## RESOLUTION OF THE <br> RESOURCES AND DEVELOPMENT COMMITTEE <br> Of the 23rd Navajo Nation Council---Second Year 2016

AN ACTION RELATING TO RESOURCES AND DEVELOPMENT; APPROVING THE GRANT OF RIGHT-OF-WAY TO CONTINENTAL DIVIDE ELECTRIC COOPERATIVE, INC., FOR THE "LITTLEWATER CHAPTER/WHITERIDGE" POWERLINE PROJECTS PHASE I AND II LOCATED ON NAVAJO NATION TRUST LANDS IN LITTLEWATER CHAPTER, MCKINLEY COUNTY, NEW MEXICO

BE IT ENACTED:

SECTION ONE. AUTHORITY

Pursuant to 2 N.N.C. Section 501 (B) (2), the Resources and Development Committee of the Navajo Nation Council has the authority to grant final approval of all land withdrawals, nonminerals leases, permits, licenses, rights-of-way, surface easements and bonding requirements on Navajo Nation lands and unrestricted (fee) land. This authority shall include subleases, modifications, assignments, leasehold encumbrances, transfers, renewals and terminations.

SECTION TWO. FINDINGS
A. The Continental Divide Electric Cooperative, Inc., P.O. Box 1087, Grants, New Mexico 87020, has submitted a right-of-way (ROW) application for Littlewater Chapter/Whiteridge power line projects Phase $I$ and II on, over and across Navajo Nation Trust Lands in Littlewater Chapter vicinity, McKinley County, New Mexico. The application request is attached hereto and incorporated herein as Exhibit "A."
B. The proposed Phase $I$ is 9,420.88 feet long, 20 feet wide, consisting of 4.33 acres, more or less, and the proposed Phase II is $12,756.79$ feet long, 20 feet wide, consisting of 5.86 acres, more or less, located in various Sections of Township 16 North, Ranges 10-11 West, NMPM, McKinley County, New Mexico. Maps are attached hereto and incorporated herein as Exhibit "B."
C. The Project Review Section with the Navajo Land Department has determined that the Navajo Nation is the only affected land user. The Project Review Section memorandum dated June 15, 2016 is attached hereto as Exhibit "C."
D. A waiver of consideration for the right-of-way project would serve a public purpose because the project will benefit Navajo residents.
E. The environmental and archaeological studies has been completed and attached hereto and made a part hereof.

## SECTION THREE APPROVAL

A. The Resources and Development Committee of the Navajo Nation Council hereby approves the Grant of Right-of-Way to Continental Divide Electric Cooperative, Inc. for the "Littlewater Chapter/Whiteridge" power line projects Phase I and II located on Navajo Nation Trust Lands in Littlewater Chapter vicinity, McKinley County, New Mexico. The location is more particularly described on the survey map attached hereto as Exhibit "B."
B. The Resources and Development Committee of the Navajo Nation Council hereby waives consideration for the right-of-way project because the project will benefit Navajo residents.
C. The Resources and Development Committee of the Navajo Nation Council hereby approves the right-of-way subject to, but not limited to, the following terms and conditions incorporated herein and attached as Exhibit "D."
D. The Resources and Development Committee of the Navajo Nation Council hereby authorizes the President of the Navajo Nation to execute any and all documents necessary to affect the intent and purpose of this resolution.

## CERTIFICATION

I, hereby, certify that the foregoing resolution was duly considered by the Resources and Development Committee of the 23 rd Navajo Nation Council at a duly called meeting at Navajo Department of Transportation, (Navajo Nation) Tse Bonito, New Mexico, at which quorum was present and that same was passed by a vote of 4 in favor, 0 opposed, 1 abstained this $13^{\text {th }}$ day of September, 2016.


Motion: Honorable Benjamin Bennett Second: Honorable Leonard Pete
$\qquad$

## EXECUTIVE OFFICIAL REVIEW

Title of Document: CDEC, ROW Whiteridge Prjtt Phase I \& II
Contact Name: DRAPER, HOWARD
Program/Division: DIVISION OF NATURAL RESOURCES
Email: howarddraper@frontiernet.net Phone Number: 928/871-6447
$\square$ Business Site Lease

|  | Sufficient <br> Date: | $\square$ | $\square$ |
| :--- | :--- | :--- | :--- |
| Date: |  |  |  |

$\begin{array}{lll}\text { 1. Division: } & \square & \square \\ \text { 2. Office of the Controller: } & \square & \square \\ \text { (only if Procurement Clearance is not issued within 30 days of the initiation of the E.O. review) } & \square \\ \text { 3. Office of the Attorney General: } & & \square\end{array}$Business and Industrial Development Financing, Veteran Loans, (i.e. Loan, Loan Guarantee and Investment) or Delegation of Approving and/or Management Authority of Leasing transactions

1. Division:
2. Office of the Attorney General: $\qquad$



Fund Management Plan, Expenditure Plans, Carry Over Requests, Budget Modifications

1. Office of Management and Budget:
2. Office of the Controller:
$\qquad$ Date:
3. Office of the Attorney General:

Date: $\qquad$
$\square$ Navajo Housing Authority Request for Release of Funds

1. NNEPA:
2. Office of the Attorney General: $\qquad$ Date: $\qquad$

$\square$ Lease Purchase Agreements
3. Office of the Controller: $\qquad$ Date: $\qquad$ (recommendation only)
4. Office of the Attorney General: $\qquad$ Date: $\qquad$

$\square$ Grant Applications
5. Office of Management and Budget: $\qquad$ Date: $\qquad$
6. Office of the Controller:

Date: $\qquad$

3. Office of the Attorney General: $\qquad$ Date: $\qquad$
Five Management Plan of the Local Governance Act, Delegation of an Approving Authority from a Standing Committee, Local Ordinances (Local Government Units), or Plans of Operation/Division Policies Requiring Committee Approval

1. Division:
2. Office of the Attorney General:
Date: $\qquad$

$\square$ Relinquishment of Navajo Membership
3. Land Department:
Date: $\qquad$
4. Elections:
5. Office of the Attorney General:
Date: —_

Pursuant to 2 N.N.C. § 164 and Executive Order Number 07-2013

Land Withdrawal or Relinquishment for Commercial Purposes

1. Division:
2. Office of the Attorney General:

Date:
Land Withdrawals for Non-Commercial Purposes, General Land Leases and Resource Leases

1. NLD $\qquad$
2. F\&W
3. HPD
4. Minerals
$\qquad$


## $\square$ Rights of Way

1. NLD $\begin{array}{ll}\text { Date: } & \square \\ \text { Date: } & \square \\ \text { Date: } & \square \\ \text { Date: } & \square \\ \text { Date: } & \square \\ \text { Date: } & \square \\ \text { Date: } & \square \\ & \square\end{array}$
2. NNEPA
3. DNR
$\qquad$

- Da

6. DNR $\qquad$
7. DOJ

| Sufficient | Insufficient |  |
| :---: | :---: | :---: |
| $\square$ | $\square$ | $\square$ |
| $\square$ | $\square$ |  |

2. $F \& W$
3. HPD
4. Minerals
5. NNEPA
6. Office of the Attorney General:
7. OPVP
$\qquad$

Oil and Gas Prospecting Permits, Drilling and Exploration Permits, Mining Permit, Mining Lease

1. Minerals
2. OPVP
3. NLD


Assignment of Mineral Lease

1. Minerals
2. DNR
3. DOJ


Date:
Date:
Date:


ROW (where there has been no delegatiofrof authority to the Navajo Land Department to grant the Nation's consent to a ROW)
$V^{m-N L D}$
2. F\&W
3. HPD
4. Minerals sublet to the
6. DNR
7. DOJ-(ic)
8. OPVP

$\square$ OTHER:



RESUBMITTAL


REVIEW
REQUEST
FORM


UNI: NAN
*** FOR NNDOJ USE ONLY - DO NOT CHANGE OR REVISE FORM. VARIATIONS OF THIS FORM WILL. NOT BE ACCEPTED. ***


NNDOJ/DRRF-July 2013

## Continental Divide Electric Cooperative, Inc.

200 E. High St. • P.O. Box 1087 • Grants, New Mexico 87020 • (505) 285-6656 • Fax (505) 287-2234

May 27, 2016

The Navajo Land Department
Attn: Ms. Vera Shurley
Project Review Office
PO Box 2249
Window Rock, Arizona 86515


Re: Submitting ROW Package for Littlewater Chapter "Whiteridge Project" Phase I and Phase W

Dear Ms. Shurley,
Continental Divide Electric Cooperative, Inc. is requesting right-of-way for the proposed $14.4 / 24.9 \mathrm{kv}$ line for the Littlewater Chapter "Whiteridge Project" Phase I and Phase II. The power line Right-of-way packet consists of the following documents being submitted for review by the Division of Natural Resources, Project Review Office.

1. $\$ 500.00$ Filing Fee, Check \#132302
2. Grant of Permission to Survey - Navajo Tribal Trust Land from Mr. Howard Draper (Copy)
3. Right of way Application - Phase I \& Phase II - Navajo Tribal Trust Land
4. Archaeological Report for Phase I and Phase II
5. Biological Resources Compliance Form
6. Cultural Resources Compliance Form for Phase I and Phase II
7. Environmental Report for Phase I and Phase II
8. FONSI for Phase I and Phase II
9. Map (3 Sets) for Phase I and Phase II
10. Legals for Phase I and Phase II
11. Copy of Letter from District 20 Land Board (Mr. Herbert Enrico Sr.) - Right of way consent

This project traverses over and across Navajo Tribal Trust Land. The distance on Navajo Tribal Trust Land for Phase $I$ is $9,420.88^{\prime}$ feet in length, $20^{\prime}$ feet in width, and 4.33 acres. The distance on Navajo Tribal Trust Land for Phase II is 12,756.79' feet in length, $20^{\prime}$ feet in width, and 5.86.

If you have any questions, please contact our office at your earliest convenience.


Debbie Olivar
Engineering/ROW

Enclosures

Continental Divide Electric Cooperative, Inc.

August 2, 2016

To whom it may concern,
Re: Littlewater Chapter "Whiteridge Project" Phase I and Phase II
Continental Divide Electric Cooperative Inc. (CDEC) of Grants New Mexico is requesting approval of the proposed 14.4/24.9 kv Electrical Powerline for the Littlewater Chapter "Whiteridge Project" Phase I and Phase II.

Per the request of the Navajo Land Department the following is a summary of the Littlewater Whiteridge Project Phase I and Phase II;

1. Phase I -distance on Navajo Tribal Trust Land is $9,420.88^{\prime}$ feet in length, $20^{\circ}$ feet in width, and 4.33 acres
2. Phase II - distance on Navajo Tribal Trust Land is $12,756.79^{\prime}$ feet in length, $20^{\circ}$ feet in width, and 5.86 acres
3. CDEC will construct, operate and maintain the 14.4 Electrical Distribution Line
4. The Land Board verified there is no authorized permittee
5. The proposed electrical line will provide service to 34 homes
6. CDEC is requesting a 50 year term per 25 CFR approved April 21, 2016, (Title 25, Part 169.201, Subpart D - Duration, Renewals, Amendment, Assignments, Mortgages). CDEC is requesting the 50 Term because the electrical line is in the best interest of the Navajo Land Owners.

If additional information is needed please contact our office at your convenience.
Sincerely,


Debbie Olivar
ROW/Technical Engineer

# UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF INDIAN AFFAIRS 

RIGHT-OF-WAY APPLICATION

## NAVAJO TRIBAL TRUST LAND DESCRIPTION: T16N R11W Section 3, T16N R11W NW/4 Section 11, T16N R11W SE/4 Section 11, T16N R11W SW/4 Section 13 NMPM McKinley County. NM

COMES NOW THE APPLICANT Continental Divide Electric Cooperative, inc. of this 27 day of MAY_2016 , who hereby petition(s) the Bureau of Indian Affairs and respectfully files under the terms and provisions of the Act of February 5, 1948 ( 62 Stat. 17; 25 USC 323-328), and Departmental Regulations 25 CFR 169, an application of a 50 (term of years) right-of-way for the following purposes and reasons:

Construction, Operation, and Maintenance of 14.4 kv Electrical Distribution Line for The Littlewater Chapter "Whiteridge Project"; Phase I Work Order \#45161

Across the following described Navajo Tribal Trust Land (easement description):
T16N R11W, Section 3, T16N R11W NW/4 Section 11, T16N R11W SE/4 Section 11, T16N R11W sW/4 Section 13, NMPM McKinley County New Mexico

Said right-of-way across Navajo Tribal Trust Land to be approximateiy $9,420.88$ in length, 20 in width, and 4.33 in acres, as shown on attached map of definite location, attached hereto, and made a part hereof.

SAID APPLICANT UNDERSTANDS AND EXPRESSLY AGREES TO THE FOLLOWING STIPULATIONS:

1. To construct and maintain the right-of-way in a workmanlike manner.
2. To pay all damages and compensation, in addition to the deposit made pursuant to 169.4, determined by the Secretary to be due the landowners and authorized users and occupants of the land due to the survey, granting, construction and maintenance of the right-of-way.
3. To indemnify the landowners and authorized users and occupants against any liabillty for loss of life, personal injury and property damage arising from the construction, maintenance, occupancy or use of the lands by the applicant, his employees, contractors and their employees, or subcontractors and their employees.
4. To restore the lands as nearly as may be possible to their original condition upon the completion of construction, to the extent compatible with the purpose for which the right-of-way was granted.
5. To clear and keep clear the lands within the right-of-way to the extent compatible with the purpose of the right-of-way; and dispose of all vegetative and other material cut, uprooted or otherwise accumulated during construction and maintenance of the project.
6. To take soil and resources conservation protection measures, including weed control, on the land covered by the right-of-way.
7. To do everything reasonable within its power to prevent and suppress fires on or near the lands to be occupied under the right-of-way.
8. To build and repair such roads, fences and trails as may be destroyed or injured by construction work and to build and maintain necessary and suitable crossings for all roads and trails that intersect the works constructed, maintained, or operated under the right-of-way.
9. That upon revocation or termination of the right-of-way, the applicant shall, so far as in reasonably possible, restore the land to its original condition. The determination of "reasonably possible" is subject to Secretary's approval.
10. To at all times keep the secretary informed of its address, and in case of corporations, of the address of its principal place of business and the names and addresses of its principal officers.
11. That the applicant will not interfere with the use of the lands by or under the authority of the landowners for any purpose not inconsistent with the primary purpose for which the right-of-way is granted.
12. During the term of this Grant of Easement, if any previously unidentified cultural resources are discovered within the easement area, work should be halted immediately and the BIA and/or Tribal contractor should be contacted immediately.

THE APPLICANT FURTHER STIPULATES AND EXPRESSLY AGREES AS FOLLOWS:
To conform and to abide by all applicable requirements with respect to the right-of-way herein applied for. The applicant agrees to conform to and abide by the rules, regulations, and requirements contained in the Code of Federal Regulations, Title 25 Indians, Part 169, as amended, and by reference includes such rules, regulations and requirements as a part of this application to the same effect as if the same were herein set out in full.

DATE May 27, 2015 APPLICANT Continental Divide Electric Cooperative, Inc. Debbie olivar ax 2

## REQUIRED SUPPORTING DOCUMENTS:

1. ( ) Written consent of landowner (ROW Form 94-7).
2. () Map (plats) of definite location (2 original mylars \& 2 coples, See 25 CFR 169.6, 169.7, 169.8, 169.9, 169.10 and 169.11).
3. ( ) Deposit of estimated damages or compensation (See 169.4 and 169.14).
4. ( ) Evidence of Authority of Officers to Execute Papers (ROW Form 94-4)
5. () For corporation or business, requirements of 25 CFR 169.4 and 169.5 (unless previously filed):
( ) a. State certified copy of corporate charter or articles of incorporation.
( ) b. Certified copy of corporate resolution, by-laws, articles of partnership or association authorizing signatory to file the application.

# UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF INDIAN AFFAIRS 

## RICHT-OF-WAY APPLICATION

NAVAJO TRIBAL TRUST LAND DESCRIPTION: T16N R10W NE/4 Section 18, T16N R10W NE/4 Section 20, T16N R10W SE/4 Section 20, T16N R10W NW/4 Section 20, T16N R11W SW/4 13 NMPM McKinley County. NM

COMES NOW THE APPLICANT Continental Divide Electric Cooperative, Inc. of this 27 day of MAY, 2016 , who hereby petition(s) the Bureau of Indian Affairs and respectfully files under the terms and provisions of the Act of February 5, 1948 (62 Stat. 17; 25 USC 323-328), and Departmental Regulations 25 CFR 169, an application of a 50 (term of years) right-of-way for the following purposes and reasons:

Construction, Operation, and Maintenance of 14.4 kv Electrical Distribution Line for The Littlewater Chapter "Whiteridge Project"; Phase II Work Order \#50547

Across the following described Navajo Tribal Trust Land (easement description):

T16N R10W NE/4 Section 18, T16N R10W NE/4 Section 20, T16N R10W SE/4 Section 20, T16N R10W NW/4 Section 20, T16N R11W SW/4 Section 13 NMPM McKinley County New Mexico

Said right-of-way across Navajo Tribal Trust Land to be approximately $\frac{12,756.79}{}$ in length, 20 in width, and 5.86 in acres, as shown on attached map of definite location, attached hereto, and made a part hereof.

SAID APPLICANT UNDERSTANDS AND EXPRESSLY AGREES TO THE FOLLOWING STIPULATIONS:

1. To construct and maintain the right-of-way in a workmanlike manner.
2. To pay all damages and compensation, in addition to the deposit made pursuant to 169.4, determined by the Secretary to be due the landowners and authorized users and occupants of the land due to the survey, granting, construction and maintenance of the right-of-way.
3. To indemnify the landowners and authorized users and occupants against any liability for loss of life, personai injury and property damage arising from the construction, maintenance, occupancy or use of the lands by the applicant, his employees, contractors and their employees, or subcontractors and their employees.
4. To restore the lands as neariy as may be possible to their original condition upon the completion of construction, to the extent compatible with the purpose for which the right-of-way was granted.
5. To clear and keep clear the lands within the right-of-way to the extent compatible with the purpose of the right-of-way; and dispose of all vegetative and other material cut, uprooted or otherwise accumulated during construction and maintenance of the project.
6. To take soil and resources conservation protection measures, including weed control, on the land covered by the right-of-way.
7. To do everything reasonable within its power to prevent and suppress fires on or near the lands to be occupied under the right-of-way.
8. To build and repair such roads, fences and trails as may be destroyed or injured by construction work and to build and maintaln necessary and suitable crossings for all roads and trails that intersect the works constructed, maintained, or operated under the right-of-way.
9. That upon revocation or termination of the right-of-way, the applicant shall, so far as in reasonably possible, restore the land to its original condition. The determination of "reasonably possible" is subject to Secretary's approval.
10. To at all times keep the Secretary informed of its address, and in case of corporations, of the address of its principal place of business and the names and addresses of its princlpal officers.
11. That the applicant will not interfere with the use of the lands by or under the authority of the landowners for any purpose not inconsistent with the primary purpose for which the right-of-way is granted.
12. During the term of this Grant of Easement, if any previously unidentified cultural resources are discovered within the easement area, work should be halted immediately and the BIA and/or Tribal Contractor should be contacted immediately.

THE APPLICANT FURTHER STIPULATES AND EXPRESSLY AGREES AS FOLLOWS:
To conform and to abide by all applicable requirements with respect to the right-of-way herein applied for. The applicant agrees to conform to and abide by the rules, regulations, and requirements contained in the Code of Federal Regulations, Title 25 Indians, Part 169, as amended, and by reference includes such rules, regulations and requirements as a part of this application to the same effect as if the same were herein set out in full.

DATE May 27, 2015 APPLICANT Continental Divide Electric Cooperative, Inc. Debbie Olivar 4 $3 \times$ ?

## REQUIRED SUPPORTING DOCUMENTS:

1. () Written consent of landowner (ROW Form 94-7).
2. () Map (plats) of definite location (2 original mylars \& 2 copies, see 25 CFR 169.6, 169.7, 169.8, 169.9, 169.10 and 169.11).
3. () Deposit of estimated damages or compensation (See 169.4 and 169.14).
4. () Evidence of Authority of Officers to Execute Papers (ROW Form 94-4)
5. () For corporation or business, requirements of 25 CFR 169.4 and 169.5 (unless previously filed):
() a. State certified copy of corporate charter or articles of incorporation.
() b. Certified copy of corporate resolution, by-laws, articles of partnership or association authorizing signatory to file the application.

Continental Divide Electric Cooperative, Inc PO Box 1087
Grants, NM 87020-1087
No. 132302
Date: 05/27/2016
$1 m 8$

Continental Divide Electric Cooperative, hic POBok 1087
EIVE HUNDRED AND NO / 100***************************
THE NAVAJO NATION
TO PO BOX 2249
THE ORDER OF
WINDOW ROCK AZ 86515


# RIGHT OF WAY EASEMENT FOR <br> LITTLE WATER CHAPTER PHASE I POWER LINE PROJECT <br> LINE A <br> MCKINLEY COUNTY, NEW MEXICO WORK ORDER NUMBER 45161 

SURVEYOR'S DESCRIPTION of a right-of-way easement for the Continental Divide Electric Coopertive Inc.'s Little Water Chapter Phase I Power Line Project, Line A, located within sections 2, 3, 11, 12 and 13, Township 16 North, Range 11 West, New Mexico Principal Meridian, BLM Land, Tribal Trust Land, and Allotted Land, Little Water, McKinley County, State of New Mexico, and being more particularly described as follows:

A strip of BLM Land, thirty (30) feet wide, being fifteen (15) feet on each side of the following described centerline:

A strip of Tribal Land and Allotted Land, twenty (20) feet wide, being ten (10) feet on each side of the following described centerline:

BEGINNING at B.O.P. Station 0+00, existing pole number 30189, in section 3, T16N, R11W, NMPM, said parcel being Navajo Tribal Trust Land, and from which point the BLM brass cap for the northwest corner of section 30, T17N, R11W, bears N58 ${ }^{\circ} 11^{\prime} 28^{\prime \prime} \mathrm{W}$ a distance of $23,961.05$ feet,

Thence S34 $45^{\circ} 08^{\prime \prime E}$ E distance of 130.17 feet to P.O.T. Station $1+30.17$, at which point the centerline of the power line easement crosses a water line,

Thence continuing $534^{\circ} 45^{\prime} 08^{\prime \prime E}$ a distance of 65.94 feet to P.O.T. Station $1+96.11$, at which point the centerline of the power line easement crosses a water line,

Thence continuing $S 34^{\circ} 45^{\prime} 08^{\prime \prime} \mathrm{E}$ a distance of 15.93 feet to P.O.T. Station $2+12.04$, at which point the centerline of the power line easement crosses a water line,

Thence continuing $\mathbf{S} 34^{\circ} 45^{\prime} 08^{\prime \prime E}$ a distance of 141.27 feet to P.I. Station $3+53.31$,
Thence S46 ${ }^{\circ} 18^{\prime} 19^{\prime \prime} \mathrm{E}$ a distance of 190.48 feet to P.O.T. Station $5+43.79$, at which point the centerline of the power line easement crosses a water line,

Thence continuing $S 46^{\circ} 18^{\prime} 19^{\prime \prime} E$ a distance of $1,465.77$ feet to P.O.T. Station $20+09.56$, at which point the centerline of the power line easement crosses a dirt road,

Thence continuing S $46^{\circ} 18^{\prime} 19^{\prime \prime}$ E a distance of 878.48 feet to P.O.T. Station $28+88.04$, at which point the centerline of the power line easement crosses a fence as it enters the SW $1 / 4$ section 2, T16N, R11W, NMPM, said parcel being BLM land, and from which point the found original stone monument for the southwest corner of section 13, T16N, R11W, NMPM, bears S23 $21^{\circ} 11^{\prime \prime}$ E a distance of 12,974.35 feet,

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*. Thence continuing $S 46^{\circ} 18^{\prime} 19^{\prime \prime} E$ a distance of $1,875.66$ feet to P.O.T. Station $47+63.70$, at which point the centerline of the power line easement enters the NW $1 / 4$ section 11, T16N, R11W, NMPM, said parcel being Tribal Trust Land, and from which point the found original stone monument for the southwest corner of section 13, T16N, R11W, NMPM, bears $\mathrm{S}_{2} 0^{\circ} 00^{\prime} 54^{\circ} \mathrm{E}$ a distance of $11,266.09$ feet

Thence continuing $S 46^{\circ} 18^{\prime} 19^{\prime \prime} \mathrm{E}$ a distance of 19.60 feet to P.I. Station $47+83.30$,
Thence $578^{\circ} 33^{\prime} 15^{\prime \prime} \mathrm{E}$ a distance of $1,279.27$ feet to P.O.T. Station $60+62.57$, at which point the centerline of the power line easement enters the NE $1 / 4$ section $11, \mathrm{~T} 16 \mathrm{~N}, \mathrm{R} 11 \mathrm{~W}$, NMPM, said parcel being Indian Allottment number 279574, and from which point the found original stone monument for the northeast corner of section 18, T16N, R10W, NMPM, bears $S 68^{\circ} 57^{\prime} 05^{\prime \prime}$ E a distance of $14,102.51$ feet,

Thence continuing $578^{\circ} 33^{\prime} 15^{\prime \prime} \mathrm{E}$ a distance of 211.77 feet to P.O.T. Station $62+74.34$, at which point the centerline of the power line easement crosses a dirt road,

Thence continuing $578^{\circ} 33^{\prime} 15^{\prime \prime} \mathrm{E}$ a distance of 27.65 feet to P.O.T. Station $63+01.99$, at which point the centerline of the power line easement crosses a water line,

Thence continuing $578^{\circ} 33^{\prime} 15^{\prime \prime} \mathrm{E}$ a distance of 221.48 feet to P.O.T. Station $65+23.47$, and from which point the found original stone monument for the northeast corner of section 18, T16N, R10W, NMPM, bears $\mathrm{S} 68^{\circ} 37^{\prime} 43^{\prime \prime} \mathrm{E}$ a distance of $13,648.28$ feet,

Thence continuing $578^{\circ} 33^{\prime} 15^{\prime \prime} \mathrm{E}$ a distance of 101.72 feet to P.O.T. Station $66+25.19$, at which point the centerline of the power line easement crosses a dirt road,

Thence continuing $578^{\circ} 33^{\prime} 15^{\prime \prime} \mathrm{E}$ a distance of 704.40 feet to P.O.T. Station $73+29.59$, at which point the centerline of the power line easement crosses a dirt road,

Thence continuing $578^{\circ} 33^{\prime} 15^{\prime \prime} \mathrm{E}$ a distance of 253.53 feet to P.I. Station $75+83.12$, from which point the found original stone monument for the northeast corner of section 18, T16N, R10W, NMPM, bears $S 67^{\circ} 47^{\prime} 54^{\prime \prime} \mathrm{E}$ a distance of $12,605.82$ feet,

Thence $\mathrm{S} 15^{\circ} 33^{\prime} 05^{\prime \prime} \mathrm{E}$ a distance of $1,700.08$ feet to P.O.T. Station $92+83.20$, the beginning point for Little Water Phase III Power Line Project, and from which point the found original stone monument for the northeast corner of section 18, T16N, R10W, NMPM, bears $574^{\circ} 25^{\prime} 41^{\prime \prime}$ E a distance of 11,642.78 feet,

Thence continuing $\mathrm{S}^{1} 5^{\circ} 33^{\prime} 05^{\prime \prime} \mathrm{E}$ a distance of 451.35 feet to P.O.T. Station $97+34.55$, at which point the centerline of the power line easement enters the SE $1 / 4$ section 11, T16N, R11W, NMPM, said parcel being Tribal Trust Land, and from which point the found original stone monument for the northeast corner of section 18, T16N, R10W, NMPM, bears S76 ${ }^{\circ} 22^{\prime} 04^{\prime \prime} \mathrm{E}$ a distance of $11,416.03$ feet,

Thence continuing $\mathrm{S} 15^{\circ} 33^{\prime} 05^{\prime \prime} \mathrm{E}$ a distance of $1,125.18$ feet to P.O.T. Station $108+59.73$, at which point the centerline of the power line easement crosses a dirt road,

Thence continuing $\mathrm{S} 15^{\circ} 33^{\prime} 05^{\prime \prime} \mathrm{E}$ a distance of 780.28 feet to P.O.T. Station $116+40.01$, at which point the centerline of the power line easement crosses a fence as it enters the $\mathrm{SW} 1 / 4$ section $12, \mathrm{~T} 16 \mathrm{~N}$, R11W, NMPM, said parcel being Indian Allottment number 983 , and from which point the found original

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stone monument for northeast corner of section 18, T16N, R10W, NMPM, bears $\mathrm{S}_{8} 5^{\circ} 22^{\prime} 54^{\prime \prime} \mathrm{E}$ a distance of $10,618.04$ feet,

Thence continuing $S 15^{\circ} 33^{\prime} 05^{\prime \prime} \mathrm{E}$ a distance of 23.19 feet to P.O.T. Station $116+63.20$,
Thence continuing $\mathrm{S} 15^{\circ} 33^{\prime} 05^{\prime \prime} \mathrm{E}$ a distance of 165.07 feet to P.O.T. Station $118+28.27$, at which point the centerline of the power line easement crosses a water line,

Thence continuing $\mathrm{S}^{\prime} 5^{\circ} 33^{\prime} 05^{\prime \prime} \mathrm{E}$ a distance of 613.44 feet to P.O.T. Station $124+41.71$, at which point the centerline of the power line easement crosses a water line,

Thence continuing $\mathrm{S} 15^{\circ} 33^{\prime} 05^{\prime \prime} \mathrm{E}$ a distance of 58.96 feet to P.O.T. Station $125+00.67$, at which point the centerline of the power line easement enters the NW $1 / 4$ section 13, T16N, R11W, NMPM, said parcel being Indian Allottment number 1752, and from which point the found original stone monument for the southwest corner of section 13, T16N, R11W, NMPM, bears S02 $23^{\prime} 40^{\prime \prime} \mathrm{W}$ a distance of $5,283.62$ feet,

Thence continuing $\mathrm{S} 15^{\circ} 33^{\prime} 05^{\prime \prime} \mathrm{E}$ a distance of $1,882.52$ feet to P.I. Station $143+83.19$, from which point the Base Station having True New Mexico State Plane West, NAD83, US survey feet coordinates of


Thence $508^{\circ} 01^{\prime} 25^{\prime \prime} \mathrm{E}$ a distance of 836.32 feet to P.O.T. Station 152+19.51, at which point the centerline of the power line easement crosses a fence as it enters the SW $1 / 4$ section 13, T16N, R11W, NMPM, said parcel being Tribal Trust Land, and from which point the found original stone monument for the southwest corner of section 13, T16N, R11W, NMPM, bears S17 $42^{\prime} 37^{\prime \prime} \mathrm{W}$ a distance of $2,768.49$ feet,

Thence continuing $\mathrm{S}^{\circ} 8^{\circ} 01^{\prime} 25^{\prime \prime} \mathrm{E}$ a distance of $1,653.62$ feet to P.O.T. Station $168+73.13$,
Thence continuing $S^{\circ} 08^{\circ} 01^{\prime} 25^{\prime \prime} \mathrm{E}$ a distance of 870.10 feet to E.O.P. Station $177+43.23$, the beginning of Little Water Phase II Power Line Project, and the terminus for the above described centerline for Line A, and at which point the found original stone monument for the southwest corner of section $13, \mathrm{~T} 16 \mathrm{~N}$, R11W, NMPM, bears $583^{\circ} 23^{\prime} 51^{\prime \prime} \mathrm{W}$ a distance of $1,202.42$ feet, and from which point the found stone monument for the quarter corner common to sections 18 and 19, T16N, R10W, NMPM, bears S88 ${ }^{\circ} 40^{\prime} 16^{\prime \prime} \mathrm{E}$ a distance of $6,740.42$ feet.

The right-of-way easement is 3.36 miles in length.

TRIBAL TRUST LAND

## ALLOTTED LAND

BLM LAND
$8,616.09$ feet, being 1.63 miles and 3.96 acres

7,251.48 feet, being 1.37 miles and 3.33 acres
1,875.66 feet, being 0.36 miles and 1.29 acres

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# RIGHT OF WAY EASEMENT FOR <br> LITTLE WATER CHAPTER PHASE I <br> POWER LINE PROJECT <br> TAP A-1 <br> MCKINLEY COUNTY, NEW MEXICO WORK ORDER NUMBER 45161 

SURVEYOR'S DESCRIPTION of a right-of-way easement for the Continental Divide Electric Coopertive Inc.'s Little Water Chapter Phase I Power Line Project, Tap "A-1", located within section 11, Township 16 North, Range 11 West, New Mexico Principal Meridian, Tribal Trust and Allotted Land, Little Water, McKinley County, State of New Mexico, and being more particularly described as follows:

A strip of land, twenty (20) feet wide, being ten (10) feet on each side of the following described centerline:

BEGINNING at P.O.T. Station $65+23.47$ of Line "A", said point being B.O.P. Station $0+00$ for Tap "A-1", in NE $1 / 4$ section 11, T16N, R11W, NMPM, said parcel being Indian Allottment number 279574, and from which point the found original stone monument for the northeast corner of section 18, T16N, R10W, NMPM, bears S68 ${ }^{\circ} 37^{\prime} 43^{\prime \prime} E$ a distance of 13,648.28 feet,

Thence $505^{\circ} 40^{\prime} 12^{\prime \prime} \mathrm{W}$ a distance of 157.17 feet to P.O.T. Station $1+57.17$, at which point the centerline of the power line easement crosses a water line,

Thence continuing $S 05^{\circ} 40^{\prime} 12^{\prime \prime} \mathrm{W}$ a distance of 142.96 feet to P.O.T. Station $3+00.13$,
Thence continuing $\mathrm{SO}^{\circ} 40^{\prime} 12^{\prime \prime} \mathrm{W}$ a distance of 981.33 feet to P.I. Station 12+81.46,
Thence $\mathrm{S} 40^{\circ} 19^{\prime} 48^{\prime \prime} \mathrm{W}$ a distance of 505.75 feet to P.O.T. Station $17+87.21$, at which point the centerline of the power line easement enters the NW $1 / 4$ section 11, T16N, R11W, NMPM, said parcel being Tribal Trust Land, and from which point the found original stone monument for the southwest corner of section 13, T16N, R11W, NMPM, bears S16³9'27"E a distance of 8,949.09 feet

Thence continuing $\mathrm{S} 40^{\circ} 19^{\prime} 48^{\prime \prime} \mathrm{W}$ a distance of 454.26 feet to E.O.P. Station $22+41.47$, the terminus for the above described centerline for Tap " $\mathrm{A}-1$ ", and from which point the found original stone monument for the southwest corner of section 13, T16N, R11W, NMPM, bears S19 ${ }^{\circ} 20^{\prime} 06^{\prime \prime}$ E a distance of $8,711.07$ feet.

The above described right-of-way easement contains 1.03 acres, more or less, in area. The right-of-way easement is 0.42 miles in length.

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RIGHT OF WAY EASEMENT FOR
LITTLE WATER CHAPTER PHASE I POWER LINE PROJECT

TAP A-1a
MCKINLEY COUNTY, NEW MEXICO WORK ORDER NUMBER 45161

SURVEYOR'S DESCRIPTION of a right-of-way easement for the Continental Divide Electric Coopertive Inc.'s Little Water Chapter Phase I Power Line Project, Tap "A-1a", located within section 11, Township 16 North, Range 11 West, New Mexico Principal Meridian, Allotted Land, Little Water, McKinley County, State of New Mexico, and being more particularly described as follows:

A strip of land, twenty (20) feet wide, being ten (10) feet on each side of the following described centerline:

BEGINNING at P.O.T. Station $3+00.13$ of Tap "A-1", said point being B.O.P. Station $0+00$ for Tap "A-1a", located in NE $1 / 4$ section 11, T16N, R11W, NMPM, said parcel being Indian Allotment number 279574,

Thence N72 $06^{\prime} 56^{\prime \prime} \mathrm{W}$ a distance of 349.92 feet to E.O.P. Station $3+49.92$, the terminus for the above described centerline for Tap " $A-1 a$ ",

The above described right-of-way easement contains 0.16 acres, more or less, in area. The right-of-way easement is 0.07 miles in length.

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# RIGHT OF WAY EASEMENT FOR <br> LITTLE WATER CHAPTER PHASE I POWER LINE PROJECT <br> TAP A-2 <br> MCKINLEY COUNTY, NEW MEXICO WORK ORDER NUMBER 45161 

SURVEYOR'S DESCRIPTION of a right-of-way easement for the Continental Divide Electric Coopertive Inc.'s Little Water Chapter Phase I Power Line Project, Tap "A-2", located within section 12, Township 16 North, Range 11 West, New Mexico Principal Meridian, Allotted Land, Little Water, McKinley County, State of New Mexico, and being more particularly described as follows:

A strip of land, twenty (20) feet wide, being ten (10) feet on each side of the following described centerline:

BEGINNING at P.O.T. Station $116+63.20$ of Line "A", said point being B.O.P. Station $0+00$ for Tap "A-2", located in SW1/4 section 12, T16N, R11W, NMPM, said parcel being Indian Allottment number 983,

Thence $\mathrm{N} 74^{\circ} 26^{\prime} 14^{\prime \prime} \mathrm{E}$ a distance of 94.18 feet to P.O.T. Station $0+94.18$, at which point the centerline of the power line easement crosses BIA Route 482,

Thence continuing N $74^{\circ} 26^{\prime} 14^{\prime \prime} \mathrm{E}$ a distance of 255.89 feet to P.I. Station 3+50.07,
Thence $S 21^{\circ} 51^{\prime} 45^{\prime \prime} \mathrm{E}$ a distance of 339.91 feet to E.O.P. Station $6+89.98$, the terminus for the above described centerline for Tap "A-2", and from which point the found original stone monument for the northeast corner of section 18, T16N, R10W, NMPM, bears S86 ${ }^{\circ} 32^{\prime} 32^{\prime \prime} E$ a distance of $10,131.98$ feet,

The above described right-of-way easement contains 0.32 acres, more or less, in area. The right-of-way easement is 0.13 miles in length.

