

Appendix A

Cultural Resources Coordination



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

April 9, 2009

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

Honorable Donald G. Tofpi
Chairman, Kiowa Tribe of Oklahoma
Post Office Box 369
Carnegie, Oklahoma 73015

Dear Chairman Tofpi:

The U.S. Army Corps of Engineers (Corps), Albuquerque District, at the request of the New Mexico Office of the State Engineer / Interstate Stream Commission and the East Puerto de Luna Acequia Association, is planning a construction project that would install approximately one-mile of underground irrigation pipeline. The project is authorized under Section 1113 of the Water Resources Development Act (WRDA) 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 proposed project area is located approximately 7 miles southeast of the City of Santa Rosa, Guadalupe County, New Mexico (see enclosed Figure 1). The City of Santa Rosa is located on Interstate Highway 40 about 120 miles east of Albuquerque, the largest city in New Mexico. The East Puerto de Luna project area is located adjacent to and on the west side of New Mexico State Highway 91, in the southwest quarter of Section 4 and the west half of Section 9, Township 7 North, Range 22 East, as shown on USGS Quadrangle map Puerto de Luna, NM, (34104-g5; 1963, Photorevised 1982; see enclosed Figure 2).

The segment of earthen ditch in the project area is experiencing significant water losses due to seepage from the ditch and there is a significant sedimentation problem from surface water flows from an adjacent, eroding upland area (see

enclosed Photograph 9785). Ditch maintenance for this ditch segment is expensive and labor intensive, posing an economic burden on acequia members. Failure of the ditch and the efficient transportation of irrigation water would leave downstream acequia members without irrigation water during critical irrigation periods and would economically threaten the livelihood of acequia members and that of the small historic agricultural community of Puerto de Luna.

The proposed project would replace the existing earthen irrigation ditch by installing approximately 4,800 lineal feet of underground irrigation pipeline and replace two existing flumes with new structures at arroyo crossings (see enclosed Photograph 9915). The project would use existing disturbed areas for staging and existing paved and gravel roads for access.


The Corps' Acequia Rehabilitation Program has previously assisted the East Puerto de Luna Acequia Association with three projects: 1) reconstruction of the diversion structure in 1996; 2) a flume replacement in 2000; and 3) a 2,870-foot irrigation pipeline project in 2003. The Natural Resources Conservation Service has also assisted the Acequia Association with three projects: 1) 3,650-foot concrete ditch lining with seven ditch structures in 1967; 2) 14,459-foot concrete ditch lining with 18 ditch structures in 1973; and 3) 134-foot concrete ditch lining with 2 ditch structures in 1985.

The Corps is seeking input for consideration during planning of the project. The purpose of this scoping letter is to provide you with the opportunity to submit concerns or comments you may have regarding potential effects for the proposed project. Specifically, any concerns you may have regarding the environment such as natural, biological, or cultural resources; wildlife, vegetation, and special status species; air, water, or sound quality; aesthetics; health and safety; or Indian Trust Assets that may occur in the project area. Your input will be used in preparing an environmental assessment to comply with the National Environmental Policy Act (NEPA).

Please provide written comments regarding environmental concerns to Dana Price, Biologist; and, comments regarding cultural resources to Gregory D. Everhart, Archaeologist, at the

above address. If you have any questions or require additional information on the East Puerto de Luna Irrigation Pipeline Project, please contact Ms. Price at (505) 342-3661, Mr. Everhart at (505) 342-3352, or myself at (505) 342-3281.

Sincerely,



Julie Alcon,
Chief, Environmental Resources
Section

Enclosure

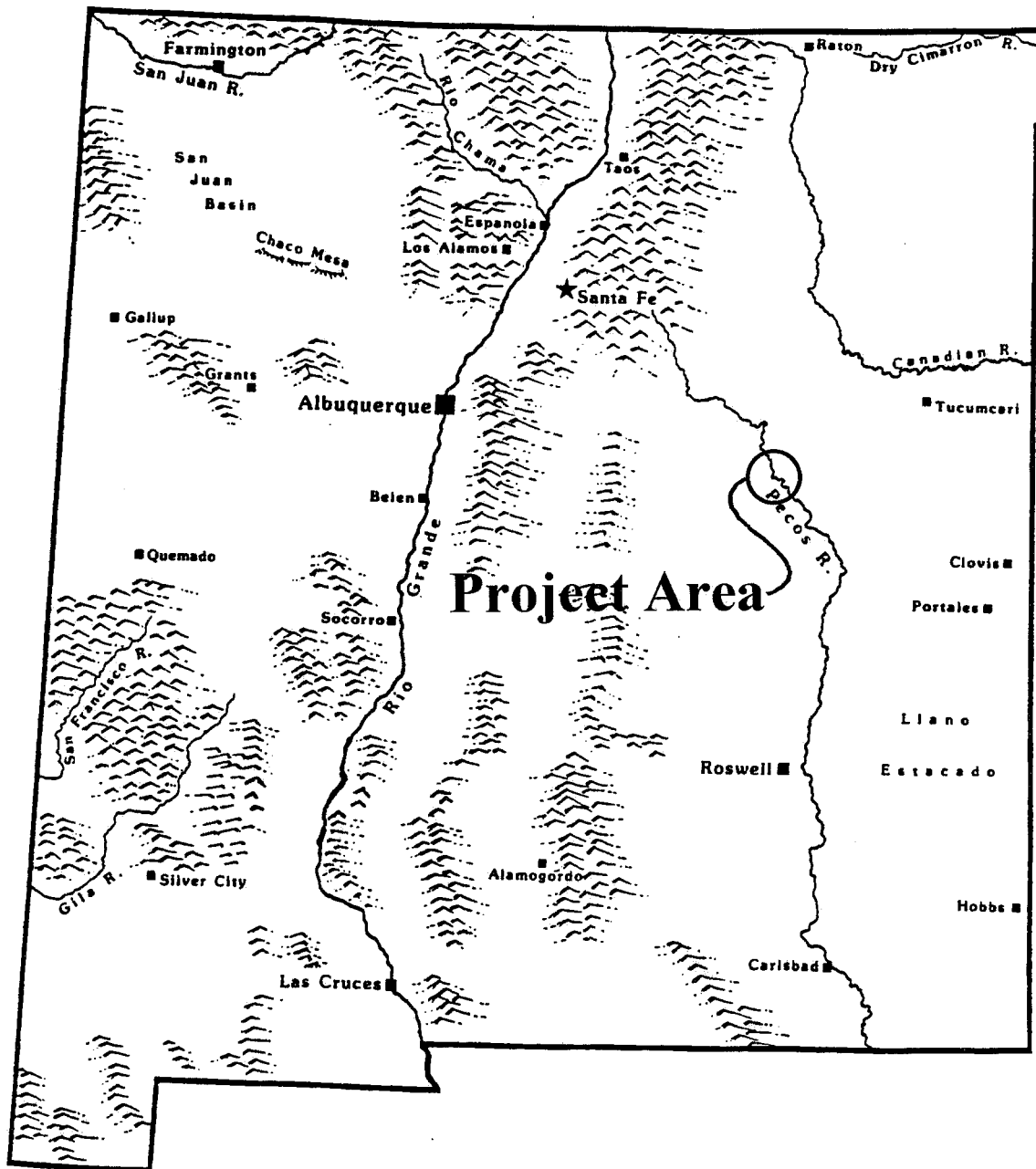


Figure 1: Project Location. East Puerto de Luna Acequia Irrigation Pipeline Project, approximately 7-miles southeast of Santa Rosa, Guadalupe County, New Mexico. Map prepared by Corps' Archeologist Gregory D. Everhart, July 08, 2009.

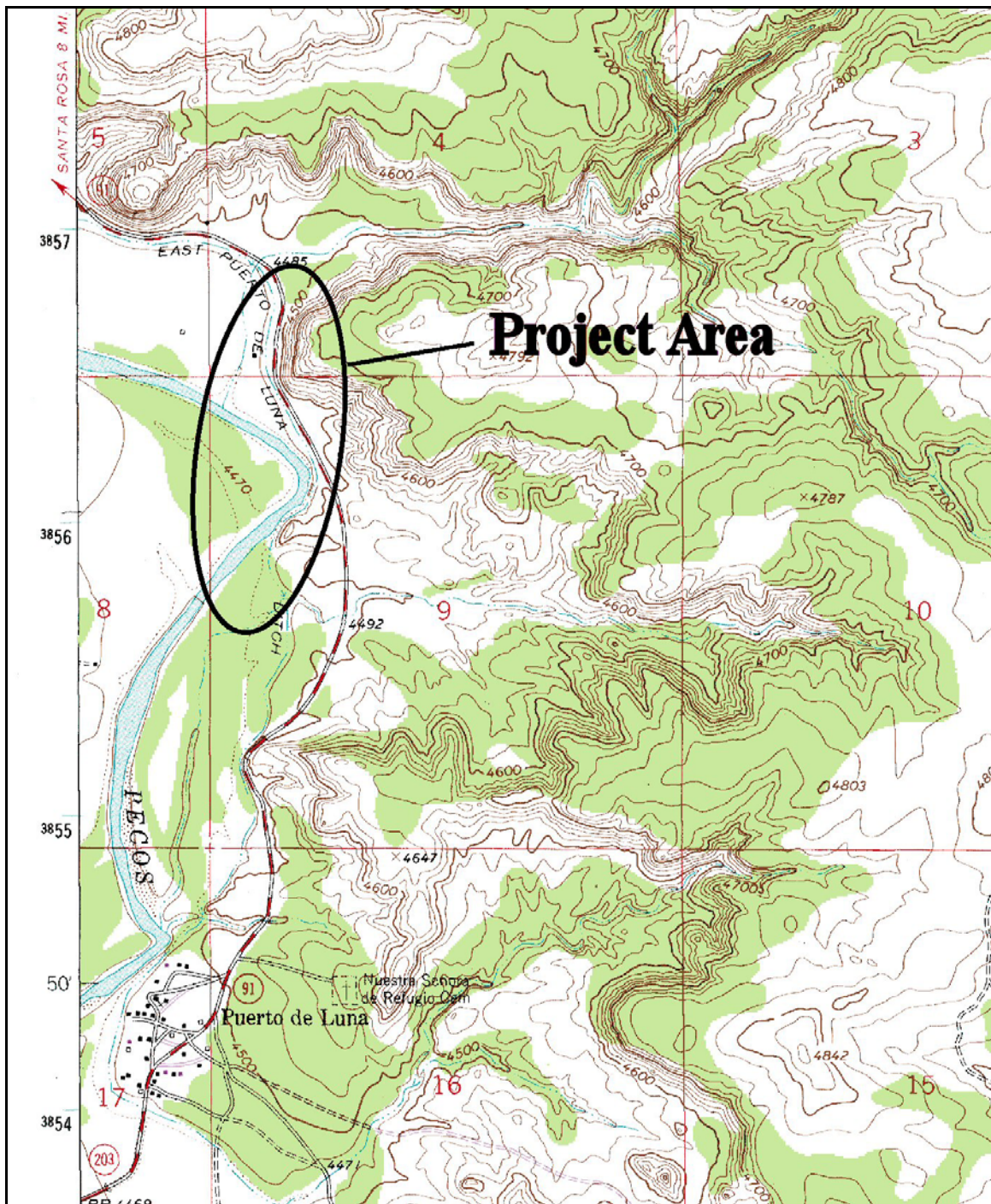


Figure 2: Approximate Project Location. East Puerto de Luna Acequia Irrigation Pipeline Project, approximately 7-miles southeast of Santa Rosa, Guadalupe County, New Mexico. Map prepared by Corps' Archeologist Gregory D. Everhart, July 08, 2009. Base Map adapted from USGS 7.5-Minute Quadrangle Map: Puerto de Luna, New Mexico (34104-g5; 1963, Photorevised 1982).



Photograph No. 9785: Overview of existing ditch alignment with example of upland sediment removed from ditch. East Puerto de Luna Acequia Irrigation Pipeline Project, approximately 7-miles southeast of Santa Rosa, Guadalupe County, New Mexico. Photograph by Corps' Archaeologist Gregory D. Everhart, April 14, 2009.



Photograph No. 9915: One of two existing flumes at arroyo crossings to be replaced. East Puerto de Luna Acequia Irrigation Pipeline Project, approximately 7-miles southeast of Santa Rosa, Guadalupe County, New Mexico. Photograph by Corps' Archaeologist Gregory D. Everhart, April 14, 2009.

Mr. Alan Downer
Navajo Nation
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Window Rock, Arizona 86515

Mr. Ron Maldonado
Navajo Nation
Historic Preservation Department
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Navajo Nation
HPD, Traditional Cultural Program
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Ms. Lorene Willis
Jicarilla Apache Nation
Office of Cultural Affairs
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Comanche Nation of Oklahoma
Tribal Historic Preservation Officer
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Tribal Historic Preservation Officer
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Mescalero, New Mexico 88340

Max Zuni
Lt. Governor, Pueblo of Isleta
Post Office Box 1270
Isleta Pueblo, New Mexico 87022



THE NAVAJO NATION

JOE SHIRLEY, JR.
PRESIDENT

BEN SHELLY
VICE-PRESIDENT

October 13, 2009

Gregory D. Everhart, Archaeologist
Department of the Army
Albuquerque District, Corps of Engineers
4101 Jefferson Plaza NE
Albuquerque, NM 87109-3435

Rec'd 10-21-2009
GDE

for East Puerto de Luna
Ditch project.

Dear Mr. Everhart:

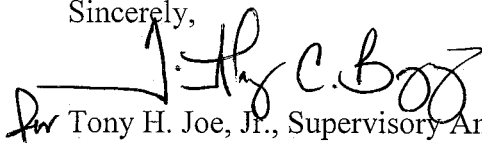
Our apology for an oversight and missing the deadline date of our response to your request, and that the Navajo Nation Historic Preservation Department – Traditional Culture Program (NNHPD-TCP) is in receipt of the proposed project regarding the planning of a construction project that would install approximately one-mile of underground irrigation pipeline, 7 miles southeast of the city of Santa Rosa, Guadalupe County, new Mexico.

After reviewing your consultation documents, HPD-TCP has concluded the proposed undertaking/project area **will not impact** any Navajo traditional cultural properties. The HPD-TCP, on behalf of the Navajo Nation has no concerns at this time.

However, the determination made by the HPD-TCP does not necessarily mean that the Navajo Nation has no interest or concerns with the proposed project. If the proposed project inadvertently discovers habitation sites, plant gathering areas, human remains and objects of cultural patrimony the HPD-TCP request that we be notified respectively in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA).

The HPD-TCP appreciates the Department of the Army's consultation efforts, pursuant to 36 CFR Pt. 800.1 (c)(2)(iii). Should you have any additional concerns and/or questions, do not hesitate to contact me electronically at tonyjoe@navajo.org or telephone at 928-871-7750. Mr. Kelly Francis will be taking over all Section 106 Consultations soon within the near future.

Sincerely,



Tony H. Joe, Jr., Supervisory Anthropologist (Section 106 Consultations)
Historic Preservation Department – Traditional Culture Program

TCP 10-042
CC: Office File/Chrono



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

Copy

October 20, 2009

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

Ms. Jan Biella
Acting, 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. Biella:

Pursuant to 36 CFR Part 800, the U.S. Army Corps of Engineers (Corps), Albuquerque District, is seeking your concurrence in our determination of "Adverse Effect to Historic Properties" for proposed construction on a segment of the East Puerto de Luna Community Ditch (EPdL Ditch). The Corps, at the request of the New Mexico State Engineer/Interstate Stream Commission and the East Puerto de Luna Community Ditch Association (EPdL Association), is planning a project that would rehabilitate a 4,400-foot segment of the EPdL Ditch. The proposed project, being planning through the Corps' Acequia Rehabilitation Program, would be conducted under Section 1113 of the Water Resources Development Act of 1986 (Public Law 99-662), as amended, and under Section 215 of the Flood Control Act of 1968, Public Law 90-483, as amended. Under Section 1113 of the Act, Congress has found that many of New Mexico's acequias date from the eighteenth century and, due to their significance in the settlement and development of the western United States should be restored and preserved for their cultural and historic values to the region. The Secretary of the Army has been authorized and directed to undertake, without regard to economic analysis, such measures as are necessary to protect and restore New Mexico's acequias.

The Corps' Acequia Rehabilitation Program would provide 75 percent of construction funding and is the lead Federal agency for this project in terms of Section 106 of the National Historic Preservation Act compliance. The Office of the State Engineer is the project sponsor and with the EPdL Association

would be responsible for the remaining 25 percent of construction costs. The EPdL Association would be responsible for assuring operation and maintenance upon project completion.

The proposed EPdL Ditch project area is located approximately 8 miles southeast of the City of Santa Rosa, Guadalupe County, New Mexico. The City of Santa Rosa is located on Interstate Highway 40 about 120 miles east of Albuquerque, the largest city in New Mexico. The East Puerto de Luna project area is located adjacent to and on the west side of New Mexico State Highway 91, in the southwest quarter of Section 4 and the west half of Section 9, Township 7 North, Range 22 East, as shown on USGS Quadrangle map Puerto de Luna, NM (34104-g5; 1963, Photo-revised 1982).

The EPdL Ditch diverts irrigation water from the Pecos River. The main ditch, or acequia madre, is approximately 8.5 miles in length. Approximately 4 miles have been previously lined with concrete or replaced with underground irrigation pipe through both the Corps and Natural Resources Conservation Service (NRCS) assistance. The remaining length of the ditch is currently earthen. It currently serves 44 families who irrigate approximately 376 acres of crop and pasture land. Currently, the EPdL Ditch irrigates alfalfa, grass pastures, and some local gardens and orchards. The community of Puerto de Luna was established in 1863; however, there were local land grants in the area that date to the early 1820s. EPdL Association members believe that the acequia was originally constructed in about 1849 and has an adjudicated date of 1883 per the 1933 Hope Decree.

The proposed EPdL Ditch Rehabilitation Project (Undertaking) would construct approximately 3,120 linear feet of concrete ditch lining, install approximately 1,190 feet of 36-inch diameter, high-density polyethylene underground pipeline, and re-construct two 36-inch diameter corrugated metal pipe flumes with concrete support structures that cross un-named arroyos. Total project length is approximately 0.82 miles (4,400 feet). A single staging area is needed to park equipment overnight and stockpile construction materials. The staging area has been used for similar purposes in the past. Access to the project area is on existing paved highways, farm roads and two-tracks. The project utilizes a NRCS design.

This segment of earthen ditch is experiencing significant water losses due to seepage and rodent burrows, and there is a significant sedimentation problem from surface water flows from the adjacent, eroding upland area. The improvements would provide for the efficient, timely, and equitable delivery of irrigation water to downstream portions of the ditch during the critical irrigation times of the growing season as well as reducing the high costs of maintaining the earthen ditch. The Association's primary goal is to conserve irrigation water so that it is available for all of the EPdL Association members.

Pursuant to 36 CFR 800.2, consulting parties in the Section 106 process identified for the Undertaking include the Corps, the Office of the State Engineer, the EPdL 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 20, 1998, and based on the State of New Mexico Indian Affairs Department and Historic Preservation Division's 2009 Native American Consultations List, American Indian tribes that have indicated they have concerns in Guadalupe 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 EPdL Association's right-of-way (ROW), a 0.5-acre staging area, and access routes with a buffer area for a total of 7.8 acres.

Pursuant to 36 CFR 800.4(b), on April 14, 2009, Corps' archaeologists conducted an intensive pedestrian survey covering 100-percent of the project area, the results of which are presented in the enclosed Corps' cultural resources survey report entitled A Cultural Resources Inventory of 7.8 Acres for an Acequia Rehabilitation Project on the East Puerto de Luna Community Ditch, Guadalupe County, New Mexico (NMCRIS No. 115353; USACE-ABQ-2009-012). The survey was conducted within EPdL Association's right-of-way and on private property.

Prior to the pedestrian survey, an archival literature search, and searches of the New Mexico Archaeological Records Management Section (ARMS) database, the State Register of Cultural Properties, and the National Register of Historic Places (NRHP) were completed. Seven previous cultural resource investigations have been conducted within one mile of the

project area. Two archaeological sites (LA108218 and LA153935) have been previously documented to occur adjacent to the proposed project area.

According to ARMS data, LA108218 was identified as a U.S. Territorial period Apachean site. ARMS data indicates that portions of the LA108218 site occur on both sides of State Highway 91 and the site has been impacted by road construction and maintenance, and by vehicular traffic. Portions of the site have been previously excavated and some artifacts have been collected.

The Corps was unable to verify the location of LA108218. The NM State Highway 91 right-of-way, as noted in ARMS, has been significantly impacted by road construction and maintenance activities. The land surface on the private property side of the fence has also been significantly disturbed. This area of private property would serve as an access route to the EPdL Ditch. The Corps observed 3 lithic artifacts adjacent to the Highway's right-of-way fence line that may be associated with LA108218. These artifacts are located close enough to the fence line that they would not be affected by the EPdL Ditch project. The Corps did not observe evidence of LA108218 within the project APE. The Corps did not observe additional cultural resources. The Corps is of the opinion that driving across the area would have no effect to cultural resources, if they occur in or adjacent to this access area. The Corps is seeking your concurrence with no effect regarding the LA108218 site.

Information regarding the second site, LA153935, is still not reported in the ARMS database; however, the site was recorded during a survey for a fiber-optic line and is located on the east side of State Highway 91. Because the site is on the opposite side of the highway from the EPdL Ditch, the proposed EPdL project would have no effect to this site. The Corps is seeking your concurrence with no effect regarding the LA153935 site.

The pedestrian survey identified one isolated occurrence (IO) located adjacent to the EPdL Ditch and near the highway. The IO consists of five artifacts: one historic micaceous utility ware sherd; a portion of an old electric ironing iron; and a historic bottle top (three pieces). This IO would not be affected by EPdL project construction. The Corps is of the

opinion that this IO is not significant and has been adequately recorded in the field, and therefore no further work is necessary.

The Corps also documented the project area's portion of the historic EPdL Ditch. The Corps has determined that the EPdL Ditch remains eligible for nomination to the NRHP under Criterion (a) because irrigation systems such as this one made possible the settling and farming of this portion of the Pecos River valley and is thus associated with events that have made a significant contribution to broad patterns of our history and under Criterion (d) because it has provided, and is likely to provide, information important to understanding the history of the local area as well as the state of New Mexico, i.e., for its potential to contribute to the understanding of the rural lifestyle during the late 19th and early 20th centuries.

