Capitol, are forced regularly to pump groundwater out of their basements as a result of being constructed over "ghost springs".

Descriptions of Santa Fe by 17th, 18th, and 19th-century European visitors refer to the Santa Fe River as a trout stream, and Santa Feans now in their forties and younger recall fishing in (and skating on!) the river. According to the hydrographic survey of 1914, the flow of the river at that time was diverted by at least 38 ditches to irrigate 1,267 acres at an average application rate of 4.5 acre-feet per acre, for a total of 5,701 acre-feet. The furthest upstream irrigated fields were in the area now occupied by the City's McClure Reservoir; the furthest downstream were farms in La Bajada that are still under acequia-fed irrigation. This amount of irrigation argues that there was generally sufficient flow in the river throughout that long reach, to warrant the effort to divert it. At the same time, as early as 1716 it was reported that the flow of the Santa Fe River was insufficient to irrigate all of the cultivated acreage in every year.

Elder residents of Agua Fria speak of large cottonwoods and duck ponds in the riverbed that now carries only storm flows in its severely incised channel. Spiegel and Baldwin confirm these memories, noting "…partial ground-water barriers at Cieneguita *(ed. note: now Frenchy's Field)* and Agua Fria at times cause the appearance of springs…" (p. 172). They further observe: "The early agricultural practices constituted an excellent form of artificial recharge of a part of the diverted water to the underlying aquifers because of ditch leakage and extensive water spreading. Despite the consumptive use by the irrigated fields, probably a larger proportion (possibly 30-50percent) of the streamflow reached the zone of saturation after irrigation began than did under natural conditions."

All this suggests that flow in the Santa Fe River was probably interrupted from time to time between its spring-fed zones; but that under pre-development conditions the river had sufficient shallow groundwater to keep riparian vegetation alive and sufficient pools to serve as refugia for fish and obligate riparian wildlife, from the headwaters to La Bajada, even in the driest years. Below La Bajada, the evidence for springs and frequent flow is much sketchier than for the upstream section of the river.

The regular dewatering of the Santa Fe River seems to have begun in the late 1940s, when water demand in the City began to approach the supply available from the reservoirs above town. Five wells were installed near the Santa Fe River; they supplied 68% of the City's drinking water in 1951, and from that point forward served as an important supplemental water source, and occasionally (until the Buckman well field was brought on line in 1972) the major source for the City (CDM&LWA, 1998). In addition to the City's riverside wells, there has been a tremendous proliferation of domestic and other permitted wells within the Santa Fe watershed. A search of the State Engineer Office well record data base for wells in the Santa Fe watershed, performed on August 16, 2001, resulted in 3,566 wells. (This is probably an undercount, since only township, range and section was used to define the search, so that records with descriptions in terms of x,y coordinates were not accessed.)"

[v] The Agua Fria Village residents helped to start the Santa Fe Water Basin Users' Association in the early 1970's and sought to preserve our water rights. The 1971 First Judicial District Court lawsuit Henry P. Anaya versus Public Service Company of New Mexico originated in the homes of former acequia users and well owners in Agua Fria (eventually the State Engineer became an Intervener in the case and turned the suit into an adjudication). <End of Document>

November 5, 2008

Dana Price
US Army Corps. Of Engineers, Albuquerque District
ATTN: CESPA-PM-LE
4101 Jefferson Plaza NE
Albuquerque, NM 87109-3435

SUBJECT: EA/FONSI for the Acequia del Llano Rehabilitation Project, Santa Fe County, New Mexico

Dear Dana,

We appreciate the opportunity to make comments on the above referenced EA on the proposed project on the Acequia del Llano, which runs across our property at the Randall Davey Audubon Center. We understand and appreciate the need for this piping project and believe that sufficient water and effort will be saved to justify the project. However, we have the following concerns that we ask that you address:

- Impacts on Audubon's acequia ditch where the water exits the pipe into our open ditch.

We have received the NRCS drawings and see that 6" of gravel on top of filter fabric will be used where the pipe opens out, but do not see anything else that indicates a control device (at least not that we can understand from the drawings).

  - How hard will the water be coming out, and will it damage our open ditch?
  - Is there anything at that gate that regulates the flow and/or slows it down if necessary?
  - Who will be responsible for watching how hard the water is coming out and whether it is damaging our ditch when increased flows occur?
  - Who will be responsible for maintaining the outlet on Audubon property, cleaning it out if necessary and/or repairing any damage that might occur on our open ditch?
  - Are erosion measures being proposed to deal with possible erosion, non-point pollution or other water quality issues and noxious weed invasion after the disturbance of the earth around the acequia?

- We are assuming that this is occurring on the easement that the acequia company holds with National Audubon. If this is not accurate, please let us know, and a formal agreement may need to be written before the project can proceed.

We would appreciate if someone from the acequia company or NRCS would contact us and come out and show us exactly where on Audubon property the project will occur, and we can discuss any possible impacts. Because we have public visitors and children onsite on a regular basis, we want to alleviate, as much as possible, any impacts on our programs, so scheduling is also important.

Thank you for including us in your outreach. We look forward to hearing from you.

Best Regards,

Linda Newberry

Linda Newberry
Randall Davey Audubon Center Manager
P.O. Box 9314
Santa Fe, NM 87501
1800 Upper Canyon Road
505-983-4609
lnewberry@audubon.org