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# RIGHT OF WAY EASEMENT FOR LITTLE WATER CHAPTER PHASE I POWER LINE PROJECT <br> TAP A-3 <br> MCKINLEY COUNTY, NEW MEXICO WORK ORDER NUMBER 45161 

SURVEYOR'S DESCRIPTION of a right-of-way easement for the Continental Divide Electric Coopertive Inc.'s Little Water Chapter Phase I Power Line Project, Tap "A-3", located within section 13, Township 16 North, Range 11 West, New Mexico Principal Meridian, Tribal Trust Land, Little Water, McKinley County, State of New Mexico, and being more particularly described as follows:

A strip of land, twenty (20) feet wide, being ten (10) feet on each side of the following described centerline:

BEGINNING at P.O.T. Station 168+73.13 of Line "A", said point being B.O.P. Station 0+00 for Tap "A-3", located in SW $1 / 4$ section 13, T16N, R11W, NMPM, said parcel being Tribal Trust Land,

Thence N78 ${ }^{\circ} 54^{\prime} 39^{\prime \prime}$ E a distance of 217.81 feet to P.O.T. Station $2+17.81$, at which point the centerline of the power line easement crosses a water line,

Thence continuing N78 ${ }^{\circ} 54^{\prime} 39^{\prime \prime}$ E a distance of 132.72 feet to E.O.P. Station $3+50.53$, the terminus for the above described centerine for Tap "A-3",

The above described right-of-way easement contains 0.16 acres, more or less, in area. The right-of-way easement is 0.07 miles in length.

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## CDEC'S LITTLE WATER CHAPTER PHASE I POWER LINE PROJECT <br> MCKINLEY COUNTY, NEW MEXICO CDEC WORK ORDER NUMBER 45161

## SUMMARY DESCRIPTION

| PARCEL | LENGTH |  | MILES | WIDTH |
| :--- | ---: | ---: | :---: | :---: |$\quad$| ACREAGE |
| :--- |
| LINE "A" BLM |

## SECTION SUMMARY

| T16N R11W |  | LENGTH | MILES | WIDTH | ACREAGE |
| :---: | :---: | :---: | :---: | :---: | :---: |
| SW1/4 Sec. 2 | BLM | 1,875.66 | 0.36 | 30' | 1.29 |
| Section 3 | TNT | 2,888.04 | 0.55 | 20' | 1.33 |
| NW1/4 Sec. 11 | TNT | 1,753.13' | 0.33 | 20' | 0.80 |
| NE1/4 Sec. 11 | IA279574 | 5,809.11' | 1.10 | 20' | 2.67 |
| SE1/4 Sec. 11 | TNT | 1,905.46' | 0.36 | 20' | 0.88 |
| SW $1 / 4$ Sec. 12 | [A 983 | 1,550.64' | 0.29 | $20^{\prime}$ | 0.71 |
| NW $1 / 4$ Sec. 13 | \|A1752 | 2,718.84' | 0.52 | 20' | 1.25 |
| SW1/4 Sec. 13 | TNT | 2,874.25' | 0.54 | 20' | 1.32 |
| TOTAL |  | 21,375.13' | 4.05 |  | 10.25 |

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# RIGHT OF WAY EASEMENT FOR <br> CDEC'S LITTLE WATER CHAPTER PHASE II POWER LINE PROJECT LINE B <br> MCKINLEY COUNTY, NEW MEXICO CDEC WORK ORDER NUMBER 50547 

SURVEYOR'S DESCRIPTION of a right-of-way easement for the Continental Divide Electric Coopertive Inc.'s Little Water Chapter Phase II Power Line Project, Line "B", located within section 13, Township 16 North, Range 11 West and sections 17 and 18, Township 16 North, Range 10 West, New Mexico Principal Meridian, Tribal Trust Land, and Allotted Land, Little Water, McKinley County, State of New Mexico, and being more particularly described as follows:

A strip of land, twenty (20) feet wide, being ten (10) feet on each side of the following described centerline:

COMMENCING at E.O.P. Station $177+43.23$ of Line " $A$ ", Little Water Chapter Phase I Power Line Project said point being B.O.P. Station 0+00 of Line "B", Little Water Chapter Phase II Power Line Project located in section 13, T16N, R11W, NMPM, said parcel being Tribal Trust Land, from which point the found original stone monument for the southwest corner of section $13, \mathrm{~T} 16 \mathrm{~N}, \mathrm{R} 11 \mathrm{~W}$, bears $S 83^{\circ} 23^{\circ} 51^{\prime \prime} \mathrm{W}$ a distance of $1,202.42$ feet, and from which point the Base Station having True New Mexico State Plane West, NAD83, US survey feet coordinates of N1681685.651, E2684573.576, bears $\mathrm{N} 12^{\circ} 47^{\prime} 39^{\prime \prime} \mathrm{W}$ a distance of $4,684.17$ feet,

Thence $N 77^{\circ} 49^{\prime} 41^{\prime \prime} \mathrm{E}$ a distance of $1,161.57$ feet to P.O.T. Station $11+61.57$, at which point the centerline of the power line easement crosses a water line,

Thence continuing $\mathrm{N} 77^{\circ} 49^{\prime} 41^{\prime \prime} \mathrm{E}$ a distance of 198.43 feet to P.I. Station $13+60.00$,
Thence $N 50^{\circ} 34^{\prime} 01$ " E a distance of 155.55 feet to P.O.T. Station $15+15.55$, at which point the centerline of the power line easement enters the SE $1 / 4$ section 13, T16N, R11W, NMPM, said parcel being Indian Allottment number 1754, from which point the found original stone monument for the southwest corner of section 13, T16N, R11W, bears $\mathrm{S} 78^{\circ} 47^{\prime} 39^{\prime \prime} \mathrm{W}$ a distance of $2,695.40$ feet

Thence continuing $\mathrm{N} 50^{\circ} 34^{\prime} 01^{\prime \prime} \mathrm{E}$ a distance of 539.48 feet to P.I. Station $20+55.03$,
Thence $\mathrm{N} 84^{\circ} 53^{\prime} 56^{\prime \prime} \mathrm{E}$ a distance of $2,241.53$ feet to P.O.T. Station $42+96.56$, at which point the centerline of the power line easement crosses a fence line and enters the SW $1 / 4$ section 18, T16N, R10W, NMPM, said parcel being Indian Allottment number 980, from which point the found original stone monument for the quarter corner common to sections 18 and 19, T16N, R10W, NMPM, bears S67 ${ }^{\circ} 40^{\prime} 39^{\prime \prime} \mathrm{E}$ a distance of $2,853.55$ feet,

Thence continuing $\mathrm{N} 84^{\circ} 53^{\prime} 56^{\prime \prime} \mathrm{E}$ a distance of 8.44 feet to P.O.T. Station $43+05.00$,

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$\therefore$

- Thence continuing N $84^{\circ} 53^{\prime} 56^{n} E$ a distance of 200.15 feet to P.O.T. Station $45+05.15$, at which point the centerline of the power line easement crosses a Western Refining gas line,

Thence continuing N84 ${ }^{\circ} 53^{\prime} 56^{\prime \prime} E$ a distance of $1,942.44$ feet to P.O.T. Station $64+47.59$, at which point the centerline of the power line easement crosses a waterline,

Thence continuing N84 ${ }^{\circ} 53^{\prime} 56^{\prime \prime} E$ a distance of 500.92 feet to P.O.T. Station $69+48.51$, at which point the centerline of the power line easement enters the SE $1 / 4$ section 18, T16N, R10W, NMPM, said parcel being Indian Allottment number 981, from which point the found original stone monument for the quarter corner common to sections 18 and 19, T16N, R10W NMPM, bears S00 $04^{\prime} 32^{\prime \prime} \mathrm{W}$ a distance of $1,319.62$ feet,

Thence continuing N84 ${ }^{\circ} 53^{\prime} 56^{\prime \prime} E$ a distance of $2,306.48$ feet to P.O.T. Station $92+54.99$, from which point the found original stone monument for the quarter corner common to sections 18 and 19, T16N, R10W, NMPM, bears $556^{\circ} 26^{\prime} 55^{\prime \prime} \mathrm{W}$ a distance of $2,758.71$ feet

Thence continuing N84 ${ }^{\circ} 53^{\prime} 56^{\prime \prime}$ E a distance of 123.31 feet to P.O.T. Station $93+78.30$, at which point the centerline of the power line crosses the centeriine of BIA Route 482,

Thence continuing N84 $53^{\prime} 56^{\prime \prime} \mathrm{E}$ a distance of 173.35 feet to P.O.T. Station $95+51.65$, at which point the centerline of the power line easement crosses a fence and enters the SW $1 / 4$ section 17, T16N, R10W, NMPM, said parcel being Indian Allottment number 3081, from which point the found original stone monument for the quarter corner common to sections 18 and 19, T16N, R10W, NMPM, bears $559^{\circ} 07^{\prime} 42^{\prime \prime} \mathrm{W}$ a distance of $3,022.84$ feet,

Thence continuing N84 ${ }^{\circ} 53^{\prime} 56^{\prime \prime} \mathrm{E}$ a distance of 1.66 feet to P.I. Station $95+53.31$
Thence $\mathrm{N} 25^{\circ} 02^{\prime} 42^{\prime \prime} \mathrm{E}$ a distance of $1,186.33$ feet to P.O.T. Station $107+39.64$, at which point the centerline of the power line easement enters the NW $1 / 4$ section 17, T16N, R10W, NMPM, said parcel being Indian Allottment number 3057, from which point the found original stone monument for the northeast corner of section 18, T16N, R10W, NMPM, bears N09 ${ }^{\circ} 49^{\prime} 17^{\prime \prime} \mathrm{W}$ a distance of 2,684.59 feet,

Thence continuing $\mathrm{N} 25^{\circ} 02^{\prime} 42^{\prime \prime} \mathrm{E}$ a distance of 883.73 feet to P.I. Station $116+23.37$,
Thence $\mathrm{N} 23^{\circ} 50^{\prime} 52^{\prime \prime} \mathrm{W}$ a distance of 153.54 feet to P.O.T. Station 117+76.91, at which point the centerline of the power line easement crosses a waterline,

Thence continuing $N 23^{\circ} 50^{\prime} 52^{\prime \prime} \mathrm{W}$ a distance of 290.19 feet to P.O.T. Station $120+67.10$, at which point the centerline of the power line easement crosses a waterline,

Thence continuing $\mathrm{N} 23^{\circ} 50^{\prime} 52^{\prime \prime} \mathrm{W}$ a distance of $1,406.27$ feet to P.I. Station $134+73.37$,

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Thence $582^{\circ} 04^{\prime} 24^{\prime \prime} \mathrm{W}$ a distance of 86.34 feet to P.O.T. Station $135+59.71$, at which point the centerline of the power line easement crosses a fence and enters NE $1 / 4$ section $18, \mathrm{~T} 16 \mathrm{~N}, \mathrm{R} 10 \mathrm{~W}$, NMPM, said parcel being Tribal Trust Land, and from which point the found original stone monument for the northeast corner of section 18, T16N, R10W, NMPM, bears NOO $30^{\prime} 23^{\prime \prime} E$ a distance of 164.44 feet,

Thence continuing $582^{\circ} 04^{\prime} 24^{\prime \prime} \mathrm{W}$ a distance of 40.71 feet to P.O.T. Station $136+00.42$, at which point the centerline of the power line easement crosses a Western Refining gas line,

Thence continuing $S 82^{\circ} 04^{\prime} 24^{\prime \prime} \mathrm{W}$ a distance of $1,313.06$ feet to P.O.T. Station 149+13.48,
Thence continuing $582^{\circ} 04^{\prime} 24^{\prime \prime} \mathrm{W}$ a distance of 215.97 feet to P.O.T. Station $151+29.45$, at which point the centerline of the power line easement crosses a waterline,

Thence continuing $S 82^{\circ} 04^{\prime} 24^{\prime \prime}$ W a distance of 84.00 feet to E.O.P. Station $152+13.45$, the terminus for the above described centerline for Line " $B$ ", at which point the found original stone monument for the northeast corner of section 18, T16N, R10W, NMPM, bears $N 76^{\circ} 32^{\prime} 05^{\prime \prime} E$ a distance of $1,685.72$ feet,

The above described right-of-way easement contains 6.98 acres, more or less, in area. The right-of-way easement is 2.88 miles in length.

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# RIGHT OF WAY EASEMENT FOR CDEC'S LITTLE WATER CHAPTER PHASE II POWER LINE PROJECT <br> TAP B-1 <br> MCKINLEY COUNTY, NEW MEXICO CDEC WORK ORDER NUMBER 50547 

SURVEYOR'S DESCRIPTION of a right-of-way easement for the Continental Divide Electric Coopertive Inc.'s Little Water Chapter Phase II Power Line Project, Tap "B- 1 ", located within sections 18 and 19, Township 16 North, Range 10 West, New Mexico Principal Meridian, Allotted Land, Little Water, McKinley County, State of New Mexico, and being more particularly described as follows:

A strip of land, twenty (20) feet wide, being ten (10) feet on each side of the following described centerline:

COMMENCING at P.O.T. Station $43+05.00$ of Line " $B$ ", said point being B.O.P. Station $0+00$ for Tap "B-1", located in SW $1 / 4$ section 18, T16N, R10W, NMPM, said parcel being Indian Allottment number 980,

Thence $500^{\circ} 55^{\prime} 47^{\prime \prime}$ E a distance of 115.19 feet to P.O.T. Station $1+15.19$, at which point the centerline of the power line easement crosses a Western Refining gas line,

Thence continuing $500^{\circ} 55^{\prime} 47^{\prime \prime} \mathrm{E}$ a distance of 965.62 feet to P.O.T. Station $10+80.81$, at which point the centerline of the power line easement crosses a fence line and enters the NW $1 / 4$ section $19, \mathrm{~T} 16 \mathrm{~N}$, R10W, NMPM, said parcel being Indian Ailottment number 3060, from which point the found original stone monument for the quarter corner common to sections 18 and 19, T16N, R10W, NMPM, bears S890 $54^{\prime} 51^{\prime \prime} \mathrm{E}$ a distance of $2,613.77$ feet,

Thence continuing $S 00^{\circ} 55^{\prime} 47^{\prime \prime}$ E a distance of 441.17 feet to P.I. Station $15+21.98$,
Thence $S 13^{\circ} 07^{\prime} 04^{\prime \prime} \mathrm{E}$ a distance of 612.57 feet to P.O.T. Station $21+34.55$, at which point the centerline of the power line easement crosses a waterline,

Thence continuing $S 13^{\circ} 07^{\prime} 04^{\prime \prime} \mathrm{E}$ a distance of 999.72 feet to P.O.T. Station $31+34.27$,
Thence continuing $\mathrm{S} 13^{\circ} 07^{\prime} 04^{\prime \prime} \mathrm{E}$ a distance of 350.94 feet to P.I. Station $34+85.21$,
Thence $503^{\circ} 33^{\prime} 56^{\prime \prime} \mathrm{E}$ a distance of 300.41 feet to P.O.T. Station $37+85.62$, at which point the centerline of the power line easement crosses a fence line and enters the SW $1 / 4$ section 19, T16N, R10W, NMPM, said parcel being Indian Allottment number 3062, from which point the found original stone monument for the quarter corner common to sections 18 and 19, T16N, R10W, NMPM, bears N38 ${ }^{\circ} 57^{\prime} 49^{\prime \prime} \mathrm{E}$ a distance of $3,406.92$ feet,

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'Thence continuing $503^{\circ} 33^{\prime} 56^{\prime \prime} \mathrm{E}$ a distance of 22.33 feet to E.O.P. Station $38+07.95$, the terminus for the above described centerline for Tap "B-1", from which point the found original stone monument for the southwest comer of section 13, T16N, R11W, NMPM, bears N65 $05^{\prime} 37^{\prime} \mathrm{W}$ a distance of $6,385.99$ feet.

The above described right-of-way easement contains 1.75 acres, more or less, in area. The right-of-way easement is 0.72 miles in length.

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# RIGHT OF WAY EASEMENT FOR <br> CDEC'S LITTLE WATER CHAPTER PHASE II POWER LINE PROJECT <br> TAP B-1a <br> MCKINLEY COUNTY, NEW MEXICO <br> CDEC WORK ORDER NUMBER 50547 

SURVEYOR'S DESCRIPTION of a right-of-way easement for the Continental Divide Electric Coopertive Inc.'s Little Water Chapter Phase II Power Line Project, Tap "B-1a", located within section 19, Township 16 North, Range 10 West, New Mexico Principal Meridian, Allotted Land, Little Water, McKinley County, State of New Mexico, and being more particularly described as follows:

A strip of land, twenty (20) feet wide, being ten (10) feet on each side of the following described centerline:

COMMENCING at P.O.T. Station $31+34.27$ of Tap B-1, said point being B.O.P. Station $0+00$ for Tap "B-1a", located in NW1/4 section 19, T16N, R10W, NMPM, said parcel being indian Allottment number 3060,

Thence $557^{\circ} 40^{\prime} 41^{\prime \prime} \mathrm{W}$ a distance of 177.85 feet to P.O.T. Station $1+77.85$, at which point the centerline of the power line easement crosses a waterline,

Thence continuing $557^{\circ} 40^{\prime} 41^{n} \mathrm{~W}$ a distance of 125.18 feet to E.O.P. Station $3+03.03$, the terminus for the above described centerline for Tap " $B-1 a$ ",

The above described right-of-way easement contains 0.14 acres, more or less, in area. The right-of-way is 0.06 miles in length.

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# RIGHT OF WAY EASEMENT FOR <br> CDEC'S LITTLE WATER CHAPTER PHASE II POWER LINE PROJECT <br> TAP B-2 <br> MCKINLEY COUNTY, NEW MEXICO <br> CDEC WORK ORDER NUMBER 50547 

SURVEYOR'S DESCRIPTION of a right-of-way easement for the Continental Divide Electric Coopertive Inc.'s Little Water Chapter Phase II Power Line Project, Tap "B-2", located within sections 17, 18 and 20, Township 16 North, Range 10 West, New Mexico Principal Meridian, Allotted Land, Navajo Nation Tribal Trust Land, Little Water, McKinley County, State of New Mexico, and being more particularly described as follows:

A strip of land, twenty (20) feet wide, being ten (10) feet on each side of the following described centerline:

COMMENCING at P.O.T. Station $92+54.99$ of Line "B", said point being B.O.P. Station $0+00$ for Tap "B-2", located in SE $1 / 4$ section 18, T16N, R10W, NMPM, said parcel being Indian Allottment number 981 , from which point the found original stone monument for the quarter corner common to sections 18 and $19, \mathrm{~T} 16 \mathrm{~N}, \mathrm{R} 10 \mathrm{~W}, \mathrm{NMPM}$, bears $\mathrm{S} 56^{\circ} 26^{\prime} 55^{\prime \prime} \mathrm{W}$ a distance of $2,758.71$ feet,

Thence $\operatorname{S} 39^{\circ} 30^{\prime} 14^{\prime \prime}$ E a distance of 457.14 feet to P.O.T. Station $4+57.14$, at which point the centerline of the power line easement enters the SW $1 / 4$ section 17, T16N, R10W, NMPM, said parcel being Indian Allottment number 3081, from which point the found original stone monument for the quarter corner common to sections 18 and 19, T16N, R10W, NMPM, bears $565^{\circ} 39^{\prime} 08^{\prime \prime} \mathrm{W}$ a distance of $2,842.71$ feet

Thence continuing S39 $30^{\prime} 14^{\prime \prime} \mathrm{E}$ a distance of $1,530.24$ feet to P.O.T. Station $19+87.38$, at which point the centerline of the power line easement enters the NW $1 / 4$ section $20, \mathrm{~T} 16 \mathrm{~N}, \mathrm{R} 10 \mathrm{~W}$, NMPM, said parcel being Tribal Trust Land, from which point the found original stone monument for the quarter corner common to sections 18 and 19, T16N, R10W, NMPM, bears N89 ${ }^{\circ} 51^{\prime} 34^{\prime \prime} \mathrm{W}$ a distance of $3,563.33$ feet,

Thence continuing S $39^{\circ} 30^{\prime} 14^{\prime \prime} \mathrm{E}$ a distance of 622.61 feet to P.I. Station $26+09.99$,
Thence $553^{\circ} 19^{\prime} 28^{\prime \prime}$ E a distance of $1,645.82$ feet to P.O.T. Station $42+55.81$, at which point the centerline of the power line easement enters the NE1/4 section 20, T16N, R10W, NMPM, said parcel being Tribal Trust Land, from which point the found original stone monument for the quarter corner common to sections 18 and 19 , T16N, R10W, NMPM, bears $N 74^{\circ} 25^{\prime} 08^{\prime \prime} \mathrm{W}$ a distance of $5,480.78$ feet,

Thence continuing $553^{\circ} 19^{\prime} 28^{\prime \prime} \mathrm{E}$ a distance of $1,294.14$ feet to P.I. Station $55+49.95$,
Thence $579^{\circ} 31^{\prime} 06^{\prime \prime} \mathrm{E}$ a distance of $1,480.05$ feet to P.O.T. Station $70+30.00$, from which point the found original stone monument for the quarter corner common to sections 18 and 19, T16N, R10W, NMPM, bears $\mathrm{N} 72^{\circ} 04^{\prime} 25^{\prime \prime} \mathrm{W}$ a distance of $8,169.24$ feet,

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Thence continuing $S 79^{\circ} 31^{\prime} 06^{\prime \prime} \mathrm{E}$ a distance of 249.93 feet to P.I. Station $72+79.93$,
Thence $\mathrm{S} 02^{\circ} 16^{\prime} 28^{\prime \prime} \mathrm{E}$ a distance of 94.30 feet to P.O.T. Station $73+74.23$, at which point the centerline of the power line easement enters the SE $1 / 4$ section 20 , T16N, R10W, NMPM, said parcel being Tribal Trust Land, from which point the found original stone monument for the quarter corner common to sections 18 and 19, T16N, R10W, NMPM, bears N71 ${ }^{\circ} 41^{\prime} 37^{\prime \prime} \mathrm{W}$ a distance of $8,449.81$ feet,

Thence continuing $S^{2} 2^{\circ} 16^{\prime} 28^{\prime \prime} \mathrm{E}$ a distance of 799.70 feet to P.O.T. Station $81+73.93$, at which point the centerline of the power line easement crosses County Road 19,

Thence continuing $S 02^{\circ} 16^{\prime} 28^{\prime \prime} \mathrm{E}$ a distance of $1,595.98$ feet to E.O.P. Station $97+69.91$, the terminus for the above described centerline for Tap "B-2", from which point the found original stone monument for the quarter corner common to sections 18 and 19, T16N, R10W, NMPM, bears N58 ${ }^{\circ} 07^{\prime} 26^{\prime \prime} \mathrm{W}$ a distance of 9,558.79 feet,

The above described right-of-way easement contains 4.49 acres, more or less, in area. The right-of-way easement is 1.85 miles in length.

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# RIGHT OF WAY EASEMENT FOR CDEC'S LITTLE WATER CHAPTER PHASE II <br> POWER LINE PROJECT <br> TAP B-2a <br> MCKINLEY COUNTY, NEW MEXICO CDEC WORK ORDER NUMBER 50547 

SURVEYOR'S DESCRIPTION of a right-of-way easement for the Continental Divide Electric Coopertive Inc.'s Little Water Chapter Phase II Power Line Project, Tap "B-2a", located within section 20, Township 16 North, Range 10 West, New Mexico Principal Meridian, Tribal Trust Land, Little Water, McKinley County, State of New Mexico, and being more particularly described as follows:

A strip of land, twenty (20) feet wide, being ten (10) feet on each side of the following described centerline:

COMMENCING at P.O.T. Station $70+30.00$ of Tap "B-2", said point being B.O.P. Station $0+00$ for Tap "B-2a", located in NE $1 / 4$ section 20, T16N, R10W, NMPM, said parcel being Tribal Trust Land, from which point the found original stone monument for the quarter corner common to sections 18 and 19 , T16N, R10W, NMPM, bears $N 72^{\circ} 04^{\prime} 25^{\prime \prime} \mathrm{W}$ a distance of $8,169.24$ feet,

Thence $\mathrm{N} 20^{\circ} 35^{\prime} 05^{\prime \prime} \mathrm{W}$ a distance of 182.77 feet to P.O.T. Station $1+82.77$, at which point the centerline of the power line easement crosses BIA Route 482,

Thence continuing $\mathrm{N} 20^{\circ} 35^{\prime} 05^{\prime \prime} \mathrm{W}$ a distance of $1,217.32$ feet to E.O.P. Station $14+00.09$, the terminus for the above described centerline for Tap "B-2a".

The above described right-of-way easement contains 0.64 acres, more or less, in area. The right-of-way easement is 0.26 miles in length.

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# RIGHT OF WAY EASEMENT FOR CDEC'S LITTLE WATER CHAPTER PHASE II POWER LINE PROJECT <br> TAP B-3 <br> MCKINLEY COUNTY, NEW MEXICO CDEC WORK ORDER NUMBER 50547 

SURVEYOR'S DESCRIPTION of a right-of-way easement for the Continental Divide Electric Coopertive Inc.'s Little Water Chapter Phase II Power Line Project, Tap "B-3", located within section 18, Township 16 North, Range 10 West, New Mexico Principal Meridian, Tribal Trust Land, Little Water, McKinley County, State of New Mexico, and being more particularly described as follows:

A strip of land, twenty (20) feet wide, being ten (10) feet on each side of the following described centerline:

COMMENCING at P.O.T. Station $149+13.48$ of Line " $B$ ", said point being B.O.P. Station $0+00$ for Tap "B-3", located in NE1/4 section 18, T16N, R10W, NMPM, said parcel being Tribal Trust Land,

Thence $\mathrm{N} 29^{\circ} 36^{\prime} 03^{\prime \prime} \mathrm{W}$ a distance of 337.83 feet to P.O.T. Station $3+37.83$, at which point the centerline of the power line easement crosses a waterline,

Thence continuing $\mathrm{N} 29^{\circ} 36^{\prime} 03^{\prime \prime} \mathrm{W}$ a distance of 67.05 feet to E.O.P. Station $4+04.88$, the terminus for the above described centerline for Tap " $B-3$ ",

The above described right-of-way easement contains 0.19 acres, more or less, in area. The right-of-way easement is 0.08 miles in length.

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MCKINLEY COUNTY, NEW MEXICO
CDEC WORK ORDER NUMBER 50547

## SUMMARY DESCRIPTION

| PARCEL | LENGTH | MILES | WIDTH | ACREAGE |
| :---: | :---: | :---: | :---: | :---: |
| LINE B | 15,213.45' | 2.88 | $20^{\prime}$ | 6.98 |
| TAP B-1 | 3,807.95' | 0.72 | $20^{\prime}$ | 1.75 |
| TAP B-1a | $303.03^{\prime}$ | 0.06 | $20^{\prime}$ | 0.14 |
| TAP B-2 | 9,769.91' | 1.85 | 20' | 4.49 |
| TAP B-2a | 1,400.09' | 0.26 | $20^{\prime}$ | 0.64 |
| TAP B-3 | 404.88' | 0.08 | $20^{\prime}$ | 0.19 |
| SUBTOTAL | 30,899.31' | 5.85 |  | 14.19 |

## SECTION SUMMARY

|  | LAND |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| T16NR10W | STATUS | LENGTH | MILES | WIDTH | ACREAGE |
| NW1/4 Sec. 17 | \|A3057 | 2,820.07' | 0.53 | $20^{\prime}$ | 1.29 |
| SW1/4 Sec. 17 | \|A3081 | 2,718.23 | 0.51 | $20^{\prime}$ | 1.25 |
| NE1/4 Sec. 18 | TNT | 2,058.62' | 0.39 | $20^{\prime}$ | 0.95 |
| SE $1 / 4 \mathrm{Sec} .18$ | 1A981 | 3,060.28 | 0.58 | $20^{\prime}$ | 1.41 |
| SW1/4 Sec. 18 | 1A980 | 3,732.76' | 0.71 | $20^{\prime}$ | 1.71 |
| NW1/4 Sec. 19 | \|A3060 | 3,007.84' | 0.57 | $20^{\prime}$ | 1.38 |
| SW1/4Sec. 19 | \|A3062 | $22.33^{\prime}$ | 0.00 | 20' | 0.01 |
| NE1/4 Sec. 20 | TNT | 4,518.51 ${ }^{\prime}$ | 0.86 | $20^{\prime}$ | 2.07 |
| SE $1 / 4 / \mathrm{Sec} .20$ | TNT | 2,395.68' | 0.45 | 20' | 1.10 |
| NW1/4 Sec. 20 | TNT | 2,268.43' | 0.43 | $20^{\prime}$ | 1.04 |
| T16N R11W |  |  |  |  |  |
| SW1/4 Sec. 13 | TNT | 1,515.55' | 0.29 | $20^{\prime}$ | 0.70 |
| SE $1 / 4$ Sec. 13 | IA1754 | 2,781.01 | 0.53 | $20^{\prime}$ | 1.28 |
| TOTAL |  | 30,899.31' | 5.85 |  | 14.19 |

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MEMORANDUM
TO : Elerina Yazzie, Supervisor Project Review Section, NLD
FROM : Eofker fec Projelct Review Section, NLD

DATE : June 15, 2016
SUBJECT: CDEC Whiteridge Phase I and Phase II Power Line Extension Project
Continental Divide Electric Cooperative, Inc., of P. O. Box 1087, Grants, New Mexico 87020, submitted an application for right of way to construct, operate and maintain a single phase distribution line across Navajo Trust lands to serve Navajo families near the vicinity of Littlewater Chapter.

The right of way for Phase I will be 9,420 feet in length, 20 feet in width, 4.33 acre, in Sections 3, NW/4 Section 11, SE/4 Section 11, SW/4 Section 13, T16N, R11W, and the right of way for Phase II will be $12,756.79$ feet in length, 20 feet in width, 5.86 acres, in NE/4 Section 18, NE/4 Section 20, SE/4 Section 20, NW/4 Section 20, T16N, R10W, SW/4 Section 13, T16N, R11W, NMPM, McKinley County, New Mexico.

The Navajo Nation is the only affected land user and provided the necessary consent from the District 20 Land Board member, Herbert Enrico, Sr.

Field clearance complete, land user consent, map and supporting documents are all attached for your information and reference.
cc: Project file

## EXHIBIT "D"

## NAVAJO NATION RIGHT-OF-WAY TERMS AND CONDITIONS

Continental Divide Electric Cooperative, Inc. (GRANTEE)<br>(Little water Chapter/ Whiteridge Projects Phase I and II)

1. The term of the right-of-way shall be for fifty (50) years, beginning on the date the right-of-way is granted by the Secretary of Interior.
2. Consideration for the right-of-way is assessed at $\$ 146,736.00$ and shall be paid in full to the Controller of Navajo Nation, in lawful money of the United States, and a copy of the receipt for such payment provided to the Navajo Nation Minerals Department, or its successor, within 10 days of approval of and consent to the grant of the right-f-way by the Navajo Nation.

If consideration has been waived, the Navajo Nation contributes the amount listed about to the project because the project serves a public purpose and will benefit Navajo residents.
3. The Grantee may develop, use and occupy the right-of-way for the purpose(s) of constructing, operating and maintaining a 14.4 kv electrical power line. The Grantee may not develop, use or occupy the right-of-way for any other purpose, nor allow others to use or occupy the right-of-way for any other purpose, without the prior written approval of the Navajo Nation and the Secretary of the Interior. The approval of the Navajo Nation may be granted, granted upon conditions or withheld in the sole discretion of the Navajo Nation. The Grantee may not develop, use or occupy the right-of-way for any unlawful purpose.
4. In all activities conducted by the Grantee within the Navajo Nation, the Grantee shall abide by all laws and regulations of the Navajo Nation and of the United States, now in force and effect or as hereafter may come into force and effect, including but not limited to the following:
a. Title 25, Code of Federal Regulations, Part 169; subject to the terms of this right-of-way.
b. All applicable federal and Navajo Nation antiquities laws and regulations, with the following additional condition: In the event of a discovery all operations in the immediate vicinity of the discovery must cease and the Navajo Nation Historic Preservation Department must be notified immediately. As used herein, "discovery" means any previously unidentified or incorrectly identified cultural resources, including but not limited to archaeological deposits, human remains, or location reportedly associated with Native American religious/traditional beliefs or practices;
c. The Navajo Preference in Employment Act, 15 N.N.C. $\S \S 601$ et seq., and the Navajo Nation Business Opportunity Act, 5 N.N.C. $\S 201$ et seq.; and
d. The Navajo Nation Water Code, 22 N.N.C. § 1101 et seq. Grantee shall apply for and submit all applicable permits and information to the Navajo Nation Water Resources Department, or its successor.
5. The Grantee shall ensure that the air quality of the Navajo Nation is not jeopardized due to violation of applicable laws and regulations by its operations pursuant to the right-of-way.
6. The Grantee shall clear and keep clear the lands within the right-of-way to the extent compatible with the purpose of the right-of-way, and shall dispose of all vegetation and other materials cut, uprooted or otherwise accumulated during any surface disturbance activities.
7. The Grantee shall reclaim all surface lands disturbed related to the right-of-way, as outlined in a restoration and revegetation plan, which shall be approved by the Navajo Nation Environmental Protection Agency (NNEPA) prior to any surface disturbance. The Grantee shall comply with all provisions of such restoration and revegetation plan and shall notify the Director of the NNEPA immediately upon completion of the surface disturbance activities so that a site inspection can be made.
8. The Grantee shall at all times during the term of the right-of-way and at the Grantee's sole cost and expense, maintain the land subject to the right-of-way and all improvements located thereon and make all necessary and reasonable repairs.
9. The Grantee shall obtain prior written permission to cross existing rights-of-way, if any, from the appropriate parties.
10. The Grantee shall be responsible for and promptly pay all damages when they are sustained.
11. The Grantee shall indemnify and hold harmless the Navajo Nation and the Secretary of the Interior and their respective authorized agents, employees, landusers and occupants, against any liability for loss of life, personal injury and property damages arising from the development, use or occupancy or use of right-of-way by the Grantee.
12. The Grantee shall not assign, convey, transfer or sublet, in any manner whatsoever, the right-of-way or any interest therein, or in or to any of the improvements on the land subject to the right-of-way, without the prior written consent of the Navajo Nation and the Secretary of the Interior. Any such attempted assignment, conveyance or transfer without such prior written consent shall be void and of no effect. The consent of the Navajo Nation may be granted, granted upon conditions or withheld in the sole discretion of the Navajo Nation.
13. The Navajo Nation may terminate the right-of-way for violation of any of the terms and conditions stated herein. In addition, the right-of-way shall be terminable in whole or part by the Navajo Nation for any of the following causes:
a. Failure to comply with any term or condition of the grant or of applicable laws or regulations;
b. A non-use of the right-of-way for the purpose for which it is granted for a consecutive two year period; and
c. The use of the land subject to the right-of-way for any purpose inconsistent with the purpose for which the right-of-way is granted.
d. An abandonment of the right-of-way.
14. At the termination of this right-of-way, the Grantee shall peaceably and without legal process deliver up the possession of the premises, in good condition, usual wear and tear excepted. Upon the written request of the Navajo Nation, the Grantee shall provide the Navajo Nation, at the Grantee's sole cost and expense, with an environmental audit assessment of the premises at least sixty (60) days prior to delivery of said premises.
15. Holding over by the Grantee after the termination of the right-of-way shall not constitute a renewal or extension thereof or give the Grantee any rights hereunder or in or to the land subject to the right-of-way or to any improvements located thereon.
16. The Navajo Nation and the Secretary of the Interior shall have the right, at any reasonable time during the term of the right-of-way, to enter upon the premises, or any part thereof, to inspect the same and any improvements located thereon.
17. By acceptance of the grant of right-of-way, the Grantee consents to the full territorial legislative, executive and judicial jurisdiction of the Navajo Nation, including but not limited to the jurisdiction of the Navajo Nation, including but not limited to the jurisdiction to levy fines and to enter judgments for compensatory and punitive damages and injunctive relief, in connection with all activities conducted by the Grantee within the Navajo Nation or which have a proximate (legal) effect on persons or property within the Navajo Nation.
18. By acceptance of the grant of right-of-way, the Grantee covenants and agrees never to contest or challenge the legislative, executive or judicial jurisdiction of the Navajo Nation on the basis that such jurisdiction is inconsistent with the status of the Navajo Nation as an Indian nation, or that the Navajo Nation government is not a government of general jurisdiction, or that the Navajo Nation government does not possess full police power (i.e., the power to legislate and regulate for the general health and welfare) over all lands, persons and activities within its territorial boundaries, or on any other basis not generally applicable to a similar challenge to the jurisdiction of a state government. Nothing contained in this provision shall be construed to negate or impair federal responsibilities with respect to the land subject to the right-of-way or to the Navajo Nation.
19. Any action or proceeding brought by the Grantee against the Navajo Nation in connection with or arising out of the terms and conditions of the right-of-way shall be brought only in the Courts of the Navajo Nation, and no such action or proceeding shall be brought by the Grantee against the Navajo Nation in any court of any state.
20. Nothing contained herein shall be interpreted as constituting a waiver, express or implied, of the sovereign immunity of the Navajo Nation.
21. Except as prohibited by applicable federal law, the law of the Navajo Nation shall govern the construction, performance and enforcement of the terms and conditions contained herein.
22. The terms and conditions contained herein shall extend to and be binding upon the successors, heirs, assigns, executors, administrators, employees and agents, including all contractors and subcontractors, of the Grantee, and the term "Grantee," whenever used herein, shall be deemed to include all such successors, heirs, assigns, executors, administrators, employees and agents.
23. There is expressly reserved to the Navajo Nation full territorial legislative, executive and judicial jurisdiction over the right-of-way and all lands burdened by the right-of-way, including without limitation over all persons, including the public, and all activities conducted or otherwise occurring within the right-of-way; and the right-of-way and all lands burdened by the right-of-way shall be and forever remain Navajo Indian Country for purposes of Navajo Nation jurisdiction.
24. The Navajo Nation reserves the right to grant rights-of-way within the right-of-way referenced herein for utilities, provided that such rights-of-ways do not unreasonably interfere with the Grantee's use of the right-of-way.

## NAVAJO NATION RIGHT-OF-WAY TERMS AND CONDITIONS

Continental Divide Electric Cooperative, Inc. (GRANTEE)

(Littlewater Chapter / Whiteridge projects Phase I and II)

1. The term of the right-of-way shall be for twenty (20) years, beginning on the date the right-of-way is granted by the Secretary of Interior.
2. Consideration for the right-of-way is assessed at $\$ 146,736.00$ and shall be paid in full to the Controller of the Navajo Nation, in lawful money of the United States, and a copy of the receipt for such payment provided to the Navajo Nation Minerals Department, or its successor, within 10 days of approval of and consent to the grant of the right-of-way by the Navajo Nation.