The Corps has assisted the EPdL Association on three previous Acequia Rehabilitation Program construction projects that have affected approximately 2,920 lineal feet (0.55 miles; 6.5 percent) of the ditch. The acequia system's 1960s diversion dam was replaced in 1996; a failing flume was rebuilt in 2000; and approximately 2,870 feet of underground pipeline was installed in a troublesome segment of the ditch in 2003. The Natural Resources Conservation Service has also assisted the EPdL Association by constructing three concrete ditch-lining projects in 1967, 1973, and 1985, covering a total of about 18,243 linear feet (3.45 miles; 40.6 percent). The current project would affect approximately 4,400 lineal feet (0.82 miles; 9.6 percent) of the 8.5-mile EPdL Ditch system.

While the previous Corps and the currently proposed projects would affect a total of only about 16.1 percent of the 8.5-mile acequia system; considering the cumulative impacts, more than one-half of the original earthen ditch system will have been altered in form (56.7 percent). Therefore, the Corps has determined that the proposed project will have an adverse effect upon the historic EPdL Ditch. We seek your concurrence in our determination of adverse effect. Approximately 43.3 percent (~16,387 linear feet) of the existing ditch will remain earthen in form. The project will follow the existing alignment and will help to ensure that the system maintains its historic function.

The Corps considered construction options that would reduce or minimize the effects to form, alignment, and function of the acequia. Due to local topography and the EPdL Ditch's location, staying in the original alignment, constricted between the Pecos River and State Highway 91, would have the least impact to the historic character of the acequia and would be the only viable alignment alternative that meets the purpose and needs of the EPdL Association.

EPdL Association members have also expressed concerns indicating that they are experiencing operations and maintenance problems in other sections of the ditch system; therefore, there is the potential for future rehabilitation projects on the ditch system.

A draft Memorandum of Agreement (MOA) is attached with proposed mitigation measures. This MOA details a combination of several efforts that might serve to mitigate for the adverse effects for the current project as well as for potential future projects. We seek your suggestions, comments, or requests that you, the EPdL Association, or other potential consulting parties might have. Pursuant to 36 CFR 800.6(a)(1), we will also notify the Advisory Council on Historic Preservation concerning this project, but due to the non-controversial nature of this project, do not anticipate their participation.

In sum, the Corps is of the opinion that the proposed East Puerto de Luna Community Ditch rehabilitation project will have an "Adverse Effect to Historic Properties." The Corps recommends that construction be permitted to proceed after consulting parties agree to the resolution of adverse effects and codify that resolution in a Memorandum of Agreement.

Should work be allowed to proceed, and 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, the EPdL Association, and with American Indian tribes that may have concerns in the project area as to the best course of action.



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

December 22, 2009

Rec'd 1-19-2010
GDE

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

1088429

Ms. Jan Biella
Acting, 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

DEC 28 2009
NN/HVB

Dear Ms. Biella:

Pursuant to 36 CFR Part 800, the U.S. Army Corps of Engineers (Corps), Albuquerque District, has submitted documentation to your office in our letter dated October 20, 2009, regarding our determination of "Adverse Effect to Historic Properties" for proposed construction on a segment of the East Puerto de Luna Community Ditch (EPdL Ditch). The documentation package included the Corps' cultural resources survey report entitled A Cultural Resources Inventory of 7.8 Acres for an Acequia Rehabilitation Project on the East Puerto de Luna Community Ditch, Guadalupe County, New Mexico (NMCRIIS No. 115353; USACE-ABQ-2009-012) and a draft Memorandum of Agreement (MOA) outlining mitigation measures that the Corps believes will resolve the Adverse Effect. On the same date, the Corps submitted the same documentation package to the Puerto de Luna Community Ditch Association. In our letter dated November 19, 2009, the Corps notified the Advisory Council on Historic Preservation (ACHP). The ACHP has not yet responded and is currently not participating in this process.

As of this date, the Corps has received no comments from anyone regarding the MOA or documentation package. Therefore, the Corps is proceeding with the Section 106 process and the Corps is of the opinion that the proposed measures in the MOA are adequate to resolve the adverse effect to EPdL Ditch. Enclosed is the Final MOA for your signature.

If you have questions or require additional information regarding the 4,400-foot East Puerto de Luna Community Ditch rehabilitation project, please contact Gregory Everhart, archaeologist, at (505) 342-3352 or myself at (505) 342-3281.

Sincerely,



Julie Alcon
Chief, Environmental
Resources Section

Enclosures

Copies furnished w/ enclosures:

Honorable James E. Moncayo
Magistrate Judge Division I
Mayordomo, East Puerto de Luna Community Ditch
c/o 603 Parker Avenue
Santa Rosa, New Mexico 88435

Mr. Ray Acosta
Acequia Program Manager
Bataan Memorial Building RM 101
P.O. Box 25102
Santa Fe, New Mexico 87504-5102

Mr. Reid Nelson, Director
Attn: Mr. Tom McCulloch
Advisory Council on Historic Preservation
Office of Planning and Review
1100 Pennsylvania Avenue NW, Suite 809
Washington, DC 20004

Concur with recommendations as proposed.
 1/12/10
for NM State Historic Preservation Officer



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

November 19, 2009

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

Mr. Reid Nelson, Director
Advisory Council on Historic Preservation
Office of Planning and Review
1100 Pennsylvania Avenue NW, Suite 809
Washington, DC 20004

Dear Mr. Nelson:

Pursuant to 36 CFR 800.6(a)(1), the U.S. Army Corps of Engineers (Corps), Albuquerque District, is notifying your office of an adverse effect finding for the proposed rehabilitation by the Corps of an irrigation ditch (Undertaking) near Santa Rosa, Guadalupe County, New Mexico. The Section 106 process for this project has not been controversial. All consulting parties are in agreement regarding resolution of adverse effects, and no National Historic Landmarks are involved in this project. This letter and its enclosures serve to notify your office of the adverse effect pursuant to 36 CFR 800.6(a)(1) and to document the Section 106 process for this Undertaking pursuant to 36 CFR 800.11(e).

The Corps, at the request of the New Mexico Office of the State Engineer/Interstate Stream Commission and East Puerto de Luna Community Ditch Association (Association), is planning a project that would rehabilitate a 4,400-foot segment of the East Puerto de Luna Community Ditch (EPdL acequia). This segment of earthen ditch (acequia) is experiencing significant water losses due to seepage and rodent burrows, and there is a significant sedimentation problem from surface water flows from the adjacent, eroding upland area. The improvements would provide for the efficient, timely, and equitable delivery of irrigation water to downstream portions of the acequia during the critical irrigation times of the growing season as well as reducing the high costs of maintaining the earthen acequia.

The proposed project, being planned through the Corps' Acequia Rehabilitation Program, would be conducted under Section 1113 of the Water Resources Development Act of 1986 (Public Law 99-662), as amended, and under Section 215 of the Flood Control Act of 1968, Public Law 90-483, as amended. Under Section 1113 of the Act, Congress has found that many of New Mexico's acequias date from the

eighteenth century and, due to their significance in the settlement and development of the western United States, should be restored and preserved for their cultural and historic values to the region. The Secretary of the Army has been authorized and directed to undertake, without regard to economic analysis, such measures as are necessary to protect and restore New Mexico's acequias.

The East Puerto de Luna (EPdL) Rehabilitation Project is located approximately 8 miles southeast of the City of Santa Rosa, Guadalupe County, New Mexico (Enclosure 1). The City of Santa Rosa is located on Interstate Highway 40 about 120 miles east of Albuquerque, the largest city in New Mexico. The East Puerto de Luna project area is located adjacent to and on the west side of New Mexico State Highway 91, in the southwest quarter of Section 4 and the west half of Section 9, Township 7 North, Range 22 East, as shown on USGS Quadrangle map Puerto de Luna, NM (34104-g5; 1963, Photo-revised 1982).

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The proposed Undertaking would construct approximately 3,120 linear feet of concrete ditch lining, install approximately 1,190 feet of 36-inch diameter, high-density polyethylene underground pipeline, and re-construct two 36-inch diameter corrugated metal pipe flumes with concrete support structures that cross un-named arroyos. Total project length is approximately 0.82 miles (4,400 feet). A single staging area is needed to park equipment overnight and stockpile construction materials. The staging area has been used for similar purposes in the past. Access to the project area is on existing paved highways, farm roads and two-tracks. The project utilizes an existing Natural Resources Conservation Service design.

Pursuant to 36 CFR 800.2, consulting parties in the Section 106 process identified for the Undertaking include the Corps, the New Mexico State Historic Preservation Officer (NMSHPO), the EPdL Association, the Office of the State Engineer/Interstate Stream Commission, and your office if you choose to participate. Consistent with the Department of Defense's American Indian and Alaska Native Policy, signed by Secretary of Defense William S. Cohen on October 20, 1998, and based on the State of New Mexico Indian Affairs Department and Historic Preservation Division's 2009 Native American Consultations List, American Indian tribes that have indicated they have concerns in Guadalupe 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 EPdL Association's acequia right-of-way, a 0.5-acre staging area, and access routes for a total of 4.95 acres.

Pursuant to 36 CFR 800.4(b), on April 14, 2009, Corps' archaeologists conducted an intensive pedestrian survey covering 100-percent of the project area, the results of which are presented in the enclosed Corps' cultural resources survey report entitled A Cultural Resources Inventory of 7.8 Acres for an Acequia Rehabilitation Project on the East Puerto de Luna Community Ditch, Guadalupe County, New Mexico (NMCRIIS No. 115353; USACE-ABQ-2009-012) (Enclosure 2). The survey was conducted within EPdL Association's right-of-way and on private property.

Prior to the pedestrian survey, an archival literature search, and searches of the New Mexico Archaeological Records Management Section (ARMS) database, the State Register of Cultural Properties, and the National Register of Historic Places (NRHP) were completed. Seven previous cultural resource investigations have been conducted within one mile of the project area. Two archaeological sites (LA108218 and LA153935) have been previously documented to occur adjacent to the proposed project area.

According to ARMS data, LA108218 was identified as a U.S. Territorial period Apachean site. ARMS data indicates that portions of the LA108218 site occur on both sides of State Highway 91 and the site has been impacted by road construction and maintenance, and by vehicular traffic. Portions of the site have been previously excavated and some artifacts have been collected.

The Corps was unable to verify the location of LA108218. The NM State Highway 91 right-of-way, as noted in ARMS, has been significantly impacted by road construction and maintenance activities. The land surface on the private property side of the State Highway right-of-way fence has also been significantly disturbed. This area of private property would serve as an access route to the EPdL acequia. The Corps observed 3 lithic artifacts adjacent to the Highway's fence line that may be associated with LA108218. These artifacts are located close enough to the fence line that they would not be affected by the Undertaking. The Corps did not observe evidence of LA108218 within the project APE. The Corps did not observe additional cultural resources. The Corps is of the opinion that driving across the area would have no effect to cultural resources, if they occur in or adjacent to this access area.

Information regarding the second site, LA153935, is still not reported in the ARMS database; however, the site was recorded during a survey for a fiber-optic line and is located on the east side of State Highway 91. Because the site is on the opposite side of the highway from the EPdL acequia, the proposed Undertaking would have no effect to this site.

The pedestrian survey identified one isolated occurrence (IO) located adjacent to the EPdL acequia and near the Highway's fence line. The IO consists of five artifacts: one historic micaceous utility ware sherd; a portion of an old electric ironing iron; and a historic bottle top (three pieces). This IO would not be affected by project construction. The Corps is of the opinion that this IO is not significant and has been adequately recorded in the field, and therefore no further work is necessary.

The Corps also documented the project area's portion of the historic EPdL acequia. The EPdL acequia was previously determined eligible for nomination to the NRHP under Criterion (a) and (d) in 1995. The Corps has determined that the EPdL acequia remains eligible for nomination to the NRHP under Criterion (a) because irrigation systems such as this one made possible the settling and farming of this portion of the Pecos River valley and is thus associated with events that have made a significant contribution to broad patterns of our history, and under Criterion (d) because it has provided, and is likely to provide, information important to understanding the history of the local area as well as the state of New Mexico, i.e., for its potential to contribute to the understanding of the rural lifestyle during the late 19th and early 20th centuries.

The Corps has assisted the EPdL Association on three previous Acequia Rehabilitation Program construction projects that have affected approximately 2,920 lineal feet (0.55 miles; 6.5 percent) of the acequia. The acequia system's 1960s diversion dam was replaced in 1996; a failing flume was rebuilt in 2000; and approximately 2,870 feet of underground pipeline was installed in a troublesome segment of the acequia in 2003. The Natural Resources Conservation Service has also assisted the EPdL Association by constructing three concrete ditch-lining projects in 1967, 1973, and 1985, covering a total of about 18,243 linear feet (3.45 miles; 40.6 percent). The current project would affect approximately 4,400 lineal feet (0.82 miles; 9.6 percent) of the 8.5-mile EPdL acequia system.

Acequias in New Mexico—linear engineering features that are designed to carry irrigation water from source points to agricultural fields—are often considered to have integrity based on their form, function, and alignment. Form refers to the historically open, earthen acequias including any associated historic structural components such as diversion structures, sluices, and gates but also includes aesthetic qualities. An acequia's intended function is to transport irrigation water from the source to a community's agricultural fields and pastures. Alignment, as it implies, refers to the actual location of the acequia. While the previous Corps projects and the currently proposed Corps project would affect a total of only about 16.1 percent of the 8.5-mile acequia system; considering the cumulative impacts that include the three Natural Resources Conservation Service projects, more than one-half of the original earthen acequia system will have been altered in form (56.7 percent). Therefore, the Corps has determined that the proposed project will have an adverse effect upon the historic EPdL acequia. Approximately 43.3 percent (~16,387 linear feet) of the existing acequia will remain earthen in form.

The Corps considered construction options that would reduce or minimize the effects to form, alignment, and function of the acequia. Due to local topography and the EPdL acequia's location, staying in the original alignment, constricted between the Pecos River and State Highway 91, would have the least impact to the historic character of the acequia and would be the only viable alignment alternative that meets the purpose and needs of the EPdL Association. Within the APE, there are no unique features or technological challenges associated with the EPdL acequia. EPdL Association members have also expressed concerns indicating that they are experiencing operations and maintenance problems in other sections of the acequia system; therefore, there is the potential

for future rehabilitation projects on the acequia system. The Association's primary goal is to conserve irrigation water so that it is available for all of the EPdL Association members.

Applying the criteria of adverse effect, pursuant to 36 CFR 800.5, to the three NRHP eligible properties, the Undertaking will avoid the two archaeological sites, LA108218 and LA153935, but has the potential to adversely affect the EPdL acequia. Primarily, effects are rehabilitation that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR 68, 36 CFR 800(2)(ii)). The Corps considers the current project's conversion of 4,400 feet of the EPdL acequia from an open earthen ditch to concrete ditch lining and underground pipeline in addition to the previous projects to have a cumulative effect that is an adverse effect to this historic property. This represents a cumulative change in form to a little more than half (56 percent) of the EPdL acequia. The proposed project, therefore, will affect the form but will not affect the acequia system's alignment/location (it follows the current alignment as closely as feasible) or function (to convey water to crop and pasture lands), those historic elements that contribute to the acequia's eligibility for nomination to the NRHP.

In sum, the Corps is of the opinion that the proposed East Puerto de Luna Community Ditch Rehabilitation Project will have no effect to LA108218 and LA153935; however, there would be an adverse effect to the EPdL acequia, therefore, there is an "Adverse Effect to Historic Properties." The Corps recommends that construction be permitted to proceed after consulting parties agree to a resolution of adverse effects and codify that resolution in a Memorandum of Agreement.

As a resolution of adverse effects to the EPdL acequia, the Corps recommends conducting additional research on the acequia (beyond survey level) including photographic documentation of the acequia on archival paper, conducting oral history interviews with acequia association members, as well as dissemination of project results to the public for educational purposes. We are in consultation with the NMSHPO and consulting parties to see if they concur with these mitigation measures (Enclosure 3). Based on previous acequia rehabilitation projects, similar efforts were found to be acceptable mitigation measures. A draft Memorandum of Agreement (MOA) that details a combination of several efforts that might serve to mitigate for the adverse effect for the current project as well as for potential future projects is also being prepared and is enclosed for your review (Enclosure 4) in anticipation of a successful resolution pursuant to 36 CFR

800.6(b)(1)(iv). Due to the non-controversial nature of this project, this MOA assumes that your office will not participate, but can be easily changed if you decide to participate in the Section 106 consultations.

Should work be allowed to proceed, and 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 the New Mexico State Historic Preservation Officer, the EPdL Association, and with American Indian tribes 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 4,400-foot East Puerto de Luna Community Ditch Rehabilitation Project, please contact Mr. Gregory Everhart, archaeologist, at (505) 342-3352 or myself at (505) 342-3281.

Sincerely,



Julie Alcon
Chief, Environmental Resources
Section

Enclosures (4)

Copy furnished w/o Enclosures:

Ms. Katherine Slick
State Historic Preservation Officer
Historic Preservation Division
Bataan Memorial Building
407 Galisteo Street, Suite 236
Santa Fe, NM 87501

ENCLOSURE 1: Project Location

East Puerto de Luna Community Ditch Rehabilitation Project
near Santa Rosa, Guadalupe County, New Mexico

ENCLOSURE 2: Archaeological Survey Report

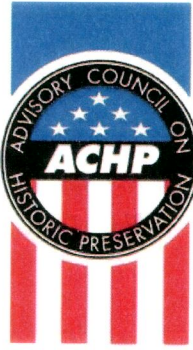
East Puerto de Luna Community Ditch Rehabilitation Project
near Santa Rosa, Guadalupe County, New Mexico

ENCLOSURE 3: NMSHPO Correspondence

East Puerto de Luna Community Ditch Rehabilitation Project
near Santa Rosa, Guadalupe County, New Mexico

ENCLOSURE 4: Draft MOA

East Puerto de Luna Community Ditch Rehabilitation Project
near Santa Rosa, Guadalupe County, New Mexico



Preserving America's Heritage

was post-marked 12-24-2009

Rec'd
GDE

December 9, 2009

Ms. Julie Alcon
Chief, Environmental Resources Section
Albuquerque District, Corps of Engineers
4101 Jefferson Plaza NE
Albuquerque, NM 87109-3435

***Ref: Proposed East Puerto de Luna Community Ditch Rehabilitation Project
Guadalupe County, New Mexico***

Dear Ms. Alcon:

On November 24, 2009, the Advisory Council on Historic Preservation (ACHP) received your notification and supporting documentation regarding the adverse effects of the referenced project on properties listed on and eligible for listing in the National Register of Historic Places. Based upon the information you provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800), does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, if we receive a request for participation from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer, affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Additionally, should circumstances change, and you determine that our participation is needed to conclude the consultation process, please notify us.

Pursuant to 36 CFR §800.6(b)(1)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the New Mexico SHPO and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the MOA and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with the opportunity to review this undertaking. Also, the ACHP is moving towards transmitting correspondence electronically. In order for us to correspond with you electronically, ***please include an email address in all future correspondence.*** If you have any questions or need assistance, feel free to contact Tom McCulloch at 202-606-8554, or via email at tmcculloch@achp.gov.

Sincerely,

Raymond V. Wallace

Raymond V. Wallace
Historic Preservation Technician
Office of Federal Agency Programs

MEMORANDUM OF AGREEMENT

BETWEEN THE U.S. ARMY CORPS OF ENGINEERS,
THE NEW MEXICO STATE HISTORIC PRESERVATION OFFICER,
THE OFFICE OF THE STATE ENGINEER-INTERSTATE STREAM COMMISSION
AND
THE EAST PUERTO DE LUNA COMMUNITY DITCH ASSOCIATION

SUBJECT: Resolution of Adverse Effects to East Puerto de Luna Community Ditch,
Guadalupe County, New Mexico.

1. WHEREAS, the U.S. Army Corps of Engineers (Corps), Albuquerque District, at the request of the New Mexico Office of the State Engineer/Interstate Stream Commission (NMISC) and the East Puerto de Luna Community Ditch Association (Association), the project sponsors, is planning a project that would rehabilitate a 4,400 foot segment of the 8.5-mile East Puerto de Luna Community Ditch (Ditch, i.e., a historic acequia); and
2. WHEREAS, field activities associated with construction of the Project include construction of approximately 3,120 linear feet of concrete ditch lining, installation of approximately 1,190 of underground HDPE pipeline, and re-construction of two flumes. These activities are referred to herein as "Construction"; and
3. WHEREAS, Federal/Corps assistance is authorized under Section 1113 of the Water Resources Development Act of 1986 (Public Law 99-662; 33 U.S.C. 2201 et. seq.), as amended; where the Federal cost-share is 75 percent and the Corps is responsible for NEPA compliance, project design, and construction oversight; and
4. WHEREAS, the Corps' funding of this project is subject to review under Section 106 of the National Historic Preservation Act, 16 U.S.C. § (NHPA), and its implementing regulations (36 CFR Part 800); and
5. WHEREAS, the Corps has notified the Advisory Council on Historic Preservation (ACHP) in our letter dated November 19, 2009 (see Attachment 1), and the ACHP has not yet responded and is currently not participating in this process; and
6. WHEREAS, the Corps has established the Project's Area of Potential Effects (APE), as defined at 36 CFR Part 800.16(d), as the construction footprint within the Association's right-of-way (ROW) as well as a 0.5-acre staging area, for a total of 4.95 acres, as shown in Enclosure 1 in a letter to the New Mexico State Historic Preservation Officer (NMSHPO) dated October 20, 2009 (see Attachment 2); and
7. WHEREAS, the Corps has evaluated adverse effects associated with this project and has determined that Construction constitutes an adverse effect to the Ditch as identified in (1) the report titled "A Cultural Resources Inventory of 7.8 Acres for an Acequia Rehabilitation Project on the East Puerto de Luna Community Ditch, Guadalupe County,

New Mexico" prepared by Corps' archaeologist, Gregory D. Everhart (Report) and dated October 19, 2009, and (2) the Corps' letter to the NMSHPO dated October 20, 2009, and that the Corps and the NMSHPO have agreed that the Ditch was previously determined eligible for nomination to the National Register of Historic Places (36 CFR 60.4); and

8. WHEREAS, the Corps has afforded the Comanche Nation of Oklahoma, the Pueblo of Isleta, the Jicarilla Apache Nation, the Kiowa Tribe of Oklahoma, the Mescalero Apache Tribe, and the Navajo Nation the opportunity to participate in this process pursuant to 36 CFR Part 800.2 and 36 CFR Part 800.4 and none of these tribes have indicated any tribal concerns related to the Project or asked to participate as a consulting party in the Project; and

9. WHEREAS, pursuant to 36 CFR Part 800.6(c)(3) the Corps has consulted with the Association and the NMISC and has invited them to sign this Memorandum of Agreement (MOA) as a concurring party; and

10. WHEREAS, the Corps has consulted with the NMSHPO in accordance with Section 106 of the National Historic Preservation Act, 16 U.S.C. § 470 (NHPA), and its implementing regulations (36 CFR Part 800.6(b)(1)) to resolve the adverse effects of the undertaking on the Ditch; and

NOW, THEREFORE, the Corps and SHPO agree that upon the Corps' decision to fund the undertaking, the Corps shall ensure that the following stipulations are implemented in order to take into account the effects of the undertaking on historic properties, and that these stipulations shall govern the Project and all of its parts until this MOA expires or is terminated.