If consideration has been waived, the Navajo Nation contributes the amount listed above to the project because the project serves a public purpose and will benefit Navajo residents.
3. The Grantee may develop, use and occupy the right-of-way for the purpose(s) of constructing, operating, and maintaining a 14.4 . KV electrical power line. The Grantee may not develop, use or occupy the right-of-way for any other purpose, nor allow others to use or occupy the right-of-way for any other purpose, without the prior written approval of the Navajo Nation and the Secretary of the Interior. The approval of the Navajo Nation may be granted, granted upon conditions or withheld in the sole discretion of the Navajo Nation. The Grantee may not develop, use or occupy the right-of-way for any unlawful purpose.
4. In all activities conducted by the Grantee within the Navajo Nation, the Grantee shall abide by all laws and regulations of the Navajo Nation and of the United States, now in force and effect or as hereafter may come into force and effect, including but not limited to the following:
a. Title 25, Code of Federal Regulations, Part 169; subject to the terms of this right-of-way.
b. All applicable federal and Navajo Nation antiquities laws and regulations, with the following additional condition: In the event of a discovery all operations in the immediate vicinity of the discovery must cease and the Navajo Nation Historic Preservation Department must be notified immediately. As used herein, "discovery" means any previously unidentified or incorrectly identified cultural resources, including but not limited to archaeological deposits, human remains, or location reportedly associated with Native American religious/traditional beliefs or practices;
c. The Navajo Preference in Employment Act, 15 N.N.C. $\S 601$ et seq., and the Navajo Nation Business Opportunity Act, 5 N.N.C. §§ 201 et seq.; and
d. The Navajo Nation Water Code, 22 N.N.C. § 1101 et seq. Grantee shall apply for and submit all applicable permits and information to the Navajo Nation Water Resources Department, or its successor.
5. The Grantee shall ensure that the air quality of the Navajo Nation is not jeopardized due to violation of applicable laws and regulations by its operations pursuant to the right-of-way.
6. The Grantee shall clear and keep clear the lands within the right-of-way to the extent compatible with the purpose of the right-of-way, and shall dispose of all vegetation and other materials cut, uprooted or otherwise accumulated during any surface disturbance activities.
7. The Grantee shall reclaim all surface lands disturbed related to the right-of-way, as outlined in a restoration and revegetation plan, which shall be approved by the Navajo Nation Environmental Protection Agency (NNEPA) prior to any surface disturbance. The Grantee shall comply with all provisions of such restoration and revegetation plan and shall notify the Director of the NNEPA immediately upon completion of the surface disturbance activities so that a site inspection can be made.
8. The Grantee shall at all times during the term of the right-of-way and at the Grantee's sole cost and expense, maintain the land subject to the right-of-way and all improvements located thereon and make all necessary and reasonable repairs.
9. The Grantee shall obtain prior written permission to cross existing rights-of-way, if any, from the appropriate parties.
10. The Grantee shall be responsible for and promptly pay all damages when they are sustained.
11. The Grantee shall indemnify and hold harmless the Navajo Nation and the Secretary of the Interior and their respective authorized agents, employees, landusers and occupants, against any liability for loss of life, personal injury and property damages arising from the development, use or occupancy or use of right-of-way by the Grantee.
12. The Grantee shall not assign, convey, transfer or sublet, in any manner whatsoever, the right-of-way or any interest therein, or in or to any of the improvements on the land subject to the right-of-way, without the prior written consent of the Navajo Nation and the Secretary of the Interior. Any such attempted assignment, conveyance or transfer without such prior written consent shall be void and of no effect. The consent of the Navajo Nation may be granted, granted upon conditions or withheld in the sole discretion of the Navajo Nation.
13. The Navajo Nation may terminate the right-of-way for violation of any of the terms and conditions stated herein. In addition, the right-of-way shall be terminable in whole or part by the Navajo Nation for any of the following causes:
a. Failure to comply with any term or condition of the grant or of applicable laws or regulations;
b. A non-use of the right-of-way for the purpose for which it is granted for a consecutive two year period; and
c. The use of the land subject to the right-of-way for any purpose inconsistent with the purpose for which the right-of-way is granted.
d. An abandonment of the right-of-way.
14. At the termination of this right-of-way, the Grantee shall peaceably and without legal process deliver up the possession of the premises, in good condition, usual wear and tear excepted. Upon the written request of the Navajo Nation, the Grantee shall provide the Navajo Nation, at the Grantee's sole cost and expense, with an environmental audit assessment of the premises at least sixty (60) days prior to delivery of said premises.
15. Holding over by the Grantee after the termination of the right-of-way shall not constitute a renewal or extension thereof or give the Grantee any rights hereunder or in or to the land subject to the right-of-way or to any improvements located thereon.
16. The Navajo Nation and the Secretary of the Interior shall have the right, at any reasonable time during the term of the right-of-way, to enter upon the premises, or any part thereof, to inspect the same and any improvements located thereon.
17. By acceptance of the grant of right-of-way, the Grantee consents to the full territorial legislative, executive and judicial jurisdiction of the Navajo Nation, including but not limited to the jurisdiction of the Navajo Nation, including but not limited to the jurisdiction to levy fines and to enter judgments for compensatory and punitive damages and injunctive relief, in connection with all activities conducted by the Grantee within the Navajo Nation or which have a proximate (legal) effect on persons or property within the Navajo Nation.
18. By acceptance of the grant of right-of-way, the Grantee covenants and agrees never to contest or challenge the legislative, executive or judicial jurisdiction of the Navajo Nation on the basis that such jurisdiction is inconsistent with the status of the Navajo Nation as an Indian nation, or that the Navajo Nation government is not a government of general jurisdiction, or that the Navajo Nation government does not possess full police power (i.e., the power to legislate and regulate for the general health and welfare) over all lands, persons and activities within its territorial boundaries, or on any other basis not generally applicable to a similar challenge to the jurisdiction of a state government. Nothing contained in this provision shall be construed to negate or impair federal responsibilities with respect to the land subject to the right-of-way or to the Navajo Nation.
19. Any action or proceeding brought by the Grantee against the Navajo Nation in connection with or arising out of the terms and conditions of the right-of-way shall be brought only in the Courts of the Navajo Nation, and no such action or proceeding shall be brought by the Grantee against the Navajo Nation in any court of any state.
20. Nothing contained herein shall be interpreted as constituting a waiver, express or implied, of the sovereign immunity of the Navajo Nation.
21. Except as prohibited by applicable federal law, the law of the Navajo Nation shall govern the construction, performance and enforcement of the terms and conditions contained herein.
22. The terms and conditions contained herein shall extend to and be binding upon the successors, heirs, assigns, executors, administrators, employees and agents, including all contractors and subcontractors, of the Grantee, and the term "Grantee," whenever used herein, shall be deemed to include all such successors, heirs, assigns, executors, administrators, employees and agents.
23. There is expressly reserved to the Navajo Nation full territorial legislative, executive and judicial jurisdiction over the right-of-way and all lands burdened by the right-of-way, including without limitation over all persons, including the public, and all activities conducted or otherwise occurring within the right-of-way; and the right-of-way and all lands burdened by the right-of-way shall be and forever remain Navajo Indian Country for purposes of Navajo Nation jurisdiction.
24. The Navajo Nation reserves the right to grant rights-of-way within the right-of-way referenced herein for utilities, provided that such rights-of-ways do not unreasonably interfere with the Grantee's use of the right-of-way.

Post Office Box 1898
Crownpoint, New Mexico 87313
PHONE: (505) 786-2120
FAX: (505) 786-2125
WIEBSIIE: www, littlewaterchapter. ondes.ong

## LITTLEWATER CHAPTER

| George Jim | Paul D. Pablo | June Barbone | Leonard Tsosic | Herteet Enrico, Sr. |
| :--- | :--- | :--- | :--- | :--- |
| President | Vice President | Secretary/Treasurer | Council Delegate | Land Board Member |

May 19, 2016
Howard Draper, Program \& Project Specialist
Project Review Section
Navajo Land Department
PO Box 2249
Window Rock, AZ 86515

## SUBNECT: RIGHT OF WAY CONSENT FOR WHITE RIDGE POWER LINE EXTENSION PHASE I \& II

This is in reference to the Continental Divide Electrical Cooperative, NN proposed electric distribution for construction, operation and maintenance of power line to serve the White Ridge area within the vicinity of Little Water Chapter, McKinley County, New Mexico.

To my knowledge, there are no authorize grazing permittees in the proposed electrical powerline extension area therefore, no grazing permittees will be affected, there are no land disputes powerline extension project.

The proposed project as follow:
Phase I
All of Section 3; T 16N; R11west; NMPM; McKinley County New Mexico
Length 2,888.04', miles; 0.55 miles; width $20^{\prime}$; acreage 1.33
NW/4 of Sec. 11; T. 16N; R 11 West
Length 1,753.13'; miles 0.33 ; width $20^{\prime}$; acreage 0.80
SE/4 of Sec 11 T. 16 N; R 11W; NM PM; McKinley County, NM
Length $1,905.46^{\prime}$; miles 0.36 ; width $20^{\prime}$; acreage 0.88
SW/4 of Sec. 13; T 16N; R 11 West NM PM; McKinley County, NM
Length 2874.25"; miles.0.54; width 20'; acreage 1.32
Phase 2
NE/4 of Section 18; T16N; R10 west; NMPM; McKinley County New Mexico
Length 2,058.62', miles; 0.39 miles; width 20'; acreage 0.95
NE/4 of Sec. 20; 'T. 16N; R 10 West
Length $4518.51^{\prime}$; miles 0.86 ; width .20 ; acreage 2.07
SE/4 of Sec $20 ;$ T. $10 \mathrm{~N} ;$ R 10 West
Length $2395.68^{\prime}$; miles 0.45 ; width $20^{\prime}$; acreage 1.10
NW/4 of sec. 20; T 16N; R 10 West NM PM; McKinley County, NM
Length 2268.43 ; miles .43 ; width 20 '; acreage 1.04
SW/4 of Section 13 T 16N; R 11 west NMPM McKinley Count, NM
Length $1515.55^{\prime}$; miles 0.29 ; width $20^{\prime}$; acreage 0.70
Ifthere are any questions, or you need additional information, please contact me at Little Water Chapter (505) 786-2120.
Cerbert Enrich, Sr.
District 20 Lud Board
Little Water Chapter - Eastern Agency

## BIOLOGICAL RESOURCES COMPLIANCE FORM NAVAJO NATION DEPARTMENT OF FISH AND WILDLIFE P.O. BOX 1480, WINDOW ROCK, ARIZONA 86515-1480

It is the Department's opinion the project described below, with applicable conditions, is in compliance with Tribal and Federal laws protecting biological resources including the Navajo Endangered Species and Environmental Policy Codes, U.S. Endangered Species, Migratory Bird Treaty, Eagle Protection and National Environmental Policy Acts. This form does not preclude or replace consultation with the U.S. Fish and Wildlife Service if a Federally-listed species is affected.

PROJECT NAME \& NO.: Whiteridge Distribution Line, Phases I, II, \& 111 (Project No. 45161, 50547, \& 50548) DESCRIPTION: The CDEC proposes to construct, operate, and maintain single-pole 14.4 kV electrical distribution lines to serve residents within the Little Water chapter. The project will be completed in Phases I, II, \& III. Phase I has a proposed ROW length of 4.05 miles, Phase II has a proposed ROW length of 5.85 miles, and Phase III has a proposed ROW length of 1.72 miles. The combined length of all phases would be a total of 11.62 miles with a minimum ROW width of 20 ft . or 28.17 acres.

LOCATION: Phase 1: T16N, R11W, Sections 2, 3, 11, 12, and 13, Little Water Chapter, McKinley County, NM Phase II: T16N, RIIW, Section 13, Little Water Chapter, McKinley County, NM

T16N, R10W, Sections 17, 18, 19, \& 20, Little Water Chapter, McKinley County, NM Phase III: T16N, R11W, Sections 1, 11, 12, Little Water Chapter, McKinley County, NM
REPRESENTATIVE: Genevieve Castillo, Little Water Chapter Manager for Continental Divide Electric Cooperation
ACTION AGENCY: Navajo Nation and Bureau of Indian Affairs
B.R. REPORT TITLE / DATE / PREPARER: EA (3) for Whiteridge Single-Pole 14.4kv Electrical Distribution Line/21 DEC 2015/DBKE

SIGNIFICANT BIOLOGICAL RESOURCES FOUND: Area 3. Potential habitat is present for ATCU and CHMO. POTENTIAL IMPACTS

NESL SPECIES POTENTIALLY IMPACTED: [1] Athene cunicularia (Burrowing Owl) G4, MBTA; [2] Charadrius montanus (Mountain Plover) G4, MBTA.

FEDERALLY-LISTED SPECIES AFFECTED: NA
OTHER SIGNIFICANT IMPACTS TO BIOLOGICAL RESOURCES: NA
AVOIDANCE / MITIGATION MEASURES: [1] The NNDFW highly recommends that the electrical distribution line is constructed utilizing a raptor-safe, power pole design standard (REPR). All guy wires will be marked with highly visual daytime markers to prevent collisions; [2] The CDEC will implement mitigation measures to avoid impacts to the Burrowing Owl (Athene cunicularia) and Mountain Plover (Charadrius montanus); [3] All project personnel and equipment will remain in the project area. Ground disturbance outside the proposed action area is strongly discouraged.
CONDITIONS OF COMPLIANCE*: NA
C:lold_pc2010 My Docuncenss INNHPRBRCF_201614LTWC-01A.doc

FORM PREPARED BY / DATE: Pamela A. Kyselka/05 APR 2016; amended on 09 MAY 2016
COPIES TO: (add categories as necessary)
2NTC \& 164 Recommendation:
区Approval
$\square$ Conditional Approval (with memo)
$\square$ Disapproval (with memo)
$\square$ Categorical Exclusion (with request letter)
$\square$ None (with memo)

[^0]Representative's signature
Date

## CULTURAL RESOURCE COMPLIANCE FORM

| ROUTE COPIES TO: | NNHPD NO: HPD-15-805-REVISED |
| :---: | :--- |
| $\square$ DCDI | OTHER PROJECT NO. DCD1 14-001 |

PROJECT TITLE: A Cultural Resource Inventory of the White Ridge Powerine Phase I, Littlewater Chapter, McKinley County, New Mexico

LEAD AGENCY: BIA/NR
SPONSORS: 1. Navajo Nation Capital Improvement Office, P.O. Box 1510, Window Rock, AZ 86515
2. Debbie Olivar, Continental Divide Electric Cooperative, Inc, P. O. Box 1087, Grants, NM 87020
3. Genevieve Castillo, Littlewater Chapter, P. O. Box 1898, Crownpoint, NM 87313

PROJECT DESCRIPTION: The undertaking consists of construction a single-phase powerline exiension 20-ft right-af-way for $21.375 .13-\mathrm{ft} 4.05$-miles on Indian Allotted land ( 4.63 ac ), TNT ( 4.33 ac ), and a 30 ft wide R-O-W corridor on BLM land $(1.29 \mathrm{ac}$ ) of for the White Ridge Phase I Powerline. The fotal area of effect for the project is 10.25 ac . Ground disturbing activities will include installation of utilities. Ground disturbing activities will be intensive and extensive with the use of heavy equipment.


METHOD OF INVESTIGATION: Class ill pedestrian inventory with transects spaced 15 m apart.

| LIST OF CULTURAL RESOUR CES FOUND: | (2) Sites (NM-R-17-6, NM-R-17-7) <br>  <br> (12) In-Use Sites (IUS) |
| :--- | :--- |
| LIST OF ELIGIBLE PROPERTIES: (2) Sites (NM-R-17-6, NM-R-17-7) <br> LIST OF NON-ELIGIBLE PROPERTIES: (12) IUS <br> LIST OF ARCHAEOLOGICAL RESOURCES: None |  |

EFFECT/CONDITIONS OF COMPLIANCE: No historic properties affected with the following conditions:

## Sites NM-R-17-6 \& NM-R-17-7:

1. Site boundaries will be flagged by a qualified archaeologist prior to all construction activities.
2. Sites will be avoided by spanning the powerline extension; a) all power poles will be placed outside of the flagged site boundaries; b) all electrical wires will be hand-carried across the sites; c) all construction traffic should be confined to the existing road and 20 -ft wide right-of-way.
3. Once construction is completed, site will continue to be avoided by routine maintenance activities by using established drive-arounds.

In the event of a discovery ["discovery" means any previously unidentifled or incorrectly identified cultural resources including but not linited to archaeological deposits, human remains, or locations reportedly associated with Native Americon religious/tradifional beliefs op practicesi] all operotions in the immeditate vilitity of the discovery must cease, and the Navalo Nation Historic Preservation Department must be notified of (928)871-7198.

Page 2, continued

FORM PREPARED BY: Tamara Billie
FINALIZED: December 1, 2015


Notification to Proceed
Recommended
Conditions:

Navajo Region Approval


Tin 12.15.15

## CULTURAL RESOURCE COMPLIANCE FORM

ROUTE COPIES TO:
NNHPD NO.: HPD-15-806
OTHER PROJECT NO.: DCD1 14-007

PROJECT TITLE: A Cultural Resource Inventory of the White Ridge Powerline Phase II, Littlewater Chapter, McKinley County, New Mexico

LEAD AGENCY: BIA/AR
SPONSORS: 1. Navajo Nation Capital Improvement Office, P.O. Box 1510, Window Rock, AZ 86515
2. Debbie Olivar, Continental Divide Electric Cooperative, Inc., P. O. Box 1087, Grants, NM 87020
3. Genevieve Castillo, Littlewater Chapter, P. O. Box 1898, Crownpoint, NM 87313

PROJECT DESCRIPTION: The undertaking consists of construction a single-phase powerline extension 20 - ft right-of-way for 30,899.31-ft $/ 5.85$-miles on Tribal Trust land ( 5.86 -acres) and Indian Allotment ( 8.33 -acres). The total area of effect for the project is 14.19 -acres. Ground disturbing activities will include installation of utilities and will be intensive and extensive with the use of heavy equipment.

| LAND STATUS: | Navajo Tribal Trust \& Indian Allotment |
| :--- | :--- |
| CHAPTER: | Litlewater |
| LOCATIONS: | T. 16 N, R. 11 W ; Sec. 13 ; Borrego Pass Quadrangle, McKinley County, New Mexico NMPM |
|  | T. 16 N, R. $10 \mathrm{~W} ;$ Sec. 17, 18,19, \& 20; Borrego Pass Quadrangle, McKinley County, New Mexico NMPM |


| PROJECT ARCHAEOLOGIST: | Denise R.E. Copeland |
| :--- | :--- |
| NAVAJO ANTIQUITIES PERMIT NO.: | NTC |
| DATE INSPECTED: | $0 T / 09 / 14$ to $09 / 25 / 14$ |
| DATE OF REPORT: | $10 / 26 / 15$ |
| TOTAL ACREAGE INSPECTED: | 70.94 ac. Total (29.29 Tribal Trust and 41.65 Indian Allotments) |
| METHOD OF INVESTIGATION: | Class III pedestrian inventory with transects spaced 15 m apart. |

## LIST OF CULTURAL RESOURCES FOUND:

## LIST OF ELIGIBLE PROPERTIES:

 LIST OF NON-ELIGIBLE PROPERTIES:LIST OF ARCHAEOLOGICAL RESOURCES:
(1) Site (NM-R-32-32)
(16) In-Use Sites (IUS)

## None

(1) Site (NM-R-32-32)
(16) IUS

## None

EFFECT/CONDITIONS OF COMPLIANCE: No historic properties affected.
Site NM-R-32-32:
No further work is warranted.

[^1]FORM PREPARED BY: Tamara Billie FINALIZED: December 1, 2015


## ARCHAEOLOGICAL INVENTORY REPORT DOCUMENTATION PAGE (HPD 2010)

## 1. HPD REPORT NO.:

2. TITLE OF REPORT: A Cultural Resource Inventory of the White Ridge Powerline Phase I, Littlewater Chapter, McKinley County, New Mexico

AUTHOR(S): Denise R.E. Copeland
5. CONSULTANT NAME AND ADDRESS:

Gen. Charge: Denise R.E. Copeland, Principal Archaeologist
Org. Name: Capital Improvement Office
Org. Address: P.O. Box 335
Fruitland, New Mexico 87416 Ph: 505 368-1059
8. SPONSOR NAME AND ADDRESS:

Ind. Respon.: Debbie Olivar (See project for other Sponsors)
Org. Name: Continental Divide Electric Cooperative, Inc.
Org. Address: P.O. Box 1087

Phone: 505 285-6656
3. FIELDWORK DATE(S): Jan. 6, 8, \& 9;

April 2; Sept. 25, 2014 and Mar. 31, 2015
4. REPORT DATE(S): (Corrected) October 13, 2015 (January 4, 2016)
6. PERMIT NO.:

## ATC

7. CONSULTANT REPORT NO.: DCD 14-001
8. SPONSOR PROJECT NO.:

Work Order \#: 45161

| 10. AOE: | $\frac{\text { TNT }}{}$ | $\underline{\text { IA }}$ | ELM |
| :---: | :---: | :---: | :---: |
|  | $\frac{4.33 \mathrm{ac}}{21.63 \mathrm{ac}}$ | $\frac{4.63 \mathrm{ac}}{23.13 \mathrm{ac}}$ | $\frac{1.29 \mathrm{ac}}{5.60 \mathrm{ac}}$ |

11. LOCATION (MAP ATTACHED):

Chapter: Littlewater f. UTM Center: NAD 83, Zone 13; See Table 3
Agency: Eastern
g. Legal: See Table 2

County: McKinley
State: New Mexico
h. $7.5^{\prime}$ USGS Map(s): Lacuna Castillo. New Mexico 1963 Borrego Pass. New Mexico 1963
Land Status: See Table 2
i. Lead Agency: BIA/Navaio Region
12. REPORT ATTACHMENTS:
a. Description of Undertaking: The undertaking consists of construction of $20 \mathrm{ft} / 6.1 \mathrm{~m} \mathrm{R}-\mathrm{O}-\mathrm{W}$ for $21,375.13 \mathrm{f} / 4.05 \mathrm{mi}$ of a single-phase powerline extension for 12 families on Phase I of the White Ridge Powerline. Ground disturbing activities will include installation of utilities.
b. Existing Data Review: As part of this project, the archival data of the Navajo Nation Historic Preservation Department (NNHPD) in Window Rock were consulted. Within $1 \mathrm{~km}(0.05 \mathrm{mi})$ of this project, 18 previously completed projects are known to have taken place (HPD\# 79-006, 79-112, 79-256, 80-108, 80-407, 89-029, 89-259, 93-044, 94-288, 98-819, 02625, 03-434, 03-499, 03-760, 04-732, 06-1004, 06-1006 and 07-084) and six sites are known to exist (NM-R-17-01, NM-R-17-02, NM-R-17-03, LA 68905, LA112496and SJC 511). A Traditional Cultural Property (TCP) Record Search was conducted on July 22, 2014. No TCPs are known to exist in the project area.
c. Area Environmental and Cultural Setting: The project area is in the White Ridge area of the Littlewater Chapter. The project is located in the southern portion of the San Juan Basin and is characterized as a broad open valley surrounded in the distance by flat-topped sandstone mesas. The San Juan Basin is bounded by the Chaco Slope on the south. The major geological features of the area are the Continental Divide, Borrego Pass, and Heart Butte. The project area consists of low hills and ridges with gentle slopes. The project area consists of grasslands and scattered stands of juniper and pinyon. Vegetation consists of buffalo berry, four-winged saltbush, gram grass, hedgehog cactus, pinyon, juniper, prickly pear cactus, Russian thistle, snakeweed, and various grasses.
d. Field Methods: Ms. Debbie Olivar, Engineering Services Manager, Continental Divide Electric Cooperative, Inc., supplied the project location map to the author. The project area was flagged by T \& D Services and all PI stakes were found at the time of the inventory. The area was investigated using a Class III $(100 \%)$ level pedestrian survey strategy. The area was investigated using a Class III ( $100 \%$ ) level pedestrian survey strategy. A $100 \mathrm{ft} / 30.5 \mathrm{~m}$ wide survey corridor on Indian Allotted land ( 23.13 ac ), TNT ( 21.63 ac ), and a 130 ft 39.6 m wide survey corridor on BLM land ( 5.60 ac ), centered on the powerline R-O-W was inspected by walking along one side and returning on the opposite side. The fieldwork was conducted by author and Ms. Lucinda A. Henry, Littlewater Chapter R-O-W Agent. A total of 50.36 acres was inspected during the cultural resource inventory. The staked powerline location was rechecked on September 25, 2014 after the legal survey was completed. The author interviewed following Chapter Officials, Staff, and residents throughout the inventory regarding TCP's and none were identified near the area. The BLM portion of the project has been submitted to the Farmington District Office of the BLM for cultural resource compliance.
13. CULTURAL RESOURCE FINDINGS:
a. Location/ldentification of Each Resource: Twelve in-use sites (IUS-1-12) and two sites (NM-R-17-6 and NM-R-177) were identified within the proposed project area. See page 8.
b. Evaluation of Significance of Each Resource: The in-use sites IUS-1 through IUS-12 do not meet the 50 year guideline for inclusion into the National Register of Historic Places. Sites NM-R-17-6 and NM-R-17-7 appear to be eligible for the National Register of Historic Places under criterion "d": No historic properties will be affected.
14. MANGEMENT SUMMARY (RECOMMENDATIONS): Notice to proceed for the undertaking is recommended.
15. CERTIFICATION:

SIGNATURE:


Direct Charge Name: Denise R.E. Copeland October 13, 2015 Date


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A CULTURAL RESOURCES INVENTORY OF THE WHITE RIDGE POWERLINE PHASE I, LITTLEWATER CHAPTER, McKINLEY COUNTY, NEW MEXICO

DCD1 14-001

October 13, 2015

## PREPARED BY:

Denise R. E. Copeland, Principal Archaeologist
Capital Improvement Office
Navajo Nation Division of Community Development
P.O. Box 335

Fruitland, New Mexico 87416

SUBMITTED TO:
Navajo Nation Historic Preservation Officer
Historic Preservation Department
Cultural Resource Compliance Section
Navajo Nation Division of Resources
P.O. Box 4950

Window Rock, Arizona 86515

## PREPARED FOR:

Capital Improvement Office
Navajo Nation Division of Community Development
P.O. Box 1510

Window Rock, Arizona 86515
928 871-6509
and
Debbie Olivar
Continental Divide Electric Cooperative, Inc.
P. O. Box 1087

Grants, New Mexico 87020
505 285-6656
and

Genevieve Castillo
Littlewater Chapter
P. O. Box 1898

Crownpoint, New Mexico 87313
505 786-2120

# ABSTRACT <br> <br> A CULTURAL RESOURCES INVENTORY OF THE <br> <br> A CULTURAL RESOURCES INVENTORY OF THE WHITE RIDGE POWERLINE PHASE I, LITTLEWATER CHAPTER, McKINLEY COUNTY, NEW MEXICO 

DCD1 14-001

On behalf of the Capital Improvement Office of the Navajo Nation Division of Community Development, the Littlewater Chapter and the Continental Divide Electric Cooperative, Inc; a cultural resources inventory has been completed for the powerline extension for 12 homes. The Bureau of Indian Affairs, Navajo Area Office is the lead agency for meeting the requirements of Section 106 of the National Historic Preservation Act for Tribal Trust (TNT) Land and Indian Allotment Land. The Bureau of Land Management is the lead agency for meeting the requirements of Section 106 of the National Historic Preservation Act for the Bureau of Land Management Land.

The fieldwork was conducted by Denise R. E. Copeland of the Capital Improvement Office and Lucinda A. Henry, R-O-W Agency for Littlewater Chapter on January 6, 8, 9; April 2; September 25, 2014; and March 31, 2015. The project area is located eastern portion of the Littlewater Chapter. The specific location of the project area is depicted on U.S.G.S. quad map: Laguna Castillo, New Mexico 1963, and Borrego Pass, New Mexico, 1963. The legal location is in T 16 N, R 11 W in Sections 2, 3, 11, 12, and 13, in McKinley County, New Mexico. The land status of the project area is Tribal Trust, Indian Allotted and BLM. A total of 50.36 acres of land was inspected for this project.

A total 15 cultural resources were located within the project area. These resources include 13 in-use sites (IUS-1 to 13), and two newly recorded sites (NM-R-17-6 and NM-R-17-7). Data on traditional cultural properties (TCP's) were collected by interviewing residents being served at their homes, and the following Chapter Officials: George S. Jim, President, June Barbone, Secretary/Treasurer and Genevieve Castillo, Chapter Manager, at the Littlewater Chapter House.

The in-use sites (1-12) do not appear to possess integrity and/or are less than 50 years old, and/or do not appear to meet an exception to the general exclusions. Sites NM-R-17-6 and NM-R-17-7 appear to be eligible for the National Register of Historic Places under criterion " $\mathrm{d}^{\text {" }}$. The sites do not meet the age criterion and are not of "archaeological interest" and do not merit protection under ARPA:

As the project is currently designed, the undertaking should have no effect on significant historic properties and a notice to proceed is recommended.

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# A CULTURAL RESOURCES INVENTORY OF THE WHITE RIDGE PHASE I POWERLINE PROJECT, LITTLEWATER CHAPTER, MC KINLEY COUNTY, NEW MEXICO 

## INTRODUCTION

On behalf of the Littlewater Chapter and the Capital Improvement Office of the Navajo Nation Division of Community Development, a cultural resources inventory has been completed for the White Ridge Powerline Extension Phase I. This work was conducted to evaluate the potential for this undertaking to effect significant cultural properties. The Bureau of Indian Affairs, Navajo Area Office is the lead agency for meeting the requirements of Section 106 of the National Historic Preservation Act for Tribal Trust (TNT) Land and Indian Allotment Land. The Bureau of Land Management is the lead agency for meeting the requirements of Section 106 of the National Historic Preservation Act for the Bureau of Land Management Land.

The fieldwork was conducted by Denise R. E. Copeland of the Capital Improvement Office and Ms. Lucinda A. Henry, Littlewater Chapter R-O-W Agent on January 6, 8, 9; April 2; September 25, 2014; and March 31, 2015. The project area is located southeast of the Littlewater Chapter House along the White Ridge Road.

## DESCRIPTION OF UNDERTAKING

The undertaking will involve the construction of ca. 4.05 mi of single-pole 14.4 kv overhead electrical distribution lines. The project area was previously, legally surveyed and flagged by the engineering company, T \& D Services, Albuquerque, New Mexico. The ground disturbance activities will include the placement of power poles and periodic patrol for repairs and routine maintenance conducted by the Continental Divide Electric Cooperative, Grants, New Mexico. BIA/Navajo Region is the lead agency for the project. Approximately 15 families will be served by this project. The right-of-way will be $6.1 \mathrm{~m}(20 \mathrm{ft})$ wide on Tribal Trust (TNT) Land and Indian Allotment Land. The right-of-way will be $9.1 \mathrm{~m}(30 \mathrm{ft})$ wide on BLM Land.

Proposed construction and maintenance activities will include the following:

1. Poles will be hauled to the project area by truck and pole trailer, where they will be distributed at intervals of approximately 400 feet apart along the right-of-way.
2. A construction crew will then attach cross-arms, insulators, ground wires, and other necessary hard ware to each pole prior to erection.
3. A truck-mounted auger will excavate holes measuring about 18 inches in diameter and averaging 5-6 feet deep for each pole location. A similar hole will be excavated for any necessary anchors. A boom, also mounted on the truck, will then raise each pole into its freshly augered hole. The pole will then be aligned and plumbed followed immediately by back filling and tamping the dirt spoils into the hole.
4. After the poles are erected, conductive wire will be reeled off truck-mounted cabie spools to be lifted and strung onto each pole. Tension will then be applied to the cable at which time it will then be attached to insulators on the poles
5. The construction crew will properly remove and dispose of all debris resulting from activities associated with construction. Surface disturbance will be confined to the approved rights-of-way and existing roads. Generally, trees will not be cut except where necessary for safety. The rights-of-way will not be bladed and will be reseeded and reclaimed in accordance with Tribal and Federal stipulations.

A line by line description of the line lengths and project vs. survey area is given in Table 1. The proposed Right-of-way is ca. 10.25 acres (TNT 4.33 acres, IA 4.63 acres and BLM 1.29 acres). A total of 50.36 acres was inspected for cultural resources in association with the powerline project.

TABLE 1
Line by Line Description of the Powerline

| Line \# | Land Status | Length of Line |  | ROW <br> Acres | Survey Corridor Acres |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | \# of Feet | Meters |  |  |
| Line-A | TNT | 8,616.09 | 2626.18 | 3.96 | 19.78 |
|  | BLM | 1,875.66 | 571.70 | 1.29 | 5.60 |
|  | Indian Allotment | 7,251.48 | 2,210.25 | 3.33 | 16.65 |
| Tap A-1 | Indian Allotment | 1,787.21 | 544.74 | 0.82 | 4.10 |
|  | TNT | 454.26 | 138.46 | 0.21 | 1.04 |
| Tap A-1a | Indian Allotment | 349.92 | 106.66 | 0.16 | 0.80 |
| Tap A-2 | Indian Allotment | 689.98 | 210.31 | 0.32 | 1.58 |
| Tap A-3 | TNT | 350.53 | 106.84 | 0.16 | 0.81 |
|  | TOTAL | 21,375.13 | 6,515.14 | 10.25 | 50.36 |

## PROJECT LOCATION

The project location is located within the Littlewater Chapter of the BIA Eastern Agency Checkerboard area of the Navajo Indian Reservation (Figure 1). The project area is located 2.33 mi to the southeast of the Littlewater Chapter House. The specific location of the project area is depicted on U.S.G.S. quad maps: Laguna Castillo, New Mexico 1963, and Borrego Pass, New Mexico, 1963, (Figure 2). The legal location is in T $16 \mathrm{~N}, \mathrm{R} 11 \mathrm{~W}$ in Sections 2, 3, 11, 12, and 13, in McKinley County, New Mexico. The land status of the project area is Tribal Trust, Indian Allotted and BLM. Line by line legal descriptions of the project are given in Table 2 and the UTM coordinates for the project are given in Table 3.


## CHAPTER

Figure 1: General Location of the White Ridge Powerline.


Figure 2: Specific Location of Points Along the White Ridge Powerline, Phase 1. Map is a composite of 7.5' Quadrangles "Laguna Castilo Lake, NM 1963 and Borrego Pass, NM 1963."

TABLE 2
Legal Description of the Powerline

| Location | T/R | Section | Land Status | Map |
| :---: | :---: | :---: | :---: | :---: |
| Line A | T16N, R11W | 3 | TNT | Laguna Castillo, NM |
|  |  | 2 | BLM |  |
|  |  | 11 | TNT |  |
|  |  |  | IA 279574 |  |
|  |  | 12 | IA 983 | Laguna Castillo, NM Borrego Pass, NM |
|  |  | 13 | IA 1752 | Borrego Pass, NM |
|  |  |  | TNT |  |
| Tap A-1 |  | 11 | IA 279574 | Laguna Castillo, NM |
| тар A-1 |  |  | TNT |  |
| Tap A-1a |  | 11 | IA 279574 | Laguna Castillo, NM |
| Tap A-1a |  |  | TNT |  |
| Tap A-2 |  | 12 | TNT | Laguna Castillo, NM |
|  |  |  | IA 983 |  |
| Tap A-3 |  | 12 | TNT | Borrego Pass, NM |

TABLE 3
UTM Coordinate Locations of the Powerline
(NAD 83, Zone 13)
Line
Point Northing
Easting
U.S.G.S Quad Map

| Line-A BOP | 1 | 3948932 | 229472 |
| :--- | :--- | :--- | :--- |
| Line-A | 2 | 3948840 | 229531 |
| Line-A | 3 | 3948290 | 230075 |
| Line-A | 4 | 3947878 | 230481 |
| Tap A-1 BOP | 5 | 3947759 | 230992 |
| Tap A-1a BOP | 6 | 3947669 | 230982 |
| Tap A-1a EOP | 7 | 3947706 | 230880 |
| Tap A-1 | 8 | 3947371 | 230942 |
| Tap A-1 EOP | 9 | 3947259 | 230840 |
| Line A | 10 | 3947686 | 231308 |
| Tap A-2 BOP | 11 | 3946479 | 231607 |
| Tap A-2 | 12 | 3946506 | 231712 |
| Tap A-2 EOP | 13 | 3946407 | 231747 |
| Line-A | 14 | 3945739 | 231788 |
| Tap A-3 BOP | 15 | 3944986 | 231870 |
| Tap A-3 EOP | 16 | 3945003 | 231977 |
| Line-A EOL | 17 | 3944725 | 231903 |$\quad$ Borrego Pass, NM $\quad$|  |
| :---: |

## AREA ENVIRONMENTAL AND CULTURAL SETTING

The project area is in the White Ridge area of the Littlewater Chapter. The project is located in the southern portion of the San Juan Basin and is characterized as a broad open valley sumrounded in the distance by flattopped sandstone mesas. The San Juan Basin is bounded by the Chaco Slope on the south. The major geological features of the area are the Continental Divide, Borrego Pass, and Heart Butte. The project area consists of low hills and ridges with gentle slopes that vary for $0-10 \%$.

The elevation within the powerine ranges from 6800 ft to 7000 ft above mean sea level. Several unnamed drainages flow through the project area to the north. The project area consists of grasslands and scattered stands of juniper and pinyon. Vegetation consists of buffalo berry, four-winged saltbush, grama grass, hedgehog cactus, pinyon, juniper, prickly pear cactus, Russian thistle, snakeweed, and various grasses. The general area is characterized by disturbances of dirt and gravel roads, erosion, fence lines, foot trails, livestock grazing, pipelines, trash debri along roads, and waterlines.

## EXISTING DATA REVIEW

As part of this project, the archival data of the Navajo Nation Historic Preservation Department (NNHPD) in Window Rock, Arizona, were consulted. Within $1 \mathrm{~km}(0.05 \mathrm{mi})$ of this project, 18 previously completed projects are known to have taken place (HPD\# 79-006, 79-112, 79-256, 80-108, 80-407, 89-029, 89-259, 93-044, 94-288, 98-819, 02-625, 03-434, 03-499, 03-760, 04-732, 06-1004, 06-1006 and 07-084) and six sites are known to exist (NM-R-17-01, NM-R-17-02, NM-R-17-03, LA 68905, LA112496and SJC 511).

## FIELD METHODS

Ms. Debbie Olivar, Engineering Services Manager, of the Continental Divide Electric Cooperative, Inc., of Grants, New Mexico, supplied the project location map to the author. The project area was previously flagged by T \& D Services, Albuquerque, New Mexico, and all PI stakes were found at the time of the inventory. The area was investigated using a Class III ( $100 \%$ ) level pedestrian survey strategy. A 100 ft 30.5 m wide survey corridor on Indian Allotted land ( 23.13 ac ), TNT ( 21.63 ac ), and a $130 \mathrm{ft} / 39.6 \mathrm{~m}$ wide survey corridor on BLM land ( 5.60 ac ), centered on the powerline R-O-W was inspected by walking along one side and returning on the opposite side. The fieldwork was conducted by Denise R. E. Copeland of the Capital Improvement Office and Ms. Lucinda A. Henry, Littlewater Chapter R-O-W Agent on January 6, 8, 9; and April 2, 2014. A total of 50.36 acres was inspected during the cultural resource inventory. T \& D Services completed the legal Survey on September 25, 2014, and March 31, 2015 and the archaeologist rechecked the staked powerline location. For the TNT Land, and Indian Allotted Land; the BIA/NR is the lead agency for the project. The BLM portion of the project has been submitted to the Farmington District Office of the BLM for cultural resource compliance.