Stipulations

The Corps shall ensure that the following stipulations are implemented:

1. Additional Documentation of the Ditch beyond Survey Level Recordation

- a. Documenting the acequia's alignment will consist of drawing the current alignment on an aerial image, presenting both the current alignment and any known past alignment(s). Sources of information will minimally include oral interviews with acequia members and an archival records search at the Office of the State Engineer and the Natural Resources Conservation Service. Current engineering drawings will be included in hardcopy as an appendix to the report. Representative archival photographs of the setting, ditch, and any associated structures, as well as representative profile drawings of the ditch will be taken to document the acequia's form. The photographic documentation will be based on

the standard practices defined in the Secretary of the Interior's Standards for Architectural and Engineering Documentation HABS/HAER Level II format for photographs, substituting 8x10" enlargements of black-and-white photographs printed on 100-year plus archival paper (and ink, if using inkjet) for large format photographs. Maps, drawings, and archival quality black-and-white photographs will be completed by an archaeologist or other qualified individual to document representative sections of the location and setting of the acequia and its structures.

- b. Conduct oral history interviews with acequia association members to document such things as how the acequia has changed over time in terms of crops planted, total acreage irrigated, association members, and the member's involvement in maintaining and using the acequia.

Documentation would be conducted through a Corps' contract with a qualified ethnographer/historian.

2. Discoveries

- a. In the event that unrecorded or unanticipated historic properties, that may be eligible for nomination to the National Register, are located during Construction activities, or it is recognized that such actions may affect a known historic property in an unanticipated manner, the Corps will terminate Construction activities within 100 feet of the property and will take all reasonable measures to avoid or minimize harm to the property until consultation between the Corps, the NMSHPO, and any other interested party, regarding significance and effect can be concluded. The Corps will notify the NMSHPO within 72 hours and consult to develop actions that will take the effects of the undertaking into account. The Corps and NMSHPO will mutually agree upon time frames for the consultation.
- b. In the event that any human burial is discovered during construction activities, the provisions of Section 18-6-11.2 of the New Mexico Cultural Properties Act, NMSA 1978, and regulations found at 4.10.11 NMAC, shall apply.

3. Reporting and Disbursement

- a. Reporting from Stipulation 1a will be included in the Report, with the exception of the archival photographs. Copies of archival photographs will be submitted to the NMSHPO with the Report. A copy of the archival photographs will also be stored at the Corps, Albuquerque District.
- b. Reporting from Stipulation 1b will be published as an appendix to the Report.
- c. Copies of the Report with appendices will be provided to consulting parties and to the Archaeological Records Management Section of the New Mexico Historic

Preservation Division. The Corps will retain 20 copies of the Report in the Albuquerque District for disbursement to interested parties.

- d. For the purpose of public outreach, the Corps will prepare a public interest story on the acequia, its members, and the Corps' involvement in the acequia program, incorporating results from Stipulations 3.a. and 3.b., and will publish and/or submit the story to at minimum two of the following media outlets: 1) the Corps internet site (<http://www.spa.usace.army.mil/>), 2) a Press Release of the public interest story through the Corps' Public Affairs Office, 3) RipRap, the Albuquerque Corps District's quarterly newsletter, 4) Engineer Update, the Corps' national monthly internal newsletter (<http://www.usace.army.mil/CEPA/ENGINEERUPDATE/Pages/Home.aspx>), and 5) NewsMAC, the newsletter of the New Mexico Archaeological Council. The public interest story will be suited for a general audience, will include at least one photograph, and will be approximately one to two pages long. Other media outlets similar to those listed above will be considered, especially those local to the Puerto de Luna community.
- e. Reporting will be completed by December 31, 2012.

4. Administrative Stipulations

- a. Disputes arising about the implementation of the stipulations of this MOA will be resolved in the following manner:

(1) The Corps shall notify all other signatories in writing of any instance where a signatory or consulting party to this MOA objects to the implementation of any of the stipulations set forth above. The Corps shall consult to resolve the objection. If the Corps determines that the objection cannot be resolved, the Corps shall forward all documentation relevant to the dispute, including the Corps' proposed resolution, to the ACHP. Within fifteen (15) business days after receipt of adequate documentation, the ACHP shall either:

- a) provide written recommendations relative to the dispute, or
- b) notify the Corps that it will comment in accordance with 36 CFR Part 800.7(c).

(2) Any comment provided by the ACHP in response to such a request shall be taken into account by the Corps in accordance with 36 CFR Part 800 with reference to the subject of the dispute. The Corps' responsibility regarding all other actions under this MOA that are not the subject of the dispute shall remain unchanged. Prior to reaching a final decision on the dispute, the Corps shall prepare a written response that takes into account

any timely advice or comments regarding the dispute from the ACHP, signatories and consulting parties, and provide them with a copy of this written response. The Corps will then proceed according to its final decision.

(3) If the ACHP does not provide its advice regarding the dispute within the fifteen (15) day time period, the Corps may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the Corps shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and consulting parties to the MOA, and provide them and the ACHP with a copy of such written response.

- b. At any time during implementation of the measures stipulated in this MOA, should an objection to any such measure or its manner of implementation be raised by a member of the public regarding historic preservation, the Corps shall take the objection into account and consult as needed with the NMSHPO, or the ACHP to determine how best to address the objection.
- c. If the terms of this agreement have not been implemented by December 31, 2012, this agreement shall be considered null and void, unless the signatories agree in writing to an extension for carrying out its terms. If this agreement is considered null and void, the Corps shall so notify the parties to this agreement, and if the Corps chooses to continue with the undertaking, shall re-initiate review of the undertaking in accordance with 36 CFR Part 800.
- d. Any signatory to this agreement may propose to the Corps that the agreement be amended, whereupon the Corps shall consult with the other parties to this agreement to consider such an amendment. This MOA will be amended when such an amendment is agreed to in writing by all signatories. The amendment will be filed with the ACHP and go into effect on the date of the last signature from signatories.
- e. If the Corps determines that it cannot implement the terms of this agreement, or if the NMSHPO determines that the agreement is not being properly implemented, such party may propose to the other parties to this agreement that it be terminated.

The party proposing to terminate this agreement shall so notify all parties to this agreement, explaining the reasons for termination and affording them at least 30 days to consult and seek alternatives to termination. The parties shall then consult.

Should such consultation fail, the Corps or other signatory party may terminate the agreement by so notifying all parties.

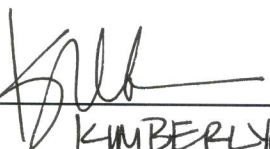
SUBJECT: Resolution of Adverse Effects to East Puerto de Luna Community Ditch near Santa Rosa, Guadalupe County, New Mexico.

Should this agreement be terminated, the Corps shall either:

- (1) Consult in accordance with 36 CFR Part 800.6 to develop a new MOA; or
 - (2) Request the comments of the Council pursuant to 36 CFR Part 800.7.
- f. Execution of this MOA by the Corps and the NMSHPO, and its submission to the Advisory Council on Historic Preservation (Council), and implementation of its terms, evidence that the Corps has afforded the Council an opportunity to comment on the undertaking and its effects on historic properties, and that Corps has taken into account the effects of the undertaking on historic properties

SIGNATORY PARTY:

U.S. ARMY CORPS OF ENGINEERS, ALBUQUERQUE DISTRICT

By:  Date: 2/8/10
KIMBERLY COLLTON
LTJ, EN

Note: Signatures continued on next page.

SUBJECT: Resolution of Adverse Effects to East Puerto de Luna Community Ditch near Santa Rosa,
Guadalupe County, New Mexico.

SIGNATORY PARTY:

NEW MEXICO STATE HISTORIC PRESERVATION OFFICER

By: Janet Buella Date: 1/12/2010

Note: Signatures continued on next page.

SUBJECT: Resolution of Adverse Effects to East Puerto de Luna Community Ditch near Santa Rosa,
Guadalupe County, New Mexico.

CONCURRING PARTY:

EAST PUERTO DE LUNA COMMUNITY DITCH ASSOCIATION

By:

Andy Heywood-Chairman Date: 1/4/10

Note: Signatures continued on next page.

SUBJECT: Resolution of Adverse Effects to East Puerto de Luna Community Ditch near Santa Rosa, Guadalupe County, New Mexico.

CONCURRING PARTY:

NEW MEXICO STATE ENGINEER/INTERSTATE STREAM COMMISSION

By: TSC declined Date: _____

Note: End of signature pages.

NMCRIS No. 115353

**A CULTURAL RESOURCES INVENTORY OF 7.8 ACRES
FOR
AN ACEQUIA REHABILITATION PROJECT
ON THE
EAST PUERTO DE LUNA COMMUNITY DITCH,
GUADALUPE COUNTY, NEW MEXICO**

Prepared by

Gregory D. Everhart
Archaeologist

With contributions by
Jonathan E. Van Hoose
Archaeologist

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-09-193

October 19, 2009

Report No. USACE-ABQ-2009-012

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NMCRIIS INVESTIGATION ABSTRACT FORM (NIAF)

1. NMCRIIS Activity No.: 115353	2a. Lead (Sponsoring) Agency: U.S. Army Corps of Engineers, Albuquerque District	2b. Other Permitting Agency(ies):	3. Lead Agency Report No.: USACE-ABQ-2009-012									
4. Title of Report: A Cultural Resources Inventory of 7.8 Acres for an Acequia Rehabilitation Project on the East Puerto de Luna Community Ditch, Guadalupe County, New Mexico. Author(s) Gregory D. Everhart			5. Type of Report <input type="checkbox"/> Negative <input checked="" type="checkbox"/> Positive									
6. Investigation Type <input type="checkbox"/> Research Design <input checked="" type="checkbox"/> Survey/Inventory <input type="checkbox"/> Test Excavation <input type="checkbox"/> Excavation <input type="checkbox"/> Collections/Non-Field Study <input type="checkbox"/> Overview/Lit Review <input type="checkbox"/> Monitoring <input type="checkbox"/> Ethnographic study <input type="checkbox"/> Site specific visit <input type="checkbox"/> Other												
7. Description of Undertaking (what does the project entail?): The U.S. Army Corps of Engineers, Albuquerque District, at the request of the NM State Engineer/Interstate Stream Commission and the East Puerto de Luna Community Ditch Association, is planning an Acequia Rehabilitation Program project that proposes to construct 3,120 linear feet of concrete ditch lining and 1,190 linear feet of underground pipeline in the existing open earthen ditch as well as replace two 36-inch corrugated metal pipe flumes. This segment of earthen ditch is experiencing significant water losses due to seepage and there is a significant sedimentation problem from surface water flows from the adjacent, eroding upland area. The improvements would provide for the efficient and timely delivery of irrigation water to downstream portions of the ditch during the critical irrigation times of the growing season as well as reducing the high costs of maintaining the earthen ditch.		8. Dates of Investigation: (from: April 6, 2009 to: September 24, 2009) 9. Report Date: October 19, 2009										
10. Performing Agency/Consultant: USACE, Albuquerque District Principal Investigator: Gregory D. Everhart Field Supervisor: Gregory D. Everhart Field Personnel Names: Gregory D. Everhart & John D. Schelberg		11. Performing Agency/Consultant Report No.: USACE-ABQ-2009-012 12. Applicable Cultural Resource Permit No(s): NM-2009-193										
13. Client/Customer (project proponent): East Puerto de Luna Acequia Association Contact: Honorable Judge James Moncayo, Mayordomo Address: 603 Parker Ave. Santa Rosa, NM 88435 Phone: (505) 472-3237		14. Client/Customer Project No.: N/A										
15. Land Ownership Status (<u>Must</u> be indicated on project map): <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 50%;">Land Owner</th> <th style="width: 25%;">Acres Surveyed</th> <th style="width: 25%;">Acres in APE</th> </tr> </thead> <tbody> <tr> <td>East Puerto de Luna Acequia Association (Private)</td> <td style="text-align: center;">7.8</td> <td style="text-align: center;">4.95</td> </tr> <tr> <td style="text-align: right;">TOTALS</td> <td style="text-align: center;">7.8</td> <td style="text-align: center;">4.95</td> </tr> </tbody> </table>				Land Owner	Acres Surveyed	Acres in APE	East Puerto de Luna Acequia Association (Private)	7.8	4.95	TOTALS	7.8	4.95
Land Owner	Acres Surveyed	Acres in APE										
East Puerto de Luna Acequia Association (Private)	7.8	4.95										
TOTALS	7.8	4.95										
16 Records Search(es): <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 40%;">Date(s) of ARMS File Review April 6, 2009</td> <td style="width: 30%;">Name of Reviewer(s) Gregory Everhart</td> <td style="width: 30%;"></td> </tr> <tr> <td>Date(s) of NR/SR File Review April 6, 2009</td> <td>Name of Reviewer(s) Gregory Everhart</td> <td></td> </tr> <tr> <td>Date(s) of Other Agency File Review April 6, 2009</td> <td>Name of Reviewer(s) Gregory Everhart</td> <td>Agency USACE</td> </tr> </table>				Date(s) of ARMS File Review April 6, 2009	Name of Reviewer(s) Gregory Everhart		Date(s) of NR/SR File Review April 6, 2009	Name of Reviewer(s) Gregory Everhart		Date(s) of Other Agency File Review April 6, 2009	Name of Reviewer(s) Gregory Everhart	Agency USACE
Date(s) of ARMS File Review April 6, 2009	Name of Reviewer(s) Gregory Everhart											
Date(s) of NR/SR File Review April 6, 2009	Name of Reviewer(s) Gregory Everhart											
Date(s) of Other Agency File Review April 6, 2009	Name of Reviewer(s) Gregory Everhart	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

Puerto de Luna, NM;
1963, Photorevised 1982

34104-g5

c. County(ies): Guadalupe

17. Survey Data (continued):

d. Nearest City or Town: Puerto de Luna

e. Legal Description:

Township (N/S)	Range (E/W)	Section	1/4	1/4	1/4
T 7 N	R 9 E	4	NW, SW, SW.		
T 7 N	R 9 E	4	SW, SW, SW.		
T 7 N	R 9 E	9	NW 1/4.		

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

f. Other Description (e.g. well pad footages, mile markers, plats, land grant name, etc.): The proposed project area is located approximately 8 miles southeast of the City of Santa Rosa, Guadalupe County, New Mexico. The City of Santa Rosa is located on Interstate Highway 40 about 120 miles east of Albuquerque, the largest city in New Mexico. The East Puerto de Luna project area is located adjacent to and on the west side of New Mexico State Highway 91, in the southwest quarter of Section 4 and the west half of Section 9, Township 7 North, Range 22 East, as shown on USGS Quadrangle map Puerto de Luna, NM (34104-g5; 1963, Photorevised 1982).

18. Survey Field Methods:

Intensity: ☒ 100% coverage ☐ <100% coverage

Configuration: ☐ block survey units ☒ linear survey units (l x w): **see below** ☐ 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): 5 Crew Size: 2 Fieldwork Dates: April 14, 2009

Survey Person Hours: 4 Recording Person Hours: 4 Total Hours: 8

Additional Narrative: Survey crew consisted of two Corps archaeologists, Gregory Everhart and John Schelberg. Corps Biologist Dana Price assisted with acequia alignment mapping and GPS work on the access road and proposed staging area. All locational information including the acequia alignment, survey boundaries, and artifact locations, was recorded with a Garmin GPS 12 XL sub-meter unit. The survey proceeded as follows: beginning at the upstream end of the project area/acequia, two archaeologists walked the linear alignment of the acequia southward/downstream, both about 2 to 5 meters from and along each bank of the acequia channel. The proposed staging area was walked in parallel transects spaced about 5 meters apart. Isolated artifacts were photographed and recorded in field notes and with the GPS, and the location of the known archaeological site was verified in relation to the project area.

19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.): Soils in the northern 2/3 of the project area are La Lande loam, the ditch proceeds around the base of a small hill on the south side of the river bend where soils are a Regnier-Rock outcrop-Lacoca complex, and a small area at the south end on the project are an Ima-La Lande fine sandy loam (NRCS websoilsurvey 2009). The vegetation community is a Plains-Mesa Grassland (Dick-Peede 1999); the project area includes a few large cottonwood trees and numerous grasses along the acequia ditch. Elevation is approx. 4500 ft amsl.

20. a. Percent Ground Visibility: 80 b. Condition of Survey Area (grazed, bladed, undisturbed, etc.): This is an existing acequia ditch with occasional dense vegetation cover on the ditch banks that is subject to repeated seasonal cleaning and maintenance operations. The proposed staging area is an upland area that has been used previously for similar purposes and that is located within a grazed pasture.	
21. CULTURAL RESOURCE FINDINGS <input checked="" type="checkbox"/> Yes, See Page 3 <input type="checkbox"/> No, Discuss Why:	
22. Required Attachments (check all appropriate boxes): <input checked="" type="checkbox"/> USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn <input checked="" type="checkbox"/> Copy of NMCRIS Mapserver Map Check <input type="checkbox"/> LA Site Forms - new sites (<i>with sketch map & topographic map</i>) <input type="checkbox"/> LA Site Forms (update) - previously recorded & un-relocated sites (<i>first 2 pages minimum</i>) <input type="checkbox"/> Historic Cultural Property Inventory Forms <input checked="" type="checkbox"/> List and Description of isolates, if applicable <input type="checkbox"/> List and Description of Collections, if applicable	23. Other Attachments: <input type="checkbox"/> Photographs and Log <input type="checkbox"/> Other Attachments (Describe):
24. I certify the information provided above is correct and accurate and meets all applicable agency standards. Principal Investigator/Responsible Archaeologist: Gregory D. Everhart Signature <u><i>Gregory D. Everhart</i></u> Date <u>10-19-2009</u> Title (if not PI):	
25. Reviewing Agency: USACE, Albuquerque District Reviewer's Name/Date <u>LANCE LUNGGIST</u> <u>10/19/2009</u> Accepted <input checked="" type="checkbox"/> Rejected () Tribal Consultation (if applicable): X Yes <input type="checkbox"/> 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.: 115353	2. Lead (Sponsoring) Agency: USACE, Albuquerque District	3. Lead Agency Report No.: USACE-ABQ-2009-012
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SURVEY RESULTS:

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

MANAGEMENT SUMMARY: The U.S. Army Corps of Engineers, Albuquerque District, at the request of the NM State Engineer/Interstate Stream Commission and the East Puerto de Luna Community Ditch Association, is planning an Acequia Rehabilitation Program project that proposes to construct 3,120 linear feet of concrete ditch lining and 1,190 linear feet of underground pipeline in the existing open earthen ditch as well as replace two 36-inch corrugated metal pipe flumes for a total of 4,400 feet. This segment of earthen ditch is experiencing significant water losses due to seepage and there is a significant sedimentation problem from surface water flows from the adjacent, eroding upland area. The improvements would provide for the efficient, timely, and equitable delivery of irrigation water to downstream portions of the ditch during the critical irrigation times of the growing season as well as reducing the high costs of maintaining the earthen ditch.

The construction area, the area of potential effect (APE), includes the EPdL Ditch's right-of-way (15 feet on either side of the ditch's centerline), the access routes, and staging area. The EPdL Ditch's alignment/project area is about 4,400 feet (0.82 miles) in length; for a total of 2.97 acres (30 ft. W x 4,310 ft. L). The access routes to the two flumes and to the new channel cut is a total of approximately 1.48 acres (30 ft. W x 2,156 ft. L). The staging area is approximately 0.5 acres in size. The area surveyed included the APE (~4.95 acres) and a buffer for a total of approximately 7.8 acres.

The pedestrian survey identified one isolated occurrence (IO) located adjacent to the EPdL Ditch and consisting of one historic micaceous sherd and four historic artifacts; a portion of an old electric ironing iron and three pieces of the neck of a historic bottle. The five IO artifacts are in an area of approximately 2 meters by 3 meters. The IO is located along the side of the highway and near a farm house; other modern trash also occurs in the area. This IO is adjacent to but outside of the EPdL construction area and would not be affected by the project. The Corps is of the opinion that this IO is not significant and has been adequately recorded in the field, and therefore no further work is necessary.

The literature search conducted prior to the archaeological survey found that two previously documented archaeological sites were reported to occur adjacent to the proposed project area. These include LA 108218 and LA 153935. The Corps did not observe evidence of LA 108218 in the project area. The Corps is of the opinion that driving across the area that is reported to be adjacent to the location of LA 108218 would have no effect to cultural resources, if they occur in or adjacent to this access area. LA 153935 is still not reported in the ARMS database; however, the site is reported to be located on the east side of State Highway 91; on the opposite side of the highway from the EPdL Ditch. Therefore, the Corps is of the opinion that neither LA 108218 nor LA 153935 would be affected by the proposed project.

The Corps has assisted the EPdL Association, through the Corps' Acequia Rehabilitation Program, on three previous acequia rehabilitation construction projects that have affected a total of approximately 2,920 lineal feet (0.55 miles; 6.5 percent) of the ditch. The acequia system's 1960s diversion structure was replaced in 1996 (Kneebone 1995); a failing flume was rebuilt in 2000 (Everhart and Schelberg 2000); and approximately 2,870 feet of underground pipeline was installed in a troublesome segment of the ditch in 2003 (Everhart 2003). The current project would affect a total of about 9.6 percent of the EPdL Ditch system. The three previous Corps' projects and the currently proposed project (2,920 feet/6.5 percent + 4,400 feet/9.6 percent) would affect a total of about 16.1 percent of the 8.5 mile acequia system.

The Natural Resources Conservation Service has also assisted the EPdL Association by constructing three concrete ditch-

lining projects in 1967, 1973, and 1985, covering a total of about 18,243 linear feet (3.45 miles; 40.6 percent).

With the current project, considering the cumulative impacts, more than one half of the original earthen ditch will have been altered in form (28,493 linear feet; 56.7 percent) while approximately 16,387 linear feet or 43.3 percent of the existing EPdL Ditch system will remain earthen in form.

The Corps considers the East Puerto de Luna Community Ditch eligible for nomination to the National Register of Historic Places under Criteria (a) and (d), as irrigation systems such as this one made possible the settling and farming of the area, and is thus associated with events that have made a significant contribution to the broad patterns of our history. The Corps is of the opinion that the proposed project will result in an adverse effect to historic properties for the following reason: the current 4,400-foot project, with the cumulative effect of six previous construction projects, will have altered more than one-half of the EPdL Ditch; converting approximately 28,493 feet or 56.7 percent of original historic, open, earthen Ditch's 8.5-mile length to concrete lining or underground pipeline.

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)

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CHAPTER 1

INTRODUCTION AND PROJECT DESCRIPTION

Purpose of the Survey and Project Background

The U.S. Army Corps of Engineers (Corps), Albuquerque District, at the request of the New Mexico Office of the State Engineer/Interstate Stream Commission and East Puerto de Luna Community Ditch Association (EPdL Association), is planning an Acequia Rehabilitation Program project for a 4,400 linear foot segment of the East Puerto de Luna Community Ditch (EPdL Ditch) under the Water Resources Development Act of 1986 (Public Law 99-662; 33 U.S.C. 2201 et. seq.), as amended. The Act authorizes the Corps' Acequia Rehabilitation Program for the restoration and rehabilitation of irrigation ditch systems (acequias) in New Mexico. Under Section 1113 of the Act, Congress has found that New Mexico's *acequias* date from the eighteenth century and, due to their significance in the settlement and development of the western United States, should be restored and preserved for their cultural and historic values to the region. The Secretary of the Army has been authorized and directed to undertake, without regard to economic analysis, such measures as are necessary to protect and restore New Mexico's *acequias*. The Federal financial responsibility is 75% and the non-Federal responsibility is 25% of any work carried out under this section of the WRDA.

Under Section 215 of the Floodwater Control Act of 1968, (Public Law 90-483), as amended, the Secretary of the Army, acting through the Chief of Engineers, may, when it is determined to be in the public interest, enter into agreements providing for reimbursement to States or political subdivisions thereof. The Act recognizes community acequias as a subdivision of the State, allowing acequia officials to serve as local sponsors of water related projects through the Department of Defense. The EPdL Ditch Rehabilitation Project qualifies under Section 215.

The Corps manages the Acequia Rehabilitation Program's Federal funding and therefore is the action agency for the project. The project utilizes a U.S. Department of Agriculture, Natural Resources Conservation Service design and inspection of project construction is the responsibility of the NRCS. The State of New Mexico, through the Office of the State Engineer, is the project sponsor along with the EPdL Association and the Interstate Stream Commission prioritizes construction of the acequia rehabilitation projects for the State. The proposed improvements to this acequia satisfy the intent and purpose of these legislative actions. EPdL Association members would be responsible for assuring operation and maintenance upon project completion. This cultural resources survey serves as one step in the environmental and cultural compliance process.

The current project's segment of earthen ditch is experiencing significant water losses due to seepage and rodent burrows, and there is a significant sedimentation problem from surface water flows from the adjacent, eroding upland area (Figure 1.1). The improvements would provide for the efficient, timely, and equitable delivery of irrigation water to downstream portions of the ditch during the critical irrigation times of the growing season as well as reducing the high costs of maintaining the earthen ditch. The EPdL Association's primary goal is to conserve irrigation water so that it is available for all of the Association members.

Project Description and Location

The proposed EPdL Ditch project area is located approximately 8 miles southeast of the City of Santa Rosa, Guadalupe County, New Mexico (Figure 1.2). The City of Santa Rosa is located on Interstate Highway 40 about 120 miles east of Albuquerque, the largest city in New Mexico. The East Puerto de Luna project area is located adjacent to and on the west side of New Mexico State Highway 91, in the southwest quarter of Section 4 and the west half of Section 9, Township 7 North, Range 22 East, as shown on USGS Quadrangle map Puerto de Luna, NM (34104-g5; 1963, Photorevised 1982) (Figure 1.3) and on 2005 USGS DOQQ Aerial Imagery (Figure 1.4).

The proposed project would construct approximately 3,120 linear feet of concrete ditch lining, install approximately 1,190 feet of 36-inch diameter, high-density polyethylene (HDPE) underground pipeline, and re-construct two 36-inch diameter corrugated metal pipe flumes with concrete support structures that cross un-named arroyos; affecting approximately 4,400 linear feet of the ditch. Flume No. 1 would be bypassed and left in place and a new flume constructed adjacent to the existing one. Flume No. 2 would be removed and a new flume constructed in its place. Total project length is approximately 4,400 feet (0.83 miles). A single staging area, approximately 0.5 acres in size, is needed to park construction equipment overnight and stockpile materials. The staging area has been used for similar purposes in the past. Access to the project area is on existing paved highways and farm access routes.

The EPdL Ditch diverts irrigation water from the Pecos River. The diversion structure, a concrete-capped gabion dam, is located approximately four miles southeast of the community of Santa Rosa in the NW 1/4 of Section 30, Township 8 North, Range 22 East. The main ditch, or acequia madre, measures a total of approximately 8.5 miles in length. Approximately 4 linear miles of the historic ditch have been previously lined with concrete or replaced with underground irrigation pipe. The remaining length of the ditch is currently earthen. EPdL Association members believe that the acequia was originally constructed in about 1849 and has a priority date of 1896 per the Hope Decree (NMOSE 1933). The EPdL Ditch currently serves 44 families who irrigate approximately 376 acres of crop and pasture land. Currently, the acequia irrigates alfalfa, grass pastures, and some local gardens and orchards.

Three previous Corps Acequia Rehabilitation Program projects have affected a total of approximately 2,920 linear feet of ditch (0.55 miles; 6.5 percent). The Natural Resources Conservation Service has also assisted the EPdL Association by constructing three concrete ditch-lining projects in 1967, 1973, and 1985, covering a total of about 18,243 linear feet (3.45 miles; 40.6 percent). The current project is proposing to rehabilitate a total of about 4,400 linear feet of open earthen ditch (0.82 miles; 9.6 percent). With the current project, considering the cumulative impacts, more than one-half of the original earthen ditch will have been altered in form (~28,493 feet; 56.7 percent); therefore, the Corps has determined that proposed project will have an adverse effect upon the historic EPdL Ditch. An acequia's form, alignment and function are those elements that qualify the acequia as eligible for nomination to the National Register of Historic Places. Approximately 43.3 percent (~16,387 linear feet; ~3.6 miles) of the existing ditch will remain earthen in form. The project will follow the existing alignment and will help to ensure that the system maintains its historic function.

Land Ownership

Construction will be confined within the EPdL Ditch's right-of-way. The entire project area is on land privately owned by Horacio Lopez (pers.comm. Horacio Lopez, April 14, 2009).

Project Personnel and Schedule

An initial site visit was conducted by Corps personnel including archaeologist Gregory D. Everhart on January 22, 2009. Prior to the field survey, on April 6, 2009, Everhart conducted searches of the New Mexico Historic Preservation Division Archaeological Records Management Section database and map server; of Corps records; and the National Register of Historic Places and the State Register of Cultural Properties. On April 14, 2009, Corps archaeologists Everhart and John Schelberg conducted an intensive pedestrian cultural resources survey of the project area including the staging area and access routes.

Gregory D. Everhart prepared this report, documented in the New Mexico Cultural Resource Information System (NMCRIIS) as No. 115353. Corps archaeologist Jonathan Van Hoose peer-reviewed this document. The EPdL Association prefers to begin project construction during the non-irrigation season, i.e., beginning in about October of 2009, with construction being about four months in duration.



Figure 1.1. Project Location. East Puerto de Luna Community Ditch Rehabilitation Project, Guadalupe County, New Mexico. Overview of existing ditch alignment with example of upland sediment recently removed from the EPdL Ditch. View to the south. Photograph No. 9785 by Corps' Archaeologist Gregory D. Everhart, April 14, 2009.

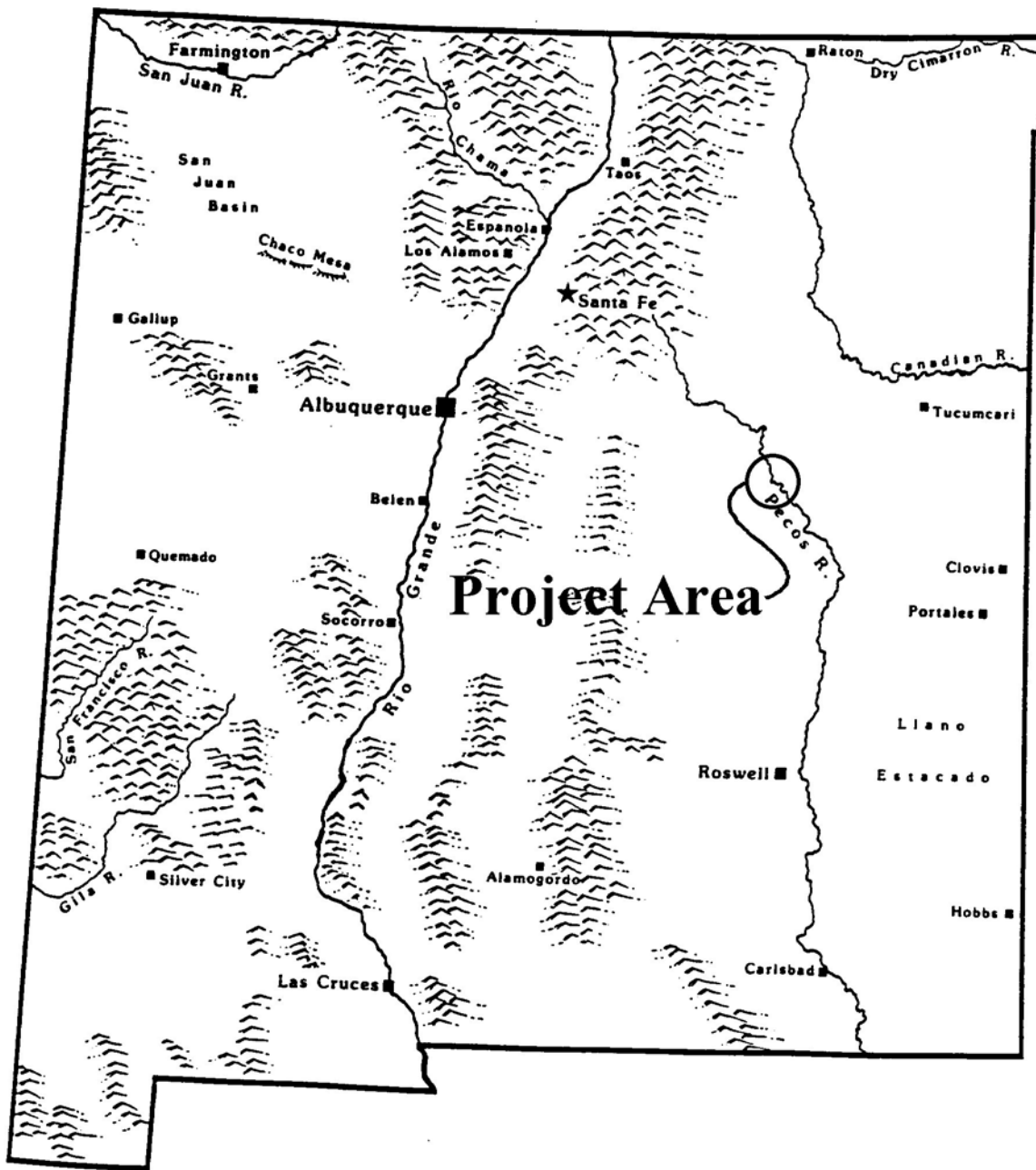


Figure 1.2. Project Location. East Puerto de Luna Community Ditch Rehabilitation Project, Guadalupe County, New Mexico.

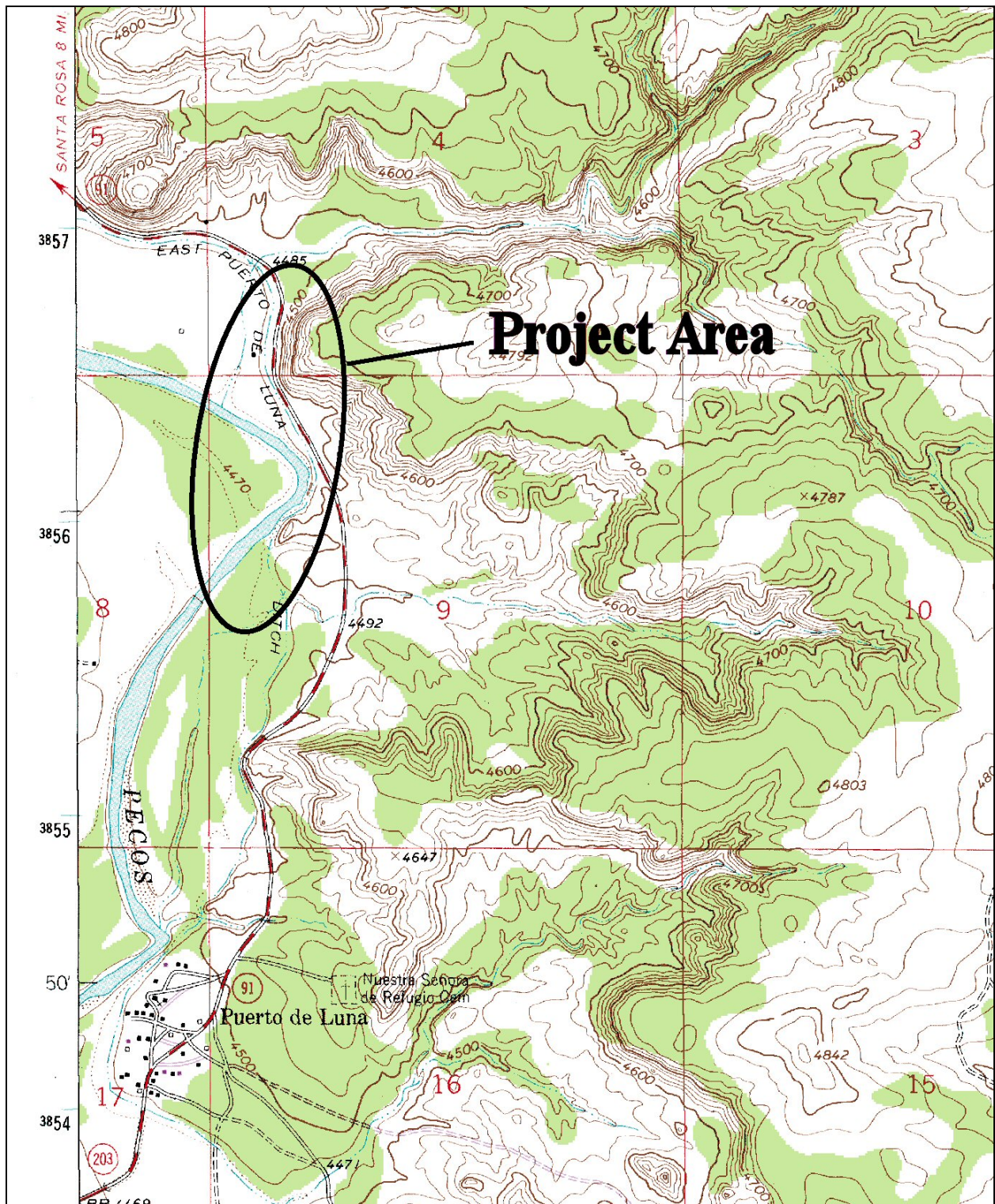


Figure 1.3. Project Location, approximate. Base Map: USGS 7.5-Minute Quadrangle Puerto de Luna, New Mexico (34104-G5).

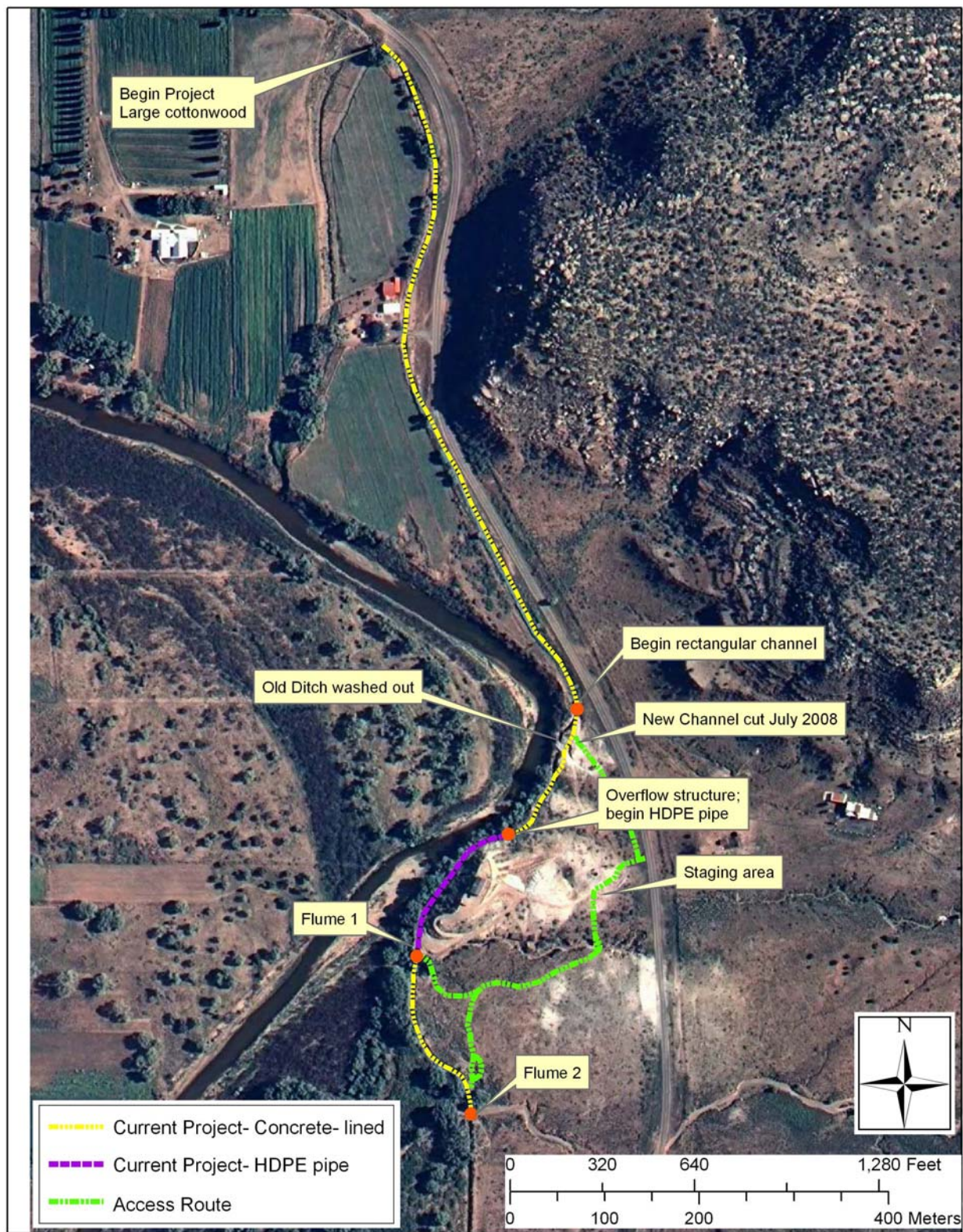


Figure 1.4. Project Location. Base Map Imagery: 2005 USGS DOQQ Aerial Imagery.

CHAPTER 2

ENVIRONMENTAL AND CULTURAL SETTING

Portions of the following text is adapted from three previous Corps reports on Acequia Rehabilitation Program projects on the East Puerto de Luna Community Ditch; i.e., Kneebone 1995, Everhart and Schelberg 2000, and Everhart 2003.

Natural Environment

Physiography and Geology

The project area is located in the rather narrow Pecos River Valley in east-central New Mexico. The Santa Rosa/Puerto de Luna area lies near the juncture of three sections of the Great Plains Physiographic Province; the Raton, Pecos Valley, and High Plains Sections (Fenneman 1931). This area of the Great Plains is a gently easterly sloping, undulating plain bisected by the Pecos River. The river valley is flanked by steep-sided sandstone mesas and elevations in the region vary from about 1,520 to 1,830 meters (5,000 to 6,000 feet) on the mesa tops and upland areas on either side of the Pecos Valley to about 1,360 meters (4,480 feet) at the project area. The geology of the area includes extensive sedimentary deposits of the Santa Rosa sandstone and San Andres limestone that tend to form a rim around the Santa Rose Sink, with some karst topography as seen in the areas numerous shallow sinks such as Blue Hole (Chronic 1987:175-178; Hawley 1986:23-27). In the uplands away from the eroded valley, the surface materials are alluvial and include sand, gravels, and thin soils that cover bedrock.

Soils

The soil associations are the mesic and thermic variants of the moderately dark-colored soils of the east-central Plains (Maker *et al.* 1978). Soils in the valley floodplain are clay loams and are primarily used for irrigated pastures and cropland; more specifically, soils in the northern 2/3 of the project area are La Lande loam, the ditch proceeds southward and around the base of a small hill on the south side of the river bend where soils are a Regnier-Rock-outcrop-Lacoca complex, and a small area at the south end of the project are an Ima-La Lande fine sandy loam (NRCS WebSoilSurvey 2009). The non-farmed areas are used for pastures with vegetation consisting of grasses, cottonwood trees and the intrusive tamarisk. The upland areas above the floodplain are sandy and gravelly loams deriving from the local sandstone outcrops and are used as rangeland and wildlife habitat, with vegetation being mostly grasses and piñon-juniper.