The sites (NM-R-17-6 and NM-R-17-7) were documented newly recorded site by using a Silva Ranger hand-held compass and a 100 m long measuring tape. No artifact collections were made and photographs were taken.

Data on traditional cultural properties (TCP's) were collected by interviewing residents being served at their homes, and the following Chapter Officials: George S. Jim, President, June Barbone, Secretary/Treasurer and Genevieve Castillo, Chapter Manager, at the Littlewater Chapter House.

## RESOURCE DEFINITIONS

The following describe the NNHPD definitions for cultural resources (NNHPD Permit Package 2015).
Isolated Occurrence: Any non-structural remains of a single event; alternatively, any non-structural assemblage of approximately 10 or fewer artifacts or other material within an area of approximately 10 square meters or less, especially if it is of questionable human origin, if it appears to be the result of fortuitous causes, or it lacks integrity. Rock art, burials, sacred places, and formal features are not recorded as isolated occurrences.

Traditional Cultural Properties: These are places with no physical material remains. Demonstrable sacred places with material remains are recorded as sites and evaluated appropriately. A sacred place is defined as a place that has traditionally been considered important to an Indian tribe or a member thereof, because of a religious event that happened there, because it played a part in life-cycle rituals, because it contains specific natural products of cultural or religious importance, because it figures in or is mentioned in traditional folklore and sacred songs, because it is considered the dwelling place or embodiment of spiritual beings, because it is conducive to communication with spiritual beings. Or because it has other specified and continuing significance in Indian religion or culture. This importance may be of uni-tribal or multi-tribal importance, or may be considered important only to smaller segments of the society, such as chapters, clans, families or individuals.

Site: The location of an event, belief, or activity, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself maintains historic, archaeological, or traditional cultural value regardless of the value of any existing structure. Operationally, a site is an isolated occurrence. (Note: does not include isolated historic trash dumps less than ten to twenty years old).

## CULTURAL RESOURCE FINDINGS

Fifteen cultural resources were located within the project area. These resources include 12 in-use sites (IUS-112), two newly recorded sites (NM-R-17-6 and NM-R-17-7). The homeowners provided the dates of the in-use sites (1-12). The dates of homes and the description information are shown in Table 4. The specific locations of the cultural resources in the project area are depicted on U.S.G.S. quad maps: Borrego Pass, New Mexico, 1963 and Laguna Castillo, New Mexico 1963, (Figure 3).

TABLE 4
In-Use Sites

| Line | IUS | Description |
| :---: | :---: | :---: |
| Line A | 1 | Thompson Homesite/Frame house (ca. 1983) with frame bathroom addition (2001), stone corral (2002) |
| Line A | 2 | Jimmy Jr. and Arlene Augustine/Two trailers 2010's and a tipi ring. |
| Line A | 3 | Jimmy Sr. and Dorothy Augustine/Frame stucco house with B/A (1973), rock oven, corral (2005), and a rock hogan. |
| TapA-1 | 4 | Veronica Garcia/Frame hogan (2003), trailer (2011) |
| Tap A-1a | 5 | Tomson Largo/Frame house (1983) with an addition (2001), shed, stone corral (2002) |
| Tap A-1 | 6 | Virginia Tom/Trailer (1980's) |
| Tap A-1 | 7 | Herman Tom/Trailer (1970's) |
| Tap A-1 | 8 | Virgilene Tom/Trailer with two frame additions (1970's) |
| Line A | 9 | Lolita Garica/Frame hogan (ca1990) with a bath addition \& a frame addition (2005) |
| Tap A-2 | 10 | Annie/Angeline Burnside/Stone hogan (1980's) with frame bathroom addition, stone hogan (1960's), frame house (1970's), stone house (1980's) and corral. |
| Tap A-3 | 11 | Marcella Chavez/Frame hogan and an outhouse (2011) |
| Line A EOP | 12 | Lucy Yazzie/Two stone hogans and a frame house (ca. 1980's) |



Figure 3: Specific Location of the Cultural Resources along White Ridge Powerline, Phase I. Map is a composite of 7.5' Quadrangles "Laguna Castillo Lake, NM 1963 and Borrego Pass, NM 1963."

## NEWLY DOCUMENTED SITES:

SITE NO.: NM-R-17-6
LEGAL LOCATION: SW $1 / 4$ of Sec. 2, T 16 N, R 11 W, N.M.P.M.
UTM: NAD 83 Zone 13, N 3948 070m, E 230 332m
LAND STATUS: Bureau of Land Management
SITE ENVIRONMENT: The site is located in an un-named drainage south of the White Ridge Road.
SITE SIZE (L $\times$ W) $15 \mathrm{~m} \times 75 \mathrm{~m} \quad$ TOTAL AREA (Sq. m): 942 m
SITE DESCRIPTION: Site consists of historic dam/water control feature (Feature 1). Feature 1 is a constructed of unshaped sandstone slabs, 45 m long and 2 courses wide (ca. 2 m ) and a dirt berm measuring 5 m wide and 45 m long. The dam was constructed of local unshaped sandstone blocks and was placed a across a drainage. The dam has been breached on the west side of the stone portion of the feature and no longer controls the flow of water. No artifacts were found associated with the feature. The site is found in a level area in an unnamed drainage south of the White Ridge Road. No artifacts were found at the site.

SITE NO.: NM-R-17-7
LEGAL LOCATION: NE $1 / 4$ of Sec. 11, T 16 N, R 11 W, N.M.P.M.
UTM: NAD 83 Zone 13, N 3947 629m, E 231 408m
LAND STATUS: Tribal Trust
SITE ENVIRONMENT: The site is located on a northeast trending ridge.
SITE SIZE (L x W) $50 \mathrm{~m} \times 70 \mathrm{~m} \quad$ TOTAL AREA (Sq. m): 2,900 m
SITE DESCRIPTION: The site is a Historic Navajo habitation with four features. Mary Chavez and Helen Yazzie occupied the site in the 1950's. Features 1,3 and 4 have been dismantled and move to new location and only the foundation remain. Feature 1 consisting of a foundation of paving sand stone slabs measuring $4 \times 4 \mathrm{~m}$. No artifacts were found with this feature. Feature 2 consists of collapsed sandstone oven measuring ca. one meter diameter with visible oxidation on the sandstone. Feature 3 is hogan ring marked with unshaped sandstone blocks measuring 5 meters in diameter. Two 16 oz pop bottle were found in the feature. Feature 4 is hogan ring marked with unshaped sandstone blocks measuring 4.5 meters in diameter. No artifacts were found with the feature. Other artifacts on the site included metal can fragments, metal fender of a 1950's truck, stove fragments and clear glass fragments.

## Traditional Cultural Properties

Data on traditional cultural properties (TCP's) were collected by interviewing residents being served at their homes, and the following Chapter Officials: George S. Jim, President, June Barbone, Secretary/Treasurer and Genevieve Castillo, Chapter Manager, at the Littlewater Chapter House. No TCP's were known or located along the powerline extension

## EVALUATION OF SIGNIFICANCE

The historic properties have been evaluated for their significance in regards to the National Register of Historic Places, the Archaeological Resources Protection Act, and the American Indian Religious Freedom Act.

## National Register

The National Register of Historic Places was created by the National Register Preservation Act in 1966. The Register was to be "...composed of districts, sites, buildings, structures and objects significant in American history, architecture, archaeology, engineering, and culture (Titte I, Sec. 101)". A set of criteria was later established by which properties could be evaluated to determine if they merited placement on the Register. These regulations or guidelines are expressed in 36 CFR 60.4 and are as follows:


Figure 4: Plan Map of Site NM-R-17-6


Figure 5: Plan Map of Site NM-R-17-7

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in district sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and
(a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
(b) that are associated with the lives of persons significant in our past; or that embody the distinctive characteristics of a type, period, or method of construction,
(c) or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
(d) that have yielded, or may be likely to yield information important in prehistory or history.

There are certain classes of properties that are normally not considered eligible for Register consideration that include cemeteries, birthplaces or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original location, reconstructed historic buildings, buildings primarily commemorative in nature, and properties that have significance within the past 50 years. There are exceptions to these general exclusion guidelines (see 36 CFR 60.4).

Coupled with the above general criteria, the criteria of integrity must also be met for Register consideration. In this category integrity is evaluated in terms of its physical and locational values: does the site or its features possess the integrity needed to allow the site to meet the appropriate criterion for which it is considered significant? As an example prehistoric site that might be significant under criterion " d " but has been apparently completely disturbed would probably not be considered to have any sufficient integrity for the fruifful investigation of important scientific question and would thus not be considered eligible for the Register. As another example, an old traditional hogan may be considered eligible for the Register under criterion " $c$ " as embodying the distinctive characteristics of a type, period, or method of construction. If that hogan is surrounded by modern cinderblock houses and trailers, thus disrupting integrity of location, setting, and feeling, it could still be considered eligible for the Register if those aspects of integrity that directly relate to its significance under criterion " $c$ " (e.g., design, materials, and workmanship), are intact.

The following presents a criterion-by-criterion evaluation of the cultural resources recorded by this project.
Criterion A: Sites NM-R-17-6 and NM-R-17-7 are not known to be associated with events that are significant in our past.
Criterion B: Sites NM-R-17-6 and NM-R-17-7 are not known to be associated with individuals that are significant in our past.
Criterion C: Sites NM-R-17-6 and NM-R-17-7 do not appear to represent a significant and distinguishable entity whose components may lack individual distinction.
Criterion D: Sites NM-R-17-6 and NM-R-17-7 may be likely to yield information important in history.

## Exclusions: None

Eligible Sites: Sites NM-R-17-6 and NM-R-17-7 are eligible for the National Register of Historic Places:
District Consideration: A District is defined as "...possessing a significant concentration, linkage, or continuity of sites, buildings, structures or objects united historically or aesthetically by plan or physical development (National Park Service 1986:41)". Because an exhaustive inventory and documentation program has not been completed, and the exact limits of the community are not yet known, the exact nature of any district boundary cannot be suggested at this time.

## Archaeological Resources Protection Act

Archaeological Resources Protection Act (ARPA) was established in 1979 with the express purpose being in part "...to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites which are on public lands and Indian lands...". For a property to qualify for protection under ARPA, it must
qualify as an "archaeological resource", which is defined as "... any material remains of human life or activity which are capable of providing scientific or humanistic understandings of past human behavior, cultural adaptation, and related topics through the application of scientific or scholarly techniques..."

Sites NM-R-17-6 and NM-R-17-7 do not meet the age criterion and are not of "archaeological interest" and do not merit protection under ARPA:

## American Indian Religious Freedom Act

The American Indian Religious Freedom Act (AIRFA) was established in 1978. Its purpose was to establish as United States policy the protection and the preservation of Native American rights to practice their traditional religions. The freedom of worship is to include but not be "...limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonies and traditional rites (Sec. 1)". Though there are a few specific examples and some generalizations that may be made, the identification of resources associated with this project that may have some application to AIRFA is difficult at best.

Sites NM-R-17-6 and NM-R-17-7 do not appear to be important under AIRFA.

## DETERMINATION OF EFFECT

Pursuant to 36 CR 800.9, the undertaking has been evaluated for its effects on potentially National Register significant historic properties. This evaluation is also considered applicable to ARPA and AIRFA values as well.

Provided that the management recommendations discussed below are followed, this undertaking should have no effect on sigrificant historic properties.

## MANAGEMENT RECOMMENDATIONS

It is recommended that compliance be granted for this undertaking. Each site and the condition, if any, for making the recommendations are presented below.

## Site Specific Recommendations:

Management recommendations for all the sites occurring within the project area are summarized in Table 7. The sites are not threatened by the undertaking, however, some restrictions of construction activities around the sites have been proposed to help ensure the integrity of all potentially Register eligible properties to help ensure compliance.

TABLE 6
Management Recommendations for the Sites in the Project Area

| Site Number | Location | Recommendation |
| :--- | :--- | :--- |
| NM-R-17-6 | The site located along Line A powerline | The site boundary will be flagged for <br> avoidance prior to any construction and <br> no further work is needed. |
| NM-R-17-7 | The site located along Line A powerline | The site boundary will be flagged for <br> avoidance prior to any construction and <br> no further work is needed. |

## General Project Recommendations

If any previously undetected cultural resources are discovered during the undertaking (e.g., pottery, bone, stone tools), all activity should cease in that area and the Navajo Nation Historic Preservation Officer (928 871-7880) should be immediately notified. Upon inspection of the remains, direction on how to proceed will be given pursuant to 36 CFR 800.11.

Upon completion of the project, the location of the significant cultural values within or directly adjacent to the final Right-of-Way should be placed on the final "as builts". These plans should carry the following or a similar notice: "Caution. Unauthorized disturbance of archaeological sites is prohibited. Criminal and civil penalties may apply". A copy of these final plans should be submitted to the Navajo Nation Historic Preservation Department for placement with the project file.

## REFERENCES

Navajo Nation Historic Preservation Department
2015 Navajo Nation Policy to Protect Traditional Cultural Properties. NNHPD, Window Rock, Arizona.
2015 Interim Fieldwork and Report Standards Guidelines, NNHPD, NNHPD, Window Rock, Arizona.
Van Valkenburgh, Richard F.
1941 Dine Bikeyah, U.S. Dept. of Interior, U.S. Indian Service, Navajo Agency, Window Rock, Arizona.

## Appendix

NAVAJO NATION ARCHAEOLOGY DEPARTMENT
Site Survey and Management Forms

# NAVAJO NATION ARCHAEOLOGY DEPARTMENT 

## Site Survev and Management Forms

## SITE NO.: NM-R-17-6 DATE RECORDED: April 02, 2014 COMPANY: CIO/DCD

ARCHAEOLOGIST: Denise R. E. Copeland
PROJECT NO. AND NAME: A Cultural Resource Inventory of the White Ridge Powerline Phase I, Littlewater Chapter, McKinley County. New Mexico DCD14-001

LEGAL LOCATION: SW $1 / 4$ of Sec. 2, T 16 N, R 11 W, N.M.P.M.
UTM: Zone 13, N 3948 070m, E 230 332m
LAND STATUS: Bureau of Land Management
STATE: New Mexico County: McKinley CHAPTER: Littlewater
USGS MAPS REFERENCE AND DATE: Laguna Castillo, New Mexico 1963.
GROUND VISIBILITY: Good Visibility, General ground cover.
TOPOGRAPHY: The site crosses a northeast trending drainage.
DRAINAGE: The site crosses an un-named blue line drainage south of the White Ridge Road.
ELEVATION (ft): $6830 \mathrm{ft} / 2082 \mathrm{~m}$ SLOPEIDIRECTION: 3 degrees northeast SOIL TYPE: Sandy alluvial deposits.

VEGETATION PRESENT: The vegetation includes cocklebur, sage, prickly pear cactus, Russian thistle and various grasses.

CULTURAL AFFILIATION(S): Historic Unknown SITE TYPE: historic dam/water control feature
PERIOD(S) OF OCCUPATION (date if known): Unknown How dated?:
SITE SIZE (L*W): $15 \mathrm{~m} \times 75 \mathrm{~m} \quad$ TOTAL AREA (Sq. m): 942 m How determined?: Tape measured

## ARCHITECTURE PRESENT?: Yes

Describe: Historic dam/water control feature
ARTIFACTS OBSERVED/COUNTED?: No COLLECTION MADE?: No PHOTO TAKEN?: Yes
SITE DESCRIPTION: Site consists of historic dam/water control feature (Feature 1). Feature 1 is a constructed of unshaped sandstone slabs, 45 m long and 2 courses wide (ca. 2 m ) and a dirt berm measuring 5 m wide and 45 m long. The dam was constructed of local unshaped sandstone blocks and was placed a across a drainage. The dam has been breached on the west side of the stone portion of the feature and no longer controls the flow of water. No artifacts were found associated with the feature. The site is found in a level area in an unnamed drainage south of the White Ridge Road. No artifacts were found at the site.

CONDITION OF SITE: Fair (75\% undisturbed) Causes of Disturbance: Erosional and livestock grazing. The dam has been breached on the west portion of the site.

LOCATION OF SITE RELATIVE TO PROJECT AREA: The site is located on 27 m north of Line A of the powerline.

EXTENT OF INVESTIGATION TO DATE: Field recording only.

RESEARCH POTENTIAL: Good RECOMMENDATIONS: The site boundary will be flagged for avoidance prior to any construction and no further work is needed.

## SITE ASSESSMENT UNDER 36 CFR 60.4 (National Register):

INTEGRITY: The site does possess significant qualities of locational and physical integrity.
CRITERIAA-D: The site is not known to be associated with any events or persons that have made significant contributions to the broad patterns of our history or are significant in our past (criteria "a" and "b"), it does not appear to embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or that represents a significant distinguishable entity whose components may lack individual distinction (criterion " $c$ ", and has yielded or may to yield information important in history or prehistory (criterion "d").

EXCLUSIONS: N/A

## SITE ASSESSMENT UNDER ARPA:

The site is less than 100 years old and should not be considered an "archaeological resource" nor "of archaeological interest".

## SITE ASSESSMENT UNDER AIRFA: N/A

PROVIDE A SITE MAP: (Including site designation, north arrow, scale, recognizable features, landmarks and relationship to project area.) See attached map.

HOW CAN THE SITE BE REACHED?: See attached U.S.G.S. map.

OTHER COMMENTS: None.


Figure 1: Plan Map of Site NM-R-17-6


Figure 2: Specific Location of the Cultural Resources along White Ridge Powerline, Phase I. Map is a composite of 7.5' Quadrangles "Laguna Castillo Lake, NM 1963 and Borrego Pass, NM 1963."

# NAVAJO NATION ARCHAEOLOGY DEPARTMENT 

## Site Survev and Management Forms

## SITE NO: NM-R-17-7 DATE RECORDED: April 02, 2014 COMPANY: CIO/DCD

ARCHAEOLOGIST: Denise R.E. Copeland
PROJECT NO. AND NAME: A Cultural Resource Inventory of the White Ridge Powerline Phase I, Littlewater Chapter, McKinley County, New Mexico DCD14-001

LEGAL LOCATION: NE $1 / 4$ of Sec. 11, T 16 N, R 11 W, N.M.P.M.
UTM: NAD 83, Zone 13, N 3947 629m, E 231 408m LAND STATUS: Tribal Trust
STATE: New Mexico County: McKinley CHAPTER: Littlewater
USGS MAPS REFERENCE AND DATE: Laguna Castillo, New Mexico 1963.
GROUND VISIBILITY: Good Visibility, General ground cover.
TOPOGRAPHY: The site is located on a northeast trending ridge.
DRAINAGE: An un-named blue line drainage in $412 \mathrm{ft} / 126 \mathrm{~m}$ located southeast of the site.
ELEVATION (ft): $6900 \mathrm{ft} / 2103 \mathrm{~m}$ SLOPE/DIRECTION: 5 degrees east SOIL TYPE: Sandy alluvial deposits.
VEGETATION PRESENT: The vegetation includes sage, prickly pear cactus, Russian thistle and various grasses.
CULTURAL AFFILIATION(S): Historic 1950's SITE TYPE: Historic Navajo habitation
PERIOD(S) OF OCCUPATION (date if known): Unknown How dated?: Interview with granddaughter Angie Burnside

SITE SIZE (L * W): $50 \mathrm{~m} \times 70 \mathrm{~m}$ TOTAL AREA (Sg. m ): 2,900 m How determined?: Tape measured

## ARCHITECTURE PRESENT?: Yes

Describe: Stone pad/foundation ( $\mathrm{F}-1$ ), a sandstone oven ( $\mathrm{F}-2$ ), and two hogan rings ( $\mathrm{F}-3$ and $\mathrm{F}-4$ ).

## ARTIFACTS OBSERVED/COUNTED?: No COLLECTION MADE?: No PHOTO TAKEN?: Yes

SITE DESCRIPTION: The site is a Historic Navajo habitation with four features. Mary Chavez and Helen Yazzie occupied the site in the 1950's. Features 1, 3 and 4 have been dismantled and move to new location and only the foundation remain. Feature 1 consisting of a foundation of paving sand stone slabs measuring $4 \times 4 \mathrm{~m}$. No artifacts were found with this feature. Feature 2 consists of collapsed sandstone oven measuring ca. one-meter diameter with visible oxidation on the sandstone. Feature 3 is hogan ring marked with unshaped sandstone blocks measuring 5 meters in diameter. Two 16 oz pop bottle were found in the feature. Feature 4 is hogan ring marked with unshaped sandstone blocks measuring 4.5 meters in diameter. No artifacts were found with the feature. Other artifacts on the site included metal can fragments, metal fender of a 1950's truck, stove fragments and clear glass fragments.

Causes of Disturbance: Erosional and livestock grazing. Features 1, 3 and 4 have been dismantled and move to new location and only the foundation remain.

LOCATION OF SITE RELATIVE TO PROJECT AREA: The site is located on $60 \mathrm{ft} / 18 \mathrm{~m}$ east of Line A of the powerline.

EXTENT OF INVESTIGATION TO DATE: Field recording only.

RESEARCH POTENTIAL: Good RECOMMENDATIONS: The site boundary will be flagged for avoidance prior to any construction and no further work is needed.

## SITE ASSESSMENT UNDER 36 CFR 60.4 (National Register):

INTEGRITY: The site does possess significant qualities of locational and physical integrity.
CRITERIA A-D: The site is not known to be associated with any events or persons that have made significant contributions to the broad patterns of our history or are significant in our past (criteria "a" and "b"), it does not appear to embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or that represents a significant distinguishable entity whose components may lack individual distinction (criterion "c", and has yielded or may to yield information important in history or prehistory (criterion "d").

EXCLUSIONS: N/A

## SITE ASSESSMENT UNDER ARPA:

The site is less than 100 years old and should not be considered an "archaeological resource" nor "of archaeological interest".

## SITE ASSESSMENT UNDER AIRFA: N/A

PROVIDE A SITE MAP: (Including site designation, north arrow, scale, recognizable features, landmarks and relationship to project area.) See attached map.

HOW CAN THE SITE BE REACHED?: See attached U.S.G.S. map.

## OTHER COMMENTS: None.



Figure 1: Plan Map of Site NM-R-17-7


Figure 2: Specific Location of the Cultural Resources along White Ridge Powertine, Phase I. Map is a composite of 7.5' Quadrangles "Laguna Castillo Lake, NM 1963 and Borrego Pass, NM 1963."

## ARCHAEOLOGICAL INVENTORY REPORT DOCUMENTATION PAGE (HPD 2010)

## 1. HPD REPORT NO.:

2. TITLE OF REPORT: A Cultural Resource Inventory of the White Ridge Powerline Phase II, Littlewater Chapter, McKinley County, New Mexico

AUTHOR(S): Denise R.E. Copeland
5. CONSULTANT NAME AND ADDRESS:

Gen. Charge: Denise R.E. Copeland, Principal Archaeologist
Org. Name: Capital Improvement Office
Org. Address: P.O. Box 335
Fruitland, New Mexico 87416 Ph: 505 368-1059
8. SPONSOR NAME AND ADDRESS:
ind. Respon.: Debbie Olivar (See project for other Sponsors)
Org. Name: $\quad$ Continental Divide Electric Cooperative, Inc.
Org. Address: P.O. Box 1087
Grants, New Mexico 87020
Phone:
505 285-6656
3. FIELDWORK DATE(S): Jan. 9, 22, 24, \&

28, 2014; Feb. 26, 2014; and Sept. 25, 2014
4. REPORT DATE(S):

October 26, 2015
6. PERMIT NO.:

NTC
7. CONSULTANT REPORT NO.:

DCD 14-007
9. SPONSOR PROJECT NO.:

Work Orders \#: 50547

| 10. AREA OF EFFECT: | INT | $\underline{1 A}$ |
| ---: | :---: | :---: |
| AREA SURVEYED: | $\underline{5.86 \mathrm{ac}}$ | $\underline{8.33 \mathrm{ac}}$ |

11. LOCATION (MAP ATTACHED):
a. Chapter: Littlewater f. UTM Center: NAD 83, Zone 13; See Table 3
b. Agency: Eastern g. Legal: See Table 2
c. County: McKinley
h. 7.5' USGS Map(s): Borrego Pass, New Mexico 1963
d. State: New Mexico
i. Lead Agency: BIA/Navaio Region
e. Land Status: See Table 2
12. REPORT ATTACHMENTS:
a. Description of Undertaking: The undertaking consists of construction of $20 \mathrm{ft} / 6.1 \mathrm{mR}-\mathrm{O}-\mathrm{W}$ for $30,899.31 \mathrm{ft} / 5.85 \mathrm{mi}$. of a single-phase powerline extension for 15 families and one church on Phases II and III of the White Ridge Powerline. Ground disturbing activities will include installation of utilities.
b. Existing Data Review: As part of this project, the archival data of the Navajo Nation Historic Preservation Department (NNHPD) in Window Rock were consulted. Within $1 \mathrm{~km}(0.05 \mathrm{mi})$ of this project, 18 previously completed projects are known to have taken place (HPD\# 79-006, 79-112, 79-256, 80-108, 80-407, 89-029, 89-259, 93-044, 94-288, 98-819, 02625, 03-434, 03-499, 03-760, 04-732, 06-1004, 06-1006 and 07-084) and no sites are known to exist in the project area. A Traditional Cultural Property (TCP) Record Search was conducted on July 22, 2014. No TCPs are known to exist in the project area.
c. Area Environmental and Cultural Setting: The project area is in the White Ridge area of the Littlewater Chapter. The project is located in the southern portion of the San Juan Basin and is characterized as a broad open valley surrounded in the distance by flat-topped sandstone mesas. The San Juan Basin is bounded by the Chaco Slope on the south. The major geological features of the area are the Continental Divide, Borrego Pass, and Heart Butte. The project area consists of low hills and ridges with gentle slopes. Vegetation consists of buffalo berry, four-winged saltbush, hedgehog cactus, pinyon, juniper, prickly pear cactus, Russian thistle, snakeweed, and various grasses.
d. Field Methods: Ms. Debbie Olivar, Engineering Services Manager, Continental Divide Electric Cooperative, Inc., supplied the project location map to the author. The project area was flagged by T \& D Services and all PI stakes were found at the time of the inventory. The area was investigated using a Class III (100\%) level pedestrian survey strategy. A 100 $\mathrm{ft} / 30.5 \mathrm{~m}$ wide survey corndor on Indian Allotted land ( 41.65 ac ), and TNT (29.29 ac), centered on the powerline R-O-W was inspected by walking along one side and returning on the opposite side. The fieldwork was conducted by author and Ms. Lucinda A. Henry, Littlewater Chapter R-O-W Agent. A total of 70.94 acres was inspected during the cultural resource inventory. The staked powerline location was rechecked on September 25, 2014 after the legal survey was completed. The author interviewed following Chapter Officials, Staff, and residents throughout the inventory regarding TCP's and none were identified near the area.
13. CULTURAL RESOURCE FINDINGS:
a. Location/identification of Each Resource: Nineteen in-use sites (IUS-1-16) and one site (NM-R-32-32) were identified within the proposed project area. See page 6 of report.
b. Evaluation of Significance of Each Resource: The in-use sites IUS-1 to IUS-16 and the site NM-R-32-32 do not meet the 50 -year guideline for inclusion into the National Register of Historic Places. No historic properties will be affected.
14. MANGEMENT SUMMARY (RECOMMENDATIONS): Notice to proceed for the undertaking is recommended.
15. CERTIFICATION:


Direct Charge Name: Denise R.E. Cobeland


## TRADITONALCMLURA PROREAY MGPIRECORD SEARCMVERICATION FONM

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Futher consultation th iequfled, combit wint the thitwint:

There are no milipative measures. Froject may not procexd.

## A CULTURAL RESOURCES INVENTORY OF THE

 WHITE RIDGE POWERLINE PHASES II, LITTLEWATER CHAPTER, McKINLEY COUNTY, NEW MEXICODCD1 14-007

October 26, 2015
PREPARED BY:
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## ABSTRACT <br> A CULTURAL RESOURCES INVENTORY OF THE WHITE RIDGE POWERLINE PHASES II, LITTLEWATER CHAPTER, McKINLEY COUNTY, NEW MEXICO

DCD1 14-007

On behalf of the Capital Improvement Office of the Navajo Nation Division of Community Development, the Littlewater Chapter and the Continental Divide Electric Cooperative, Inc.; a cultural resources inventory has been completed for the powerline extension for 15 homes and one church. For the purposes of Tribal Trust (TNT) Land, and Indian Allotment Land on this project, the Bureau of Indian Affairs, Navajo Area Office is the lead agency for meeting the requirements of Section 106 of the National Historic Preservation Act.

The fieldwork was conducted by Denise R. E. Copeland of the Capital Improvement Office and Lucinda A. Henry, R-O-W Agency for Littlewater Chapter on January 9, 22, 24, 28; and February 26, 27, and September 25,2014 . The project area is located eastern portion of the Littlewater Chapter. The specific location of the project area is depicted on U.S.G.S. quad map Borrego Pass, New Mexico, 1963. The legal location is in T 16 N, R 11 W in Section 13 and T 16 N, R 10 W in Sections 17, 18, 19 and 20, in McKinley County, New Mexico. The land status of the project area is Tribal Trust, and Indian Allotted land. A total of 70.94 acres of land was inspected for this project.

A total 17 cultural resources were located within the project area. These resources include 16 in-use sites (IUS-1 to 16), and one newly recorded site (NM-R-32-32). Data on traditional cultural properties (TCP's) were collected by interviewing residents being served at their homes, and the following Chapter Officials: George S. Jim, President, June Barbone, Secretary/Treasurer and Genevieve Castillo, Chapter Manager, at the Littlewater Chapter House.

The in-use sites (1-16) do not appear to possess integrity and/or are less than 50 years old, and/or do not appear to meet an exception to the general exclusions. Site NM-R-32-32 is not eligible for the National Register of Historic Places the site does not meet the age criterion and is not of "archaeological interest" and does not merit protection under ARPA:

As the project is currently designed, the undertaking should have no effect on significant historic properties and a notice to proceed is recommended.

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## A CULTURAL RESOURCES INVENTORY OF THE WHITE RIDGE PHASES II POWERLINE PROJECT, LITTLEWATER CHAPTER, MC KINLEY COUNTY, NEW MEXICO <br> DCD1 14-007

## INTRODUCTION

On behalf of the Capital Improvement Office of the Navajo Nation Division of Community Development, the Littlewater Chapter and the Continental Divide Electric Cooperative, Inc.; a cultural resources inventory has been completed for the White Ridge Powerline Extension Phase II. This work was conducted to evaluate the potential for this undertaking to effect significant cultural properties. The Bureau of Indian Affairs, Navajo Area Office is the lead agency for meeting the requirements of Section 106 of the National Historic Preservation Act for Tribal Trust (TNT) Land and Indian Allotment Land.

The fieldwork was conducted by Denise R. E. Copeland of the Capital Improvement Office and Ms. Lucinda A. Henry, Littlewater Chapter R-O-W Agent on January 9, 22, 24, 28; and February 26, 27, and September 25, 2014. The project area is located southeast of the Littlewater Chapter House along the White Ridge Road.

## DESCRIPTION OF UNDERTAKING

The undertaking will involve the construction of ca. 5.85 mi of single-pole 14.4 kv overhead electrical distribution lines. The project area was previously, legally surveyed and flagged by the engineering company, T \& D Services, Albuquerque, New Mexico. The ground disturbance activities will include the placement of power poles and periodic patrol for repairs and routine maintenance conducted by the Continental Divide Electric Cooperative, Grants, New Mexico. BIA/Navajo Region is the lead agency for the project. Approximately 15 families and one church will be served by this project. The right-of-way will be 6.1 m ( 20 ft ) wide on Tribal Trust (TNT) Land and Indian Allotment Land.

Proposed construction and maintenance activities will include the following:

1. Poles will be hauled to the project area by truck and pole trailer, where they will be distributed at intervals of approximately 400 feet apart along the right-of-way.
2. A construction crew will then attach cross-arms, insulators, ground wires, and other necessary hard ware to each pole prior to erection.
3. A truck-mounted auger will excavate holes measuring about 18 inches in diameter and averaging $5-6$ feet deep for each pole location. A similar hole will be excavated for any necessary anchors. A boom, also mounted on the truck, will then raise each pole into its freshly augered hole. The pole will then be aligned and plumbed followed immediately by back filling and tamping the dirt spoils into the hole.
4. After the poles are erected, conductive wire will be reeled off truck-mounted cable spools to be lifted and strung onto each pole. Tension will then be applied to the cable at which time it will then be attached to insulators on the poles
5. The construction crew will properly remove and dispose of all debris resulting from activities associated with construction. Surface disturbance will be confined to the approved rights-of-way and existing roads. Generally, trees will not be cut except where necessary for safety. The rights-of-way will not be bladed and will be reseeded and reclaimed in accordance with Tribal and Federal stipulations.

A line by line description of the line lengths and project vs. survey area is given in Table 1. The proposed Right-ofway is ca. 14.19 acres (TNT 5.86 acres and IA 8.33 acres). A total of 70.94 acres was inspected for cultural resources in association with the powerline project.

## PROJECT LOCATION

The project location is located within the Littlewater Chapter of the BIA Eastern Agency Checkerboard area of the Navajo Indian Reservation (Figure 1). The project area is located ca. 5 mi to the southeast of the Littlewater Chapter House. The specific location of the powerline extension in the project area is depicted on U.S.G.S. quad map Borrego Pass, New Mexico, 1963 in Figure 2. The legal location is in T 16 N, R 11 W in Section 13 and T 16 N, R 10 W in Sections 17, 18, 19 and 20, in McKinley County, New Mexico. The land status of the project area is Tribal Trust, Indian Allotted. Line by line legal descriptions of the project are given in Table 2 and the UTM coordinates for the project are given in Table 3.


## 

## CHAPTER

Figure 1: General Location of the White Ridge Powerline.

TABLE 1
Line by Line Description of the Powerline

| Line \# | Land Status | Length of Line |  | ROW <br> Acres | Survey <br> Corridor <br> Acres |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | \# of Feet | Meters |  |  |
| Line B | TNT | 3,169.29 | 966.00 | 1.46 | 7.28 |
|  | Indian Allotment | 12,044.16 | 3,671.06 | 5.53 | 27.65 |
| Tap B-1 | Indian Allotment | 3,807.95 | 1,160.66 | 1.75 | 8.74 |
| Tap B-1a | Indian Allotment | 303.03 | 92.36 | 0.14 | 0.70 |
| Tap B-2 | Indian Allotment | 1,987.38 | 605.75 | 0.91 | 4.56 |
|  | TNT | 7,782.53 | 2,372.12 | 3.57 | 17.87 |
| Tap B-2a | TNT | 1,400.09 | 426.75 | 0.64 | 3.21 |
| Tap B-3 | TNT | 404.88 | 123.41 | 0.19 | 0.93 |
|  | TOTAL | 30,899.31 | 9,418.11 | 14.19 | 70.94 |


Figure 2: Specific Location of UTM Coordinates Along the White Ridge Powerline Phase II. Map is 7.5' Quadrangle

TABLE 2
Legal Description of the Powerline

| Location | T/R | Section | Land Status | Map |
| :---: | :---: | :---: | :---: | :---: |
| Line B | T16N, R11W | 13 | TNT | Borrego Pass, NM |
|  |  |  | IA 1754 |  |
|  | T16N, R10W | 18 | IA 980 |  |
|  |  |  | \|A 981 |  |
|  |  | 17 | IA 3081 |  |
|  |  | 17 | IA 3057 |  |
|  |  | 18 | TNT |  |
| Tap B-1 | T16N, R10W | 18 | IA 980 | Borrego Pass, NM |
|  |  | 19 | IA 3060 |  |
|  |  | 19 | IA 3062 |  |
| Tap B-1a | T16N, R10W | 19 | IA 3060 | Borrego Pass, NM |
| Tap B-2 | T16N, R10W | 18 | IA 981 | Borrego Pass, NM |
|  |  | 17 | IA 3081 |  |
|  |  | 20 | TNT |  |
| TAP B-2a | T16N, R10W | 20 | TNT | Borrego Pass, NM |
| Tap B-3 | T16N, R10W | 18 | TNT | Borrego Pass, NM |

TABLE 3
UTM Coordinate Locations of the Powerline (NAD 83, Zone 13)

| Line | Point | Northing | Easting | U.S.G.S Quad Map |
| :---: | :---: | :---: | :---: | :---: |
| Line-B BOL | 1 | 3944652 | 231924 | Borrego Pass, NM |
| Line-A | 2 | 3944727 | 232331 |  |
| Line-A | 3 | 3944857 | 232499 |  |
| Tap B-1 BOL | 4 | 3944898 | 233184 |  |
| Tap B-1 | 5 | 3944434 | 233178 |  |
| Tap B-1a BOL | 6 | 3943952 | 233276 |  |
| Tap B-1a EOL | 7 | 3943905 | 233197 |  |
| Tap B-1 EOL | 8 | 3943749 | 233301 |  |
| Tap B-2 BOL | 9 | 3944989 | 234691 |  |
| Line B | 10 | 3944995 | 234782 |  |
| Line B | 11 | 3945559 | 235066 |  |
| Line B | 12 | 3946081 | 234852 |  |
| Tap B-3 BOL | 13 | 3946033 | 234416 |  |
| Line B-3EOL | 14 | 3946142 | 234358 |  |
| Line B EOL | 15 | 3946023 | 234325 |  |
| Tap B-2 | 16 | 3944361 | 235180 |  |
| Tap B-2 | 17 | 3943805 | 235883 |  |
| Tap B-2a BOL | 18 | 3943710 | 236324 |  |
| Tap B-2a EOL | 19 | 3944114 | 236186 |  |
| Tap B-2 | 20 | 3943399 | 236694 |  |
| Tap B-2 EOL | 21 | 3942935 | 236407 |  |

## AREA ENVIRONMENTAL AND CULTURAL SETTING

The project area is in the White Ridge area of the Littlewater Chapter. The project is located in the southern portion of the San Juan Basin and is characterized as a broad open valley surrounded in the distance by flat-topped sandstone mesas. The San Juan Basin is bounded by the Chaco Slope on the south. The major geological features of the area are the Continental Divide, Borrego Pass, and Heart Butte. The project area consists of low hills and ridges with gentle slopes that vary for $0-10 \%$.