Climate

The climate of the plains area is semiarid continental (Maker *et al.* 1978). The summers are hot and breezy and the winters are crisp, clear and sunny. The average annual precipitation is about 12 to 14 inches and comes from brief but intense afternoon thunderstorms. Wind velocities are steady from the west-southwest and humidity is generally low. Snowfall is low, but common. The average annual temperature is about 58.0 degrees Fahrenheit (°F) with maximum summer temperatures in the 100's°F and winter lows as low of -18°F. The average frost-free season is about 193 days.

Water Resources

The EPdL Ditch diverts irrigation water from the Pecos River. The ditch system approximately parallels the east (left-hand) side of the river. Water quality in the lower part of the Pecos headwaters, including the Puerto de Luna area, is reported as being relatively good. Between Santa Rosa Reservoir and Sumner Reservoir, most of the Pecos River's designated uses, including fish culture, irrigation, livestock watering, wildlife habitat, and secondary contact, are fully supported.

Vegetation and Wildlife

The project site lies within a transitional area of the Great Basin Conifer Woodland and Plains Grassland biotic communities (Brown 1982). The Grassland and Conifer Woodland is cold-adapted and is characterized by open and exposed plains with areas of juniper and piñon pine. Vegetation in the project area includes species such as cottonwood, one-seed juniper, mesquite, field bindweed, broom snakeweed, alkali sacaton, buffalo grass, and plains prickly pear.

The area supports a variety of mammalian, avian, reptile and amphibian, and fish species. Wildlife in the area is typical for New Mexico and would include small mammals such as squirrels, mice, gophers, rats, rabbits, badgers, raccoon, and skunks as well as larger mammals such as fox, coyote, bobcat, mule deer, and an occasional mountain lion. Resident and migratory birds would include Western Meadowlark, Mourning Dove, Common Raven, Turkey Vulture, Great Horned Owl, Red-tailed Hawk, American Kestrel and various swallows, sparrows and ducks. There are no perennial waters near the project area therefore no fish, although there are fish in the nearby Pecos River. Reptiles and amphibians may include tiger salamander, western spadefoot, Woodhouse's toad, ornate box turtle, short-horned lizard, western collared lizard, Great Plains skink, western garter snake, and prairie rattlesnake.

Results of Tribal Consultation

Pursuant to 36 CFR 800.2, consulting parties in the Section 106 process identified for the proposed project include the Corps, the EPdL Association, the New Mexico Office of the State Engineer, and the New Mexico State Historic Preservation Office. Consistent with the Department of Defense's American Indian and Alaska Native Policy, signed by Secretary of Defense William S. Cohen on October 20, 1998, and based on the State of New Mexico Indian Affairs Department's and the Historic Preservation Division's 2009 Native American Consultations List, American Indian tribes that have indicated they have concerns in Guadalupe 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.

Results of Records Check

Prior to the field survey, a records search of the New Mexico Office of Cultural Affairs, Archaeological Records Management Section's (ARMS) database and map server, and of Corps records regarding previous EPdL Ditch Acequia Rehabilitation Program projects was conducted on April 6, 2009 by Gregory Everhart. A screen capture of the ARMS map server search

conducted on April 6, 2009, is shown in Appendix B, Figure B.1. Specific site location information in Appendix B is not for public disclosure.

The nearby historic community of Puerto de Luna has been given the Laboratory of Anthropology (LA) site number LA 5201. The site boundaries for the community are incomplete however, because the town has not been entirely documented. Puerto de Luna is reported as having one component with a Hispanic cultural affiliation that dates from the U.S. Territorial Period (1862 A.D.) to Recent Historic. The former Guadalupe County Courthouse, placed on the State Register of Cultural Properties (HPD No. 1264) on May 9, 1986, and the Alexander Grzelachowski House and Store, placed on the State Register of Cultural Properties (HPD No. 176) on April 20, 1970, and on the National Register of Historic Places on June 24, 1993, are also located in Puerto de Luna. LA 5201 is linked to two references for work in the area. These references include NMCRIS No. 48176 (Weidner 1995) and No. 63303 (Michalik 1999).

The ARMS search found that two archaeological sites have been previously documented to occur adjacent to the proposed project area. These include LA 108218 and LA 153935; the location of these sites is shown on the map found in Appendix B, Figure B.2.

According to ARMS data, LA 108218 was identified as a U.S. Territorial period Apachean site. ARMS data indicates that portions of the LA 108218 site occur on both sides of State Highway 91 and the site has been impacted by road construction and maintenance, and by vehicular traffic. Portions of the site have been previously excavated and some artifacts were collected.

Information regarding the second site, LA 153935, is still not reported in the ARMS database; however, the site was recorded during a survey for a fiber-optic line and is located on the east side of State Highway 91; on the opposite side of the highway from the EPdL Ditch.

The Corps has assisted the EPdL Association, through the Corps' Acequia Rehabilitation Program, on three previous acequia rehabilitation projects. The acequia system's 1960s diversion dam was replaced in 1996 (Kneebone 1995). The Corps also assisted the EPdL Association with the re-construction of a failing flume in 2000 (Everhart and Schelberg 2000) and with the installation of an underground pipeline in a troublesome segment of the ditch in 2003 (Everhart 2003). See Appendix A for documentation of previous Corps consultation with the New Mexico State Historic Preservation Officer (SHPO) regarding these EPdL Ditch projects.

In preparation for the diversion dam project, Kneebone (1995) reported on the "Puerto de Luna East Side Acequia" (a.k.a. East Puerto de Luna Ditch, East Puerto de Luna Community Ditch) and the community ditch was assigned a Laboratory of Anthropology (LA) site number, LA 109299, by ARMS. In that report, Kneebone (1995:12) noted that "Irrigation systems are an intrinsic component of the early settlement and development of New Mexico, and many of the existing ditches date to the founding of their associated communities." and that "The Puerto de Luna east side ditch is specifically mentioned in documents (The Hope Decree) as early as 1880 and is believed to date to the mid-1860s" (Kneebone 1995:11). The communities of East and West Puerto de Luna were established in 1863 (Nostrand 1992:94-95); however, there were local land grants in the area that date to the early 1820s and some members of the EPdL Association strongly believe that community members have records that indicate that the Ditch was originally constructed in about 1849.

Ackerly (1996:87-93) noted that: “Unlike many other New Mexico basins, construction dates of acequia systems along the Rio Pecos have been adjudicated. Estimated canal ages are based primarily on the United States of America vs. Hope Community Ditch et al. decree (1933) and, to a lesser extent, on data compiled by the U.S. Department of Agriculture (1942).” While Ackerly lists numerous Pecos basin ditches and their dates; however, he does not make note for the EPdL Ditch specifically. Kneebone (1995:12) noted that the Puerto de Luna East Side Acequia is potentially eligible for inclusion to the National Register of Historic Places.

Previous archaeological survey in the area, along the highway, and associated with both of these sites, LA 108218 and LA 153935, is noted in Table 2.1.

Table 2.1. Surveys conducted within 1 km of project area.

NMCRIS Number	Performing Agency	Activity End Date	Acres	Number of Sites	Survey Type	Report
48176	SHTD	Apr. 1995	189.3	18	Intensive	Weidner 1995
55173	MNM	1997	N/A	N/A	N/A	Literature: No Survey/Report
63303	Archaeo Svcs Michalik	Jan. 1999	N/A	2	N/A - Site Visit	Michalik 1999
67798	Archaeo Svcs Michalik: Mgmt Recommendations	Mar. 2000	N/A	4	N/A - Site Visit	Michalik 2000
84592	EMI	Nov. 2003	0.61	0	Intensive	Burleson 2003
97432	Tierra ROW Svcs	pending	2949	37	Intensive	pending
113039	Tierra ROW Svcs	pending	pending	pending	pending	pending

Culture History and Literature Review

The culture history for the project area generally follows that of the Southwest and the nearby High Plains, and has been chronologically generalized into several classification schemes. These descriptions utilize noticeable changes in the cultural record, as seen in temporal and spatial similarities and differences, to assist in the explanation and interpretation of the cultural record. The primary Periods and their approximate dates are as follows:

Paleoindian	~11,500 B.P. - ~7,500 B.P.
Archaic	~7,500 B.P. - ~AD 1
Formative	~AD 1 - AD 1540
Historic	AD 1540 - Present.

These Periods are further subdivided to describe specific regional and local variations in the archaeological record (Cordell 1997, 1984; Stuart and Gauthier 1984; Simmons *et al.* 1989; Hoffman *et al.* 1989). Some archaeological and historic work with local and regional information is documented in reports such as Hofman *et al.* (1989), Simmons *et al.* (1989), Ward, Schelberg, and Widdison (1987), Gunnerson (1987), Stuart and Gauthier (1984), Kessell (1979), Levine and Mobley (1976), and Jelinek (1967). Documentation more specific to acequias in the state and near the project area includes Ackerly (1996), Rivera (1998), and Rodríguez (2006), Baxter

(1997), and Clark (1987). Covering east and northeast New Mexico, good prehistoric and historic overviews regarding American Indian archaeology and historic use of the area are provided by Sebastian and Larralde (1989), Gunnerson (1987), Gunnerson and Gunnerson (1988), and Winter (1988). A recent discussion regarding the interaction between the Southwest and the Southern Great Plains is found in Spielmann (1991).

In New Mexico, Paleoindian sites are known primarily from the eastern plains and the Rio Grande valley, with a few being known in the western part of the state (Cordell 1997:67-100, 1984:121-151; Stuart and Gauthier 1984:28-33, 291-300; Simmons *et al.* 1989:21-38; Sebastian and Larralde 1989:19-39). There are also numerous, scattered isolated artifacts reported from across the state. The Paleoindian studies in the Rio Grande valley, reported by Judge and Dawson (1972) and Judge (1973) are widely referenced for the PaleoIndian sequence in New Mexico. Their studies indicate that there are Clovis, Folsom, and Plano sites in the Rio Grande valley consisting mostly of surface finds of isolated artifacts; however, stratified sites have been found such as a camp site identified and excavated on Albuquerque's West Mesa (Cordell 1984:148). The Paleoindian peoples were thought to be primarily mobile big game hunter-gathers who probably also scavenged. Paleoindian sites in New Mexico have been found primarily on eroded surfaces, especially in sand dune areas and on upper terraces along rivers and their tributaries.

The Paleoindian and Archaic time periods are typically identified by the presence of morphologically diagnostic projectile points. Paleoindian point types from widely separate areas located to the north, south, east, and west (i.e., Clovis, Folsom, Midland, Firstview, Midland, Plainview, Cody and Eden) have been reported from surface finds and excavated sites within a 100-mile radius of the project area. The Clovis type site is located only about 90 miles to the southeast of the project area and the Folsom type site is located about 150 miles to the north. A similar variety in known Archaic diagnostics also occur in the area (Ward et al. 1987:30-33) and the bow and arrow with corner notched points come into use toward the end of the Archaic (Jelinek 1967:110).

In New Mexico, the chronology defined by Cynthia Irwin-Williams (1973) for the Arroyo Cuervo region in northwestern New Mexico has been the most widely utilized for the Archaic Period. Huckell (1996) has brought together recent documentation for the period in the Southwest. While the Archaic Period for the Southwest is becoming fairly well defined, sites across the state remain difficult to distinguish. Many lithic scatters in the Southwest may date to the Archaic, but positive dating and association to the Archaic Period eludes archaeologists at this time. Dating sites is usually accomplished with diagnostic projectile points although many newly discovered Southwestern sites are producing dateable materials (Huckell 1996:325-327). Northeast and eastern New Mexico are even less documented for the Archaic Period although the lengthy period is known to generally date from about 6,000 BC to 1,000 AD, and in some areas, as late as 1,400 AD (Simmons *et al.* 1989:65; Stuart and Gauthier 1984:300-303; Sebastian and Larralde 1989:41-57). Archaic peoples were thought to be very mobile, but had an increased reliance on small game, the collecting and gathering of plant foods, and likely utilized a seasonal migratory pattern in their subsistence strategies. Toward the end of the Archaic period, many social and technological changes occur with increased dependence on wild plants and the adoption of Mesoamerican cultigens. Examples would be changes found in ground stone

technology, in site sizes and distributions, and the introduction of the bow and arrow about AD 200.

A confusing culture-historical terminology has resulted from the lack of adequate archaeological research in East-Central and Northeast New Mexico (Stuart and Gauthier 1984:291, 303; Hofman et al. 1989:53, 66; Simmons et al. 1989:99-100, 108-109). This problem is most evident for the Formative or Woodland Period (ca. AD 400-1000 to AD 1500). Jelinek (1967:64) has defined the 18 Mile Phase of the Plains Woodland archaeological tradition from sites on the Middle Pecos River, just south of the project area and dates this phase prior to AD 1000. However, Stuart and Gauthier (1984:270-273), in their analysis of regional trends suggest that the 18 Mile Phase (both Early and Late) should be slightly earlier. It is interesting to note that the ceramic assemblages of this time are typically Jornada Brownwares (Jelinek 1967:64). These types of ceramics are related to the Mogollon ceramic types of the southwestern part of the state, suggesting influences from the southwest as early as or earlier than the Plains (Hofman et al. 1989:66-67; Sebastian and Larralde 1989:73-92). Stuart and Gauthier (1984:270-273) also take notice of Jelinek's ceramic "intrusives," and suggest contacts and possibly trade with several other areas in western New Mexico.

Pithouse architecture becomes common in the area around AD 1000. By the 12th century, above-ground, contiguous-room "pueblos" become the customary residential unit. These multiroom structures; however, feature construction methods different from the more commonly recognized Ancestral Puebloan (Anasazi) pueblos to the west and suggests that wood for construction purposes was scarce (Jelinek 1967:156). Perhaps the most important attribute of this area's Formative as well as the subsequent Protohistoric occupation is that while horticulture became relied upon, some buffalo hunting and gathering continued (Simmons et al. 1989:75, 94-96, 112-113, 124-128; Stuart and Gauthier 1984:270-276). Horticulture in the area would have always been at risk from drought and events such as summer floods and insects that could wipe out a seasons crop in one event; as is evidenced by the much later 1860s Bosque Redondo experiment noted below. Unfortunately, quantitative estimates of the contribution of buffalo to diet are lacking. The presence of ungulate remains typical of the Plains contributes to the perception of Plains influences, though much of the area's material culture is more characteristic of the Southwest.

Between AD 1300 and AD 1450, the area's ceramic assemblage is dominated by local manufactures, and Ancestral Puebloan, also known in the literature as Anasazi, type ceramics are reduced in number and referred to as "intrusive." The aggregated sedentary village adaptation common in the region declines and is seen in dramatic decreases in maize pollen while bison exploitation increases (Simmons et al. 1989:75, 112-113, 127-128; Stuart and Gauthier 1984:270-276). These shifts seem to be related to environmental changes; however, little research has documented this shift or investigated its possible antecedents (Sebastian and Larralde 1989:73-92; Ward et al. 1987:36-37).

The Rio Grande valley, then portions of eastern New Mexico and possibly the local area were some of the first areas to be visited by Francisco Vásquez de Coronado's 1540-1541 *entrada* to what became known as New Mexico and the Great Plains. Although some consider Coronado's expedition to the plains a "futile act" or failed attempt in the quest for the mythic Strait of Anian,

for gold, and glory, it none the less opened the possibility of future exploration by Europeans (Thomas 1966:5). Spanish colonization in *Nuevo Mexico* began in 1598, when don Juan de Oñate and his colonist followers traveled the route northward up the Rio Grande from Mexico and established the first Spanish colonial settlement near the immediate vicinity of today's Ohkay Owingeh (formerly known as San Juan Pueblo) (Cordell 1997:438-440; Simmons 1988:35-38). Recalling the Coronado expedition, one of the first things Oñate did was to also conduct an expedition to the plains (Thomas 1966; Simmons 1988:41). Subsequently, many others such as Archuleta, de Vargas, Ulibarri, Hurtado, Valverde, Villasur, and later Vial, traveled to the plains so that by the time of the 1786 Comanche Peace, the Spanish had a fairly good geographic idea of what lay east of the Rocky Mountains (Thomas 1966; Loomis and Nasatir 1967; Weber 1992; Kessell 2002). While the above were all official, documented expeditions, this is not to say that the local *peón*, shepherding his flock, was not grazing east of the mountains; Hispanos were well known for extending their range while seeking new grazing pastures, even their ranchos were "dispersed," to the great consternation of Spanish officials (Nostrand 1992:43-44, Note No. 34; Simmons 1979:105-107).

The Spanish during the Colonial Period were aware of numerous nomadic American Indian tribes that traveled over the Great Plains. Early on, these included the tribes they identified as the Tejas and Querechos (Sebastian and Larralde 1989:100-101). Later, these plains tribes were known as the Jicarilla, Lipan, and Kiowa Apache as well as the Farons, Palomas, Cuarteles, and Carlanas. They also knew of the Utes to the mountainous north, the Pawnee to the far northeast, and the Jumanos to the southeast (Gunnerson 1979:162-169; Kenner 1994:7-22; Thomas 1966:1-50). The Athapaskan tribes are generally thought, due to significant linguistic similarities, to have migrated from west-central Canada, and arrived in northern New Mexico sometime in about the mid-1500s. Through the 1600s, the Puebloans of New Mexico and the Rio Grande valley were trying to co-exist with the Spaniards; however, social conflict between the two groups subsequently resulted in the famed 1680 Pueblo Revolt.

By the early 1700s, the Comanche are reported to have started occupying areas along the Arkansas River valley in southeastern Colorado, to have been allied with the Ute, and were raiding into New Mexico (Kenner 1969:23-52; Gunnerson 1987:128; Winter 1988:113-115). The Comanche were known to be fierce and about the same time the Jicarilla Apache, although they still frequented the northeastern New Mexico plains, began to occupy parts of the northern Rio Grande valley (Gunnerson 1979:162-169). Many of these outlying tribes traded with the Puebloans as well as the Spanish in the Rio Grande valley; however, raiding never ceased to be an option. Apachean groups such as the Jicarilla and the Kiowa-Apache as well as the Ute, Navajo, and perhaps other plains tribes continued to raid the Rio Grande valley from outlying areas on all sides of the valley. The Spaniards led many punitive raids against these tribes trying to counter the raiding threat; as early as 1630, the Spanish had even authorized slave raids against the Apaches (Sebastian and Larralde 1989:96-97; Weber 1971:25-28).

Settlement east of the Southern Rocky Mountains, first being along the Pecos River and other small, watered foothill valleys, began in the late 1700s and early 1800s, relatively late considering the long Spanish Colonial history in the Rio Grande Valley. Settlement became possible primarily due to the reduced threat of Plains Indian raiding. Governor Juan Baptista de Anza's defeat of Chief Cuerno Verde in 1779 resulted in the 1786 treaty with the hostile

Comanche (Simmons 1988:88-92; Kenner 1969:49-52). Although there had been numerous early exploring and military expeditions into eastern New Mexico, with the Comanche Peace and reduced threat of raiding, local Hispano and Puebloan ciboleros and Comancheros increased their travels to the eastern plains and Hispanos saw the grazing opportunity as well as the opportunity for acquiring east mountain lands (Kessell 1979:416, 434; Chávez 1955:318-319).

The first settlements along the Pecos River were associated with the 1794 San Miguel del Vado (Bado) Community Land Grant as well as the nearby settlement of San José del Vado (Kessell 1979:415-419; GAO 2001). The grantees, after having established their community, having made the required improvements per the Royal Ordinances, and after having lived there for five consecutive years, were ceremoniously given the land by don Pedro Bautista Pino on March 12, 1803 (Kessell 1979:419; Simmons 1979:99-101; Nuttall 1922).

As New Mexico's Hispanic population continued to grow, there was a continuing demand for more arable land. The petitions for land grants were all similar in regard for needing more land and water with which they could maintain their rather meager but growing agrarian subsistence lifestyle. Kessell (1979:416) quotes from the San Miguel del Vado petition: "Although we all have some pieces of land in this villa [Santa Fe], they are not sufficient for our support, both because they are small and because of the great shortage of water and the crowd of people who make it impossible for all of us to enjoy its use." Once settled at San Miguel, the local folks naturally began grazing their livestock in the rather lush prairie grasses located to the northeast near today's community of Las Vegas as well as further downstream along the Pecos River. Again, the grant lands became filled with people and additional petitions for land were submitted, for "...relief from so many miseries" (Kessell 1979:445). "San Miguel [and later Las Vegas] became the springboard for village-founding in the upper Pecos watershed" (Nostrand 1987:367-369).

The number and frequency of French, British, and then U.S. expeditions into the west such as the early 1739 expedition of the Mallet brothers, the French explorers who first penetrated the Spanish Colonial realm, began to worry the Spanish, and Pedro Vial, "...a foreigner in the service of Spain" by 1792 had proven the closeness of Santa Fe to St. Louis alarming Spanish officials (Loomis and Nasatir 1967:xvii-xxv, 52-53; Weber 1971:32-50). French and American fur trappers were regularly penetrating New Mexico by the early 1800's. The 1805-1806 Zebulon Pike expedition traveling through the southern portion of the United States' 1803 Louisiana Purchase and into Spain's Nuevo Mexico piqued the interest of Americans in that mysterious and ancient Spanish colony located to the southwest, especially after the publication of Pike's journals in 1810 (Boyle 1994:3; Simmons 1988:98). By 1819, numerous trappers had traveled to Taos and other local villages where they explored and probably were illegally trapping beaver in the nearby mountains (Pratt and Snow 1988:289; Knowlton 1988:60; Weber 1971:32-50). By 1822, it was reported that "...several streams in the Taos region [were] already trapped out" (Pratt and Snow 1988:289; Weber 1971).