The elevation within the powerline ranges from 6900 ft to 7200 ft above mean sea level. Several unnamed drainage flow through the project area to the north. The project area consists of grasslands and scattered stands of juniper and pinyon. Vegetation consists of buffalo berry, four-winged saltbush, grama grass, hedgehog cactus, pinyon, juniper, prickly pear cactus, Russian thistle, snakeweed, and various grasses. The general area is characterized by disturbances of dirt and gravel roads, erosion, fence lines, foot trails, livestock grazing, pipelines, trash debri along roads, and waterlines.

## EXISTING DATA REVIEW

As part of this project, the archival data of the Navajo Nation Historic Preservation Department (NNHPD) in Window Rock, Arizona, were consulted. Within $1 \mathrm{~km}(0.05 \mathrm{mi})$ of this project, 18 previously completed projects are known to have taken place (HPD\# 79-006, 79-112, 79-256, 80-108, 80-407, 89-029, 89-259, 93-044, 94-288, 98-819, 02-625, 03434, 03-499, 03-760, 04-732, 06-1004, 06-1006 and 07-084) and no sites are known to exist in the project area. A Traditional Cultural Property (TCP) Record Search was conducted on July 22, 2014. No TCPs are known to exist in the project area.

## FIELD METHODS

Ms. Debbie Olivar, Engineering Services Manager, of the Continental Divide Electric Cooperative, Inc., of Grants, New Mexico, supplied the project location map to the author. The project area was previously flagged by T \& D Services, Albuquerque, New Mexico, and all PI stakes were found at the time of the inventory. The area was investigated using a Class III ( $100 \%$ ) level pedestrian survey strategy. A $100 \mathrm{ft} / 30.5 \mathrm{~m}$ wide survey corridor on Indian Allotted land ( 41.65 ac), and TNT ( 29.29 ac ), centered on the powerline R-O-W was inspected by walking along one side and returning on the opposite side. The fieldwork was conducted by Denise R. E. Copeland of the Capital Improvement Office and Ms. Lucinda A. Henry, Littlewater Chapter R-O-W Agent on January 9, 22, 24, 28; and February 26, 27, and September 25, 2014. A total of 70.94 acres was inspected during the cultural resource inventory. T \& D Services completed the legal Survey on September 25, 2014 and the archaeologist rechecked the staked powerline location. For the TNT Land, and Indian Allotted Land; the BIA/NR is the lead agency for the project.

The site (NM-R-32-32) was documented newly recorded site by using a Silva Ranger hand-held compass and a 100 m long measuring tape. No artifact collections were made and no photographs were taken.

Data on traditional cultural properties (TCP's) were collected by interviewing residents being served at their homes, and the following Chapter Officials: George S. Jim, President, June Barbone, Secretary/Treasurer and Genevieve Castillo, Chapter Manager, at the Littlewater Chapter House.

## RESOURCE DEFINITIONS

The following describe the NNHPD definitions for cultural resources (NNHPD Permit Package 2015).
Isolated Occurrence: Any non-structural remains of a single event: alternately, any non-structural assemblage of approximately 10 or fewer artifacts within an area of approximately 10 sq m or less, especially if it is of questionable human origin or if it appears to be the result of fortuitous causes. The number and/or composition of observed artifact classes are a useful rule of thumb for distinguishing between a site and an isolate. It seems unlikely, for exampie, that the presence of three artifact classes (e.g., lithic debitage, ground stone or sandstone fragments, and pottery) represents the remains of a single event. Similarly, it seems unlikely that two sherds from different vessels or two pieces of debitage from different parent materials, together with a small number of items from a second artifact class represent a single event.

Traditional Cultural Properties: A location of an event (a ceremony, belief, prayer, sweat lodge, plant gathering areas, and others as defined within the Navajo Nation Policy to Protect Traditional Cultural Properties) where the location itself maintains historic or traditional cultural value regardiess of the value of any existing structure. The Navajo Nation requires that a Traditional Cultural Property (TCP) NOT be recorded as a site.

Site: The location of an event, belief, or activity, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself maintains historic, archaeological, or
traditional cultural value regardless of the value of any existing structure. A site is anything that falls within the preceding definition and is more than an isolated occurrence. (Note: does not include isolated historic trash dumps less than ten to twenty years old).

## CULTURAL RESOURCE FINDINGS

Seventeen cultural resources were located within the project area. These resources include 16 in-use sites (IUS-1-16), and one newly recorded site (NM-R-32-32). The homeowners provided the dates of the in-use sites (1-16). The dates of homes and the description information are shown in Table 4. The specific locations of the cultural resources in the project area are depicted on U.S.G.S. quad maps: Borrego Pass, New Mexico, 1963 and Laguna Castillo, New Mexico 1963, (Figure 3).

| TABLE 4 In-Use Sites |  |  |
| :---: | :---: | :---: |
| Line | IUS | Description |
| Line B | 1 | Ariene Saunders/Frame hogan and an outhouse (2013) |
| Tap B-1 | 2 | Katherine Largo/Frame house, brick building w/ bathroom addition (1980's) |
| Tap B-1a | 3 | Curtis Sloan/Frame house, trailer and shed (1980's) |
| Tap B-1 | 4 | Benjamin Sloan/Frame house and an outhouse (1980's) |
| Line B | 5 | Louva Chavez/Frame grey house w/green roof (1980's), outhouse, brown frame stucco house(1980's) |
|  | 6 | Chee Largo/Cream frame house w/ bathroom addition (1980's) |
|  | 7 | Emerson Chavez/Cream Frame house w/brown roof (1980's), corral, and shed |
|  | 8 | Gracie Mescal/Grey frame house w/brown roof (1980's), solar power, and chicken coop |
| Tap B-3 | 9 | Lucita Yazzie/Trailer w/service pole (2000's) |
|  | 10 | Church/Gray frame building w/red trim - metal roof (1980's) |
|  | 11 | Fred Pablo/Rock house w/stucco frame addition (1970's), shed lean-to corral, sheep corral |
| Line B | 12 | Vicki Pablo/Tan frame house w/green roof (1990's) and an outhouse |
|  | 13 | Mary Pablo/Brown frame house (1980's), shed and a dog house |
| Tap B-2 | 14 | Dixie Largo/Cinder block house-red w/brown roof (1990's), tan metal warehouse in fenced area |
|  | 15 | Alexender Woody/Trailer, numberous cars (2000's) |
|  | 16 | Laura Yazzie/Frame House and a shed (1980's) |

## NEWLY DOCUMENTED SITE:

SITE NO.: NM-R-32-32
LEGAL LOCATION: NE $1 / 4$ of Sec. 18, T 16 N, R 10 W, N.M.P.M.
UTM: NAD 83 Zone 13, N 3946 072m, E 234 768m
LAND STATUS: Tribal Trust
SITE ENVIRONMENT: The site is located on northeast slope of a northwest trending ridge.
SITE SIZE ( $L \times W$ ) $4 \mathrm{~m} \times 5 \mathrm{~m}$ TOTAL AREA (Sq. m): 20 m
SITE DESCRIPTION: The site is a storage area for livestock dating about 1970's and consists of one feature ( $\mathrm{F}-1$ ) a pile of irregular sandstone blocks in an area $4 \times 4$ meters. The only artifact is a 55 gallon barrel cut down $1 / 4$ from the top. It appears to have been used as a feeder.

Figure 3: Specific Location of the Cultural Resources along Line B, Taps B-1, B-1a, B-2, B-2a and B-3 of the White



Figure 4: Plan View of Site NM-R-32-32

## EVALUATION OF SIGNIFICANCE

The historic properties have been evaluated for their significance in regards to the National Register of Historic Places, the Archaeological Resources Protection Act, and the American Indian Religious Freedom Act.

## National Register

The National Register of Historic Places was created by the National Register Preservation Act in 1966. The Register was to be "...composed of districts, sites, buildings, structures and objects significant in American history, architecture, archaeology, engineering, and culture (Titie I, Sec. 101)". A set of criteria was later established by which properties could be evaluated to determine if they merited placement on the Register. These regulations or guidelines are expressed in 36 CFR 60.4 and are as follows:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in district sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and
(a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
(b) that are associated with the lives of persons significant in our past; or that embody the distinctive characteristics of a type, period, or method of construction,
(c) or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
(d) that have yielded, or may be likely to yield information important in prehistory or history.

There are certain classes of properties that are normally not considered eligible for Register consideration that include cemeteries, birthplaces or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original location, reconstructed historic buildings, buildings primarily commemorative in nature, and properties that have significance within the past 50 years. There are exceptions to these general exclusion guidelines (see 36 CFR 60.4).

Coupled with the above general criteria, the criteria of integrity must also be met for Register consideration. In this category integrity is evaluated in terms of its physical and locational values: does the site or its features possess the integrity needed to allow the site to meet the appropriate criterion for which it is considered significant? As an example prehistoric site that might be significant under criterion " $d^{n}$ but has been apparently completely disturbed would probably not be considered to have any sufficient integrity for the fruitful investigation of important scientific question and would thus not be considered eligible for the Register. As another example, an old traditional hogan may be considered eligible for the Register under criterion " $c$ " as embodying the distinctive characteristics of a type, period, or method of construction. If that hogan is surrounded by modern cinderblock houses and trailers, thus disrupting integrity of location, setting, and feeling, it could still be considered eligible for the Register if those aspects of integrity that directly relate to its significance under criterion " $c$ " (e.g., design, materials, and workmanship), are intact.

The following presents a criterion-by-criterion evaluation of the cultural resources recorded by this project.
Criterion A: Site NM-R-32-32 is not known to be associated with events that are significant in our past.
Criterion B: Site NM-R-32-32 is not known to be associated with individuals that are significant in our past.
Criterion C: Site NM-R-32-32 does not appear to represent a significant and distinguishable entity whose components may lack individual distinction.
Criterion D: Site NM-R-32-32 is not likely to yield information important in history.
Exclusions: None
Eligible Sites: None
District Consideration: A District is defined as *...possessing a significant concentration, linkage, or continuity of sites, buildings, structures or objects united historically or aesthetically by plan or physical development (National Park Service 1986:41)". Because an exhaustive inventory and documentation program has not been completed, and the exact limits of the community are not yet known, the exact nature of any district boundary cannot be suggested at this time.

## Archaeological Resources Protection Act

Archaeological Resources Protection Act (ARPA) was established in 1979 with the express purpose being in part "...to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites which are on public lands and Indian lands...". For a property to qualify for protection under ARPA, it must qualify as an "archaeological resource", which is defined as "... any material remains of human life or activity which are capable of providing scientific or humanistic understandings of past human behavior, cultural adaptation, and related topics through the application of scientific or scholarly techniques..."

Site NM-R-32-32 does not meet the age criterion and is not of "archaeological interest" and nor merit protection under ARPA:

## American Indian Religious Freedom Act

The American Indian Religious Freedom Act (AIRFA) was established in 1978. Its purpose was to establish as United States policy the protection and the preservation of Native American rights to practice their traditional religions. The freedom of worship is to include but not be "...limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonies and traditional rites (Sec. 1)". Though there are a few specific examples and some generalizations that may be made, the identification of resources associated with this project that may have some application to AIRFA is difficult at best.

Site NM-R-32-32 is not considered potentially important under AIRFA.

## DETERMINATION OF EFFECT

Pursuant to 36 CR 800.9, the undertaking has been evaluated for its effects on potentially National Register significant historic properties. This evaluation is also considered applicable to ARPA and AIRFA values as well. No further work is required for the project; this undertaking should have no effect on significant historic properties.

## MANAGEMENT RECOMMENDATIONS

It is recommended that compliance be granted for this undertaking. No further work is required for the project.

## General Project Recommendations

If any previously undetected cultural resources are discovered during the undertaking (e.g., pottery, bone, stone tools), all activity should cease in that area and the Navajo Nation Historic Preservation Officer ( 928 871-7148) should be immediately notified. Upon inspection of the remains, direction on how to proceed will be given pursuant to 36 CFR 800.11.

Upon completion of the project, the location of the significant cultural values within or directly adjacent to the final Right-of-Way should be placed on the final "as builts". These plans should carry the following or a similar notice: "Caution. Unauthorized disturbance of archaeological sites is prohibited. Criminal and civil penalties may apply". A copy of these final plans should be submitted to the Navajo Nation Historic Preservation Department for placement with the project file.

## REFERENCES

Navajo Nation Historic Preservation Department<br>2015 Navajo Nation Policy to Protect Traditional Cultural Properties. NNHPD, Window Rock, Arizona.<br>2015 Fieldwork and Report Standards Guidelines, NNHPD, NNHPD, Window Rock, Arizona.<br>Van Valkenburgh, Richard F.<br>1941 Dine Bikeyah, U.S. Dept. of Interior, U.S. Indian Service, Navajo Agency, Window Rock, Arizona.

## Appendix

## NAVAJO NATION ARCHAEOLOGY DEPARTMENT

 Site Survey and Management Forms
## NAVAJO NATION ARCHAEOLOGY DEPARTMENT

## Site Survey and Management Forms

SITE NO: NM-R-32-32 DATE RECORDED: February 22, 2014 COMPANY: CIOIDCD
ARCHAEOLOGIST: Denise R.E. Copeland
PROJECT NO. AND NAME: A Cultural Resource Inventory of the White Ridge Powerline Phase II and III, Littlewater Chapter, McKinley County, New Mexico DCD1 14-007

LEGAL LOCATION: NE $1 / 4$ of Sec. 18, T 16 N, R 10 W, N.M.P.M.
UTM: NAD 83 Zone 13, N 3946 072m, E 234 LAND STATUS: Tribal Trust
STATE: New Mexico County: McKinley CHAPTER: Littlewater
USGS MAPS REFERENCE AND DATE: Borrago Pass, NM 1963.
GROUND VISIBILITY: Good Visibility, General ground cover.
TOPOGRAPHY: The site is located on northeast slope of a northwest trending ridge.
DRAINAGE: Unnamed blue line drainage is located to the ca. 300 meters.
ELEVATION (ft): $6,970 \mathrm{ft} / 2,124 \mathrm{~m}$ SLOPE/DIRECTION: NE 3 degrees SOIL TYPE: Sandy
VEGETATION PRESENT: The vegetation includes various grasses.
CULTURAL AFFILIATION(S): Historic Navajo SITE TYPE: Special Activty
PERIOD(S) OF OCCUPATION (date if known): A.D. 1970's How dated?: **
SITE SIZE ( $L^{*}$ W): $4 \mathrm{~m} \times 5 \mathrm{~m}$ TOTAL AREA (Sg. m): 20 sq m How determined?: Tape measured
ARCHITECTURE PRESENT?: no
Describe: none
ARTIFACTS OBSERVED/COUNTED?: Yes COLLECTION MADE?: No PHOTOTAKEN?: No
SITE DESCRIPTION: The site is a storage area for livestock dating about 1970's and consists of one feature (F-1) a pile of irregular sandstone blocks in an area $4 \times 4$ meters. The only artifact is a 55 gallon barrel cut down $1 / 4$ from the top. It appears to have been used as a feeder.

CONDITION OF SITE: Fair ( $75 \%$ undisturbed) Causes of Disturbance: Erosional and livestock grazing.
LOCATION OF SITE RELATIVE TO PROJECT AREA: The site is located on the Line B of the powerline.

EXTENT OF INVESTIGATION TO DATE: Field recording only.

RESEARCH POTENTIAL: poor
RECOMMENDATIONS: No further work required.

## SITE ASSESSMENT UNDER 36 CFR 60.4 (National Register):

INTEGRITY: The site does not possess significant qualities of locational and physical integrity.
CRITERIA A-D: The site is not known to be associated with any events or persons that have made significant contributions to the broad patterns of our history or are significant in our past (criteria "a" and " b "), it does not appear to embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or that represents a significant distinguishable entity whose components may lack individual distinction (criterion " c ", and has not yielded nor yielded information important in history or prehistory (criterion "d").

EXCLUSIONS: N/A

## SITE ASSESSMENT UNDER ARPA:

The site is not over 100 years old and should not be considered an "archaeological resource" nor "of archaeological interest".

## SITE ASSESSMENT UNDER AIRFA: N/A

PROVIDE A SITE MAP: (Including site designation, north arrow, scale, recognizable features, landmarks and relationship to project area.) See attached map.

HOW CAN THE SITE BE REACHED?: See attached U.S.G.S. map.

OTHER COMMENTS: None.


Figure 1: Plan View of Site NM-R-32-32


Figure 2: Specific Location of the Cultural Resources along Line B, Taps B-1, B-1a, B-2, B-2a and B-3 of the White
Ridge Powerline. Map is $7.5^{\prime}$ Quadrangle Borrego Pass, NM 1963.

## $\underline{\mathbf{M}} \underline{\mathbf{E}} \underline{\mathbf{M}} \underline{\mathbf{O}} \underline{\mathrm{R}} \underline{\mathbf{A}} \underline{\mathbf{N}} \underline{\mathrm{D}} \underline{\mathrm{U}} \underline{\mathbf{M}}$

TO: Howard Draper, Program \& Project Specialist
Project Review Office
Navajo Land Department
Division of Natural Resources

FROM:


Rita Whitehorse-Larsen, Senior Environmental Specialist
Office of Executive Director/Administration
Office of Environmental Review
NNEPA

DATE: July 21, 2016

## SUBJECT: 164 EOR 006108 CDEC ROW Whiteridge Project Phase I \& II

The Continental Divide Electric Cooperative Incorporated, PO Box 1087, Grants, New Mexico, 87020, submitted a right-of-way (ROW) application for Littlewater Chapter/Whiteridge power line projects line Phase I and Phase II on, over and across Navajo Nation Trust Lands in Littlewater vicinity, McKinley County, New Mexico. The proposed Phase I is $9,420.88$ feet long, 20 feet wide, consisting of 4.33 acres, more or less. The proposed Phase II is $12,756.79$ feet long, 20 feet wide, consisting of 5.86 acres, more or less.

The Navajo Nation Environmental Protection Agency (NNEPA) reviewed ${ }^{12,2,34}$ and recommends conditional approval for the proposed action. NNEPA recommends the proposed project will not

[^2]have a significant effect (direct, indirect, or cumulative) on the quality of the human environment considering the context and intensity of impacts if the following recommendations from NNEPA are adhered to.

## 1. Navajo Nation Clean Water Act:

a. §Section 401 is required if any drainage with discernable ordinary high water mark will be crossed and/or disturbed as recommended by Patrick Antonio, Principal Hydrologist, NNEPA Water Quality Program on previous proposed projects.
b. $\S$ Section 402 - Land surface disturbance in excess of 1.0 acre will require compliance with the federal General Construction Permit requirements for storm water discharges. The project will disturb scattered 50.96 acres for Phase I and 70.94 acres for Phase II of surface land. Best Management Practices is highly recommended to be implemented to control sediment runoff. Contact Mr. Dave Smith with USEPA Region 9 at 415-972-3464. USEPA oversees the NPDES /NOI/SWPPP for Navajo Nation lands. A copy of the NPDES /NOI/SWPPP shall be provided to Patrick Antonio, Principal Hydrologist, NNEPA Water Quality Program.

## 2. Navajo Nation Safe Drinking Water Act:

a. Make sure there are no existing drinking waterlines and/or domestic waste waterlines located within the premises of the proposed site to avoid significant impacts to the Littlewater chapter vicinity and surrounding communities' safe drinking water resources before trenching and/or digging.
3. Navajo Nation Air Pollution Prevention and Control Act:
a. Suppress dust to lessen air impacts to community members and public located in or near the proposed action.

## 4. Navajo Nation Pesticide Act:

a. Continental Divide Electric Cooperative Incorporated is required to monitor and prevent invasive and noxious weeds either by manual or chemical control.
b. Before applying any chemicals, contact the NNEPA Pesticide Program at 928/8717815 to ensure the product is in compliance and appropriately applied by a certified and licensed applicator.
c. Pesticide staff will also may need to be onsite to monitor during pesticide/herbicide application.
5. Navajo Nation Solid Waste Act:
a. Solid waste generated from the construction and operation activities will be collected and transported by Continental Divide Electric Cooperative Incorporated to a designated trash bins to minimize significant impacts to human and wildlife resources.
b. If a sub-contractor will be hired to transport waste, ensure the contractors are certified and licensed with the Navajo Nation Business Regulatory Office.
c. The contractor must submit a copy of the landfill receipt/ticket to guarantee the construction waste has been properly disposed.
d. Do not allow public to take construction and operation waste. Cumulatively NNEPA gets complaints and reports on illegal trash dumpings on rural areas and in the waters of the US and Navajo Nation.
e. All illegal waste currently on the proposed site is the responsibility of the lease/permit applicant.
6. Navajo Nation Comprehensive Environmental Response, Compensation and Liability Act (NNCERCLA)
a. Approved by the Navajo Nation Council, CF-07-08, February 26, 2008, the NN CERCLA includes petroleum (including crude oil or any fraction thereof, natural gas, natural gas liquids, liquefied natural gas or synthetic gas usable for fuel (or mixtures
of natural gas and synthetic gas)) unlike the US CERCLA or the Superfund Law and mandates petroleum, operator and guarantor to report petroleum release $\geq 25$ gallons at the site and/or during transport immediately to the Navajo Nation Department of Emergency Management within the Navajo Nation Division of Public Safety.

## 7. Navajo Nation Storage Tank Act:

a. Amended and approved by the Navajo Nation Council, CJA-09-12, February 2012, the aboveground tanks are included to be regulated.
b. No aboveground and/or underground storage tanks are expected to be installed at the proposed site.

If there are any questions, you may contact me at 928/871-7188. Thank you.

Cc: Continental Divide Electric Cooperative Incorporated, PO Box 1087, Grants, New Mexico, 87020
NNEPA Water Quality; Operating Permit Program; STP; Administration chrono file Contact Person: Debbie Olivar, Engineering/ROW, 505-285-6656

United States Department of the Interior
Bureau of Indian Affairs
Navajo Region
P. O. Box 1060

Gallup, New Mexico 87305

MC 620: Brancb of Environmental Quality Act Compliance \& Review

MAY 103016

Mr. Steven Chischilly, Owner
Dine BiKeyah Environmental
P.O. Box 2084

Crownpoint, New Mexico 87313-2084
Dear Mr. Chischilly:
The Environmental Assessment (EA), EA-16-12796, for the proposed 4.05 Mile Phase I Whiteridge Electric Distribution Line, Project No. 45161, in Littlewater Chapter, McKinley County, New Mexico, has been reviewed in the Branch of Environmental Quality Act Compliance \& Review, Navajo Regional Office. The Little Water Chapter and The Navajo Nation are sponsoring the project and Continental Divide Electric Cooperative (CDEC) will construct the electric line. The 4.05 mile, Phase 1, of the Whiteridge power line project will supply electricity to at least thirteen homes located approximately 2 miles southeast of the Littlewater Chapter and progresses to the east approximately 7 miles with spurs coming off the main trunk line in several locations. The electric line will be a single-pole, 14.4 kV electric power line traversing Navajo Tribal Trust, Indian Trust Allotment and BLM land.

A Finding of No Significant Impact (FONSI) has been determined for the proposed action. It will not have a significant impact on the quality of the natural and human environment. An environmental impact statement for the proposed project is not required.

If you have questions, you may contact Ms. Harrilene J. Yazzie, Regional NEPA Coordinator, at (505) 863-8287.

Sincerely,


Regional Director, Navajo
Enclosure

# FINDING OF NO SIGNIFICANT IMPACT ENVIRONMENTAL ASSESSMENT, EA-16-12796 4.05 MILE, PHASE I, WHITERIDGE ELECTRIC DISTRIBUTION LINE, PROJECT NO. 45161, LITTLEWATER, NEW MEXICO 

Location: Laguna Castillo, NM, Quadrangle, USGS 7.5 Minute Series Map<br>Sections 2, 3, 11, 12, \& 13, T16N, R11W, NMPM<br>Littlewater Chapter, McKinley County, New Mexico

The proposed action is approval, by the Bureau of Indian Affairs, of a Right-of-Way Grant to the Continental Divide Electric Cooperative for the construction/installation of the electric distribution line on Navajo Tribal Trust, Indian Trust Allotment land and BLM land. The width of the proposed 4.05 milelong electric line will be 20 feet and will encompass 50.36 acres of land. Of the 50.36 acres, 5.6 acres is BLM Land; 21.63 acres is Navajo Tribal Trust land and, 23.13 acres is Indian Trust Allotment land. The project is sponsored by the Littlewater Chapter and the Navajo Nation. The Chapter Manager is Ms. Genevieve Castillo, P.O. Box 1898, Crownpoint, New Mexico 87313.

The project environmental assessment (EA) was reviewed in the Branch of Environmental Quality Act Compliance and Review, Navajo Regional Office. Based on the environmental assessment and the mitigation measures specified in the document, it is determined that the proposed action will not have a significant impact on the natural and human environment. Therefore, in accordance with the National Environmental Policy Act, Section 102 (2) (C), an environmental impact statement will not be required.

The following references, incorporated in the environmental assessment, serve as the bases for this decision:

1. Agency and public involvement was solicited. Environmental issues relative to the proposed project were identified. Alternative courses of action and mitigation measures were developed in response to environmental concerns and issues.
2. The EA disclosed the environmental consequences of the proposed, alternative site, and "no action" alternatives.
3. In compliance with the Endangered Species Act of 1973, informal consultation was held with the Navajo Nation Department of Fish and Wildlife (NNDFW), Natural Heritage Program (NHP). The entire proposed 4.05 mile project ROW was evaluated on June 16, 17,20 and July 24, 2014, by Mr. Steven Chischilly, Biologist. No raptor species, or other species of concern, were encountered during the survey of the proposed electric line. No negative impacts on species of concern are expected with the construction, operation, and maintenance of the electric line to the rural homes. The Navajo Nation Department of Fish \& Wildlife (NNDFW) issued Biological Resources Compliance Form (BRCF), NNDFW Review No.14LTWC-01 indicating approval of the proposed project and stating in the BRCF that the proposed project is in Area 3: Potential habitat is present for Burrowing owl and Mountain plover. Avoidance/Mitigation measures include: 1. The NNDFW highly recommends that the electrical distribution line be constructed utilizing a raptor-safe, power pole design standard (REPR). All guy wires shall be marked with highly visible daytime markers to prevent collisions; 2. The CDEC shall implement mitigation measures to avoid impacts to the Burrowing owl and Mountain plover; 3. All project personnel and equipment shall remain in the project area. Ground disturbance outside the proposed action area is strongly discouraged (BRCF).
4. Potential impacts to floodplains and wetlands by the proposed project have been evaluated in accordance with Executive Orders 11988 and 11990 respectively. During the survey of the proposed project area, no flowing water or standing water were encountered; and no riparian areas including riparian plant species or wetlands were encountered (Biological Evaluation).
5. Water Resources- there is no naturally occurring surface water in the Littlewater Chapter vicinity other than small wells, cienegas, and Laguna Castillo, an area that is periodically inundated with water during periods of snow melt or during the monsoon season. This area is not located near the project ROW. There is no standing or flowing water in the project ROW, nor in the immediate vicinity except during brief periods during the monsoon season and during winter snow pack runoff (EA, III.B.1).
6. In compliance with the National Historic Preservation Act of 1966, as amended, Section 106 and 36 CFR 800.9 (b), a cultural resources inventory of the proposed project area was conducted by the Navajo Nation Capital lmprovement Office, DCD1. A literature search of TCP records at the NNHPD was completed on May 28, 2014. There are no TCPs present within the project area and/or buffer zone. The project may proceed as proposed (TCP Record Search Verification Form dated 7/22/2014). Field work was conducted by Denise R.E. Copeland of the Capital Improvement Program on January 6, 8, 9; April 2; September 25, 2014; and March 31, 2015. Fifteen cultural resources were located within the project area. Provided that management recommendations, as listed, are followed, the undertaking should have no effect on significant resources (A Cultural Resources Inventory of the White Ridge Powerline Phase 1, Littlewater Chapter, McKinley County, New Mexico).

In the event of a discovery [discovery means any previously unidentified or incorrectly identified cultural resources including, but not limited to, archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs or practices] all operations in the immediate vicinity of the discovery must cease, and the Navajo Nation Historic Preservation Department must be notified.
7. RCRA, Subtitles C and D, Hazardous and Non-Hazardous Solid Waste- hazardous waste will be properly disposed according to Federal and Tribal waste laws. Large quantities of hazardous waste are not expected to be generated by this project. All hazardous materials will be transported, handled, and stored in compliance with all Federal and Tribal laws. Non-hazardous solid waste will be disposed at compliant landfills per Navajo Nation law (EA, Section IV, E).

8 Other Values - the proposed power line construction will not pose a public health or safety problem, nor will it significantly increase sound or noise in the area (EA, Section III.H).
9. Cumulative and secondary effects on soil, water, air, noise, vegetation, cultural resources, and wildlife resources (species and habitat) were considered, and the proposed mitigation measures were found to be acceptable.
10. In accordance with Executive Order 12898 on Environmental Justice, impacts to minority and low-income populations and communities have been considered by the Regional NEPA Coordinator, as have impacts to Indian Trust Resources.

The proposed project, supported by Resolutions of the Littlewater Chapter and the Transportation and Community Development Committee of the Navajo Nation Council (EA, Figure 4) will provide electricity to families living in the remote areas of the Littlewater Chapter. These families have endured hardships for many years living without electricity; the installation of electric power to their homes will have a positive effect in their lives.


MAY 052016

# United States Department of the Interior 

Bureau of Indian Affairs
Navajo Region
P. O. Box 1060

Gallup, New Mexico 87305


MC 620: Brancb of Environmental Quality Act Compliance \& Review

Mr. Steven Chischilly, Owner

Dine BiKeyah Environmental
P.O. Box 2084

Crownpoint, New Mexico 87313-2084
Dear Mr. Chischilly:
The Environmental Assessment (EA), EA-16-12795, for the proposed 5.85 Mile Phase II Whiteridge Electric Distribution Line, Project No. 50547, in Littlewater Chapter, McKinley County, New Mexico, has been reviewed in the Branch of Environmental Quality Act Compliance \& Review, Navajo Regional Office. The Little Water Chapter and The Navajo Nation are sponsoring the project and Continental Divide Electric Cooperative (CDEC) will construct the electric line. The 5.85 mile, Phase II, of the Whiteridge power line project will supply electricity to fifteen homes and possibly a community church located approximately 5 miles southeast of the Littlewater Chapter. The electric line will be a single-pole, 14.4 kV electric power line traversing Navajo Tribal Trust and Indian Trust Allotment land.

A Finding of No Significant Impact (FONSI) has been determined for the proposed action. It will not have a significant impact on the quality of the natural and human environment. An environmental impact statement for the proposed project is not required.

If you have questions, you may contact Ms. Harrilene J. Yazzie, Regional NEPA Coordinator, at (505) 863-8287.

Sincerely,


Regional Director, Navajo
Enclosure

# FINDING OF NO SIGNIFICANT IMPACT ENVIRONMENTAL ASSESSMENT, EA-16-12795 5.85 MILE, PHASE II, WHITERIDGE ELECTRIC DISTRIBUTION LINE, PROJECT NO. 50547, LITTLEWATER, NEW MEXICO 

Location: Borrego Pass, NM, Quadrangle, USGS 7.5 Minute Series Map Section 13, T16N, R11W, NMPM<br>Sections 17, 18, 19, \& 20, T16N, R10W, NMPM<br>Littlewater Chapter, McKinley County, New Mexico

The proposed action is approval, by the Bureau of Indian Affairs, of a Right-of-Way Grant to the Continental Divide Electric Cooperative for the construction/installation of the electric distribution line on Navajo Tribal Trust and Indian Trust Allotment land. The width of the proposed 5.85 mile-long electric line will be 20 feet and will encompass 70.94 acres of land. Of the 70.94 acres, Navajo Tribal Trust land amounts to 29.29 acres and, Indian Trust Allotment land amounts to 41.65 acres. The project is sponsored by the Littlewater Chapter and the Navajo Nation. The Chapter Manager is Ms. Genevieve Castillo, P.O. Box 1898, Crownpoint, New Mexico 87313.

The project environmental assessment (EA) was reviewed in the Branch of Environmental Quality Act Compliance and Review, Navajo Regional Office. Based on the environmental assessment and the mitigation measures specified in the document, it is determined that the proposed action will not have a significant impact on the natural and human environment. Therefore, in accordance with the National Environmental Policy Act, Section 102 (2) (C), an environmental impact statement will not be required.

The following references, incorporated in the environmental assessment, serve as the bases for this decision:

1. Agency and public involvement was solicited. Environmental issues relative to the proposed project were identified. Alternative courses of action and mitigation measures were developed in response to environmental concerns and issues.
2. The EA disclosed the environmental consequences of the proposed, alternative site, and "no action" alternatives.
3. In compliance with the Endangered Species Act of 1973, informal consultation was held with the Navajo Nation Department of Fish and Wildlife (NNDFW), Natural Heritage Program (NHP). The entire proposed 4.05 mile project ROW was evaluated on June 16, 17, 20 and July 24, 2014, by Mr. Steven Chischilly, Biologist. No raptor species, or other species of concern, were encountered during the survey of the proposed electric line. No negative impacts on species of concern are expected with the construction, operation, and maintenance of the electric line to the rural homes. The Navajo Nation Department of Fish \& Wildlife (NNDFW) issued Biological Resources Compliance Form (BRCF), NNDFW Review No.14LTWC-01 indicating approval of the proposed project and stating in the BRCF that the proposed project is in Area 3: Potential habitat is present for Burrowing owl and Mountain plover. Avoidance/Mitigation measures include: 1. The NNDFW highly recommends that the electrical distribution line be constructed utilizing a raptor-safe, power pole design standard (REPR). All guy wires shall be marked with highly visible daytime markers to prevent collisions; 2 . The CDEC shall implement mitigation measures to avoid impacts to the Burrowing owl and Mountain plover; 3. All project personnel and equipment shall remain in the project area. Ground disturbance outside the proposed action area is strongly discouraged (BRCF).
4. Potential impacts to floodplains and wetlands by the proposed project have been evaluated in accordance with Executive Orders 11988 and 11990 respectively. During the survey of the proposed project area, no flowing water or standing water were encountered; and no riparian areas including
riparian plant species or wetlands were encountered (Biological Evaluation).
5. Water Resources- there is no naturally occurring surface water in the Littlewater Chapter vicinity other than small wells, cienegas, and Laguna Castillo, an area that is periodically inundated with water during periods of snow melt or during the monsoon season. This area is not located near the project ROW. There is no standing or flowing water in the project ROW, nor in the immediate vicinity except during brief periods during the monsoon season and during winter snow pack runoff (EA, III.B.1).
6. In compliance with the National Historic Preservation Act of 1966, as amended, Section 106 and 36 CFR 800.9 (b), a cultural resources inventory of the proposed project area was conducted by the Navajo Nation Capital Improvement Office, DCD1. The Navajo Nation Historic Preservation Department (NNHPD) issued Cultural Resources Compliance Form (NNNPD No. HPD-15-806 which states, "No historic properties affected." (CRCF, EA, Section III.E).

In the event of a discovery [discovery means any previously unidentified or incorrectly identified cultural resources including, but not limited to, archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs or practices] all operations in the immediate vicinity of the discovery must cease, and the Navajo Nation Historic Preservation Department must be notified.
7. RCRA, Subtitles C and D, Hazardous and Non-Hazardous Solid Waste- hazardous waste will be properly disposed according to Federal and Tribal waste laws. Large quantities of hazardous waste are not expected to be generated by this project. All hazardous materials will be transported, handled, and stored in compliance with all Federal and Tribal laws. Non-hazardous solid waste will be disposed at compliant landfills per Navajo Nation law (EA, Section IV. E).

8 Other Values - the proposed power line construction will not pose a public health or safety problem, nor will it significantly increase sound or noise in the area (EA, Section III.H).
9. Cumulative and secondary effects on soil, water, air, noise, vegetation, cultural resources, and wildlife resources (species and habitat) were considered, and the proposed mitigation measures were found to be acceptable.
10. In accordance with Executive Order 12898 on Environmental Justice, impacts to minority and low-income populations and communities have been considered by the Regional NEPA Coordinator, as have impacts to Indian Trust Resources.

The proposed project, supported by Resolutions of the Littlewater Chapter and the Transportation and Community Development Conmittee of the Navajo Nation Council (EA, Figure 4) will provide electricity to families living in the remote areas of the Littlewater Chapter. These families have endured hardships for many years living without electricity; the installation of electric power to their homes will have a positive effect in their lives.


ENVIRONMENTAL ASSESSMENT CONDUCTED FOR THE 4.05 MILE PHASE I-WHITERIDGE SINGLE-POLE 14.4 kv ELECTRICAL DISTRIBUTION LINE (Project No. 45161), IN LITTLEWATER CHAPTER, MCKINLEY COUNTY, NAVAJO NATION, NEW MEXICO


Conducted for:
Continental Divide Electric Cooperative, Inc.
Attn: Ms. Debbie Olivar, Engineering Services Manager
PO Box 1087
Grants, New Mexico 87020
(505) 285-6656

Prepared by
Dińe Bi Keyah Environmental Mr. Steven Chischilly, Owner

PO Box 2084
Crownpoint, New Mexico
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(505) 786-4147/(505) 786-5644(fax)

December 21, 2015

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Mitigation is recommended in concert with construction, maintenance and use of the Phase I-Whiteridge Single-Pole 14.4kv Electrical Distribution Line, in Littlewater Chapter, McKinley County, Navajo Nation, New Mexico.

New discoveries are previously unidentified cultural resources that include, but are not limited to: archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs, or practices. Areas in which these cultural resources are encountered are to be immediately reported to the Historic Preservation Department in Window Rock, Arizona (928-871-7148), and simultaneously, all operations on and in the vicinity of the discovery are to cease.

It is recommended that the CDEC consult with the New Mexico Army Corps of Engineers (ACOE) regarding the disturbance of arroyos located along the ROW. Disturbance of arroyos that are categorized as waterways of the United States are protected from disturbance under the Clean Water Act, and consultation is recommended should any arroyos are to be crossed or if the banks are to be disturbed by heavy equipment. Should mitigation not be required as deemed by the ACOE, or if consultation with the ACOE leads to the successful adoption and implementation of mitigated measures to prevent the negative effects of potential water contamination, then no negative impact upon water resources is expected with the implementation of this proposed distribution line installation.

According to the project staking CDEC Engineer, there will be only a truck carrying the electrical poles that are to be within the ROW, and they will be used to auger the holes for pole placement. Allother equipment will be kept on existing roads, like vehicles with equipment, additional tools, and other poles. Raptor safe electrical lines will be installed as not to electrocute raptors on this distribution line project (Ms. Genevieve Castillo, Personal Communication, 2014).