Due to the Spaniards' fear of intruders, several more land grants were established in the upper portions of the Pecos River valley and in northeastern New Mexico; later more grants were let by the Mexicans. The authorities were trying to create a buffer against outsiders since settlement and occupation of an area represented viable ownership. After Mexico's 1820 independence

from Spain and the opening of Mexico to foreign trade, for better or worse, practically all things changed in New Mexico. From the Mexican side, in the inhabited areas of the New Mexico frontier, things were also changing. It was the trader William Becknell, in 1821, that initiated what became a significant American as well as Mexican commercial trade over the famous Santa Fe Trail (Lavender 1954; Gregg 1967; Weber 1971:52-65; Beachum 1982; Boyle 1994). Other than the ciboleros and Comancheros that frequented the area, historic settlement and related use of the project area most likely began in the early 1820s with the establishment of nearby land grants including the Los Trigos (1814), Antonio Ortiz (1819), Anton Chico (1822), Preston Beck (1823), Agua Negra (1824), and the Jose Perea (1825) (Ward *et al.* 1987:43-46). To take advantage of the fur and later the buffalo hide trade with the local trappers/hunters and Indians, and to capitalize on the commerce and freighting business on the Santa Fe Trail, the commercially connected Bent brothers, Charles and William, established a trading post on the north side of the Arkansas River in about 1833/1834 (Lavender 1954; Thompson 1979; Boyle 1994). The introduction of trade along the historic Santa Fe Trail boosted New Mexico's barter economy into one of cash as the local people began to provide flour, some produce, and feed for travelers and their livestock (Boyle 1994).

With the opening of the Santa Fe Trail, some interested explorers and U.S. reconnaissance surveys were being conducted early on such as Glenn-Fowler expedition in 1821-1822 that traveled to Santa Fe and that by Albert Pike who traveled down the Pecos and "...through the Los Esteros [Santa Rosa] Reservoir..." in 1833 (Coues 1898; Weber 1971; Ward *et al.* 1987:49). By the 1820s, the Cheyenne, who became well known as horse traders/raiders, raiding as far south as into portions of today's Mexico, were occupying the Arkansas River valley with their allies the Arapahoe (Gunnerson and Gunnerson 1988:ix-x; Winter 1988:115-116); the Comanche having moved further to the south and into Texas and the Jicarilla moving further to the west (Winter 1988:121). To the north, additional land grants were being let such as the significant Mora (1835) and Las Vegas (1835) grants, and others such as the extensive Maxwell Grant (1841) going to those with close connections with the U.S. (Ebright 1994:189-193, Map Figure 8.5, 188; Van Ness 1980; Lavender 1992:11-25; Keleher 1984). Subsequently, the Santa Fe Trail was not the only route into New Mexico as famous traders such as Josiah Gregg also utilized a cross country route directly west from Fort Smith, Arkansas (Gregg 1954, 1967).

Pressing to widen the Texas realm and with an eye on Santa Fe, the Texas-Santa Fe Expedition penetrated into Mexico in 1841 but failed (McClure 1973:45-56). The increasing presence of U.S. traders, merchants, and opportunists were pushing the trade further south into Mexico. With the increasing tensions between the American Indians, the Mexicans, the Texans, and the huge influx of Americans, for many years there was a growing discussion on both the American and Mexican sides regarding the idea that New Mexico would be better off if it were a part of the United States (Boyle 1994:13-28; Simmons 1988:121-122; Twitchell 1976:17-36).

In 1846, Colonel Stephen Watts Kearny and his Army of the West were ordered to invade Mexico; by June they had left Fort Leavenworth (Schubert 1980:41-44; Simmons 1988:121-131). With the expedition, Topographical Engineer Lt. William H. Emory, began making the first accurate U.S. maps of the Santa Fe Trail corridor into New Mexico; Lieutenants Peck and Abert conducted much of this field work (Emory 1951:74-75; Twitchell 1976; Goetzmann 1991:128, 134, 142, 144-147). In the New Mexican capital of Santa Fe, Kearny, now promoted

to Brigadier General, proclaimed that the U.S. had taken New Mexico “...without firing a gun, or spilling a single drop of blood...”; however, there was naturally a lot of fear and resentment among the Mexicans (Twitchell 1976:80, 122-124). The January 1847 Mexican uprising against U.S. occupation led to the killing of Charles Bent, the newly appointed Military Governor of New Mexico (Simmons 1988:129-130; Twitchell 1976:84, 124-128, 149-198; Lavender 1954:283-284, 302-303; Horn 1963:14, 21-22). In quelling the uprising, Taos Pueblo and shortly thereafter, the village of Mora were nearly destroyed by the U.S. Army (Twitchell 1976:124-138; deBuys 1985:105-108; Murphy 1972:33-48; Goodrich 1972:49-60).

The Treaty of Guadalupe–Hidalgo was signed in 1848 ending the Mexican War with a huge portion of the Southwest and New Mexico becoming a U.S. Territory (Simmons 1988:132-136). With the responsibility of protecting the population as well as the Santa Fe Trail trade, Fort Union was established in 1851 north of Las Vegas with Fort Stanton being established in 1855 a short distance northeast of the Sacramento Mountains (Utley 1962; Sebastian and Larralde 1989:107). A significant amount of supplies were needed to provide for the U.S. Army forts and other outlying posts such as Fort Union, Fort Stanton, Hatch’s Ranch, and later Fort Bascom, Fort Sumner and Bosque Redondo (Flint and Flint 2002:27-55; Miller 1989; Frazer 1972: 213-238; Sebastian and Larralde 1989:106-107, 111). “The military demand for bread literally created the flour-milling industry in the Southwest” (Miller 1989:173). Military supply had huge impacts as Sam Watrous, who set up a ranch at the *La Junta de los Rios Mora y Sapello*, had “...found the Army’s appetite for beef to be equally profitable, and many other settlers in the area [i.e., in the Mora and Pecos River valleys] made good money supplying the fort with corn, oats, and vegetables” (deBuys 1985:111; Julyan 1996:376-377). While military supply had a huge effect on the Southwest as a whole, it did not affect numerous small Hispanic communities that were some distance away from the major commercial centers or the alignment of the Santa Fe Trail (Ward et al. 1987:46-48).

There was a flurry of U.S. Army activity all across the Southwest after New Mexico was incorporated into the U.S. as a Territory. The Army was conducting reconnaissance surveys for potential road and railroad alignments and communication routes (Goetzmann 1991). Captain Judd’s 1850 reconnaissance down the Pecos resulted in “...the first map of the Middle Pecos River” produced by cartographer R.H. Kern (Sebastian and Larralde 1989:50). The map with its road alignments was later utilized in determining the location for the establishment of Fort Sumner and the Bosque Redondo Reservation, located a relatively short distance downstream of the EPdL Ditch project area. Whipple conducted a survey along the 37th parallel for a potential railroad alignment; the survey crosses in the immediate vicinity of Santa Rosa Lake, a short distance north of the project area (Sebastian and Larralde 1989:53).

In 1861, the Confederates made a Civil War push into New Mexico trying to take Fort Union and its supply of military stores; however, they were crushed with a defeat in the Battle of Glorieta Pass (Simmons 1988:141-149). Through the years, Fort Union had a significant economic impact of New Mexico, at one time having a peak population of 3,000 (Flint and Flint 2002:27-55; Miller 1989; Frazer 1972: 213-238; Julyan 1996:136-137). With the end of the Civil War, the military immediately went to work to suppress the Indians; specifically they set to work confining the Navajo and Mescalero to a reservation at Bosque Redondo (Sebastian and Larralde 1989:110-114). In 1866, Loving and Goodnight trailed Texas cattle up the Pecos and through

New Mexico to supply the mining boom in Colorado and the next year John Chisum followed in their path (Sebastian and Larralde 1989:119-120).

Locally however, the U.S. Army's Bosque Redondo experiment had been a horrific experience for the Mescalero and Navajo, who had been traditional enemies. The conditions were so bad that the Mescalero finally escaped and the Navajo being there for almost four years were finally released by General Sheridan in 1868 (Thompson 1976:151-157; Sebastian and Larralde 1989:113). By 1872, Chisum had established his Jinglebob Ranch further down the Pecos at Bosque Grande. Due to abuses and deprivations on both sides, the Comanchero trade was finally brought to an end in 1872 (Sebastian and Larralde 1989:108; Kenner 1969:176-200). The arrival of and the efficiency of the railroads brought an end to wagon train freighting on the Santa Fe Trail. In a sense, the old ways and times were on the way out and a new era was beginning as the famous Atchison, Topeka and Santa Fe Railroad, laying tracks across the prairie, reached Las Vegas in 1879 (Simmons 1988:160; Myrick 1970:18). The railroads along with many other factors resulted in the eventual confinement of the numerous Plains Indian tribes to reservations and the near extinction of their primary food source, the buffalo (American bison). With a greater sense of security and easier transportation, now began a huge influx of traders, merchants, entrepreneurs of all sorts, businessmen, bankers, land speculators, and settlers and farmers.

In both prehistoric and historic times, the Los Esteros-Santa Rosa area with its fresh water springs would have seemed like an oasis, especially during times of drought. Although they were taking advantage of the local spring and river water, it may be just an interesting coincidence that the Homestead Act was passed in 1862 and the communities of West and East Puerto de Luna were established in the 1863 (Nostrand 1992:94-95; 1987:383-385; Cabeza de Baca 1958:20, 42-43). However, Hispanic folks had been periodically grazing as well as occupying this area of the Pecos River valley since at least the early 1800s. "It is clear from the Agua Negra and Pedro Jose Perea land grants that lands were often occupied for long periods of time before a grant was petitioned" (Levine 1987:45). Appeals were made in November 1824 before the court in Santa Fe for both the Agua Negra and Pedro Jose Perea land grants. Levine (1987:45-46) provides the following information: "Perea came before the court 'showing it is now nine years [since 1815] that he possess[ed] a ranch officiously and voluntarily, the location of which is on the opposite side of the Pecos River (from Sandoval's Agua Negra Grant), below the swamps [Los Esteros]' (Spanish Archives of New Mexico 710:1)." The Agua Negra Grant was confirmed by Congress/Court of Private Land Claims in 1860 and has a patent date of 1900 (GAO 2001). The southeast boundary corner of Sandoval's Agua Negra Grant is located about two miles northwest of the community of Puerto de Luna. The Pedro José Perea Grant, a short distance north of Santa Rosa, was confirmed by Congress/Court of Private Land Claims in 1860 and has a patent date of 1877 (GAO 2001). Some members of the EPdL Association strongly believe that the EPdL Ditch was originally constructed in about 1849 and that records may be found to support that date.

The eastern plains of New Mexico were well known for their grazing capacity. From the Spanish Colonial days, eastern New Mexico had produced thousands of sheep and tens of thousands were tailed as far south as Mexico City (Wentworth 1948:28-29, 112-113; Pratt and Snow 1988:376-379). As noted above, the U.S. Army as well as other American entrepreneurs took early notice of this productivity (Gregg 1954:134; Tainter and Levine 1987:109-111). Later, in the early

1850s, thousands of sheep were trailed from New Mexico to California where in 1849, miners were facing near starving conditions in the gold fields (Wentworth 1948:135, 165-169). In the late 1800s, it became again profitable to replenish diminished herds in New Mexico by trailing sheep from California back to New Mexico; one example being a 10,000 head herd driven from Merced County, CA to Puerto de Luna (Wentworth 1948:261). Las Vegas, with its close proximity to the plains grasslands, became a commercial boom town with the arrival of the Atchison, Topeka and Santa Fe Railroad in 1879; the rails making for fast and efficient delivery of livestock and related products such as wool to eastern markets (Knowlton 1980:16; de Buys 1985:150, 219-220; Nostrand 1992:113-114). The community of Puerto de Luna, being approximately 70 miles southeast of Las Vegas, was close enough to have taken advantage of at least a portion of this commercial opportunity.

With the railroads, the work of extracting the West's natural resources began and did not slow down. The railroads expanded sending spur lines throughout the mountainous West. Northeast New Mexico was also to supply some of those resources such as the good quality coal from near Raton and Trinidad, and timber for railroad cross ties coming from throughout the Southern Rocky Mountains. From the 1880s until 1903, the community of Puerto de Luna was the county seat with a peak population of about 1,500 residents (Julyan 1996:278; Goetz 1948). Nearby Santa Rosa, originally named Agua Negra Chiquita, had been settled in 1865. With the local boom generated by the arrival and joining of the Chicago, Rock Island and Pacific railroad with the El Paso and Southwestern in 1902 at Santa Rosa, Santa Rosa became the county seat the next year (Myrick 1970:56, 120; Ward *et al.* 1987:53; Julyan 1996:326).

New Mexico was full of corruption as greed and the control of land and water became paramount to many. In the midst of numerous protests as well as evidence of fraud, investigations found that huge tracts of public lands had been fenced with "perjured preemption entries" (Clark 1987:44-52). In 1884, H. H. Eddy was sent to the Pecos to continue the investigations; at Puerto de Luna he found that "The settlement itself was largely Mexican and dated back to the time when the residents had to live close together for protection against the Indians. Although they were technically in violation by not actually residing on their [individual farm] lands, Eddy recommended that they be given patents because they were certainly within the spirit of the Homestead Act" (Clark 1987:52).

CHAPTER 3

FIELD METHODS

Introduction

The project's area of potential effect (APE) is the construction area that includes the EPdL Ditch's right-of-way (15 feet on either side of the ditch's centerline), the access routes, and a staging area for a total of 4.95 acres (Table 3.1). The EPdL Ditch's project area alignment is 4,400 feet (0.82 miles) in length; for a total of 2.97 acres (30 ft. W x 4,310 ft. L). The access routes to the two flumes and to the new channel cut is a total of approximately 1.48 acres (30 ft. wide x 2,156 ft. long). The staging area is approximately 0.5 acres in size. The area surveyed included the APE and a buffer for a total of 7.8 acres (Figure 3.1).

Table 3.1. Acreage of APE.

Area of Potential Effect	Area (acres)
Ditch segment (4,400 feet)	2.97
Access routes (~2,156 feet)	1.48
Staging area	0.50
Total	4.95

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

Corps personnel conducted an initial site visit of the project area on January 22, 2009. On April 14, 2009, two Corps archaeologists conducted an intensive pedestrian survey of the project area, the results of which are presented in this report. Photographs of the project area were taken during both the January site visit and the April survey. The survey crew consisted of Gregory Everhart and John Schelberg as well as Corps Biologist Dana Price, who assisted with GPS data collection for the acequia alignment, access road, and staging area mapping. The survey proceeded as follows: beginning at the upstream end of the project area/acequia, two archaeologists walked the linear alignment of the acequia southward/downstream, both about two to five meters from each bank of the acequia channel. The proposed staging area was walked in parallel transects spaced about five meters apart. Isolated artifacts were photographed and recorded in field notes and with the GPS, and the location of the known archaeological site (LA 108218, noted below) was verified in relation to the project area.

Field Conditions

Field conditions during the survey were sunny, with no appreciable cloud cover during the majority of the survey. Temperatures ranged between 65 to 75 degrees Fahrenheit with a light breeze. Ground visibility was good for the majority of the study area, being 80- to 90-percent visibility. Approximately 30-percent of the length of the project area's built-up ditch banks were

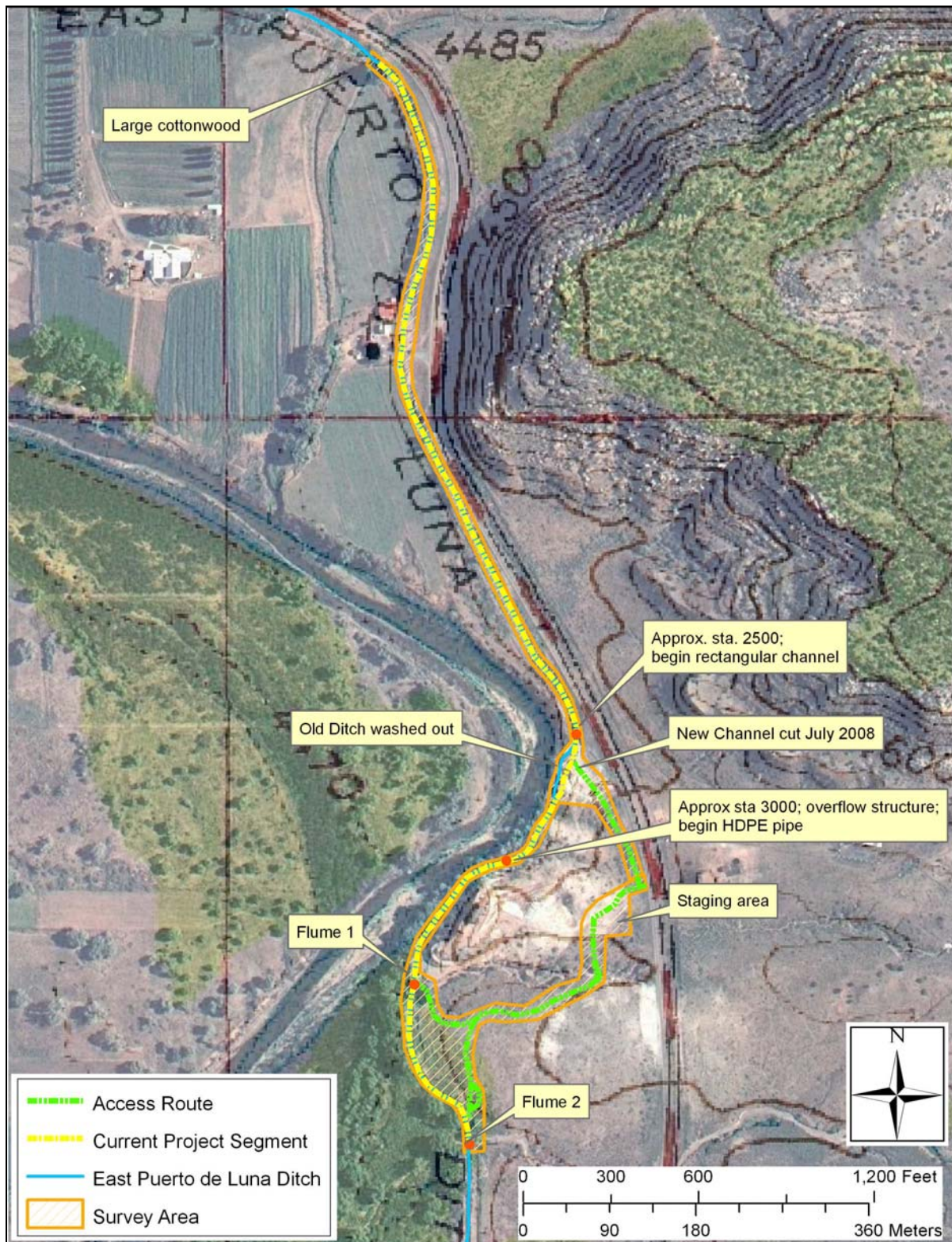


Figure 3.1. Project Location. Survey, Access, and Staging Areas. Base Map a Composite of the USGS 7.5-Minute Quadrangle Puerto de Luna, New Mexico (34104-G5) and 2005 USGS DOQQ Aerial Imagery.

obscured with dense vegetation; in these locations, the survey crew widened their survey to the open areas in adjacent fields and the highway right-of-way. There were no access issues encountered in completing this survey.

Methods of Site Location and Site Recording

The purpose of the survey was to document the presence/absence of cultural resources in the survey area and determine if impacts would occur to known or newly discovered sites within the APE. Standard survey methods and criteria, such as presence/absence of features and artifacts, were used to identify historic properties. Prior to going to the field, a color 2005 aerial image of the project area was obtained for in-field use. All locational information including the acequia alignment, survey boundaries, and artifact locations, was recorded with a Garmin GPS 12 XL sub-meter unit. The location of an archaeological site (LA 108218) known to occur in the vicinity of the project area was marked on the aerial image prior to going to the field.

Photography and Documentation Methods

Digital photographs were taken at different points of the project area during the survey using a Nikon Coolpix 4800 ED 4.0-megapixel camera set at a resolution of 2288 x 1712 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. Photographs of the project area included in this report were drawn from the 2009 April 14th survey photos.

One Isolated Occurrence (IO) was observed during the survey along the acequia's ditch bank. The five IO artifacts were photographed and documented in the field notes (see Chapter 4, Results of Survey).

Strategies Employed for Collection or Limited Tests

No artifacts were collected and no limited testing was conducted during this survey.

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CHAPTER 4

RESULTS OF SURVEY

Location of Cultural Properties

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 B. Appendix B should be removed prior to public disclosure of this report.”

East Puerto de Luna Community Ditch

The East Puerto de Luna Community Ditch diverts irrigation water from the Pecos River at a point approximately four miles southeast of the City of Santa Rosa, Guadalupe County, New Mexico. The current project area begins at a point located about eight miles southeast of Santa Rosa and about two miles north of the historic community of Puerto de Luna. The EPdL Ditch measures a total of approximately 8.5 miles in length.

“The Puerto de Luna east side ditch is specifically mentioned in documents (The Hope Decree) as early as 1880 and is believed to date to the mid-1860s” (Kneebone 1995:11). The communities of East and West Puerto de Luna were established in 1863 (Nostrand 1992:94-95; Cabeza de Baca 1958:20, 42-43); however, the nearby Agua Negra and Pedro José Perea land grants date to the early 1820s. Some EPdL Association members strongly believe that community members have records that indicate that the EPdL Ditch was originally constructed in about 1849.

Most acequias are considered historic properties in New Mexico; they are eligible for nomination to the National Register of Historic Places (36 CFR 800). As noted in the Records Check section in Chapter 2, Kneebone (1995) reported that the “Puerto de Luna East Side Acequia” was eligible for nomination to the National Register of Historic Places under Criteria (a) and (d) of 36 CFR 60.4. The New Mexico SHPO concurred with the Corps determination of eligibility on June 15, 1995, during consultation for a previous EPdL Ditch project (HPD Consultation No. 47283; Appendix A). The EPdL Community Ditch was previously assigned a Laboratory of Anthropology (LA) site number, LA 109299.

The Corps has assisted the EPdL Association, through the Corps’ Acequia Rehabilitation Program, on three previous acequia rehabilitation construction projects that have affected a total of approximately 2,920 lineal feet (0.55 miles; 6.5 percent) of the ditch. The acequia system’s 1960s diversion structure was replaced in 1996 (Kneebone 1995); a failing flume was rebuilt in 2000 (Everhart and Schelberg 2000); and approximately 2,870 feet of underground pipeline was installed in a troublesome segment of the ditch in 2003 (Everhart 2003). The three previous

projects and the currently proposed Corps' project (4,400 feet; 0.82 miles; 9.6 percent) would affect a total of about 16.1 percent of the 8.5 mile acequia system.

The Natural Resources Conservation Service (NRCS) has also assisted the EPdL Association by constructing three concrete ditch-lining projects in 1967, 1973, and 1985, covering a total of about 18,243 linear feet (3.45 miles; 40.6 percent).