All solid waste and hazardous waste will be disposed of properly at a compliant landfill or hazardous waste landfill per the requirements under Navajo Nation law and Federal law.

To minimize excessive physical impacts, it is recommended that construction be limited to associated access roads and within the boundaries of the 20 feet right-of-way wherever possible.

No wetlands were located within this project ROW nor in the immediate vicinity of the project area. No negative impacts are expected upon rare, threatened, or endangered species associated with these habitats nor is there any expectation that these other sensitive species will be impacted in the project ROW and up to 1 mile from the project site with the construction, operation, and maintenance of this electrical distribution line.

With the successful institution and full compliance of all mitigation, no negative impact is expected upon the environment with the construction, operation and maintenance of the proposed 4.05 mile Phase l-Whiteridge Single-Pole 14.4 kv

Electrical Distribution Line in Littlewater Chapter, McKinley County, Navajo Nation, New Mexico.

## Section I. DESCRIPTION OF PROPOSED ACTION

## A. PROJECT DESCRIPTION

The Navajo Indian Reservation is located in northeastern and northwestern New Mexico, and southeastern Utah, and is the largest Native American reservation in the United States. The Navajo Indian Reservation is 27,425 square miles (17,552,000 acres) in size. The Navajo Indian Reservation is the homeland of the Navajo People, with the earliest archaeological evidence of Navajo being in the area linked to the date of 1541 for a structure located near what is the Navajo Reservoir near Farmington, NM (Winter, et. al, 1992). This homeland, primarily in northeastern Arizona and northwestern New Mexico, is in excess of 17.5 million acres with most of this land held in tribal trust by the Bureau of Indian Affairs, with a small percentage held by private allotees. The private land held by allotees is primarily found near the exterior of the Navajo Nation border where the Navajo Nation boundary abuts state, federal and other privately held lands, primarily in the eastern and southern portions of the Navajo Nation. These areas are referred to as "checkerboard" lands (Figure 1 and 2; Map of the Navajo Nation and Littlewater Chapter).

The Navajo Indian Reservation is governed by a sovereign tribal governmental entity and this is the Navajo Nation Government. The project this report is written for is on the checkerboard area with mixed jurisdiction of allotted land, BLM land, BIA trust land, all within the chapter boundary of Littlewater Chapter, New Mexico. The focus of this Environmental Assessment is to determine the environmental impacts and potential impacts to the human environment for the 4.05 mile SinglePole 14.4kv electrical distribution line right-of-way (ROW) located in Little Water, New Mexico (known as the Phase I- Whiteridge Distribution Line). The width of the ROW to be surveyed is a minimum of 20 feet. The Littlewater Chapter would like to contract with the local electrical company, Continental Divide Electric Cooperative, to install and maintain a two-phase electrical distribution line to serve residents within their chapter who presently do not have electrical service. Indeed, the Continental Divide Electric Cooperative has jurisdiction on the checkerboard portion that makes up Littlewater Chapter.

The route proposed for Phase I of the White Ridge powerline project is as follows:
"The fieldwork was conducted by Denise R. E. Copeland of the Capital Improvement Office and Lucinda A. Henry, R-O-W Agency for Littlewater Chapter on January 6, 8, 9; April 2; September 25, 2014; and March 31, 2015. The project area is located eastern portion of the Littlewater Chapter. The specific location of
the project area is depicted on U.S.G.S. quad map: Laguna Castillo, New Mexico 1963, and Borrego Pass, New Mexico, 1963. The legal location is in T 16 N, R 11 W in Sections 2, 3, 11, 12, and 13, in McKinley County, New Mexico. The land status of the project area is Tribal Trust, Indian Allotted and BLM. A total of 50.36 acres of land was inspected for this project."

On the Navajo Nation, a chapter is akin to a county government within a state; however the chapters are located within the boundaries of the Navajo Indian Reservation and represent Navajo citizens within each chapter boundary. Each chapter is relatively autonomous and conducts its' business in a manner that strives to best serve the community. A conglomeration of chapters have a representative from respective chapters that serves on the Tribal Council, and the Tribal Council is the entity that makes and approves laws that will be enforced on the Navajo Indian Reservation. There are 110 chapters recognized on the Navajo Nation. With this background information and summary, a discussion can now begin regarding the proposed development and construction of a 4.05 mile singlepole 14.4 kv electrical distribution line. Littlewater Chapter is located within the Navajo community of Littlewater, New Mexico, in northwestern New Mexico, twelve miles east of Crownpoint, NM in McKinley County.

The project area is on the checkerboard area of the Navajo Nation in the state of New Mexico. The 4.05 mile ROW is found approximately 2 miles southeast of the Littlewater Chapter and progresses to the east approximately 7 miles with spurs coming off the main trunk in several locations.

The 4.05 mile ROW is under the control of the Littlewater Chapter and the ROW has already been surveyed and staked by the Continental Divide Electric Cooperative (Genevieve Castillo, Personal Communication, 2014). The land is tribal trust land and allotted land, although the ROW easement is under the control of the chapter, the 4.05 mile ROW still needs to obtain permission from the Bureau of Indian Affairs Environmental Quality Office due to the fact that the installation of the electrical distribution line is partially on tribal lands and constitutes a federal action (Figure 4; Chapter Resolutions from the Littlewater Chapter). Construction of this electrical distribution line is scheduled for 2016 upon successful completion of all National Environmental Policy Act (NEPA) documents and requirements (Ms. Genevieve Castillo, Personal Communication, 2014).
"Proposed construction and maintenance activities will include the following:

1. Poles will be hauled to the project area by truck and pole trailer, where they will be distributed at intervals of approximately 400 feet apart along the right-of-way.
2. A construction crew will then attach cross-arms, insulators, ground wires, and other necessary hard ware to each pole prior to erection.
3. A truck-mounted auger will excavate holes measuring about 18 inches in diameter and averaging 5-6 feet deep for each pole location. A similar hole will be excavated for any necessary anchors. A boom, also mounted on the truck, will then raise each pole into its freshly augered hole. The pole will then be aligned and plumbed followed immediately by back filling and tamping the dirt spoils into the hole.
4. After the poles are erected, conductive wire will be reeled off truck-mounted cable spools to be lifted and strung onto each pole. Tension will then be applied to the cable at which time it will then be attached to insulators on the poles.
5. The construction crew will properly remove and dispose of all debris resulting from activities associated with construction. Surface disturbance will be confined to the approved rights-of-way and existing roads. Generally, trees will not be cut except where necessary for safety. The rights-ofway will not be bladed and will be reseeded and reclaimed in accordance with Tribal and Federal stipulations." Copeland, 2015.

Per the requirements under the National Environmental Policy Act (NEPA) of 1970, an Environmental Assessment of the proposed project area is required prior to project commencement. In addition to the Environmental Assessment, a Biological Evaluation is to be conducted for threatened and endangered species, as required by the Endangered Species Act of 1973 (as amended), and an Archaeological Survey is also to be conducted, per the requirements of the Historic Preservation Act of 1966.

According to Ms. Genevieve Castillo, Littlewater Chapter Manager, the project area has been selected for this electrical distribution line based upon the location of present, existing home-sites and the shortest, most economical way of getting from one home to the next within reason of addressing geologic conditions and the minimization conflict with other existing right-of-ways. The archeological clearance has been conducted prior to the EA and will be addressed in the archeological summary portion of this EA.

## B. PURPOSE AND NEED:

The mission statement of the Littlewater Chapter is as follows:

## "MISSION STATEMENT:

As a self-governing community, Littlewater Chapter will maintain its sustainability through economic development by utilizing alternative funding sources to support services to its community members for the purpose of establishing accountability and promoting self-sufficiency through the teachings of our traditional values and culture."

The Littlewater Chapter provides these services through governmental services through requests by resolution from the chapter, or by any other form of documented request to the Navajo Nation Tribal Council. Through these methods, services are carried out in accordance with the Local Governance Act (LGA) that the Littlewater Chapter has been granted. The granting of Littlewater Chapter LGA status allows the chapter to self-govern itself without having to approach the Navajo Nation Council for approval for funding or approval for projects as considered needed in the best interest of its constituents by the chapter.
"..Local Governance Act certification is a boon for chapters, offering authorities like business site leasing, home site leasing, alternative forms of government, local ordinances, and a streamlined expenditure process." (Navajo Nation Division of Community Development, July 2011, Volume 1, Issue 2).

Based upon the mission and goals of the Littlewater Chapter, the chapter has decided to install a 4.05 mile single-pole 14.4 kv electrical distribution line on Tribal Trust and Allotted Land. The Littlewater Chapter has sought funding for this venture and has obtained funds in the amount of $\$ 377,477.56$ and thus the agreement between the Navajo Nation and the Continental Divide Electric Cooperative needs to be executed so that this power line can be constructed (Figure 6: Chapter Resolution). The new project cost was provided by Ms. Genevieve Castillo and the cost break-down is as follows for all three phases of this electrical distribution line: Phase I ( $\$ 377,477.56$ ), Phase II $(\$ 295,456.90)$, and Phase III $(\$ 162,761.76)$ for a grand total of $\$ 835,696.22$.

Many Navajos that live on the Navajo Nation continue to not only haul potable water for the drinking and bathing needs, but also for their livestock. Additionally, some Navajo must also deal with the lack of electricity at their homes, these are mostly homes that are located in remote areas. This lack of drinking water and electrical infrastructure causes hardship on these families since it takes additional time and effort to prepare for school and work during the limited window of time when there is sunlight available, or in the light of a kerosene lantern or flashlights.

Also, many times they try to find alternatives to conducting household chores or enjoy family time during the daylight hours. Often this means reverting to kerosene lamps or photovoltaic panels, the latter being expensive since batteries are quite costly and repairs to these systems by a qualified technician is almost non-existent. The proposed 4.05 mile Phase I-Whiteridge electrical line will provide this needed security and freedom to enjoy appliances and lighting well into the night and before dawn. It will alleviate much of the stress and energy needed to prepare meals, clothing, homework, and all other similar chores or tasks for the following day. A listing of families to be served by this electrical distribution line is found below. Many of the people scheduled to obtain electrical power with this project have been living for many years without electricity and thus, with the installation of electrical power
to their homes, they will be better able to live in these remote areas. They will be better able to provide for their family members, particularly their young children that need light to do their homework and hot water to bathe and shower with, and properly cooked foods for general good health and nutrition. Additionally, they will increase their general quality of life, although other conditions may remain such as muddy and rough roads, collecting and hauling fuel, wood and coal for heat, and enduring the remoteness and solitude.

It is important to understand that these homeowners listed below likely have additional family members inhabiting their respective residences with them and that this project will benefit these additional household members also. A detailed listing of these homes, homeowners, and other issues related to their ability to obtain electrical power is listed in Figure 6.



Table provided by Ms. Genevieve Castillo, Chapter Manager, Littlewater Chapter, 505-786-2120. The names in blue are the individuals to obtain electricity to their homes in the Phase I Whiteridge Project.

## C. LOCATION/VICINITY MAP

The proposed Phase I-Whiteridge Power Line is located in McKinley County, New Mexico on the Navajo Indian Reservation. The Navajo Nation is broadly broken into different regions and they are northern, southern, western, central and eastern. This project is located in the eastern agency of the Navajo Nation in the Littlewater Chapter (Figure 1).

The Phase I-Whiteridge Electrical Distribution Line is located on the United States Geological Survey 7.5' quadrangle maps entitled "Laguna Castillo, 1963" and "Borrego Pass, 1963". The legal description for the project tract is found on page 6 of this document, taken from the attached archaeological reports.

## SECTION II. FORMATION OF ALTERNATIVES

A. NO ACTION ALTERNATIVE

The no action alternative does not support the on-going initiatives by the Navajo Nation Government, the Littlewater Chapter, and the residents that reside along the ROW in their desire to obtain needed electricity to these homes within this

ROW. The no action alternative will force families living in this remote area of the Navajo Nation to continue to live life without electricity thus causing them continued hardship in working and living on this part of the Navajo Nation.

The lack of construction of the proposed electrical line will cause continued hardships upon the residents by not allowing them access to electricity needed for everyday purposes such as cooking, lighting, cooling, heating, washing, and even for lifesaving medical purposes in areas such as respiratory and oxygen, mobility and rehab, home accessibility, wound therapy, sleep therapy, and ostomy and incontinence.

The no action alternative also does not support the philosophy of the Navajo Nation Government, including the Littlewater Chapter, and the residents along the Phase I-Whiteridge Single-Pole 14.4kv Electrical Distribution Line, for community development and providing needed services to the Navajo People, especially the much needed infrastructure for electricity to this remote community. The timely and proper construction of powerline will improve the living conditions of the Navajo residents that will benefit from the long term availability of electricity for their homes. Additionally, the construction will allow these families to better provide for their families and they will be able to be more productive in their daily lives since they will be able to have much better access to electricity instead of having to spend time and money to get the resources to light, heat, and cool their homes.

## B. ALTERNATIVE PROJECT SITE

There are no alternative project sites that can be utilized for said construction since the homes to be served are stationary and are found in this location. If an alternative site is selected, then even more time will be needed for ROW survey and preparation and securing the land from the local residents and chapter approval would also need to be obtained. Additional surveys of alternative ROWs will mean that archaeological, biological, and a legal survey would need to be conducted causing additional time and money to be spent. It is in the professional judgment of the Continental Divide Electric Cooperative that, due to location of these homes in this ROW, this route is preferred and has been selected for the Phase I-Whiteridge Single-Pole 14.4 kv Electrical Distribution Line (Ms. Genevieve Castillo, Personal Communication, 2014).

The selection of another project site would be very time-consuming, for an EA would need to be conducted and the required surveys and documents would need to be secured for the site, such as the Threatened and Endangered Species Listing, Biological Evaluation, Archaeological, Survey, Homeowner Consent Form, and ROW survey.

## C. PREFERRED ALTERNATIVE

The preferred alternative is to utilize the surveyed ROW as secured by the Littlewater Chapter. The chapter has also passed a chapter resolution approving the use of this ROW for construction of said electrical distribution line, and the biological, archaeological, and legal surveys have been conducted for this construction ROW. It is in the best interest of the local residents of the Littlewater Chapter to construct this electrical distribution line in the current ROW since most of the NEPA compliance documents have been completed and the survey crew has already been compensated.

Additionally, as stated previously, the Continental Divide Electric Cooperative has selected this site based upon suitable and appropriate cost effective measures minimizing distances between home-sites with the ROW they have selected (Ms. Genevieve Castillo, Personal Communication, 2014).

## SECTION III. DESCRIPTION OF AFFECTED ENVIRONMENT A. LAND RESOURCES <br> 1. TOPOGRAPHY

The project construction ROW is located in the northwestern region of New Mexico in sandstone outcrops and groundwater basins that are found in this region. The topography of the area can be described as a high desert scrub environment with rolling mesas, and clay based soils found in the valley which have arroyos found within them. The arroyos are generally dry and generally only have flowing water during the monsoon season or during periods of snow melt.

The project site is on the northern flanks of a long chain of mesas that make up the Continental Divide. The construction tract is located approximately 3 miles east of the community of Littlewater, New Mexico in a desert scrub plant community. To the south of the project ROW, at approximately 2 miles, is a sandstone mesa running from west to east which as mentioned is part of the Continental Divide. This mesa is 8,600 feet in height at Hosta Butte which is located to the southwest of the project area at approximately 15 miles.

The Phase I-Whiteridge Single-Pole 14.4 kv Electrical Distribution Line is found in a north-south trending valleys which continue to the south up canyons that lead to the Mesa which makes up part of the Continental Divide, and the valleys go north to become rolling, grassy hills and small outcrops of sandstone escarpment.

The valleys in this vicinity contain many mesas, washes, and buttes. The valleys and draws, found north of the mesa that makes up part of the Continental Divide, flow to the north and northwest and enter tributaries that enter into the Chaco

Wash, then into the Dead Man's Wash, which drains the San Juan Watershed into


Photograph 1. This photograph shows homes in the distance that will be getting the electrical distribution line, and a general view of the topography. The mesa chain in the background (south) is the Continental Divide.

## 2. GEOLOGY AND SOIL <br> LITTLEWATER AND BORREGO PASS, NM GEOLOGY AND SOILS REPORT-LEE EVERSOLE, PROFESSIONAL GEOLOGIST http://www.ose.state.nm.us/Pub/TechnicalReports/TechReport-035.pdf GENERAL

This report includes an analysis of stratigraphic units, relief and topography, water drainage trends, and soils regarding the geology of Crownpoint, Littlewater, and Borrego Pass, New Mexico. This region lies in McKinley County, New Mexico on the broad expanse of the geological structure known as the Colorado Plateau. Regional relief and topography, in conjunction with sparse, semi-arid vegetation, has resulted in unique erosional structures - sedimentary outctrops, primarily mesas, buttes, sheer-walled canyons, and wide sediment-laden plains stretching north toward the Bisti Badlands and San Juan Basin. Volcanic structures such as widespread ash deposits, cinder structures, and lava flows are also visible. General elevations vary between 6,000 to 8,000 asl. Because the region generally receives less than 18 inches of annual rainfall, permanent bodies of surface water
are altogether absent; however playa streams and ponds, often contained by small earthen dams, exist here. Alluvial and Aeolian deposits are common. Mining and ranching comprise the principal occupations. The nearest trade centers to Borrego Pass, Littlewater, and Crownpoint are Grants, in Cibola County and Gallup in McKinley County.

## STRUCTURAL

The prominent geological feature in the area of interest is the Colorado Plateau, a wide geologic province that covers parts of four states including New Mexico's northwestern corner of New Mexico. A major tectonic even, the Laramide orogeny, dated approximately 75 million years ago, was the most substantial geologic event that is responsible for modern features on the Colorado Plateau. The Plateau averages about 6,500 to 7,000 feet above seas level and is characterized by relatively horizontal erosional outcrops such as buttes, mesas, and badlands formed over millions of years. Its uplift, due to the Laramide Orogeny, reflected a very gradual plate subduction from the west that resulted in wide and uniform uplift and a unique landscape.

The Laramide Orogeny is responsible for two other geologic events that characterized major geologic aspects bordering the area outlined in this report. Just north of the Littlewater- Borrego Pass area is another sequentially large geologic feature known as the San Juan Basin, also formed 75 million years ago during orogenic events. The Basin is a compressional feature known for its vast resources of hydrocarbon fuel deposits and uranium. Volcanic features and ongoing magmatic activity further relates to the Laramide. Sacred to the Diné people, Mount Taylor is a dormant volcano viewable from Borrego Pass. Shiprock, another Diné sacred feature, is a volcanic neck with radiating basaltic dikes that is north of the area. Smaller cinder cones, widespread volcanic ash deposits forming distinctive badlands, lava flows, and hot springs further evidence the active and dormant volcanic activities in regions near to Littlewater and Borrego Pass. The inland distance from the ancient western continental boundary confounded
geologists for years as to the origins of these volcanics, but these, further, can be explained by the shallow descent of the Pacific Plate beneath the North American Plate in late-Cretaceous time.


The San Juan Basin, a region known for its wealth of natural resources, formed from various orogenies affecting the area, namely the Laramide. This broad downwarped structure extends form the lower reaches of McKinley County north to Colorado. Littlewater and Borrego Pass situate along the southern fringes. Rock units associated with the basin generally dip toward the basin's center. This translates to an overall gentle dip of rocks in our area of interest to the north. The Continental Divide follows just west of our area of interest, and is within miles of Borrego Pass. Mount Powell (8,748 feet) and Hosta Butte (8,620 feet) identify the Divide. Although the Littlewater-Borrego Pass area is separate from the domal Zuni Mountain Uplift to the south, the uplift has warped distinctive cuestas north. Viewable from Borrego Pass, these cuestas dip gradually to the north, the direction which defines a general slope toward the area of interest.

## LITHOLOGY AND STRUCTURE

Sediments overlying this entire region - from the southern extremities of the San Juan Basin covering nearly the entire expanse north to Farmington, are Cretaceous in age. These are underlain by rock units predominantly of the same age, although upper Paleozoic rocks surface in very local formations. So much of New Mexico's Colorado Plateau consists of Aeolian and alluvial deposits. The underlying rock, consequently, is the source of many of these sediments. Low rainfall and semi-arid conditions have resulted in sparse vegetation, and this occurrence has been exacerbated by deforestation. This, in combination with the
high altitude, results in accelerated erosion rates. During the July-August monsoons, excessive erosion from during flash flooding can re-sculpt the landscape. Some sediments are second generation alluvial deposits; they had already formed the original streambed before being eroded once more and deposited for a second time.


Within southern McKinley County, exposed rock outcrops range from Permian (upper Paleozoic) to Quaternary. The units generally dip to the north at gentle angles often less than five degrees. Of the rock units, sandstone predominates; lesser beds of limestone and shale are not uncommon. Rocks of late Cretaceous age cover most of the area; just north of the Zuni Mountains, from the uplift process, younger rocks of Jurassic, Triassic, and Permian age have been uplifted and exposed. Resulting from the uplift, Jurassic-age rocks appear as vertical red palisades near the town of Thoreau, twenty miles south of Borrego Pass. This is the Entrada Sandstone. Just north of these Entrada Sandstone outcrops that run perpendicular to the cross-cutting Highway 371, a narrow outcrop of Jurassic Todilto Limestone reaches the surface and is mined for construction-grade aggregate. Whereas the Entrada is a desert-dune formation rich in iron oxides, the Todilto represents the transgressing and regressing seas of Jurassic times. Both are members of the San Rafael Group, in which seas levels - or altogether absence of seas - provided the physical qualities of rock. Some of the highest outcrops in the region, such as those adjacent the Continental Divide on the highest mesas above Borrego Pass, are replete with shark's teeth representing, obviously, a transgressing sea. In areas surrounding Borrego Pass, various
sections of Cretaceous age rocks are overlain by Tertiary lava flows. Volcanic ash commonly infiltrates various units throughout the region.

Although surficial rocks dating back to PreCambrian times have been mapped just outside the McKinley County borders, most rocks within the county are much younger and date back to the Mesozoic Era. In our area of study, of three Mesozoic time periods, the Triassic, Jurassic, and Cretaceous, youngest to oldest respectively, the Cretaceous is most represented. These rocks are underlain by older units, some of which are fossiliferous; some are rich in uranium oxides and hydrocarbons, mostly oil, coal, and gas; some provide excellent properties for underground aquifers. Because of these significant properties, even rocks that are not surficial must be analyzed.

Of the Permian-age rocks, the Glorieta Sandstone and overlying San Andres Limestone appear at the surface at the southeastern extent of McKinley County. Otherwise they are predominantly subsurface.

Eventually, these units thin out and later, are truncated. At Ambrosia Lake just east of Borrego Pass, both formations were represent in drill cores. The Glorieta is a well-sorted, medium-grained, sandstone primarily of a quartz composition and ranging in colors from white to light brown. Where the unit outcrops, the sandstone occasionally exhibits a yellowish hue from a result of weathering. Like so many units in the Plateau region, it is frequently cross-bedded. The San Andres Limestone lies directly overtop. In places, the San Andres is missing, and the Glorieta, highly resistant toward the top of the sequence, is overlain by Triassicage rocks. The upper third of the San Andres limestone is significant in that it is highly fossiliferous. The Glorieta and San Andres units commonly, in unison, form a single aquifer. Buried too deeply for well-use throughout much of McKinley County, its depths near Thoreau and Prewitt are shallow enough to allow access. Deterioration of water quality, however, especially near mining activities, has resulted in contamination, and the water is non-potable. Industrialization near

Prewitt and mining activities near Grants have depleted and contaminated this aquifer.

Sequential younger, the Chinle formation overlies the San Andres or, where it is absent, the Glorieta. The Chinle is late Triassic. This readily identifiable unit is divided into three parts, each with substantial thicknesses totaling over 1,600 feet. The unit lies at the surface south of McKinley County, along the Zuni Mountains and Highway 66, and in valleys to the north. Older sections - the lowest third of the unit - consist mostly of thin beige silty-sandstones, dark brown or purple siltstones, and layers of conglomerate. Noticeable amounts of petrified wood are common throughout the unit. Purple layers of siltstone and mudstone also forge into the middle sequences of yellow and gray sandstones. A pebble-sized conglomerate is also visible in these middle units. Younger expanses of the Chinle formation are characterized by intervening lenses of multi-colored mudstones, siltstones, nodular limestone, and sandstones. A distinct erosional surface near the top of this unit where it meets the Wingate Sandstone reflect receding seas.

A lower unit in the Glen Canyon Group, late Triassic, the Wingate Sandstone commonly sits stop the Chinle formation. The Wingate formation is a distinctive unit comprised of red-brown to orange cross-bedded sandstones ranging from thirty feet thick near Prewitt to almost a hundred feet thick near Thoreau. These varying thicknesses again reflect varying sea depths at the origin of deposition.

Sedimentary Jurassic-age units also appear within or near the area outlined in this report. Outcrops of the Jurassic San Rafael Group and fossiliferous Morrison Formation are exposed in southeastern McKinley County. The oldest unit of San Rafael Group in McKinley County is the Entrada Sandstone. This is overlain by younger units: the Todilto Limestone, Summerville Formation, and Bluff Sandstone respectively, all units that vary in thicknesses throughout the area. San Rafael Group members appear sporadically as narrow belts and tongues in isolated escarpments delineating the southwestern third of McKinley County.

An unconformity exists where the Entrada Sandstone sits atop the Wingate Sandstone. This sandstone is distinctive in various ways. It forms the vertical red cliffs north of Interstate 40 that weather into round summits indicative of exfoliated boulders. The upper expanse of the Entrada is a resistant orange-red fine-grained sandstone with predominant crossbedding. North of these prodigious Interstate outcrops, the Entrada dips below the surface. The very resistant and extremely hard Todilto Limestone often caps the Entrada Sandstone above which, in many places, it represents an unconformity. The Todilto Limestone is generally a gray color, fine-grained, and lacks fossils. Despite the thinness of its beds, its properties make it valued as a construction aggregate. Weathering produce rectangular blocks common to limestones. Near Haystack Mountain east of Prewitt, the limestone reaches a thickness of twenty-five feet. Rich in the uranium ore, carnotite, which appears in yellowish pockets, this site has been extensively mined of the popular oxide. The yellow pockets often are carried away by erosive activities where they congregate as yellowish deposits commonly mixed with amber at the bases of trees and shrubs.

The younger Jurassic Summerville Formation overlies the Todilto Limestone. Noticeably less resistant than the Todilto, it forms as rounded knobs and weathers into weathers into friable talus deposits. The Summerville units consist of variablysized and erratically sorted multi-colored sandstones, siltstones, and shales, redbrown, to green, to white. In southern McKinley County, the formation varies from thirty to two hundred feet thick.

Overlying the Summerville Formation, the resistant, fine-grained Bluff Sandstone, in southern McKinley County, also displays varying thicknesses. At many places north of Interstate 40, this cross-bedded, light-gray to light- brown hard sandstone forms vertical cliffs. On Haystack Mountain, the unit reaches a thickness of nearly three-hundred feet where it underlies the gradually-sloping Morrison Formation.

The renowned, highly fossiliferous Morrison Formation forms substantial outcrops in southern McKinley County. Like the San Rafael Group, the Morrison consists of numerous members; from oldest to youngest, they are the Recapture, Westwater Canyon, and the Brushy Basin members. The Recapture situates above the Bluff Sandstone and at times diminishes laterally as an erosional unconformity. The member consists primarily of dark brown red-brown siltstones, shales, and fine-grained sandstones, all interstratified with each other at vastly varying thicknesses typical of the unit. Wedges of conglomeratic coarse-grained sandstones and thin green limestones are also evident in places. The leads to varying resistances and slopes within the formation itself; however, the Recapture member general displays low weathering resistance.

The Westwater Canyon member of the Morrison, relative to the other members, displays moderate to high resistance and forms steep cliffs above the Recapture Member and below the Brushy Basin member. The Westwater Canyon member consists of poorly sorted sandstone with defined cross-bedding throughout, commonly gray to white, or light yellow-brown, with fine to coarse quartz grains. The member, in places, also displays thin conglomerates with clay, cherts, and petrified wood inclusions. Like the other members of the Morrison, the Westwater Canyon varies in thickness from thirty to three-hundred feet in southern McKinley County. Significance of the Westwater Canyon member relates to its vast uranium oxide depositions that are present as large masses of the ore mineral, coffinite, in sandstone blocks, lenses and elongate pods extending up to a mile long.

Overlying the Westwater Canyon member, the Brushy Basin member often intertongues with this older member. Varying grain size within this unit allows for deposits ranging from mudstone to coarse sandstone. Thin beds of limestone may also be present. The mudstones display evidence of gypsum and bentonite, and the concentrations of each add to the whitish colorations within the deposit. This
unit in particular is composed of gradational variations in the deposits. Carbonaceous and calcareous materials commonly have intermixed with sand, silt, and clay particles. The intertonguing of this member leads to highly variable thicknesses, but generally these thicknesses range from 50 to 150 feet. Sandstone lenses in the Brushy Basin also contain uranium ores especially near Ambrosia Lake where various mining operations have persisted.

Throughout McKinley County, Cretaceous rocks and direct underlying units provide most of the sediments. In southeastern sections of the county, their exposure predominates. Cretaceous-age sandstones comprise the cliff-forming units that rise above Littlewater and Borrego Pass in southern McKinley County. In many areas, the Cretaceous rocks are overlain by younger basalt flows. These strata consist of alternating thick sequences of marine, deltaic, coastal and intercontinental deposits evidence in shales, siltstones, and mudstones of highly varying resistances and thicknesses. Intertonguing results is these changes in thickness and abrupt changes in lithologies. In ascending order, the Cretaceous formations in southern McKinley County consist of the lower Cretaceous Dakota Sandstone, mid-Cretaceous Mancos Shale, and the upper Cretaceous Mesaverde Group.

The distinctive Dakota Sandstone lies unconformably over Late Jurassic rocks. This highly resistant sandstone forms the caprock on various escarpments near or within the study area. The composition of the Dakota lends to its very high resistance. The unit consists of yellow-brown, to gray, to purplish hued coarsegrained quartz sandstone interlaced with lenses of conglomerate and low-grade coal. Cross-bedding is very evident in the lower part of the unit whereas conglomeratic tongues and carbonaceous shales form in the upper rocks. On the slopes of the older Morrison Formation, blocks of Dakota Sandstone frequently appear from slope retreat. In southeastern McKinley County, thicknesses vary from 50 to 150 feet thick. The formation then continues beneath the surface, dipping
north, for the entire breadth of the county. Mines near Ambrosia Lake have recovered small amounts of uranium oxides within this formation.

Above the Dakota Sandstone, the younger Mancos Shale, of mid to Late Cretaceous age appears. Its low weathering resistance makes the Mancos Shale a valley-former, as it does at Smith Lake and Ambrosia Lake. This characteristic of the formation results in vast alluvial deposits lying upon and often obscuring its outcrops. The Mancos is a very substantial lithologic unit. Characteristic of marine sediments, the shale is, in places, highly calcareous. Known for being very fissile, the Mancos Shale is generally medium to dark gray in color. Lower rocks consist of three fossiliferous sandstone beds. Another fossiliferous sandstone bed appears near the top of the unit.

In our area of study, the late Cretaceous Mesaverde Group is most prominent. Units of this group form the of Late Cretaceous age form the high, precipitous cliffs overlooking Littlewater and Borrego Pass. This group ranges in thickness up to 1,500 feet and is composed of alternating, beds of sandstone, siltstone, clay deposits, and coal. Origins of these sequences are primarily continental desert and coastal deposits. In the area of our study, the Group consists of the Gallup Sandstone, Crevasse Canyon Formation, Point Lookout Sandstone, and the Menefee Formation from oldest to youngest.

The Gallup Sandstone comprises a narrow continuous arc of sandstone separated by ninety feet of carbonaceous gray-black shale throughout southeastern McKinley County. The fine-grained silty basal sandstones are mostly light to dark brown in color. Upper sandstone rocks are much thicker, up to 125 feet thick, and may appear pink or light gray. A cliff-former, the upper sandstone often displays beehive weathering features and is more resistant.

Overlying the Gallup Sandstone of the Mesaverde Group, the Crevasse Canyon Formation also displays three distinctive layers of strata. These are, from oldest to youngest, the Dileo Cqal Member, the Dalton Sandstone Member, and the Gibson Coal Member. The Dilco Coal Member ranges up to 200 feet and consists of thin sandstones and shales with lenses of coal. It is mildly resistant and forms gentle slopes above the Gallup Sandstone. The Dalton Sandstone member is a white to light-brown unit sandstone that disintegrates into massive blocks. The uppermost member of the Crevasse Canyon Formation, the Gibson Coal, consists of alternating sandstones, thick shales, and coal beds ranging in thickness from 250 to 400 feet. The highly resistant Point Lookout Sandstone forms the caprock on the high mesas overlooking Borrego Pass and Littlewater. This member is a thick, dark-orange, reddish-brown sandstone with prominent crossbeds. Because of its arkosic concentrations, these medium-grained sandstones are rich in iron oxides that lead to reddish weathering streaks in places. Black manganese stains are also prominent on the sides of escarpments. The units' thicknesses range from 75 to 300 feet. The uppermost unit of Mesaverde Group, the Menefee Formation outcrops in the eastern portion of the study area. This member consists of gray and brown claystones and shale, thin coal beds, and brown sandstone. The Menefee Formation contains small amounts of water allowing the unit to serve as an aquifer to the San Mateo communities. The formation's low resistance lends to the formation of gentle slopes directly above the more prominent Point Lookout Sandstone.

Tertiary and Quaternary age materials in our area of study primarily consist of extrusive volcanic materials - basalt, rhyolite, and andesite - extruded from the late Tertiary volcanics that predominated throughout the region. Dikes, sills, and other intrusive plutons are common to this area, and some are associated the Mount Taylor eruption system. Volcanic vents from extinct cinder cones have also contributed to the extrusive igneous rocks, basaltic cinder, and ash that
predominate throughout the region. These extrusive materials have settle mostly upon the Cretaceous rocks exposed in the area of study.

## B. WATER RESOURCES

1. SURFACE WATER

During a pedestrian survey of the project ROW, and a review of the topographic maps of the project area, there is no naturally occurring surface water in the Littlewater Chapter vicinity other than small wells, cienegas, and Laguna Castillo, or, translated into English, "Lake Castle". Laguna Castillo is an area that is periodically inundated with water during periods of snow melt, or during the monsoon season. This area in not located near the project ROW. There is no standing or flowing water in the project ROW, nor in the immediate vicinity except during brief periods during the monsoon season and during winter snow pack runoff.

Ponded surface water from monsoon season precipitation or winter snow pack melt, within the chapter boundary is considered potable by livestock, with tested and monitored wells and pump houses in the area providing human drinking water (Ms. Genevieve Castillo, Personal Communication, 2014).

## 2. GROUND WATER/HYDROLOGY

"The San Juan Basin of New Mexico has long been considered as an area having very limited groundwater potential. Farmington, the largest city in the basin, as well as the City of Aztec, have depended exclusively on surface water from the Animas River for their municipal water supplies. Shiprock is dependent upon the San Juan River. Wells at Cuba, New Mexico tap the Ojo Alamo Sandstone, however these are low-yielding wells that produce highly-mineralized water. Elsewhere in the basin, isolated wells have been drilled at trading posts, as well as for stock and domestic purposes. However these have often been low capacity wells tapping the shallowest available aquifer.

Only Crownpoint, New Mexico, has had a dependable supply of groundwater. The first four wells drilled at the community tapped Cretaceous strata, including the Gallup Sandstone and the shallower Crevasse Canyon sands. Well No. 5 was completed in the Westwater Canyon member of the Morrison Formation in 1958 and well No. 6 was completed in the same deposit three years later. During the same period, a tremendous amount of information about the Westwater Canyon was being obtained in the Ambrosia Lake area where major uranium ore deposits were being mined from the Westwater sandstones. As exploration for uranium has spread into the deeper parts of the San Juan Basin, it has become obvious that the Westwater Canyon is the principal aquifer in the southern part of the basin." (Kelly, 1977)

Based upon this summary, the Westwater formation below the Crownpoint community is the foremost reliable source of potable water in this region. The Navajo Tribal Utility Authority has wells that have been drilled that have tapped into these strata and this is where the communities of Crownpoint, Littlewater, and Standing Rock currently receive their water supply.

Surface water within the reservation boundaries may be seen only during the late summer thunderstorms and late-winter and spring from meager melting snow accumulations. The direction of surface water runoff in the northern reservation is north to northeast. Almost all waters eventually drain into the San Juan River. As with most arid regions, a small amount of interior drainage is likely.

The lack of surface water requires the Littlewater community to rely on the wells located at Crownpoint entirely for water supply. Springs on and near the reservation yield restricted amounts of water with moderate mineral content. Several springs and wells in the general area of the checkerboard area do not contain potable water for human use, and also because some of the wells have elevated levels of uranium.

Littlewater obtains potable water from the water wells at Crownpoint with most of the community receiving its potable water from these ground water wells. Water is obtained from wells that are several feet to hundreds of feet in depth, and treated to become potable water. They are treated by the Navajo Tribal Utility Authority and this entity also ensures that the water is safe and potable. Under the Safe Drinking Water Act of 1996, all public water systems must meet United States Environmental Protection Agency drinking water standards.

## C. AIR RESOURCES

1. QUALITY/VISIBILITY

Increased fuel-wood and coal burning in the winter months decreases air quality in the area, but in general, air quality is considered good. As seen in preliminary data from air monitoring stations across the reservation, air quality in the winter months decreases dramatically in the early morning and late evening hours when fuel-wood and coal burning increases, and when air circulation drops (Personal Communication, Mangus Slinkey, Navajo Nation EPA, 2010). This is more than likely to occur in Littlewater since a most of the home heating is wood and also due to the fact that most homes of Littlewater are located in a small valleys. This is especially evident in valleys and drainages where thermal inversions can occur and in areas with high human inhabitation and vehicle traffic causing an abundance of airborne particulates.

The proposed project does not intend to produce a significant amount of particulate pollution, perhaps only from the increased number of heavy equipment on roads in the area during the installation of the distribution line poles, but this will only be minimal. In general, visibility at the site is excellent.

## 2. CLIMATE

The following description of the climate for the state of New Mexico was obtained from the Western Regional Climate Center western database in Reno, NV (http://www.wrcc.dri.edu/narratives/newmexicol).

## "Temperature

Mean annual temperatures range from $64^{\circ} \mathrm{F}$ in the extreme southeast to $40^{\circ} \mathrm{F}$ or lower in high mountains and valleys of the north; elevation is a greater factor in determining the temperature of any specific locality than its latitude. This is shown by only a $3^{\circ} \mathrm{F}$ difference in mean temperature between stations at similar elevations, one in the extreme northeast and the other in the extreme southwest; however, at two stations only 15 miles apart, but differing in elevation by 4,700 feet, the mean annual temperature are $61^{\circ}$ and $45^{\circ} \mathrm{F}$ - a difference of $16^{\circ} \mathrm{F}$ or a little more than $3^{\circ}$ decrease in temperature for each 1,000 -foot increase in elevation.

During the summer months, individual daytime temperatures quite often exceed $100^{\circ} \mathrm{F}$ at elevations below 5,000 feet; but the average monthly maximum temperatures during July, the warmest month, range from slightly above $90^{\circ} \mathrm{F}$ at lower elevations to the upper 70's at high elevations. Warmest days quite often occur in June before the thunderstorm season sets in; during July and August, afternoon convective storms tend to decrease solar insolation, lowering temperatures before they reach their potential daily high. The highest temperatures of record in New Mexico are $116^{\circ}$ at Orogrande on July 14, 1934, and at Artesia on June 29, 1918. A preponderance of clear skies and low relative humidities permit rapid cooling by radiation from the earth after sundown; consequently, nights are usually comfortable in summer. The average range between daily high and low temperatures is from $25^{\circ}$ to $35^{\circ} \mathrm{F}$.

In January, the coldest month, average daytime temperatures range from the middle 50s in the southern and central valleys to the middle 30 s in the higher elevations of the north. Minimum temperatures below freezing are common in all sections of the State during the winter, but subzero temperatures are rare except in the mountains. The lowest temperature recorded at regular observing stations in the State was $-50^{\circ} \mathrm{F}$ at Gavilan on February 1, 1951. An unofficial low temperature of $-57^{\circ} \mathrm{F}$ at Ciniza on January 13, 1963, was widely reported by the press.

The freeze-free season ranges from more than 200 days in the southern valleys to less than 80 days in the northern mountains where some high mountain valleys have freeze in summer months.

Precipitation
Average annual precipitation ranges from less than 10 inches over much of the southern desert and the Rio Grande and San Juan Valleys to more than 20 inches at higher elevations in the State. A wide variation in annual totals is characteristic of arid and semiarid climates as illustrated by annual extremes of 2.95 and 33.94 inches at Carlsbad during a period of more than 71 years.

Summer rains fall almost entirely during brief, but frequently intense thunderstorms. The general southeasterly circulation from the Gulf of Mexico brings moisture for these storms into the State, and strong surface heating combined with orographic lifting as the air moves over higher terrain causes air currents and condensations. July and August are the rainiest months over most of the State, with from 30 to 40 percent of the year's total moisture falling at that time. The San Juan Valley area is least affected by this summer circulation, receiving about 25 percent of its annual rainfall during July and August. During the warmest 6 months of the year, May through October, total precipitation averages from 60 percent of the annual total in the Northwestern Plateau to 80 percent of the annual total in the eastern plains.

Winter precipitation is caused mainly by frontal activity associated with the general movement of Pacific Ocean storms across the country from west to east. As these storms move inland, much of the moisture is precipitated over the coastal and inland mountains ranges of California, Nevada, Arizona, and Utah. Much of the remaining moisture falls on the western slope of the Continental Divide and over northern and high central mountain ranges. Winter is the driest season in New Mexico except for the portion west of the Continental Divide. This dryness is most noticeable in the Central Valley and on eastern slopes of the mountains.

Much of the winter precipitation falls as snow in the mountain areas, but it may occur as either rain or snow in the valleys. Average annual snowfall ranges from about 3 inches at the Southern Desert and Southeastern Plains stations to well over 100 inches at Northern Mountain stations. It may exceed 300 inches in the highest mountains of the north.

## Floods

General floods are seldom widespread in New Mexico. Heavy summer thunderstorms may bring several inches of rain to small areas in a short time. Because of the rough terrain and sparse vegetation in many areas, runoffs from these storms frequently cause local flash floods. Normally dry arroyos may overflow their banks for several hours, halting traffic where water crosses highways; damaging bridges, culverts, and roadways; and if in an urban area, possibly causing considerable property damage. Snowmelt during April to June,
especially in combination with a warm rain, and heavy general rains during August to October may occasionally cause flooding of the larger rivers. Although streams in New Mexico have risen substantially during several floods, the overflows cannot be termed disastrous because comparatively little real property damage has resulted in this lightly industrialized and sparsely populated State. During spring snowmelt, main rivers may exceed flood stage and cause some damage to property along their banks.

Years in which there have been high flood discharges in major New Mexico river basins since 1903 are: Rio Grande - 1904, 1905, 1929, 1935, and 1941; Pecos - 1904, 1905, 1915, 1916, 1937, 1941, 1942, and 1966; Canadian - 1904, 1913, 1937, and 1965; San Juan - 1909, 1911, 1927, 1929, and 1942; and Gila - 1941 and 1965.

## Climate of New Mexico

Topographic Features
New Mexico, fifth largest State in the Union, with a total area of 121,412 square miles, is approximately 350 miles square, and lies mostly between latitudes $32^{\circ}$ and $37^{\circ} \mathrm{N}$ and longitudes $103^{\circ}$ and $109^{\circ} \mathrm{W}$. The State's topography consists mainly of high plateaus or mesas, with numerous mountain ranges, canyons, valleys, and normally dry arroyos. Average elevation is about 4,700 feet above sea level. The lowest point is just above the Red Bluff Reservoir at 2,817 feet where the Pecos River flows into Texas. The highest point is Wheeler Peak at 13,161 feet. The principal sources of moisture for the scant rains and snows that fall on the State are the Pacific Ocean, 500 miles to the west, and the Gulf of Mexico, 500 miles to the southeast. New Mexico has a mild, arid or semiarid, continental climate characterized by light precipitation totals, abundant sunshine, low relative humidities, and a relatively large annual and diurnal temperature range. The highest mountains have climate characteristics common to the Rocky Mountains.

The State is divided into three major areas by mountain ranges and highlands, oriented in a general north-south directions, which merge in the north. The Northern Mountains and Central Highlands, between longitudes $105^{\circ}$ and $106^{\circ}$ W, are the western boundary of the Northeastern and southeastern Plains which slope gradually eastward and southeastward. The northern part of these eastern plains lies within the Arkansas River Basin and is drained mostly by the Canadian River, which flows southward then eastward into Oklahoma to its confluence with the Arkansas, and the Cimarron River in the extreme northeastern corner. The Pecos River rises in the Sangre de Cristo Mountains and flows southward through the Southeastern Plains into Texas, and then southeastward to join the Rio Grande. West of the mountain ranges that form the Continental Divide, whose height decreases to a markedly lower elevation in
southern New Mexico, rivers drain into the Gulf of California through the Colorado River system. Principal tributaries flowing westward into the Colorado River are the San Juan River in the north, the Gila River in the south, and the San Francisco tributary of the Gila and other headwater streams of the Little Colorado River in the west-central area. The largest closed basins in the west are the Plains of St. Augustine in Catron County and the Rio members Basin in Grant and Luna Countries. Between the Northern Mountains and the Central Highland system and the Continental Divide system is the Rio Grande Valley which widens toward the south. The Rio Grande rises in the San Juan Mountains of southern Colorado, flows southward through New Mexico, then southeastward along the Texas-Mexico border into the Gulf of Mexico. The closed Tularosa Basin in southern New Mexico is an intermountain area east of the Central Valley.

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## Severe Storms

On rare occasions, a tropical hurricane may cause heavy rain in eastern and central New Mexico as it moves inland from the western part of the Gulf of Mexico, but there is no record of serious wind damage from these storms. Also on rare occasions, a tropical storm moving inland from the Gulf of California area may cause heavy rain in southwestern New Mexico.

Tornadoes are occasionally reported in New Mexico, most frequently during afternoon and early evening hours from May through August. There is an average of nine tornadoes a year, but damage has been light because most occur over open, sparsely populated country. The tornado causing the most loss of life and injuries occurred in 1930 at Wagon Mound with 3 deaths, 19 injuries, and property loss of $\$ 150,000$. Greater property damage, $\$ 450,000$, but fewer casualties - 1 death and 8 injuries - resulted from a destructive tornado at Maxwell in 1964.

Thunderstorms are relatively frequent in summer, averaging from 40 in the south to more than 70 in the northeast, the latter area having the second greatest thunderstorm frequency in the country. Occasionally, these heavy thunderstorms are accompanied by hail, with the greatest hail frequency occurring near and to
the east of Los Alamos. When hail falls over an agricultural area, considerable local crop damage may result.

Sunshine
Plentiful sunshine occurs in New Mexico, with from 75 to 80 percent of the possible sunshine being received. In winter, this is particularly noticeable with from 70 to 75 percent of the possible sunshine being received. It is not uncommon for as much as 90 percent of the possible sunshine to occur in November and in some of the spring months. The average number of hours of annual sunshine ranges from near 3,700 in the southwest to 2,800 in the north-central portions.

Relative Humidity
Average relative humidities are lower in the valleys but higher in the mountains because of the lower mountain temperatures. Relative humidity ranges from an average of near 65 percent about sunrise to near 30 percent in mid-afternoon; however, afternoon humidities in warmer months are often less than 20 percent and occasionally may go as low as 4 percent. The low relative humidities during periods of extreme temperatures ease the effect of summer and winter temperatures.

## Wind

Wind speeds over the State are usually moderate, although relatively strong winds often accompany occasional frontal activity during late winter and spring months and sometimes occur just in advance of thunderstorms. Frontal winds may exceed 30 mph for several hours and reach peak speeds of more than 50 mph . Spring is the windy season. Blowing dust and serious soil erosion of unprotected fields may be a problem during dry spells. Winds are generally stronger in the eastern plains than in other parts of the State. Winds generally predominate from the southeast in summer and from the west in winter, but local surface wind directions will vary greatly because of local topography and mountain and valley breezes.

## Evaporation

Potential evaporation in New Mexico is much greater than average annual precipitation. Evaporation from a Class A pan ranges from near 56 inches in the north-central mountains to more than 110 inches in southeastern valleys. During the warm months, May through October, evaporation ranges from near 41 inches in the north-central to 73 inches in the southeast portions of the State.

## Drought

Periods of recent extreme meteorological drought, as defined by palmer drought index of -4.0 or lower, have been noted in the mid-1930's in the Northeastern Plains and Central Highlands, in 1947 in the Central Highlands, in the 1950's throughout the State, in 1963-64 in the Northern Mountains, in 1964 in the Southeastern Plains, and in 1967 in the Northern Mountains. The largest general drought since 1930 was in the 1950's."

The climate of the Littlewater, NM vicinity, data taken from the Western Regional Climate Center for Crownpoint, NM, can be described as having hot summers, and moderately cold winters with nighttime lows often below freezing from November through March. Spring weather is highly variable with extended periods of wind. Fall weather is usually mild and in the late summer months of July and August, the monsoon season arrives with abundant rainfall and thunderstorms. Temperatures range from an average maximum temperature of $84.7^{\circ} \mathrm{F}$ in July to an average minimum temperature of $18.6^{\circ} \mathrm{F}$ in January. Precipitation is generally light, with an average of 10.75 inches per year, although heavy rain and flooding does occur in the spring and summer (Western Regional Climate Center, 2014). The average temperatures and precipitation amounts were taken from weather station data that was collected from 1914 to 1969.

WEATHER STATION: CROWNPOINT, NEW MEXICO (292219)

## Period of Record Monthly Climate Summary

Period of Record : 7/ 1/1914 to 11/13/1969
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Annual
Average Max.
Temperature (F)
$40.746 .553 .062 .872 .382 .084 .782 .577 .867 .053 .243 .3 \quad 63.8$
Average Min.
Temperature (F)
$18.623 .527 .635 .644 .353 .659 .056 .551 .040 .327 .720 .8 \quad 38.2$
Average Total
Precipitation (in.)
Average Total
SnowFall (in.)
$\begin{array}{llllllllllll}3.8 & 5.7 & 2.6 & 0.9 & 0.1 & 0.0 & 0.0 & 0.0 & 0.0 & 0.2 & 1.7 & 5.0\end{array}$
$\begin{array}{llllllllllllll}\text { Average Snow } & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0\end{array}$
Depth (in.) of possible observations for period of record.
Percent Max. Temp.: 52.4\% Min. Temp.: 51.7\% Precipitation: 85.9\% Snowfall: 36.2\% Snow Depth: 31.5\%
(source: Western Regional Climate Center, 2014)

## D. BIOTIC RESOURCES

## 1. DESCRIPTION OF ECOSYSTEM/BIOLOGICAL COMMUNITIES

A biological description of the community within which the ROW is found can be characterized as being found in wide, shallow valleys that are covered with sparse xeric grasses and shrubs. Although the area looks very sparse and barren, there exists within these desert habitats in the northern parts of New Mexico, over 50 wildlife species and over 400 species of plants (http://nmbiodiversity.org/nmbiodiversity.php). These species can endure very high and low temperatures with great tenacity and adaptability. At the time of visiting the ROW, there were very few plants species other than tumbleweed (Salsola kali) or Alkali sacaton (Sporobolus airoides (Torr.)) and very little grass, including Indian Ricegrass (Oryzopsis hymenoides) and a few Greasewood (Sarcobatus vermiculus) bushes. The ROW itself appears to have been grazed by livestock for years and very few palatable plant species exist on the site.
There is evidence that livestock graze in the ROW seeking food and grazing, there are hoofprints and dung throughout the area. Some areas are worse than others, some allottees allow more grazing than others, thus increasing the likelihood of desertification in these fenced allotted areas.
"New Mexico is enormously rich in biodiversity. Across plants and vertebrate animals, New Mexico has the 4th highest native species richness of any of the U.S. states ${ }^{1}$. The large size of our state and nearness to the U.S. southern border are major contributers to our species richness. Another important factor is that several ecoregions converge in New Mexico including the Colorado Plateau, the Southern Rocky Mountains, the Arizona-New Mexico Mountains, the Central and Southern Short-grass Prairies, the Chihuahuan Desert, and the Apache Highlands. While these factors contribute to New Mexico's large species richness, the level of endemism (species found only in New Mexico) is relatively low. New Mexico ranks 11th in endemism ${ }^{1}$.

Among U.S. states, New Mexico has the 4th highest diversity of plants, 3rd highest diversity of mammals and of reptiles, and the 2nd highest diversity of birds ${ }^{1}$. At this time, we do not know invertebrates well enough to say how many species we have in New Mexico or to compare quantitatively against other states. Nevertheless, it seems quite likely that the species richness of insects, spiders, and other arachnids is quite high in New Mexico. As expected for a dry state, our species richness for amphibians and freshwater fishes is relatively low compared to other states ${ }^{1}$ (27th and 38th respectively).

The table below seeks to summarize the number of documented species in New Mexico across the entire taxonomic spectrum. At the present time, we have good estimates for species numbers in vertebrates and vascular plants, but our understanding of the other taxonomic groups is too limited to allow us to offer even
a plausible guess as to the number of species. As such, we are a long way from being able to generate a legitimate estimate for the total number of species in New Mexico.

|  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Viruses | ?? | ?? | ?? | ?? | ?? |
| Monera | ?? | ?? | ?? | ?? | ?? |
| Protists | ?? | ?? | ?? | ?? | ?? |
| Fungi | ?? | ?? | ?? | ?? | ?? |
| Non-vascular Plants | ?? | ?? | ?? | ?? | ?? |
| Mosses ${ }^{2}$ | 287 | 0 | 0 | 0 | 287 |
| Vascular Plants ${ }^{3}$ | 3,174 | 440 | $? ?$ | $1 ?$ | 3,614 |
| Ferns \& Fern Allies ${ }^{3}$ | 80 | 0 | 0 | 0 | 80 |
| Gymnosperms ${ }^{3}$ | 27 | 0 | 0 | 0? | $27 ?$ |
| Dicots ${ }^{3}$ | 2,470 | 304 | ?? | $1 ?$ | 2,775 |
| Monocots ${ }^{3}$ | 597 | 136 | ?? | $0 ?$ | 732 |
| Invertebrate Animals | ?? | ?? | ?? | ?? | ?? |
| Vertebrate Animals | 696 (816) | 51 | 4 | 21 | $\begin{gathered} 772 \\ (892) \end{gathered}$ |
| Fishes ${ }^{4}$ | 57 | 30 | 1 | 9 | 107 |
| Amphibians ${ }^{5}$ | 22 | 1 | 2 | 1 | 26 |
| Reptiles ${ }^{5}$ | 101 | 1 | 1 | 0 | 103 |
| Birds ${ }^{6}$ | 361 (481) | 5 | 0 | 2 | $\begin{gathered} 368 \\ (488) \end{gathered}$ |


| Mammals $^{7}$ | 155 | 14 | 0 | 9 | 178 |
| :--- | :--- | :--- | :--- | :--- | :--- |

${ }^{1}$ B.A. Stein. 2002. States of the Union: Ranking America's Biodiversity. Arlington, Virginia: NatureServe."

## 2. WILDLIFE

Limited wildlife, or sign of wildlife, was observed during the survey of the project area. This lack of wildlife may be due to the close proximity and prevalence of dogs, constant land use and disturbance, length of time on site, and the close proximity to human inhabitation (the ROW goes through homesites along the way). The following species were noted during the survey of the site, and the site vicinity:

1. Common raven (Corvus corax)
2. Common Flicker (Colaptes auratus)
3. Northern Harrier (Circus cyaneus)
4. Red-tailed Hawk (Buteo jamaicensis)
5. Mohave Rattlesnake (Crotalus scutalatus)
6. Blue Grama (Boutelous gracilis)
7. Indian Ricegrass (Oryzopsis hymenoides)
8. Four-o'clock (Mirabilis sp)
9. Prickly Pear (Opuntia sp.)
10. Jumping Cholla (Opuntia bigelovii)
11. Wolfberry (Lycium berlandieri)
12. Globemallow (Sphaeralcea ambiqua)
13. Side-oats Grama (Bouteloua curtipendula)
14. Alkali Sacaton (Sporobolus airoides)
15. Russian Thistle (Salsola Kali)
16. Pinyon Pine (Plnus edulis)
17. One-seed Juniper (Juniperus osteosperma)
18. Buffalo Grass (Buchloe dactyloides)
19. Yucca (Yucca Glauca)
20. Sclerocactus sp. (Sclerocactus sp.)

No other wildlife species were located during the survey of this project site and vicinity.

## 3. VEGETATION

Due in part to the disturbance which has occurred in the ROW, vegetation includes many species which are native and others which are invaders and introduced species. A vegetative survey was conducted of the ROW and a listing of species was generated. As stated earlier, this site is highly disturbed with apparently uncontrolled or heavy grazing on site, also there are the beginnings of blowouts
throughout the area which can lead to boondocks and ultimately desertification. Desertification can then lead to loss of topsoil, a decrease of biodiversity, and erosion and the formation of arroyos.

Existing vegetation found on the proposed project site and in the vicinity of the ROW residences include:

1. One seed juniper (Juniperus osteosperma)
2. Rubber Rabbitbrush (Ericameria nauseosa)
3. Broom snakeweed (Gutierrezia sarothrae)
4. Sage (Artemisia tridentate)
5. Fourwing saltbush (Atriplex canescens)
6. Wolfberry (Lyceum barbarum)
7. Yucca (Yucca elata)
8. Greasewood (Sarcobatus vermiculatus)
9. Blue Grama (Boutelous gracilis)
10. Indian Ricegrass (Oryzopsis hymenoides)
11.Four-o'clock (Mirabilis sp)
11. Prickly Pear (Opuntia sp.)
12. Jumping Cholla (Opuntia bigelovii)
13. Wolfberry (Lycium berlandieri)
14. Globemallow (Sphaeralcea ambiqua)
15. Side-oats Grama (Bouteloua curtipendula)
16. Alkali Sacaton (Sporobolus airoides)
17. Russian Thistle (Salsola Kali)
18. Pinyon Pine (PInus edulis)
19. One-seed Juniper (Juniperus osteosperma)
20. Yucca (Yucca Glauca)
21. Sclerocactus sp. (Sclerocactus sp.)
22. Mormon tea (Ephedra viridis)
23. Rocky Mountain Bee Plant (Cleome surrulata)
24. AGRICULTURE

Livestock sign, tracks, and manure, were seen in and along the ROW. Although most of these allotments are fenced and individually owned by individuals or families, there is sign of livestock in all of the allotments that were surveyed. Some of the rangelands that are fenced are better than others showing that there is decreased grazing pressure or that there is different management techniques used based upon control of the allotment.

No agricultural crops have been grown on the project site or in the immediate vicinity of the project site over the past 25 years (Genevieve Castillo, Personal Communication, 2014).

## E. CULTURAL RESOURCES

> 1. TRADITIONAL CULTURAL PROPERTIES
> According to the Navajo Nation Historic Preservation Department Traditional Cultural Properties (TCPs) are defined as:
> "places with no physical material remains. Demonstrable sacred place with material remains are recorded as sites and evaluated appropriately. A sacred place is defined as a place that has traditionally been considered important to an Indian tribe or membere thereof, because of a religious event that happened there, because it played a part in life-cycle rituals, because it contains specific natural products of cultural and religious importance, because it figures in or is mentioned in traditional folklore and sacred songs, because it is considered the dwelling place or embodiment of spiritual beings, because it is conducive to communication with spiritual beings, or because it has other specified and continuing multi-tribal importance, or may be considered important only to small segments of the society, such as chapters, clans, families, or individuals."

The ROW itself is not considered to be in any way sacred to the Littlewater chapter residents. The site has been used in the past for grazing but has not been used for anything else (Genevieve Castillo, Personal Communication, 2014). Allotee resident homesites and access roads exist within and along the ROW.

## 2. ARCHAEOLOGICAL RESOURCES

An archaeological survey and report was conducted in 2015 for the Littlewater Chapter and a summary of the subsequent reports are attached in the Cultural Resource Inventory Determination Forms and the full, entire reports themselves (Figure 3). The report was obtained from the Littlewater Chapter in November 2015. This survey was for the 4.05 mile Phase I-Whiteridge R-O-W which includes a combined acreage of 50.36 acres.

According to the archaeological report, there are in-use sites within the area surveyed, but they do not meet the 50 -year guideline for inclusion into the National Register of Historic Places, except where two sites were identified as they appear to be eligible for the National Register of Historic Places under criterion "d", however it also states that no historic properties will be affected since they do not meet the age criterion and are not of "archaeological interest". As stated in the report cultural resources findings "No historic properties will be affected. Notice to proceed for the undertaking is recommended"(Figure 3).

## F. SOCIOECONOMIC CONDITIONS <br> 1. EMPLOYMENT AND INCOME

## Littlewater Chapter:

As of 2010, the total population of the LIttlewater Chapter was 427 people, and the land area of this chapter is 101.5 square miles ( 64,960 acres). The 2000 Census revealed that the population of Littlewater Chapter has a population that consists 201 male residents, and 226 female residents. This averages out to 0.23 people per square mile. According to the 2010 U.S. Census, the population that lives within the boundaries that comprise Littlewater Chapter consists of American Indian (94.59\%), White (3.89\%), African American (0.08\%), Asian (0.08\%), and other races $(1.36 \%)$. This amounts to the following of individuals found within this chapter by race: American Indian (1,047), White (36), African American (6), and some other race (3).

Of the people working in Littlewater Chapter most of the employed local residents are employed with the following entities: education (22\%), public administration (14\%), professional, scientific, management ( $9 \%$ ), construction ( $20 \%$ ), manufacturing (16\%), retail trade (5\%), and agriculture, forestry, fishing, hunting and mining (14\%). The total civilian workforce in Littlewater Chapter over the age of 18 is 277 (U.S. Census Bureau, 2011).

Aside from employment opportunities listed above, many residents of the Littlewater vicinity supplement their income through livestock raising and marketing (ranching), and arts and crafts for income.

Fifty-six percent drive to work, $19 \%$ carpooled, less than $0.5 \%$ used public transportation, and $9 \%$ used other means. Sixteen percent worked from home and, on average, it took commuters 34.7 minutes to get to work. The total enrollment in Littlewater Chapter in 2009 was 18 for kindergarten and nursery school, and 18 for elementary school, and 130 for high school students. College or graduate school enrollment was 5.

As of 2009, the percentage of people in Littlewater Chapter that lived below the poverty level was $60 \%$ according to the United States Census, $84 \%$ were under 18 years of age, and $50 \%$ of the people 65 years old and older were living in poverty (http://www.census.gov/acs/www/).

## Navajo Nation Demographics

The average size of a Navajo household, according to the 2000 census, is 4.54 persons per household and the median age is 22.3 years of age. The state of Arizona Navajo population accounts for $47.76 \%$ of all Navajo and the per capita income for the Navajo Nation, as of 1990 , was $\$ 4,106$. Median Navajo income for
families living on the Navajo Nation in 2000 was $\$ 27,303$ with $47.2 \%$ of the total Navajo population living below the poverty level (Census 2000).

The unemployment rate on the Navajo Nation was $25.06 \%$ in 2000 , with $26.3 \%$ of the Navajo population having obtained a high school diploma ( 25 years or older), and $0.78 \%$ of the population on the Navajo Nation having a graduate degree (Census 2000).

Of the estimated 56,188 houses on the Navajo Nation in 1990, 19,399 were vacant and $50.85 \%$ lacked complete plumbing, $46.95 \%$ lacked complete kitchen facilities, and $77.5 \%$ lacked telephones (Etsitty, 1996).

The birth rate per 1000 population is $32.5 \%$ and the life expectancy is 73.7 years for residents of the Navajo Indian Reservation. The infant death rate is $10.1 \%$ per 1000 (Etsitty, 1996).

As of 2010, the total population of Navajos is listed as 332,000 with 286,000 being full blooded Navajo and Native American populations in the United States grew twice as fast as the general population from 2000 to 2010.

## Geography:

The Navajo Reservation covers a 27,000 square mile area on the Colorado Plateau that can be compared to that of the size of the state of West Virginia. It is comprised of the states Arizona, New Mexico, and Utah. The arid deserts and alpine forests with high plateaus, mesas, and mountains reaching as high as 10,500 feet in altitude and as low of 5,500 feet in the desert regions characterize the topography of Navajo land. Pre-Cenozoic period volcanic activities, wind and water erosions have formed and carved the Navajo Nation's many majestic mesas, mountains and canyons today. Navajo land boasts a number of world-renowned scenic wonders of the Southwest such as: Canyon de Chelly, Shiprock peak, Monument Valley, the Chuska Mountains, Antelope Canyon, and many more. The beauty and the culture of the Navajo Nation draw over three million tourists annually from all over the world.

While the Navajo Nation does contain several eye-appealing natural wonders, the majority of it is desolate and bare. Natural resource mining - for uranium, coal, etc. - has left massive amounts of land hazardous and hard to develop.

## Demographics2:

According to the 2012 American Community Survey - 3-year estimate (ACS), the Navajo Nation currently holds a population of 177,078 people, with $48.7 \%$ of the population being male and $51.3 \%$ being female. Of this population, 169,774
(95.9\%) were American Indians. After the American Indians, White constituted the second largest racial group on the Navajo Nation. The 2010 ACS counted 6,525 Whites living on the Navajo Nation, which constitutes 3.7 percent of the total population of the Navajo Nation. It is estimated that the actual growth rate of the Navajo population is considerably higher; however, because of the lack of employment opportunities on the Navajo Nation, many younger Navajos move to cities like Phoenix, Albuquerque, and Salt Lake City - thereby reducing the population size of the Navajo Nation and causing a lower population growth rate.

The Navajo population is relatively young. This is reflected by the fact that the median age of the overall population residing on the Navajo Nation in 2012 was 28.8 years, whereas the median age of the population of the United States was 37.3 years old. These figures are according to a release of the American Community Survey for the year 2012, which has replaced the long form of the Decennial censuses.

## Education:

The 2012 ACS showed that there were 32,310 high school graduates on the Navajo Nation for the 25-years-and-over age medium, as compared to the $1,777,463$ students who completed high school education in Arizona, New Mexico and Utah - which is $3.04 \%$ of the U.S. population's $58,410,105$ high school graduates.

Only 7.1\% of Al graduates obtained a Bachelor's Degree or higher compared to $26.7 \%$ of their peers completing the same higher education accomplishments within Arizona, $25.7 \%$ within New Mexico and $30.1 \%$ within Utah.

## Employment/Unemployment:

According to the 2012 ACS, $44.7 \%$ of the Navajo Nation population (ages 16 and over) was in the labor force. This number has drastically increased from $28.46 \%$ during 2000 Census. The 2012 ACS also found $64.1 \%$ of the U.S. population in general to be in the labor force. The numbers for Arizona, New Mexico and Utah were $60.5 \%, 60.7 \%$, and $68.5 \%$ respectively. To be in the labor force a person (a) has to be over the age of 16; (b) must not be institutionalized (i.e., in schools, in health or other institutions); and (c) must be looking for a job during the past six months.

The unemployment rate on the Navajo Nation has always been high, but has drastically reduced since 2001. In 2001 the unemployment rate was $42.2 \%$, but has since decreased to $23.3 \%$ according to the 2012 ACS. Though the unemployment rate has nearly dropped in half, it is still twice as much compared to the rest of the U.S. (10.1\%).

The largest industry for employment on the Navajo Nation was in the educational services, health care, and social assistance sector, which employed $39.3 \%$ of the civilian population. The next highest industries, in order, include: arts, entertainment, and recreation, and accommodation and food services (10.4\%), public administration (9.5\%), and construction and retail trade (9.0\% each).

The 2012 ACS found 56,671 individuals in the labor force on the Navajo Nation, which constituted $32 \%$ of the total population. Comparatively, $63.7 \%$ of the total population of the United States is in the labor force. The 2012 population of the Navajo Nation was estimated to be 177,078 people. If we were to apply the Navajo Nation's Labor Force-population ratio, the Navajo Nation's Labor Force in 2012 would be $56,664(177,078.32)$. However, if we were to apply the US Labor Forcepopulation ratio to the Navajo population, there would be 112,798 individuals in the labor force of the Navajo Nation $(177,078 \times .637=112,798)$. Thus the number of individuals in our labor force varies depending upon which percentage we use to calculate it, which in turn, determines the unemployment rate.

There is this common belief among political leaders and government officials that $80 \%$ of the jobs on the Navajo Nation are to be found in the Government sector. This is not true. According to the 2012 ACS, 18,933 individuals were directly working for all forms of Government combined - Navajo, Federal, State and County. This amounted to $43.6 \%$ of the total employment on the Navajo Nation. This is compared to the 22,875 individuals that were employed through private wage and salary, or $52.6 \%$ of the population. Of the private and wage salary workers, the number one occupational field was in service occupations at $26.1 \%$ followed by management, business, science, and arts occupations at $\mathbf{2 5 . 7} \%$.

## Per Capita Income:

As the unemployment rate on the Navajo Nation has been steadily decreasing, the Per Capita Income has been steadily rising. This is attributed to the number of people in the labor force getting jobs and the raises given particularly to the Navajo government employees in recent years, as well as to the regular COLA's given to the Federal, State, and other government employees.

While the Per Capita Income has been on the rise, it is considerably lower on the Navajo Nation as compared to Arizona, New Mexico, and Utah. The Per Capita Income on the Navajo Nation is 10,537 . In Arizona, New Mexico, and Utah, the Per Capita Income is $24,602,23,193$, and 23,255 respectively.

## Poverty Rate:

The relatively high unemployment rate on the Navajo Nation, and hence low
income, has resulted in a very high Poverty Rate. The 2012 ACS found $41.9 \%$ of the Navajo individuals living below poverty level. The numbers were astoundingly smaller for the U.S. (15.7\%), Arizona (18.3\%), New Mexico (21\%) and Utah (13.2\%). In depth, current data on the Navajo Nation Poverty Rate is not yet available." Vandever, 2014, Navajo Technical University Marketing Plan.

## G. RESOURCE/LAND USE PATTERNS

Mining does not actively occur within the project ROW and no hunting or gathering occurs in the project vicinity nor does the site have any timber for harvesting. People in the immediate vicinity do use the project area for anything other than to graze their livestock and there were family cemetery plots encountered during the pedestrian survey of the ROW.

The site does not appear to be extremely valuable to wildlife due to the close proximity to houses in Littlewater Chapter and there is very little suitable habitat in the area for most species on the species of concern listing as generated by the Navajo Fish and Wildlife Department. Due to the dogs associated with these residences, including feral dogs living in the area which would preclude any wildlife from coming onto the property or getting established in the vicinity other than common avian species such as ravens.

## H. OTHER VALUES

The proposed power line construction in the ROW, will not pose a public health and safety problem, nor will the proposed construction and use of the project area significantly increase the sound or noise in the area. Indeed, the installation and construction of said project will benefit the local community with access to electricity for these remote, rural homes, and will allow the community members in this location to not have to rely on batteries, backup generators, or photovoltaic panels.

## Section IV. ENVIRONMENTAL CONSEQUENCES OF PROPOSED ACTION A. BIOTIC IMPACTS

The displacement of some natural vegetation occupying the project area will occur with the construction of this power line project. Natural regeneration should occur over time as disturbance will not be so great as to permanently disturb and disrupt the native flora and fauna of this area.

The Navajo Natural Heritage Program (NNHP) of Window Rock, Arizona, identified no threatened or endangered species that may occupy the site, or occupy areas in close proximity. This list is based upon historical records and suitable habitat, as determined by a Heritage Program Zoologist and Botanist. No threatened and
endangered species were found to inhabit the respective project site or in the area surrounding the project area. No adverse impacts are expected upon threatened and endangered species with the construction and operation of this project. A biological survey was conducted and no suitable habitat was found.

## B. PHYSICAL IMPACTS

Physical impacts are planned. Temporary access roads will be utilized within the ROW. The roads that are formed within the ROWs will be utilized on a very infrequent basis by the power line company to make repairs and any other maintenance needs. These roads, or more appropriately, trails, will not be used very much, mainly during the time of active distribution line installation and during periods of needed service and repair.

Since, during times of high moisture deposition, like during the annual monsoon season, the area has water that ponds for short periods of time however these are not considered to be wetlands due to the lack of wetland vegetation, hydric soils and the lack of water on these areas for more than a few weeks at a time. These sites naturally pond and are not wetlands based upon the Army Corps of Engineers definition of a wetland (refer to photographs).

## C. SOCIOECONOMIC IMPACTS

The construction and operation of the 4.05 mile Phase I-Whiteridge Single-Pole 14.4 kv Electrical Distribution Line will improve and benefit the socioeconomic conditions of the Littlewater Chapter community. With the construction of the power line, there will be short-term employment for construction workers and laborers from the Navajo Nation and surrounding communities. This will have a positive effect on the local economy and growth of these respective communities. No adverse socioeconomic impacts are foreseen with the construction and installation of this power line.

## D. ARCHAEOLOGICAL IMPACTS

No archaeological impacts are expected with the strict incorporation of previously stated stipulations made by the Navajo Nation Historic Preservation Department. If these stipulations regarding Traditional Cultural Properties are followed then no negative effects to archaeological resources is expected.

## E. SOLID WASTE DISPOSAL AND HAZARDOUS MATERIALSWASTE

Solid waste generated while this power line is being constructed and installed will be disposed of at a compliant landfill per Navajo Nation law. All parties involved with this project will dispose of their respective waste at a compliant landfill (Genevieve Castillo, Personal Communication, 2014).

All hazardous waste will be properly disposed of according to Federal and Tribal waste laws. Large quantities of hazardous waste are not expected to be generated by this project. All hazardous materials will be transported, handled, and stored in compliance with all Federal and Tribal laws (Genevieve Castillo, Personal Communication, 2014).

## Section V. MITIGATION MEASURES OF IMPACTS TO PROPOSED ACTION

 A. BIOTIC IMPACTSMany of the biological resources currently inhabiting the project site will be disturbed.
No negative impacts are expected upon threatened and endangered species during the preparation, construction, and operation of this power line project. No mitigation measures are necessary with regards to biological resources for no threatened or endangered species are expected.

## B. PHYSICAL IMPACTS

Physical impacts are expected with the construction of this power line. Disturbance from heavy equipment and vehicles used to transport and install equipment will occur, in addition to all other needed equipment to move building materials on to the site and to off load them. To minimize excess physical impacts, it is recommended that construction be limited to associated ROW and any access roads to the ROW for delivery of power poles and equipment.

It is recommended that the CDEC consult with the New Mexico Army Corps of Engineers (ACOE) regarding the disturbance of arroyos located along the ROW. Disturbance of arroyos that are categorized as waterways of the United States are protected from disturbance under the Clean Water Act, and consultation is recommended should any arroyos are to be crossed or if the banks are to be disturbed by heavy equipment. Should mitigation not be required as deemed by the ACOE, or if consultation with the ACOE leads to the successful adoption and implementation of mitigation measures to prevent the negative effects of potential water contamination, then no negative impact upon water resources is expected with the installation of this proposed distribution line.

## C. ARCHAEOLOGICAL IMPACTS

New discoveries are previously unidentified cultural resources that include, but are not limited to: archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs, or practices. Areas in which these cultural resources are encountered are to be immediately reported to the Historic Preservation Department in Window Rock, Arizona (928-871-7198),
and simultaneously, all operations on and in the vicinity of the discovery are to cease.

No cultural resources are expected to be negatively affected with the construction and operation of this ROW construction project.

## D. SOCIOECONOMIC IMPACTS

The proposed project will benefit, for the very long term, the socioeconomic status of Littlewater and surrounding communities. With the construction of this project, construction personnel will be hired, and some of their payroll will end up in the community of Littlewater and surrounding communities. Surrounding families can benefit from this project socio-economically since the construction of an electrical distribution line in their community will increase their access to electricity and all associated benefits with having access to electrical appliances, including medical equipment and supplies.

No socioeconomic mitigation is foreseen or considered needed with regards to the construction of this project.

## E. THREATENED AND ENDANGERED SPECIES MITIGATION

No threatened or endangered species were located during the pedestrian survey of the 4.05 mile, 20 -foot wide ROW project area. No negative impact upon threatened or endangered species is expected with the construction and operation of this power line project. To minimize the potential disturbance to any nesting bird species that may occur near the project area, it is recommended that construction occur outside of February 15 through June 30 to prevent this activity from potentially disturbing these species. This is a recommendation only since no active or inactive nests were located from any raptor species and may be heeded at the discretion of the project sponsor.

## F. SOLID/HAZARDOUS WASTE DISPOSAL

No mitigation is deemed necessary since all waste generated on site from construction will be disposed of in a solid waste landfill or hazardous waste landfill as required under tribal and federal law.

## Section VI. CONCLUSION/SUMMARY

With the successful institution and full compliance of all mitigation, no negative impact is expected upon the environment with the construction and operation of this project.