Consideration of Impacts

Considering the cumulative impacts of the previous Corps and NRCS projects with the current project, a total of more than one-half of the original earthen ditch system will have been altered in form (~28,493 feet, 56.7 percent). Therefore, the Corps has determined that the proposed project will have an adverse effect upon the historic EPdL Ditch. Approximately 43.3 percent (~16,387 linear feet) of the existing ditch will remain earthen in form. The project will follow the existing alignment and will help to ensure that the system maintains its historic function.

The Corps considered construction options that would reduce or minimize the effects to form, alignment, and function of the acequia. Due to local topography and the EPdL Ditch's location, staying in the original alignment, constricted between the Pecos River and State Highway 91, would have the least impact to the historic character of the acequia and would be the only viable alignment alternative that meets the purpose and needs of the acequia association.

EPdL Association members have also expressed concerns and have indicated that they are experiencing operations and maintenance problems in other sections of the ditch system; therefore, there is the potential for future rehabilitation projects on the ditch system.

For the current project, Flume No. 1 will be bypassed and abandoned in place; Flume No. 2 will be removed and a new flume structure constructed to replace the existing one. These structures are old but not historic (Figure 4.1, Figure 4.2). A field sketch of the EPdL Ditch profile with the location photo is provided in Figure 4.3 and Figure 4.4.



Figure 4.1. Overview Photograph of Flume No. 1 to be by-passed and abandoned in place. Photograph No. 9889.



Figure 4.2. Overview Photograph of Flume No. 2 to be Replaced. Photograph No. 9911.



Figure 4.3. Overview Photograph of Location of EPdL Ditch Profile. View to the south; State Highway 91 is on the left (east) and farm fields are on the right (west). Photograph No. 9788.

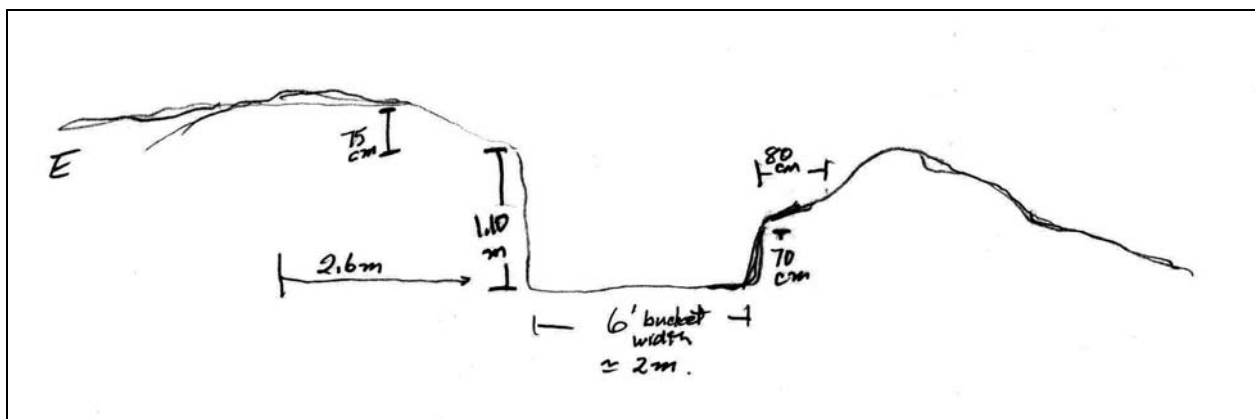


Figure 4.4. Field Sketch of EPdL Ditch Profile.

Description of Other Archaeological Sites

No previously recorded archaeological sites were encountered during this survey in the project area.

The ARMS search found that two archaeological sites, LA 108218 and LA 153935, have previously been documented adjacent to the proposed project area. The locations of these sites are shown on the map found in Appendix B, Figure B.2. Specific site location information in Appendix B is not for public disclosure

ARMS data indicates that portions of the LA 108218 site occur on both sides of State Highway 91 and the site has been impacted by road construction and maintenance, and by vehicular traffic. The Corps was unable to verify the location of LA 108218. The NM State Highway 91 right-of-way, as noted in ARMS, has been significantly impacted by road construction and maintenance activities.

The land surface on the private property side of the fence has also been significantly disturbed. In 2008, a portion of the EPdL Ditch washed out from heavy rains, the result of upland surface water flows that inundated the ditch; an example of the existing problems being faced by the EPdL Association and a reason for the current project. The EPdL Ditch had to be realigned at the wash out on a high bank overlooking a hard bend of the Pecos River, (Figure 3.1; Figure 4.5). The new ditch alignment had to be excavated by a large backhoe into the hillside near the reported location of LA 108218. This area of private property would serve as an access route to the EPdL Ditch (Figure 4.6). The Corps did not observe evidence of LA 108218 on the private property. The Corps observed 3 lithic artifacts adjacent to the Highway's right-of-way fence line that may be associated with LA 108218. These artifacts are located close enough to the fence line that they would not be affected by the EPdL Ditch project. The Corps did not observe additional cultural resources. The Corps is of the opinion that driving across the area would have a negligible effect to cultural resources, if they occur in or adjacent to this access area.

Information regarding another site, LA 153935, is still not reported in the ARMS database; however, the site was recorded during a survey for a fiber-optic line and is located on the east side of State Highway 91, on the opposite side of the highway from the EPdL Ditch. The corps was unable to relocate this site during the current survey.



Figure 4.5. Overview Photograph of 2008 Washout (right) and New Alignment (left). Photograph No. 9846.



Figure 4.6. Overview Photograph of Access Route. Photograph No. 9855.

Isolated Occurrences (IOs)

The pedestrian survey identified one isolated occurrence (IO) located adjacent to the EPdL Ditch and the highway (Figure 4.7). The IO consists of five historic artifacts: one historic sherd, a micaceous utility ware; a portion of an old electric iron; and three pieces of a historic bottle. The five IO artifacts occur in an area of approximately 2 meters by 3 meters. This IO is adjacent to but outside of the proposed EPdL construction area. The IO is also near a modern, occupied farm house. Other modern trash, consisting of 6-penny nails, galvanized roofing nails and pieces of rusty, smooth (bailing) wire and window glass, also occurs in the area. The Corps is of the opinion that this IO is not significant and has been adequately recorded in the field; therefore, no further work is recommended. UTM coordinates for EPdL IO No. 1 are given in Appendix B, Table B.1, and the location is shown on the map found in Appendix B, Figure B.3. Specific site location information in Appendix B is not for public disclosure.

The historic sherd, a historic micaceous utility ware (Figure 4.8), is consistent with descriptions of Ocate Micaceous (AD 1550-1750), although the boundary between that and the later Cimarron Micaceous (~1750-1900s) is unclear (Carrillo 1997; McKenna and Miles 1995; Gunnerson 1968, 1969). Pottery falling into these categories was manufactured by Apache, Pueblo, and Spanish populations throughout the protohistoric/historic period (Carrillo 1997). There were no obvious striations on the sherd.

The historic iron is an old electric iron as evidenced by the two terminal posts with fiber washers at the rear (left side of photograph) of the iron plate (Figure 4.9). An example of a 1916 electric iron (Chase 1921) with a similar bolt plan indicates that perhaps the iron's handle was attached to a chrome cover that covered the heated iron plate (Figure 4.10). It is unknown if the iron was actually used in this portion of the Pecos Valley or just dumped here. President Franklin D. Roosevelt established the Rural Electrification Administration, commonly known as the REA, in 1935. The Farmer's Electric Cooperative, that serves this area, was formed in 1937 (Farmer's Electric 2009), and it is unknown exactly when electricity was brought to the Puerto de Luna area.

The three bottle fragments from an unidentified historic bottle include the finish (the lip and collar) and a portion of the neck (Figure 4.11). Since the historic bottle has a rather symmetrical or uniform finish it is most likely machine made and dates after about 1915 (BLM 2009).



Figure 4.7. Overview Photograph of Isolated Occurrence No. 1. East Puerto de Luna Community Ditch Rehabilitation Project, Guadalupe County, New Mexico. View to the south. Photograph No. 9814 by Corps' Archaeologist Gregory D. Everhart, April 14, 2009.



Figure 4.8. Isolated Occurrence No. 1, Artifact No. 1, exterior view (left, Photograph No. 9811) and side view (right, Photograph No. 9812).



Figure 4.9. Isolated Occurrence No. 1, Artifact No. 2. Historic electric iron. Photograph No. 9813.



Figure 4.10. Example of 1916 electric iron with similar bolt plan (Chase 1921).



Figure 4.11. Isolated Occurrence No. 1, Artifact No's. 3, 4, and 5. Unidentified Historic bottle. Photograph No. 9817.

CHAPTER 5

SUMMARY AND RECOMMENDATIONS

Summary

The proposed East Puerto de Luna Community Ditch project area is located approximately eight miles southeast of the City of Santa Rosa, Guadalupe County, New Mexico. The project area is located within the EPdL Ditch's right-of-way and on private property. The EPdL Ditch measures a total of approximately 8.5 miles in length and diverts irrigation water from the Pecos River. It currently serves 44 families who irrigate approximately 376 acres of crop and pasture land. The proposed project utilizes an existing Natural Resources Conservation Service construction design.

The proposed project plans to construct approximately 3,120 linear feet of concrete ditch lining; install approximately 1,190 feet of 36-inch diameter, high-density polyethylene underground pipeline; and re-construct two 36-inch diameter corrugated metal pipe flumes. Total project length is approximately 4,400 feet. A single staging area, used for similar purposes in the past, would be used for parking construction equipment and stockpiling materials. Access to the project area is on existing paved highways, and farm roads and two-wheel tracks.

The present archaeological survey examined the APE that includes the 4,400-foot segment of the EPdL Ditch's right-of-way, the staging area, and access routes covering approximately 4.95 acres with a buffer for a total survey area of about 7.8 acres. The survey identified one isolated occurrence and was unable to locate a previously recorded archaeological site, LA 108218; the absence of this site within the APE indicates that it would not be impacted by the proposed construction project. Another nearby site, LA 153935, is located on the opposite side of the highway from the EPdL Ditch and would not be impacted by the proposed project.

The Natural Resources Conservation Service has previously constructed three concrete ditch-lining projects in 1967, 1973, and 1985 for the EPdL Association, affecting a total of about 18,243 linear feet or 40.6 percent of the 8.5 mile EPdL Ditch system.

Through its Acequia Rehabilitation Program, the Corps has previously undertaken three construction projects on the EPdL system. The Corps constructed a new diversion structure in 1996, rebuilt a failing flume in 2000, and installed approximately 2,870 feet of underground pipeline in a troublesome segment of the ditch in 2003. The three Corps projects have affected a total of approximately 2,920 linear feet of ditch or about 6.5 percent of the EPdL Ditch system.

Evaluation and Statement of Significance

The EPdL Community Ditch dates to the mid-1860s; however, two early Mexican land grants were let in the early 1820s for lands a short distance north of the project area. Some EPdL Association members strongly believe that records may exist indicating that the EPdL Ditch was originally constructed in about 1849.

On June 15, 1995, the State Historic Preservation Officer concurred with the Corps' determination that the "Puerto de Luna East Side Acequia" (a.k.a. the East Puerto de Luna Community Ditch) was eligible for nomination to the National Register of Historic Places (36 CFR 800) under Criteria (a) and (d) of 36 CFR 60.4 (HPD Consultation No. 47283). The EPdL Community Ditch was assigned a Laboratory of Anthropology (LA) site number, LA 109299. The Corps has determined that the EPdL Ditch remains eligible for nomination to the NRHP under Criterion (a) because irrigation systems such as this one made possible the settling and farming of this portion of the Pecos River valley and is thus associated with events that have made a significant contribution to broad patterns of our history and under Criterion (d) because it has provided, and is likely to provide, information important to understanding the history of the local area as well as the state of New Mexico, i.e., for its potential to contribute to the understanding of the rural lifestyle during the late 19th and early 20th centuries.

The pedestrian survey identified one isolated occurrence (IO) located adjacent to the project area. The EPdL IO consists of five historic artifacts that occur in an area of approximately two meters by three meters and is adjacent to but outside of the proposed EPdL construction area and would not be affected by the proposed construction. Historic trash also occurs in this area. The Corps is of the opinion that this IO is not significant and has been adequately recorded in the field; therefore, no further work is recommended.

Effect Determination

Under 36 CFR 800.5, Assessment of Adverse Effects, seven examples of adverse effects to historic properties are provided in subsection (2). This project with the cumulative effects of six previous projects is considered to have an adverse affect to the EPdL Ditch by having affected approximately 56.7 percent of the EPdL Ditch's form. 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 to each below, in turn.

East Puerto de Luna Community Ditch

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

The project will abandon the existing Flume No. 1, bypassing it and leaving it in place, and construct a new flume to replace it. The project will result in the removal of Flume No. 2 and the construction of a new flume to replace it. Neither of these existing flume structures are over 50 years in age and therefore are not considered to be historic. Since the acequia's original construction, the acequia system has been subject to more than about 130 years of operations and maintenance activities and the structural components have been rebuilt an unknown but numerous number of times. The proposed project will not affect the EPdL Ditch's alignment/location, or intended function.

(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 purpose of this project is to rehabilitate the form of the 4,400-foot project segment of the EPdL Ditch and replace two flumes so that the acequia may continue to function in its current context. Rehabilitation is defined under 36 CRF 68.2(b) as “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 project will result in a change to the form of the 4,400-foot project segment of the EPdL Ditch from the existing open, earthen ditch that will be replaced with concrete ditch lining and underground pipeline, and, as noted, two new flumes will be constructed to replace those existing. These improvements would provide for the efficient, timely, and equitable delivery of irrigation water to downstream portions of the ditch during the critical irrigation times of the growing season, i.e., the acequia system will function as intended, as well as reducing the high costs of maintaining the earthen ditch. The EPdL Association’s primary goal is to conserve the irrigation water so that it is available for all of the EPdL Association members. The proposed project, therefore, will affect the form but will not affect the acequia system’s alignment/location or function, those historic elements that contribute to the acequia’s eligibility for nomination to the National Register of Historic Places.

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

The proposed construction of concrete ditch lining and installation of underground pipeline as well as bypassing the existing Flume No. 1, will generally follow the existing ditch alignment as closely as possible, and therefore, the project is considered to have a negligible effect on the acequia system’s alignment/location.

(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 proposed project will not alter the acequia’s intended function or use; it will continue to be used in the traditional manner for crop and pasture irrigation. The current project’s segment of earthen ditch is experiencing significant water losses due to seepage and rodent burrows, and there is a significant sedimentation problem from surface water flows from the adjacent, eroding upland area, and therefore does not function properly. Also, the two existing flume structures are in disrepair and in imminent danger of failure, and therefore, lack integrity.

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

In changing the form of the 4,400-foot project segment of the EPdL Ditch, from the existing open, earthen ditch that will be replaced with concrete ditch lining and underground pipeline, the proposed project may be considered to have a visual impact to the EPdL Ditch’s historic setting; however, the proposed project maintains the original Ditch alignment and provides for the efficient, timely, and equitable delivery of irrigation water to downstream portions of the ditch which is necessary to maintain the viability of the acequia system. The Corps is proposing a combination of several efforts including additional archival research, conducting oral history interviews, photographically

documenting the existing acequia, and conducting public outreach and education, to mitigate adverse effects to the acequia. If determined desirable in the future, this EPdL Ditch segment could be converted back to an open earthen ditch.

(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.

The current project would affect a total of about 9.6 percent of the EPdL Ditch system. Upon completion of the current project, Corps assisted projects will have affected a total of about 16.1 percent of the 8.5 mile EPdL Ditch system (4,400 feet/9.6 percent + 2,920 feet/6.5 percent). With the current project, considering the cumulative impacts, more than one half of the original earthen ditch will have been altered in form (28,493 linear feet; 56.7 percent) while approximately 16,387 linear feet or 43.3 percent of the existing EPdL Ditch system will remain earthen in form. EPdL Association members have indicated that they are experiencing operations and maintenance problems in other sections of the ditch system; therefore, there is the potential for future rehabilitation projects on the ditch system.

The Corps considered several construction options that would reduce or minimize the effects to form, alignment, and function of the acequia. Due to local topography and the EPdL Ditch's location, staying in the original alignment (constricted between the Pecos River and State Highway 91) would have the least impact to the historic character of the acequia and would be the only viable alignment alternative that meets the purpose and needs of the acequia association. Therefore, the proposed project will not affect the EPdL Ditch's alignment/location, or intended function, two historic elements that contribute to the acequia's eligibility for the National Register of Historic Places. However, in converting open earthen ditch to concrete lining and underground pipeline, the proposed project will alter one contributing element of the ditch's eligibility, its form. Further, since the cumulative impacts of previous projects in combination with the current project will have altered approximately 56.7 percent of the EPdL Ditch's form, the Corps has determined that the proposed project will have an **adverse effect** upon the historic EPdL Ditch.

Other Cultural Properties

A literature search conducted prior to the archaeological survey found that two previously documented archaeological sites were reported to occur adjacent to the proposed project area. These include LA 108218 and LA 153935. The Corps did not observe evidence of LA 108218 in the project area. The Corps is of the opinion that driving across an area that is reported to be adjacent to the location of LA 108218 would have no effect to cultural resources. LA 153935 is still not reported in the ARMS database; however, the site is reported to be located on the east

side of State Highway 91, on the opposite side of the highway from the EPdL Ditch. Therefore, the Corps is of the opinion that neither LA 108218 nor LA 153935 would be affected by the proposed project.

In sum, the Corps is of the opinion that, regarding the EPdL Ditch, the proposed East Puerto de Luna Community Ditch rehabilitation project will have an **adverse effect to historic properties**. The Corps is of the opinion that no other cultural resources would be affected.

Recommendations

The Corps considers the East Puerto de Luna Community Ditch eligible for nomination to the National Register of Historic Places under Criteria (a) and (d), as irrigation systems such as this one made possible the settling and farming of the area, and is thus associated with events that have made a significant contribution to the broad patterns of our history. However, the Corps is of the opinion that the proposed project will result in an **adverse effect to historic properties** for the following reason: the current 4,400-foot project, with the cumulative effect of six previous construction projects, will have altered more than one-half of the EPdL Ditch; converting approximately 28,493 feet or 56.7 percent of original historic, open, earthen Ditch's 8.5-mile length to concrete lining or underground pipeline.

The Corps is considering a combination of several efforts to resolve adverse effects to the acequia, including additional archival research, conducting oral history interviews, photographically documenting the existing acequia, and conducting public outreach and education. These recommendations will be submitted, in the form of a draft Memorandum of Agreement for the current project, to the State Historic Preservation Officer and to the EPdL Community Ditch Association for consideration. The Corps recommends that mitigation efforts conducted for the current project would also serve to mitigate for any future projects as well. The Corps recommends that construction be permitted to proceed after consulting parties agree to a resolution of adverse effects, as documented in the Section 106 Memorandum of Agreement. Pursuant to 36 CFR 800.6(a)(1), the Corps will also notify the Advisory Council on Historic Preservation concerning this project, but due to the non-controversial nature of the project, do not anticipate their participation.

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APPENDIX A

DOCUMENTS RELATING TO THE EAST PUERTO DE LUNA COMMUNITY DITCH

This appendix contains documentation of previous Corps consultation with the New Mexico State Historic Preservation Officer (SHPO) regarding three Acequia Rehabilitation Program projects conducted on the East Puerto de Luna Community Ditch.

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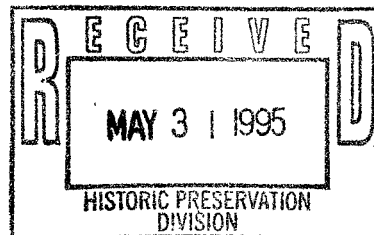
DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1580
ALBUQUERQUE, NEW MEXICO 87103-1580
FAX (505) 766-2770

REPLY TO
ATTENTION OF:

May 24, 1995

Engineering and Planning Division
Planning Branch

Mr. Michael Romero Taylor
State Historic Preservation Officer
State Historic Preservation Bureau
228 East Palace Avenue, Room 101
Santa Fe, New Mexico 87503



47283

Dear Mr. Taylor:

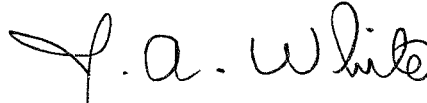
Pursuant to 36 CFR Part 800 and in accord with our Programmatic Memorandum of Agreement for the acequia rehabilitation program, the U.S. Army Corps of Engineers (Corps) is seeking your concurrence in our determinations on the rehabilitation of portions of the Puerto de Luna East Side irrigation system, Guadalupe County, New Mexico. The Corps' acequia rehabilitation program is authorized under PL99-662, **Water Resources Development Act of 1986**. During February of 1995, Corps' archaeologists conducted an intensive cultural resources inventory for the proposed rehabilitation of the irrigation system. Information on project locations and dimensions are provided in the enclosed report.

As a result of the resource inventory, the Corps is of the opinion that the Puerto de Luna East Side Acequia is eligible for the National Register of Historic Places under criteria "a" and "d" of 36 CFR 60.4 for its historical importance to the settlement of the Santa Rosa area. The Corps has evaluated the effect that the proposed undertaking will have on this historic irrigation system and concludes that the project will not "adversely affect" characteristics of the ditch that contributes to its National Register eligibility, specifically its intended function and alignment. The Puerto de Luna East Side Acequia has been assigned the Laboratory of Anthropology site number LA 109299.

A second historic property was identified during the inventory. Designated LA 109300 by your Archaeological Records Management Section, the site has suffered extensive disturbance. The damage to the site is so complete that the site, in our opinion, is not eligible for inclusion to the National Register of Historic Places. As a result, the Corps believes that the undertaking will have "no effect" on the historic resources of the region. Should any previously undiscovered cultural resources be encountered during the construction operations, however, construction will cease in

the immediate vicinity of the resource until the significance and disposition of the resource has been evaluated, pursuant to 36 CFR 800.11. If you have any questions or require additional information, please contact Dr. Ronald Kneebone of my staff at (505) 766-1628.

Sincerely,



James A. White
Chief, Planning Branch

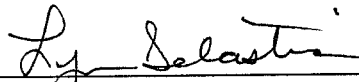
Enclosure

Copies Furnished:

Claudia Nissley, Director
Western Office of Project Review
Advisory Council on Historic Preservation
730 Simms Street, Room 401
Golden, Colorado 80401

I CONCUR

for

 6-15-95
MICHAEL ROMERO TAYLOR,
NEW MEXICO STATE HISTORIC
PRESERVATION OFFICER

SHPO Comments:

I concur with your findings that LA 109299 is eligible to the National Register of Historic Places under 36 CFR 60.4(a) and (d); that LA 109300 is not eligible to the National Register; and that this undertaking will have no adverse effect on historic properties.



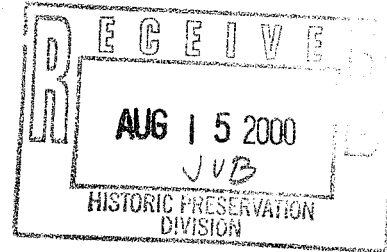
Reply to
Attention of:

DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
4101 JEFFERSON PLAZA, NE
ALBUQUERQUE, NEW MEXICO 87109-3435
FAX (505) 342-3199

EC-R
MX.

August 14, 2000

Engineering and Construction Division
Environmental Resources Branch



Mr. Elmo Baca
State Historic Preservation Officer
New Mexico State Historic Preservation Bureau
228 East Palace Avenue, Room 101
Santa Fe, New Mexico 87503

060266

Rec'd 10-31-2000
GDE

Dear Mr. Baca:

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 Historic Properties Affected" for the proposed flume rehabilitation project on the Puerto de Luna East Side Acequia. The Corps, in cooperation with the New Mexico State Engineer's Office; the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS, formerly the Soil Conservation Service [SCS]); and the East Puerto de Luna Community Ditch Association is planning the rehabilitation project under the Water Resources Development Act of 1986 (Public Law 99-662; 33 U.S.C. 2201 *et. seq.*), as amended. The project area is located along the Puerto de Luna East Side Acequia about one-half mile south of the community of Puerto de Luna in south-central Guadalupe County, New Mexico.

On May 25, 2000, a Corps archaeologist conducted an intensive cultural resources inventory of approximately 1.2 hectares (2.9 acres) at the proposed construction and staging areas along the Puerto de Luna East Side Acequia. Information on the project location and dimensions are provided in the enclosed report.

A search of the New Mexico Archaeological Records Management Section (ARMS) database found one archaeological site (LA 5201) that has been reported in the vicinity of the proposed construction area. LA 5201 is the community of Puerto de Luna. The site boundaries for Puerto de Luna are reported as incomplete because the entire town has not been recorded. The LA 5201 site is reported as having one component with a Hispanic cultural affiliation that dates from the U.S. Territorial Period (1862 A.D.) to Recent Historic. NMCRIS project/activity/reports linked with the site include No. 48176, an archaeological survey for a State Highway fencing project (Weidner 1995) and No. 63303, a site visit report for a proposed Puerto de Luna community domestic water pipeline project (Michalik 1999). The former Guadalupe County Courthouse, placed on the State Register of Cultural Properties (HPD No. 1264) on May 9, 1986, and the Alexander Grzelachowski House and Store, placed on the State Register of Cultural Properties (HPD No. 176) on April 20, 1970, and on the National Register of Historic Places on June 24, 1993, are also located in Puerto de Luna.

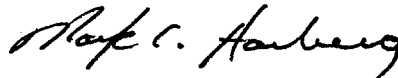
The Puerto de Luna East Side Acequia, also known as East Puerto de Luna Ditch, East Puerto de Luna Community Ditch, is an historic acequia system. The acequia system's 1960s diversion dam was replaced in 1996. In preparation for that project, Kneebone (1995) reported on the "Puerto de Luna East Side Acequia" (LA 109299) for the Acequia Rehabilitation Program project. In that report, Kneebone (1995:11) noted that "The Puerto de Luna east side ditch is specifically mentioned in documents (The Hop. Decree) as early as 1880 and is believed to date to the mid-1860s." The acequia is considered to be potentially eligible for inclusion to the National Register of Historic Places (Kneebone 1995:12)

The acequia flume, currently under consideration, is a structural component of the historic acequia system and has been given a Laboratory of Anthropology site number of LA 130831 by the New Mexico Historic Preservation Division's Archeological Records Management Section. The flume structure has been previously rebuilt numerous times with the flume's last rehabilitation being completed in 1997. Although the acequia system is potentially eligible for inclusion to the National Register, the flume structure has previously been rebuilt numerous times and the proposed project, that would rehabilitate the flume, would not affect those historic elements that contribute to the acequia's eligibility for the National Register.

During the Corp's survey, no other artifacts or cultural resource manifestations were found in or immediately adjacent to the construction or staging areas. The proposed rehabilitation of the flume would have no effect on the community of Puerto de Luna (LA 5201), the former Guadalupe County Courthouse, the Alexander Grzelachowski House and Store, or on the historic elements that contribute to the Puerto de Luna East Side Acequia's eligibility for the National Register.

Based on this information, the Corps is of the opinion that there would be "No Historic Properties Affected" by the proposed undertaking or on the historic and cultural resources of the region. Should previously undiscovered cultural resources be encountered during any construction operation, construction would cease in the immediate vicinity of the resource until its significance and disposition have been evaluated, in consultation with your office pursuant to 36 CFR 800.11. If you have any questions or require additional information, please contact Gregory Everhart of my staff at (505) 342-3352 or John Schelberg, Ph.D. at (505) 342-3359.

Sincerely,



Mark C. Harberg
Chief, Environmental Resources Branch

Enclosure

Copy Furnished: (w/o enclosure)

Don Klima, Director
Advisory Council on Historic Preservation
Office of Planning and Review
12136 W. Bayaud Ave., #330
Lakewood, Colorado 80228-2115

I CONCUR see below
ELMO BACA
NEW MEXICO STATE HISTORIC
PRESERVATION OFFICER

We can concur with a determination of No Adverse Effect.
Jan B. Allen 10/25/2000
for NM SHPO

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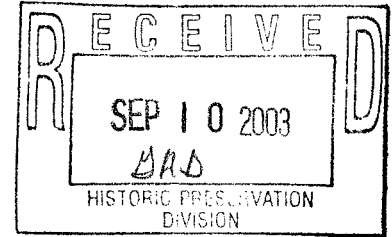


Reply to
Attention of:

DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
4101 JEFFERSON PLAZA, NE
ALBUQUERQUE, NEW MEXICO 87109-3435
FAX (505) 342-3199

September 9, 2003

Engineering and Construction Division
Environmental Resources Branch



Ms. Katherine Slick
State Historic Preservation Officer
New Mexico Historic Preservation Division
228 East Palace Avenue, Room 320
Santa Fe, New Mexico 87501

Rec'd 9-16-2003
GDE

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 acequia rehabilitation project involving the installation of 2,870 feet of pipeline for the East Puerto de Luna Community Ditch. The Corps, at the request of the New Mexico State Engineer and the East Puerto de Luna Community Ditch Association, is planning the rehabilitation project under the Water Resources Development Act of 1986 (Public Law 99-662; 33 U.S.C. 2201 et. seq.), as amended. The project area is located in the Pecos River Valley, about 5 miles south of Santa Rosa, Guadalupe County, New Mexico. Santa Rosa is located on Interstate Highway 40 approximately 185 km (115 miles) east of Albuquerque. Senator Dominici and the Interstate Stream Commission are very adamant about expediting the planning, consultation and construction of this Acequia Rehabilitation Program project.

The segment of earthen ditch in the project area is experiencing a significant sedimentation problem from an adjacent, eroding upland area. Ditch maintenance for this ditch segment is expensive and labor intensive, posing an economic burden on acequia members. Failure of the ditch and the efficient transportation of irrigation water would leave downstream acequia members without irrigation water during critical irrigation periods and would economically threaten the livelihood of acequia members and that of the small historic agricultural community of Puerto de Luna. The proposed project, a Natural Resources Conservation Service (NRCS) design, calls for the installation of 2,870 feet of 36-inch underground, polyethylene pipeline and the construction of two new gated, concrete sluicing structures with manholes and trash racks, and the placement of rock rip-rap to stabilize the left bank of the Pecos River where sluice water and sediment are discharged to the river. Construction is planned to occur during the non-irrigating season.

Two previous Acequia Rehabilitation Program projects have been constructed for the East Puerto de Luna Acequia by the Corps, the rehabilitation of the diversion structure and a flume, reported by

Kneebone (1995) and Everhart and Schelberg (2000), respectively. For the 1995/1996 project, your office concurred with the Corps' determination that the East Puerto de Luna Community Ditch, that dates to at least 1883, is eligible for inclusion to the National Register of Historic Places under criteria a and d of 36 CFR 60.4 and that the 1995 project would have no adverse effect on the values for which the Community Ditch is considered eligible (copy of consultation letter enclosed). The flume rehabilitation project also had no adverse effect (copy of consultation letter enclosed). The proposed pipeline project would not change the existing acequia's intended function or alignment, those elements that contribute to the acequia's eligibility. The NRCS has also assisted the Ditch Association by constructing several projects such as the concrete ditch-linings that occur both upstream and downstream of the currently proposed pipeline project and structural components such as sluicing structures.

For the currently proposed pipeline project, Albuquerque District archaeologists conducted an intensive cultural resources inventory of approximately 9.9 acres covering the proposed pipeline construction area along the East Puerto de Luna Ditch, the staging areas and access routes on November 18 and 20, 2002. During the intensive inventory, archaeologists documented the presence of three archaeological sites, LA140285, LA140286, and LA140287. These sites were unsystematically surveyed to determine nature and extent only. The proposed project would have no effect to LA140287 because it is outside of the project area. The use of an existing access road would have no adverse effect to LA140285. LA140286 has been significantly disturbed by bull-dozing and installation of the pipeline would have no effect on the site.

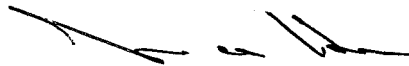
Prior to the cultural resources survey, a search of the New Mexico Historic Preservation Division, Archeological Records Management Section's database found that two archaeological sites have been reported to occur in the project area, LA65326 and LA108215. The cultural survey verified the location of these two archaeological sites in relation to the project area and neither would be affected by the proposed project. No other archaeological sites are known to occur in the immediate area and no historic properties listed on the State Register of Cultural Properties or National Register of Historic Places are known to occur in the immediate vicinity of the project area. No traditional cultural properties are known to occur in the area.

Other construction projects have previously affected approximately 3 to 4 miles of the ditch or about 40 to 50 percent of the total ditch. The proposed pipeline project would effect about 6.5 percent of the total ditch and, therefore, would have a negligible effect when compared to the cumulative effects of previous projects. Based on the information provided in the enclosed survey report, the Corps is of the opinion that the proposed East Puerto de Luna Community Ditch rehabilitation project would have "No Adverse Effect to Historic Properties."

Pursuant to 36 C.F.R. 800.11, should previously unknown artifacts or cultural resource manifestations be encountered during construction, work would cease in the immediate vicinity of the resource, a determination of significance made and a mitigation plan formulated in consultation with your office and any Native American groups that may have interest or concerns in the project area.

If you have any questions or require additional information, please contact Mr. Gregory Everhart, Archaeologist, at (505) 342-3352 or Mr. John Schelberg, Archaeologist, at (505) 342-3359.

Sincerely,

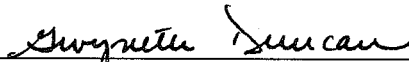


Julie A. Hall
Chief, Environmental Resources Branch

9/15/03

Date

I CONCUR


for KATHERINE SLICK
NEW MEXICO STATE HISTORIC
PRESERVATION OFFICER

Enclosures

Copy Furnished: (w/o enclosures)

Mr. Don Klima, Director
Advisory Council on Historic Preservation
Office of Planning and Review
12136 W. Bayaud Ave., #330
Lakewood, Colorado 80228-2115

Appendix B

Summary of Irrigation Exemption, Clean Water Act Section 404
Regulatory Division, US Army Corps of Engineers, Albuquerque District



**US Army Corps
of Engineers**

Albuquerque District
4101 Jefferson Plaza NE
Albuquerque, NM 87109-3435
Fax No. 505-342-3498

Irrigation Exemption Summary

FARM OR STOCK POND OR IRRIGATION DITCH CONSTRUCTION OR MAINTENANCE

Pursuant to Section 404 of the Clean Water Act (33 USC 1344) and Federal Regulations (33 CFR 323.4(a)(3)), certain discharges for the construction or maintenance of farm or stock ponds or irrigation ditches have been exempted from requiring a Section 404 permit. Included in the exemption are the construction or maintenance of farm or stock ponds or irrigation ditches, or the maintenance (but not the construction) of drainage ditches. Discharges associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant and functionally related to irrigation ditches are included in this exemption.

A Section 404 permit is required if either of the following occurs:

(1) Any discharge of dredged or fill material resulting from the above activities which contains any toxic pollutant listed under Section 307 of the Clean Water Act shall be subject to any applicable toxic effluent standard or prohibition, and shall require a permit.

(2) Any discharge of dredged or fill material into waters of the United States incidental to the above activities must have a permit if it is part of an activity whose purpose is to convert an area of the waters of the United States into a use to which it was not previously subject, where the flow or circulation of waters of the United States may be impaired or the reach of such waters reduced. Where the proposed discharge will result in significant discernible alterations to flow or circulation, the presumption is that flow or circulation may be impaired by such alteration. For example, a permit will be required for the conversion of a wetland from silvicultural to agricultural use when there is a discharge of dredged

or fill material into waters of the United States in conjunction with construction of dikes, drainage ditches, or other works or structures used to effect such conversion. A discharge which elevates the bottom of waters of the United States without converting it to dry land does not thereby reduce the reach of, but may alter the flow or circulation of, waters of the United States.

If the proposed discharge satisfies all of the above restrictions, it is automatically exempted and no further permit action from the Corps of Engineers is required. If any of the restrictions of this irrigation exemption will not be complied with, an individual permit is required and should be requested using ENG Form 4345 (Application for a Department of the Army permit). A nationwide permit authorized by the Clean Water Act may be available for the proposed work. State or local approval of the work may also be required.

For additional information concerning exemptions, nationwide permits, or for a written determination regarding a specific project, please contact the Corps at the following addresses:

In New Mexico:

Albuquerque District Corps of Engineers
ATTN: Regulatory Branch
4101 Jefferson Plaza, NE
Albuquerque, New Mexico 87109-3435
Phone: (505) 342-3283

In southeastern Colorado:

Southern Colorado Regulatory Office
720 North Main Street, Room 300
Pueblo, Colorado 81003-3047
Phone: (719) 543-9459

In southern New Mexico and western Texas:

El Paso Regulatory Office
P.O. Box 6096
Ft. Bliss, Texas 79906-0096
Phone: (915) 568-1359

Appendix C
Agency Review Coordination Letter and Notice of Availability

Copy



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

September 24, 2009

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 the Puerto de Luna East Side Community Ditch, is planning a project to rehabilitate the East Puerto de Luna Community Ditch, Guadalupe County, New Mexico. The proposed project is located along the Pecos River approximately 8 miles south of Santa Rosa and 2 miles north of Puerto de Luna via State highway 91 (see enclosure). The proposed work would replace 4310 feet of earthen ditch with concrete lining and HDPE irrigation pipe. Two flumes that cross arroyos would be replaced with corrugated metal pipe. The proposed construction period is four months and is expected to start in November, 2009.

The Corps is soliciting comments from Federal, State, and local interests for compliance under the National Environmental Policy Act (NEPA) and the Endangered Species Act. The Draft Environmental Assessment (DEA), entitled "East Puerto de Luna Community Ditch Rehabilitation Project, Guadalupe County, New Mexico" is electronically available for viewing and copying at the Albuquerque District website at <http://www.spa.usace.army.mil/fonsi> or hard copies will be sent upon request.

The Corps has reviewed information on the NMESFO website and determined that no endangered or threatened species would be affected by the proposed project. We would appreciate any additional information on endangered and threatened animal species or species of concern within Guadalupe 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 October 23, 2009**, 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

Notice of Availability
Draft Environmental Assessment for the
East Puerto de Luna Community Ditch Rehabilitation Project, Guadalupe 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 (Corps), Albuquerque District, completed a draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) for a proposal to rehabilitate the East Puerto de Luna Community Ditch (Acequia) in Guadalupe County, New Mexico. The project area is located along the Pecos River, approximately 8 miles south of the City of Santa Rosa, New Mexico and 2 miles north of Puerto de Luna via State Highway 91.

The Corps proposes to rehabilitate the East Puerto de Luna Community Ditch by replacing 4310 feet of earthen ditch with concrete lining and underground pipe. Project components include: 1) installing approximately 3120 linear feet of 2500 PSI concrete ditch lining along the existing earthen ditch; 2) installing approximately 1190 linear feet of 36-inch diameter high-density polyethylene (HDPE) irrigation pipe; and 3) constructing two flumes of 36-inch diameter corrugated metal pipe with concrete support structures to allow the acequia to cross arroyos.

Public review of the draft EA/FONSI will begin on September 24, 2009 and will run for 30 days until October 23, 2009. 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: CESP-PM-LE (Dana Price)
4101 Jefferson Plaza NE
Albuquerque, New Mexico 87109-3435

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

Moise Memorial Library
208 S 5th St
Santa Rosa, NM 88435

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

STATE OF NEW MEXICO

SS

COUNTY OF GUADALUPE

LEGAL NOTICES
Notice of Availability
Draft Environmental
Assessment for the
East Puerto de Luna
Community Ditch
Rehabilitation Project,
Santa Fe County, New
Mexico

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U.S. Army Corps of Engineers, Albuquerque District

Environmental Resources Section

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

Published in the Guadalupe County Communicator September 24, 2009

Michael E. Sprengelmeyer

of Santa Rosa, New Mexico, being first duly sworn on oath deposes and says:

That he is the PUBLISHER of the SANTA ROSA Communicator, a weekly newspaper of general paid circulation, published in the English and Spanish languages, which is entered under the Second Class Postal Privileges in the County of Guadalupe and State of New Mexico; that the notice hereto attached was published in the regular and entire issue of said newspaper and not in any supplement thereof, on the same day of the week, for a period of 1 consecutive week/s to-wit.

A 100-line notice for the E. Puerto de Luna Community Ditch
First Publication: Sept. 24, 2009, page 12.

Second Publication: _____

Third Publication: _____

Fourth Publication: _____

Affiant further says that said newspaper has been published weekly in said County of Guadalupe, State of New Mexico, continuously and uninterruptedly for more than twenty-six weeks next prior to the first issue thereof containing said notice and is duly qualified for the purpose of publishing all legal notices or advertisements required by law or the order of any court of record in the State of New Mexico to be published in newspapers, within the meaning of Chapter 167, Laws of New Mexico of 1937; and that payment for publication of the said notice (has not been made) (was made) on the 13th 2009 November 2009

Michael E. Sprengelmeyer
Business Manager-Publisher

Subscribed and sworn to before me this 13th

day of November 2009

By Patrick Z. Martinez

(SEAL)



OFFICIAL SEAL

PATRICK Z. MARTINEZ

NOTARY PUBLIC-NEW MEXICO

My Commission Expires 05-23-2013

Hard copy attached.

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO

SS

COUNTY OF GUADALUPE

Michael E. Sprengelmeyer

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By *Patrick Z. Martinez*



OFFICIAL SEAL

PATRICK Z. MARTINEZ

NOTARY PUBLIC-NEW MEXICO

My Commission Expires 05-23-2013

Appendix D
Agency Review Comment Letters

The following are comments received in response to the Draft Environmental Assessment and Notice of Availability (NOA) publication:

CESPA-RD

October 8, 2009

MEMORANDUM FOR Ch, Environmental Resources Section (CESPA-PM-LE/Julie Alcon)

SUBJECT: Action Number SPA-2009-00591-ABQ; East Puerto de Luna Community Ditch Rehabilitation

1. This is in response to your Memo dated September 24, 2009 concerning a proposal to rehabilitate the East Puerto de Luna Community Ditch, Guadalupe County, New Mexico. The work would occur on an existing earthen irrigation ditch near the Pecos River, shown on USGS topographic quadrangles Puerto Creek (34104-g6) and Puerto de Luna (34104-g5). This project has been assigned Action Number SPA-2009-00591-ABQ.
2. We have reviewed this proposed project in accordance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899.
3. Based on your description of the proposed work, and other information available to us, we have determined that the project may involve discharges of dredged or fill material into a water of the United States. However, the specific activity that is proposed is currently exempted from regulation by a specific provision of the Clean Water Act as implemented by the Corps regulations at 33 CFR 323.4(a). Therefore, the project will not require Department of the Army authorization.
4. A copy of the Irrigation Exemption Summary is attached and is also available at <http://www.spa.usace.army.mil/reg/Exemptions/exemption.asp>. Please keep in mind that compliance with the restrictions outlined in the Irrigation Exemption Summary is required.
5. If you have any questions or need additional information, please contact Mr. Chris Grosso, extension 3374 or christopher.m.grosso@usace.army.mil.



Lesley McWhirter
Chief, NM/TX Branch



BILL RICHARDSON
Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT

Office of the Secretary

Harold Runnels Building
1190 Saint Francis Drive (87505)
PO Box 5469, Santa Fe, NM 87502-5469
Phone (505) 827-2855 Fax (505) 827-2836
www.nmenv.state.nm.us



RON CURRY
Secretary
Jon Goldstein
Deputy Secretary

October 15, 2009

Julie Alcon
Chief, Environmental Resources Section
Department of the Army
Albuquerque District, Corps of Engineers
4101 Jefferson Plaza, NE
Albuquerque, NM 87109-3435

RE: Puerto de Luna East Side Community Ditch

Dear Ms. Alcon:

Your letter regarding the above named project was received in the New Mexico Environment Department (NMED) and was sent to various Bureaus for review and comment. Comments were provided by the Surface Water Quality Bureau and are as follows.

Surface Water Quality Bureau

This project may require a Section 401 Water Quality Certification. However, the need for certification depends upon the jurisdictional determination made by the U.S Army Corps of Engineers (USACE). In the event the USACE determines this conveyance system to be a Water of the United States and thus covered under Section 404 of the Federal Clean Water Act (CWA), the Surface Water Quality Bureau will follow standard procedures for issuing water quality certification as required by Section 401 of the CWA.

I hope this information is helpful to you.

Sincerely,

Georgia Cleverley
Environmental Impact Review Coordinator
NMED File #3064

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