Section VII. CONSULTATION AND COORDINATION

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## B. REFERENCES CITED

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ATTACHMENTS:

Figure 1
Figure 2
Figure $3 \quad$ Resources Compliance Forms for the 4.05 mile Phase IWhiteridge electrical distribution line and the full archaeological report including maps, legal survey, and maps of the archaeological sites in Littlewater Chapter, McKinley County, Navajo Nation, New Mexico
Chapter Resolution Requesting Assistance for the Construction of the 4.05 mile Phase I-Whiteridge Single-Pole 14.4kv Electrical Distribution Line from the Continental Divide Electrical Cooperative and the Letter from the CDEC responding to the Chapter Request
Figure 5
Figure 6
General Map of the Navajo Nation Map of the Eastern Navajo Agency and the Littlewater Chapter

Figure 4

Navajo Nation Fish and Wildlife Species Listing
Client Home Assessment Check-off List Form for Whiteridge

## Powerline Project

Figure $7 \quad$ Biological Evaluation Report for the 4.05 mile Phase IWhiteridge Single-Pole 14.4kv Electrical Distribution Line ROW and Surrounding Vicinity
Photographs 1-20 Photographs of the Whiteridge Electrical Distribution Line ROW

http://www.ovc.edu/missions/indians/navajres.htm

Figure 2: Map of Eastern Navajo Agency of the Navajo Nation and Littlewater Chapter, New Mexico

http://www.geocities.com/navajonation1/Navajoland/EasternNavajoAgency.JPG

Figure 3: Resources Compliance Forms for the 4.05 mile Phase I-Whiteridge Electrical Distribution Line archaeological report including maps, legal survey, and the maps of the archaeological sites in Littlewater Chapter, McKinley County, Navajo Nation, New Mexico


## TRADITIONAL CULTURAL PROPERTY (TCP) RECORD SEARCH VERIFICATION FORM

|  | WTCP WILL NOT SIENAFPROVE IF TAIS PORTIONLS TERTBLANK* |
| :---: | :---: |
|  |  |
| DATE | May 28, 2014 |
| RESEARCHER 2 COMPANY | Denise R. E. Copeland, Principal Archaeologist Navajo Nation Capital Improvement Office |
| PROJECT NAME | A Culture Resource Inventory of the White Ridge Powirline Phase 1, Littlewnter Chapter, McKinley County, New Mexico |
| PROJECT/PERMIT NUMBER | $\begin{aligned} & \text { DCD1 } 14-001 \\ & \text { NTC } \end{aligned}$ |
| PROJECT LOCATION | T16N, R11W; Sections 2, 3, 11, 12, and 13, NMPM; Littewater Chp, McKinley Crity, New Mexicol Laguna Castillo, Now Mexico 1983 and Borrego Pass, Now Mexico 1963 |





## Environmental Assessment Conducted for the 4.05 mile Phase I-Whiteridge Single-Pole 14.4 kv Electrical Distribution Line in Littlewater Chapter, McKinley County, Navajo Nation, New Mexico

## 1. HPD REPORT NO.:

2. TITLE OF REPORT: A Cultural Resource Inventory of the White Ridge Powerline Phase I, Littlewater Chapter, McKinley County, New Mexico

AUTHOR(S): Denise R.E. Copeland
5. CONSULTANT NAME AND ADDRESS:

| Gen. Charge: | Denise R.E. Copeland, Principal Archaeologist |
| :---: | :--- |
| Org. Name: | Capital Improvement Office Org. Address: |
|  | P.O. Box 335 <br>  <br>  Fruitland, New Mexico 87416 Ph: 505 368-1059 |

8. SPONSOR NAME AND ADDRESS:

Ind. Respon: Debbie Olivar (See project for other Sponsors)
Org. Name: $\quad$ Continental Divide Electric Cooperative, Inc.
Org. Address
P.O. Box 1087

Grants, New Mexico 87020
Phone: 505 285-6656
11. LOCATION (MAP ATTACHED):
a. Chapter: Littlewater f. UTM Center: NAD 83, Zone 13; See Table 3
b. Agency: Eastern g. Legal: See Table 2
C. County: McKinley h. 7.5' USG5 Map(s): Laguna Castillo, New Mexico 1963
d. State: New Mexico Borrego Pass, New Mexico 1963
e. Land Status: See Table 2 i. Lead Agency: BlA/Navaio Region
12. REPORT ATTACHMENTS:
 of the White Ridge Powerline. Ground disturbing activities will include installation of utilities.
b. Existing Data Review: As part of this project, the archival data of the Navajo Nation Historic Preservation Department (NNHPD) in Window Rock were consulted. Within 1 km ( 0.05 mi ) of this project, 18 previously completed projects are known to have taken place (HPD\# 79-006, 79-112, 79-256, 80-108, 80-407, 89-029, 89-259, 93-044, 94-288, 98-819, 02625, 03-434, 03-499, 03-760, 04-732, 06-1004, 06-1006 and 07-084) and six sites are known to exist (NM-R-17-01, NMR-17-02, NM-R-17-03, LA 6890S, LA112496and SJC 511). A Traditional Cultural Property (TCP) Record Search was conducted on July 22, 2014. No TCPs are known to exist in the project area.
C. Area Environmental and Cultural Setting: The project area is in the White Ridge area of the Littlewater Chapter. The project is located in the southern portion of the San Juan Basin and is characterized as a broad open valley surrounded in the distance by flat-topped sandstone mesas. The San Juan Basin is bounded by the Chaco Slope on the south. The major geological! features of the area are the Continental Divide, Borrego Pass, and Heart Butte. The project area consists of low hills and ridges with gentle slopes. The project area consists of grasslands and scattered stands of juniper and pinyon. Vegetation consists of buffalo berry, four-winged saltbush, grama grass, hedgehog cactus, pinyon, juniper, prickly pear cactus, Russian thistle, snakeweed, and various grasses.
d. Field Methods: Ms. Debbie Olivar, Engineering Services Manager, Continental Divide Electric Cooperative, Inc., supplied the project location map to the author. The project area was flagged by T \& D Services and all PI stakes were found at the time of the inventory. The area was investigated using a Class ill ( $100 \%$ ) level pedestrian survey strategy. The area was investigated using a Class III ( $100 \%$ ) level pedestrian survey strategy. A $100 \mathrm{ft} / 30.5 \mathrm{~m}$ wide survey corridor on Indian Allotted land ( 23.13 ac ), TNT ( 21.63 ac ), and a $\mathbf{1 3 0} \mathrm{ft} / 39.6 \mathrm{~m}$ wide survey corridor on BLM land ( 5.60 ac ), centered on the powerline R-O-W was inspected by walking along one side and returning on the opposite side. The fieldwork was conducted by author and Ms. Lucinda A. Henry, Littlewater Chapter R-O-W Agent. A total of 50.36 acres was inspected during the cultural resource inventory. The staked powerline location was rechecked on September 25,2014 after the legal survey was completed. The author interviewed following Chapter Officials, Staff, and residents throughout the inventory regarding TCP's and none were identified near the area. The BLM portion of the project has been submitted to the Farmington District Office of the BLM for cultural resource compliance.
13. CULTURAL RESOLIRCE FINDING5:
a. Location/identification of Each Resource: Twelve in-use sites (IUS-1-12) and two sites (NM-R-17-6 and NM-R-177) were identified within the proposed project area. See page 8.
b. Evaluation of Significance of Each Resource: The in-use sites IUS-1 through IUS-12 do not meet the 50 year guideline for inclusion into the National Register of Historic Places. Sites NM-R-17-6 and NM-R-17-7 appear to be eligible for the National Register of Historic Places under criterion "d": No historic properties will be affected.
14. MANGEMENT SUMMARY (RECOMMENDATIONS):

Notice to proceed for the undertaking is recommended.
15.

CERTIFICATION:

## A CULTURAL RESOURCES INVENTORY OF THE

 WHITERIDGE POWERLINE PHASE I, LITTLEWATER CHAPTER, McKINLEY COUNTY, NEW MEXICODCD1 14-001

October 13, 2015

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# ABSTRACT <br> A CULTURAL RESOURCES INVENTORY OF THE WHITE RIDGE POWERLINE PHASE I, LITTLEWATER CHAPTER, McKINLEY COUNTY, NEW MEXICO 

DCD1 14-001

On behalf of the Capital Improvement Office of the Navajo Nation Division of Community Development, the Littlewater Chapter and the Continental Divide Electric Cooperative, Inc; a cultural resources inventory has been completed for the powerline extension for 12 homes. The Bureau of Indian Affairs, Navajo Area Office is the lead agency for meeting the requirements of Section 106 of the National Historic Preservation Act for Tribal Trust (TNT) Land and Indian Allotment Land. The Bureau of Land Management is the lead agency for meeting the requirements of Section 106 of the National Historic Preservation Act for the Bureau of Land Management Land.

The fieldwork was conducted by Denise R. E. Copeland of the Capital Improvement Office and Lucinda A. Henry, R-O-W Agency for Littlewater Chapter on January 6, 8, 9; April 2; September 25, 2014; and March 31, 2015. The project area is located eastern portion of the Littlewater Chapter. The specific location of the project area is depicted on U.S.G.S. quad map: Laguna Castillo, New Mexico 1963, and Borrego Pass, New Mexico, 1963. The legal location is in T 16 N, R 11 W in Sections 2, 3, 11, 12, and 13, in McKinley County, New Mexico. The land status of the project area is Tribal Trust, Indian Allotted and BLM. A total of 50.36 acres of land was inspected for this project.

A total 15 cultural resources were located within the project area. These resources include 13 in-use sites (IUS1 to 13), and two newly recorded sites (NM-R-17-6 and NM-R-17-7). Data on traditional cultural properties (TCP's) were collected by interviewing residents being served at their homes, and the following Chapter Officials: George S. Jim, President, June Barbone, Secretary/Treasurer and Genevieve Castillo, Chapter Manager, at the Littlewater Chapter House.

The in-use sites (1-12) do not appear to possess integrity and/or are less than 50 years old, and/or do not appear to meet an exception to the general exclusions. Sites NM-R-17-6 and NM-R-17-7 appear to be eligible for the National Register of Historic Places under criterion " $d$ ": The sites do not meet the age criterion and are not of "archaeological interest" and do not merit protection under ARPA:

As the project is currently designed, the undertaking should have no effect on significant historic properties and a notice to proceed is recommended.

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# A CULTURAL RESOURCES INVENTORY OF THE WHITE RIDGE PHASE I POWERLINE PROJECT, LITTLEWATER CHAPTER, MC KINLEY COUNTY, NEW MEXICO <br> DCD1 14-001 

## INTRODUCTION

On behalf of the Littlewater Chapter and the Capital Improvement Office of the Navajo Nation Division of Community Development, a cultural resources inventory has been completed for the White Ridge Powerline Extension Phase I. This work was conducted to evaluate the potential for this undertaking to effect significant cultural properties. The Bureau of Indian Affairs, Navajo Area Office is the lead agency for meeting the requirements of Section 106 of the National Historic Preservation Act for Tribal Trust (TNT) Land and Indian Allotment Land. The Bureau of Land Management is the lead agency for meeting the requirements of Section 106 of the National Historic Preservation Act for the Bureau of Land Management Land.

The fieldwork was conducted by Denise R. E. Copeland of the Capital Improvement Office and Ms. Lucinda A. Henry, Littlewater Chapter R-O-W Agent on January 6, 8, 9; April 2; September 25, 2014; and March 31, 2015. The project area is located southeast of the Littlewater Chapter House along the White Ridge Road.

## DESCRIPTION OF UNDERTAKING

The undertaking will involve the construction of ca. 4.05 mi of single-pole 14.4 kv overhead electrical distribution lines. The project area was previously, legally surveyed and flagged by the engineering company, T \& D Services, Albuquerque, New Mexico. The ground disturbance activities will include the placement of power poles and periodic patrol for repairs and routine maintenance conducted by the Continental Divide Electric Cooperative, Grants, New Mexico. BIA/Navajo Region is the lead agency for the project. Approximately 15 families will be served by this project. The right-of-way will be 6.1 m ( 20 ft ) wide on Tribal Trust (TNT) Land and Indian Allotment Land. The right-of-way will be $9.1 \mathrm{~m}(30 \mathrm{ft})$ wide on BLM Land.

Proposed construction and maintenance activities will include the following:

1. Poles will be hauled to the project area by truck and pole trailer, where they will be distributed at intervals of approximately 400 feet apart along the right-of-way.
2. A construction crew will then attach cross-arms, insulators, ground wires, and other necessary hard ware to each pole prior to erection.
3. A truck-mounted auger will excavate holes measuring about 18 inches in diameter and averaging 5-6 feet deep for each pole location. A similar hole will be excavated for any necessary anchors. A boom, also mounted on the truck, will then raise each pole into its freshly augered hole. The pole will then be aligned and plumbed followed immediately by back filling and tamping the dirt spoils into the hole.
4. After the poles are erected, conductive wire will be reeled off truck-mounted cable spools to be lifted and strung onto each pole. Tension will then be applied to the cable at which time it will then be attached to insulators on the poles
5. The construction crew will properly remove and dispose of all debris resulting from activities associated with construction. Surface disturbance will be confined to the approved rights-of-way and existing roads. Generally, trees will not be cut except where necessary for safety. The rights-of-way will not be bladed and will be reseeded and reclaimed in accordance with Tribal and Federal stipulations.

A line by line description of the line lengths and project vs. survey area is given in Table 1. The proposed Right-of-way is ca. 10.25 acres (TNT 4.33 acres, IA 4.63 acres and BLM 1.29 acres). A total of 50.36 acres was inspected for cultural resources in association with the powerline project.

TABLE 1
Line by Line Description of the Powerline

| Line \# | Land Status | Length of Line |  | ROW <br> Acres | Survey Corridor Acres |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | \# of Feet | Meters |  |  |
| Line-A | TNT | 8,616.09 | 2626.18 | 3.96 | 19.78 |
|  | BLM | 1,875.66 | 571.70 | 1.29 | 5.60 |
|  | Indian Allotment | 7,251.48 | 2,210.25 | 3.33 | 16.65 |
| Tap A-1 | Indian Allotment | 1,787.21 | 544.74 | 0.82 | 4.10 |
|  | TNT | 454.26 | 138.46 | 0.21 | 1.04 |
| Tap A-1a | Indian Allotment | 349.92 | 106.66 | 0.16 | 0.80 |
| Tap A-2 | Indian Allotment | 689.98 | 210.31 | 0.32 | 1.58 |
| Tap A-3 | TNT | 350.53 | 106.84 | 0.16 | 0.81 |
|  | TOTAL | 21,375.13 | 6,515.14 | 10.25 | 50.36 |

## PROJECT LOCATION

The project location is located within the Littlewater Chapter of the BIA Eastern Agency Checkerboard area of the Navajo Indian Reservation (Figure 1). The project area is located 2.33 mi to the southeast of the Littlewater Chapter House. The specific location of the project area is depicted on U.S.G.S. quad maps: Laguna Castillo, New Mexico 1963, and Borrego Pass, New Mexico, 1963, (Figure 2). The legal location is in T 16 N, R 11 W in Sections 2, 3, 11, 12, and 13, in McKinley County, New Mexico. The land status of the project area is Tribal Trust, Indian Allotted and BLM. Line by line legal descriptions of the project are given in Table 2 and the UTM coordinates for the project are given in Table 3.

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Figure 1: General Location of the White Ridge Powerline.


Figure 2: Specific Location of Points Along the White Ridge Powerline, Phase I. Map is a composite of 7.5' Quadrangles "Laguna Castillo Lake, NM 1963 and Borrego Pass, NM 1963.'

TABLE 2
Legal Description of the Powerline

| Location | T/R | Section | Land Status | Map |
| :---: | :---: | :---: | :---: | :---: |
| Line A | T16N, R11W | 3 | TNT | Laguna Castillo, NM |
|  |  | 2 | BLM |  |
|  |  | 11 | TNT |  |
|  |  |  | IA 279574 |  |
|  |  | 12 | IA 983 | Laguna Castillo, NM Borrego Pass, NM |
|  |  | 13 | IA 1752 | Borrego Pass, NM |
|  |  |  | TNT |  |
| Tap A-1 |  | 11 | IA 279574 | Laguna Castillo, NM |
|  |  |  | TNT |  |
| Tap A-1a |  | 11 | IA 279574 | Laguna Castillo, NM |
|  |  |  | TNT |  |
| Tap A-2 |  | 12 | TNT | Laguna Castillo, NM |
|  |  |  | IA 983 |  |
| Tap A-3 |  | 12 | TNT | Borrego Pass, NM |

TABLE 3
UTM Coordinate Locations of the Powerline (NAD 83, Zone 13)

| Line | Point | Northing | Easting |
| :--- | :---: | :---: | :---: |
| Line-A BOP 1 | 3948932 | 229472 |  |
| Line-A | 2 | 3948840 | 229531 |
| Line-A | 3 | 3948290 | 230075 |
| Line-A | 4 | 3947878 | 230481 |
| Tap A-1 BOP | 5 | 3947759 | 230992 |
| Tap A-1a BOP | 6 | 3947669 | 230982 |
| Tap A-1a EOP | 7 | 3947706 | 230880 |
| Tap A-1 | 8 | 3947371 | 230942 |
| Tap A-1 EOP | 9 | 3947259 | 230840 |
| Line A | 10 | 3947686 | 231308 |
| Tap A-2 BOP | 11 | 3946479 | 231607 |
| Tap A-2 | 12 | 3946506 | 231712 |
| Tap A-2 EOP | 13 | 3946407 | 231747 |
| Line-A | 14 | 3945739 | 231788 |
| Tap A-3 BOP | 15 | 3944986 | 231870 |
| Tap A-3 EOP | 16 | 3945003 | 231977 |
| Line-A EOL | 17 | 3944725 | 231903 |

U.S.G.S Quad Map

Laguna Castillo, NM

Borrego Pass, NM

## AREA ENVIRONMENTAL AND CULTURAL SETTING

The project area is in the White Ridge area of the Littlewater Chapter. The project is located in the southern portion of the San Juan Basin and is characterized as a broad open valley surrounded in the distance by flattopped sandstone mesas. The San Juan Basin is bounded by the Chaco Slope on the south. The major geological features of the area are the Continental Divide, Borrego Pass, and Heart Butte. The project area consists of low hills and ridges with gentle slopes that vary for $0-10 \%$.

The elevation within the powerline ranges from 6800 ft to 7000 ft above mean sea level. Several unnamed drainages flow through the project area to the north. The project area consists of grasslands and scattered stands of juniper and pinyon. Vegetation consists of buffalo berry, four-winged saltbush, grama grass, hedgehog cactus, pinyon, juniper, prickly pear cactus, Russian thistle, snakeweed, and various grasses. The general area is characterized by disturbances of dirt and gravel roads, erosion, fence lines, foot trails, livestock grazing, pipelines, trash debri along roads, and waterlines.

## EXISTING DATA REVIEW

As part of this project, the archival data of the Navajo Nation Historic Preservation Department (NNHPD) in Window Rock, Arizona, were consulted. Within $1 \mathrm{~km}(0.05 \mathrm{mi})$ of this project, 18 previously completed projects are known to have taken place (HPD\# 79-006, 79-112, 79-256, 80-108, 80-407, 89-029, 89-259, 93-044, 94-288, 98-819, 02-625, 03-434, 03-499, 03-760, 04-732, 06-1004, 06-1006 and 07-084) and six sites are known to exist (NM-R-17-01, NM-R-17-02, NM-R-17-03, LA 68905, LA112496and SJC 511).

## FIELD METHODS

Ms. Debbie Olivar, Engineering Services Manager, of the Continental Divide Electric Cooperative, Inc., of Grants, New Mexico, supplied the project location map to the author. The project area was previously flagged by T \& D Services, Albuquerque, New Mexico, and all Pl stakes were found at the time of the inventory. The area was investigated using a Class III ( $100 \%$ ) level pedestrian survey strategy. A $100 \mathrm{ft} / 30.5 \mathrm{~m}$ wide survey corridor on Indian Allotted land ( 23.13 ac ), TNT ( 21.63 ac ), and a $130 \mathrm{ft} / 39.6 \mathrm{~m}$ wide survey corridor on BLM land ( 5.60 ac ), centered on the powerline R-O-W was inspected by walking along one side and returning on the opposite side. The fieldwork was conducted by Denise R. E. Copeland of the Capital Improvement Office and Ms. Lucinda A. Henry, Littlewater Chapter R-O-W Agent on January 6, 8, 9; and April 2, 2014. A total of 50.36 acres was inspected during the cultural resource inventory. T \& D Services completed the legal Survey on September 25, 2014, and March 31, 2015 and the archaeologist rechecked the staked powerline location. For the TNT Land, and Indian Allotted Land; the BIA/NR is the lead agency for the project. The BLM portion of the project has been submitted to the Farmington District Office of the BLM for cultural resource compliance.

The sites (NM-R-17-6 and NM-R-17-7) were documented newly recorded site by using a Silva Ranger hand-held compass and a 100 m long measuring tape. No artifact collections were made and photographs were taken.

Data on traditional cultural properties (TCP's) were collected by interviewing residents being served at their homes, and the following Chapter Officials: George S. Jim, President, June Barbone, Secretary/Treasurer and Genevieve Castillo, Chapter Manager, at the Littlewater Chapter House.

## RESOURCE DEFINITIONS

The following describe the NNHPD definitions for cultural resources (NNHPD Permit Package 2015).
Isolated Occurrence: Any non-structural remains of a single event; alternatively, any non-structural assemblage of approximately 10 or fewer artifacts or other material within an area of approximately 10 square meters or less, especially if it is of questionable human origin, if it appears to be the result of fortuitous causes, or it lacks integrity. Rock art, burials, sacred places, and formal features are not recorded as isolated occurrences.

Traditional Cultural Properties: These are places with no physical material remains. Demonstrable sacred places with material remains are recorded as sites and evaluated appropriately. A sacred place is defined as a place that has traditionally been considered important to an Indian tribe or a member thereof, because of a religious event that happened there, because it played a part in life-cycle rituals, because it contains specific natural products of cultural or religious importance, because it figures in or is mentioned in traditional folklore and sacred songs, because it is considered the dwelling place or embodiment of spiritual beings, because it is conducive to communication with spiritual beings. Or because it has other specified and continuing significance in Indian religion or culture. This importance may be of uni-tribal or multi-tribal importance, or may be considered important only to smaller segments of the society, such as chapters, clans, families or individuals.

Site: The location of an event, belief, or activity, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself maintains historic, archaeological, or traditional cultural value regardless of the value of any existing structure. Operationally, a site is an isolated occurrence. (Note: does not include isolated historic trash dumps less than ten to twenty years old).

## CULTURAL RESOURCE FINDINGS

Fifteen cultural resources were located within the project area. These resources include 12 in-use sites (IUS-112), two newly recorded sites (NM-R-17-6 and NM-R-17-7). The homeowners provided the dates of the in-use sites (1-12). The dates of homes and the description information are shown in Table 4. The specific locations of the cultural resources in the project area are depicted on U.S.G.S. quad maps: Borrego Pass, New Mexico, 1963 and Laguna Castillo, New Mexico 1963, (Figure 3).

TABLE 4
In-Use Sites
Line IUS Description

| Line A | 1 | Thompson Homesite/Frame house (ca. 1983) with frame bathroom <br> addition (2001), stone corral (2002) |
| :---: | :---: | :--- |
| Line A | 2 | Jimmy Jr. and Arlene Augustine/Two trailers 2010's and a tipi ring. <br> Line A $\mathbf{3}$ |
| Tap A-1 | 4 | Jimmy Sr. and Dorothy Augustine/Frame stucco house with B/A (1973), <br> rock oven, corral (2005), and a rock hogan. |
| Veronica Garcia/Frame hogan (2003), trailer (2011) |  |  |
| Tap A-1a | 5 | Tomson Largo/Frame house (1983) with an addition (2001), shed, stone <br> corral (2002) |
| Tap A-1 | 6 | Virginia Tom/Trailer (1980's) |
| Tap A-1 | 7 | Herman Tom/Trailer (1970's) |
| Tap A-1 | 8 | Virgilene Tom/Trailer with two frame additions (1970's) <br> Line A <br> 9Lolita Garica/Frame hogan (ca1990) with a bath addition \& a frame <br> addition (2005) |
| Tap A-2 | 10 | Annie/Angeline Burnside/Stone hogan (1980's) with frame bathroom <br> addition, stone hogan (1960's), frame house (1970's), stone house <br> (1980's) and corral. |
| Tap A-3 | 11 | Marcella ChaveZ/Frame hogan and an outhouse (2011) <br> LineAE0P 12 | | Lucy Yazzie/Two-stone hogans-and aframe house(ca. 1980's) |
| :--- |



Figure 3: Specific Location of the Cultural Resources along White Ridge Powerline, Phase I. Map is a composite of 7.5' Quadrangles "Laguna Castillo Lake, NM 1963 and Borrego Pass, NM 1963."

## NEWLY DOCUMENTED SITES:

SITE NO.: NM-R-17-6
LEGAL LOCATION: SW $1 / 4$ of Sec. 2, T 16 N, R 11 W, N.M.P.M.
UTM: NAD 83 Zone 13, N 3948 070m, E 230 332m
LAND STATUS: Bureau of Land Management
SITE ENVIRONMENT: The site is located in an un-named drainage south of the White Ridge Road.
SITE SIZE (L x W) $15 \mathrm{~m} \times 75 \mathrm{~m} \quad$ TOTAL AREA (Sq. m): 942 m
SITE DESCRIPTION: Site consists of historic dam/water control feature (Feature 1). Feature 1 is a constructed of unshaped sandstone slabs, 45 m long and 2 courses wide (ca. 2 m ) and a dirt berm measuring 5 m wide and 45 m long. The dam was constructed of local unshaped sandstone blocks and was placed a across a drainage. The dam has been breached on the west side of the stone portion of the feature and no longer controls the flow of water. No artifacts were found associated with the feature. The site is found in a level area in an unnamed drainage south of the White Ridge Road. No artifacts were found at the site.

SITE NO.: NM-R-17-7
LEGAL LOCATION: NE $1 / 4$ of Sec. 11, T 16 N, R 11 W, N.M.P.M.
UTM: NAD 83 Zone 13, N 3947 629m, E 231 408m
LAND STATUS: Tribal Trust
SITE ENVIRONMENT: The site is located on a northeast trending ridge.
SITE SIZE (L $\times$ W) $50 \mathrm{~m} \times 70 \mathrm{~m}$ TOTAL AREA (Sq. m): 2,900 m
SITE DESCRIPTION: The site is a Historic Navajo habitation with four features. Mary Chavez and Helen Yazzie occupied the site in the 1950's. Features 1,3 and 4 have been dismantled and move to new location and only the foundation remain. Feature 1 consisting of a foundation of paving sand stone slabs measuring $4 \times 4 \mathrm{~m}$. No artifacts were found with this feature. Feature 2 consists of collapsed sandstone oven measuring ca. one meter diameter with visible oxidation on the sandstone. Feature 3 is hogan ring marked with unshaped sandstone blocks measuring 5 meters in diameter. Two 16 oz pop bottle were found in the feature. Feature 4 is hogan ring marked with unshaped sandstone blocks measuring 4.5 meters in diameter. No artifacts were found with the feature. Other artifacts on the site included metal can fragments, metal fender of a 1950's truck, stove fragments and clear glass fragments.

## Traditional Cultural Properties

Data on traditional cultural properties (TCP's) were collected by interviewing residents being served at their homes, and the following Chapter Officials: George S. Jim, President, June Barbone, Secretary/Treasurer and Genevieve Castillo, Chapter Manager, at the Littlewater Chapter House. No TCP's were known or located along the powerline extension

## EVALUATION OF SIGNIFICANCE

The historic properties have been evaluated for their significance in regards to the National Register of Historic Places, the Archaeological Resources Protection Act, and the American Indian Religious Freedom Act.

## National Register

The National Register of Historic Places was created by the National Register Preservation Act in 1966. The Register was to be "...composed of districts, sites, buildings, structures and objects significant in American history, architecture, archaeology, engineering, and culture (Title I, Sec. 101)". A set of criteria was later established by which properties could be evaluated to determine if they merited placement on the Register. These regulations or guidelines are expressed in 36 CFR 60.4 and are as follows:



Figure 5: Plan Map of Site NM-R-17-7

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in district sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and
(a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
(b) that are associated with the lives of persons significant in our past; or that embody the distinctive characteristics of a type, period, or method of construction,
(c) or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
(d) that have yielded, or may be likely to yield information important in prehistory or history.

There are certain classes of properties that are normally not considered eligible for Register consideration that include cemeteries, birthplaces or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original location, reconstructed historic buildings, buildings primarily commemorative in nature, and properties that have significance within the past 50 years. There are exceptions to these general exclusion guidelines (see 36 CFR 60.4).

Coupled with the above general criteria, the criteria of integrity must also be met for Register consideration. In this category integrity is evaluated in terms of its physical and locational values: does the site or its features possess the integrity needed to allow the site to meet the appropriate criterion for which it is considered significant? As an example prehistoric site that might be significant under criterion "d" but has been apparently completely disturbed would probably not be considered to have any sufficient integrity for the fruitful investigation of important scientific question and would thus not be considered eligible for the Register. As another example, an old traditional hogan may be considered eligible for the Register under criterion " $c$ " as embodying the distinctive characteristics of a type, period, or method of construction. If that hogan is surrounded by modern cinderblock houses and trailers, thus disrupting integrity of location, setting, and feeling, it could still be considered eligible for the Register if those aspects of integrity that directly relate to its significance under criterion "c" (e.g., design, materials, and workmanship), are intact.

The following presents a criterion-by-criterion evaluation of the cultural resources recorded by this project.
Criterion A: Sites NM-R-17-6 and NM-R-17-7 are not known to be associated with events that are significant in our past.
Criterion B: Sites NM-R-17-6 and NM-R-17-7 are not known to be associated with individuals that are significant in our past.
Criterion C: Sites NM-R-17-6 and NM-R-17-7 do not appear to represent a significant and distinguishable entity whose components may lack individual distinction.
Criterion D: Sites NM-R-17-6 and NM-R-17-7 may be likely to yield information important in history.
Exclusions: None
Eligible Sites: Sites NM-R-17-6 and NM-R-17-7 are eligible for the National Register of Historic Places:
District Consideration: A District is defined as "...possessing a significant concentration, linkage, or continuity of sites, buildings, structures or objects united historically or aesthetically by plan or physical development (National Park Service 1986:41)". Because an exhaustive inventory and documentation program has not been completed, and the exact limits of the community are not yet known, the exact nature of any district boundary cannot be suggested at this time.

## Archaeological Resources Protection Act

Archaeological Resources Protection Act (ARPA) was established in 1979 with the express purpose being in part "...to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites which are on public lands and Indian lands...". For a property to qualify for protection under ARPA, it must
qualify as an "archaeological resource", which is defined as "...any material remains of human life or activity which are capable of providing scientific or humanistic understandings of past human behavior, cultural adaptation, and related topics through the application of scientific or scholarly techniques..."

Sites NM-R-17-6 and NM-R-17-7 do not meet the age criterion and are not of "archaeological interest" and do not merit protection under ARPA:

## American Indian Religious Freedom Act

The American Indian Religious Freedom Act (AIRFA) was established in 1978. Its purpose was to establish as United States policy the protection and the preservation of Native American rights to practice their traditional religions. The freedom of worship is to include but not be "...limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonies and traditional rites (Sec. 1)". Though there are a few specific examples and some generalizations that may be made, the identification of resources associated with this project that may have some application to AIRFA is difficult at best.

Sites NM-R-17-6 and NM-R-17-7 do not appear to be important under AIRFA.

## DETERMINATION OF EFFECT

Pursuant to 36 CR 800.9, the undertaking has been evaluated for its effects on potentially National Register significant historic properties. This evaluation is also considered applicable to ARPA and AIRFA values as well.

Provided that the management recommendations discussed below are followed, this undertaking should have no effect on significant historic properties.

## MANAGEMENT RECOMMENDATIONS

It is recommended that compliance be granted for this undertaking. Each site and the condition, if any, for making the recommendations are presented below.

## Site Specific Recommendations:

Management recommendations for all the sites occurring within the project area are summarized in Table 7. The sites are not threatened by the undertaking, however, some restrictions of construction activities around the sites have been proposed to help ensure the integrity of all potentially Register eligible properties to help ensure compliance.

TABLE 6
Management Recommendations for the Sites in the Project Area

| Site Number | Location | Recommendation <br> NM-R-17-6 |
| :--- | :--- | :--- |
| The site located along Line A powerline The site boundary will be flagged for <br> avoidance prior to any construction and <br> no further work is needed.  <br> NM-R-17-7 The site located along Line A powerline The site boundary will be flagged for <br> avoidance prior to any construction and <br> no further work is needed. |  |  |

## General Project Recommendations

If any previously undetected cultural resources are discovered during the undertaking (e.g., pottery, bone, stone tools), all activity should cease in that area and the Navajo Nation Historic Preservation Officer (928 871-7880) should be immediately notified. Upon inspection of the remains, direction on how to proceed will be given pursuant to 36 CFR 800.11.

Upon completion of the project, the location of the significant cultural values within or directly adjacent to the final Right-of-Way should be placed on the final "as builts". These plans should carry the following or a similar notice: "Caution. Unauthorized disturbance of archaeological sites is prohibited. Criminal and civil penalties may apply". A copy of these final plans should be submitted to the Navajo Nation Historic Preservation Department for placement with the project file.

## REFERENCES

Navajo Nation Historic Preservation Department
2015 Navajo Nation Policy to Protect Traditional Cultural Properties. NNHPD, Window Rock, Arizona.
2015 Interim Fieldwork and Report Standards Guidelines, NNHPD, NNHPD, Window Rock, Arizona.
Van Valkenburgh, Richard F.
1941 Dine Bikeyah, U.S. Dept. of Interior, U.S. Indian Service, Navajo Agency, Window Rock, Arizona.

## Appendix

## NAVAJO NATION ARCHAEOLOGY DEPARTMENT

## Site Survey and Management Forms

## NAVAJO NATION ARCHAEOLOGY DEPARTMENI

## Site Survey and Management Forms

SITENQ: NM-R-17-6 DATERECORDED: April 02, 2014 COMPANY: CIO/DCD
ARCHAEOLOGIST: Denise R. E. Copeland
PRO.JECT NO. AND NAME: A Cultural Resource Inventory of the White Ridge Powerline Phase I, Littlewater Chapter, McKinley County, New Mexico DCD14-001

LEGAL_OCATION: SW ¼ of Sec. 2, T 16 N, R 11 W, N.M.P.M.
UTM: Zone 13, N 3948 070m, E 230 332m
LAND STATUS: Bureau of Land Management
STATE: New Mexico County: McKinley CHAPTER: Littlewater
USGS MAPS REFERENCEAND DATE: Laguna Castillo, New Mexico 1963.
GROUND VISIBILITY: Good Visibility, General ground cover.
IOPOGRAPHY: The site crosses a northeast trending drainage.
DRAINAGE: The site crosses an un-named blue line drainage south of the White Ridge Road.
ELEVATION(ft): $6830 \mathrm{ft} / 2082 \mathrm{~m}$ SLOPE/DIRECTION: 3 degrees northeast SOlL_TYPE: Sandy alluvial deposits.

YEGETATIONPRESENT: The vegetation includes cocklebur, sage, prickly pear cactus, Russian thistle and various grasses.

CULTURAL_AFFILIATION(S): Historic Unknown SITE TYPE: historic dam/water control feature
PERIOD(S)OF OCCUPATION(date ifknown): Unknown How dated?:
SITESIZE(L*W): $15 \mathrm{~m} \times 75 \mathrm{~m} \quad$ TOTAL_AREA(Sg.m): 942 m How determined?: Tape measured

## ARCHITECTUREPRESENT?: Yes

Describe: Historic dam/water control feature

## ARTIFACTSOBSERVED/COUNTED?: No COLIECTION MADE?: No PHOTOTAKEN?: Yes

SITEDESCRIPTION: Site consists of historic dam/water control feature (Feature 1). Feature 1 is a constructed of unshaped sandstone slabs, 45 m long and 2 courses wide (ca. 2 m ) and a dirt berm measuring 5 m wide and 45 m long. The dam was constructed of local unshaped sandstone blocks and was placed a across a drainage. The dam has been breached on the west side of the stone portion of the feature and no longer controls the flow of water. No artifacts were found associated with the feature. The site is found in a level area in an unnamed drainage south of the White Ridge Road. No artifacts were found at the site.

CONDITION OF SITE: Fair ( $75 \%$ undisturbed) Causes of Disturbance: Erosional and livestock grazing. The dam has been breached on the west portion of the site.

LOCATION OF SITE RELATIVETO PROJECTAREA: The site is located on 27 m north of Line A of the powerline.

EXTENT OF INVESTIGATION TO DATE: Field recording only.

RESEARCH POTENTIAL: Good

RECOMMENDATIONS: The site boundary will be flagged for avoidance prior to any construction and no further work is needed.

## SITE ASSESSMENT UNDER 36 CER 60.4 (National Reaister):

INTEGRITY: The site does possess significant qualities of locational and physical integrity.
CRITERIAA-D: The site is not known to be associated with any events or persons that have made significant contributions to the broad patterns of our history or are significant in our past (criteria "a" and "b"), it does not appear to embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or that represents a significant distinguishable entity whose components may lack individual distinction (criterion "c", and has yielded or may to yield information important in history or prehistory (criterion "d").

EXCLUSIONS: N/A

## SITEASSESSMENT UNDER ARPA:

The site is less than 100 years old and should not be considered an "archaeological resource" nor "of archaeological interest".

## SITEASSESSMENT UNDER AIREA: N/A

PROVIDEASITEMAP: (Including site designation, north arrow, scale, recognizable features, landmarks and relationship to project area.) See attached map.

HOW CAN THESITE BEREACHED?: See attached U.S.G.S. map.

OTHER COMMENTS: None.



Figure 2: Specific Location of the Cultural Resources along White Ridge Powerline, Phase 1. Map is a composite of 7.5' Quadrangles "Laguna Castillo Lake, NM 1963 and Borrego Pass, NM 1963."

# NAVAJO NATION ARCHAEOLOGY DEPARTMENT 

## Site Survev and Management Forms

## SITENO.: NM-R-17-7 DATERECORDED: April 02, 2014 COMPANY: CIO/DCD

ARCHAEOLOGISI: Denise R. E. Copeland
PROJECT NO. AND NAME: A Cultural Resource Inventory of the White Ridge Powerline Phase I, Littlewater Chapter, McKinley County, New Mexico DCD14-001

LEGAL_OCATION: NE $1 / 4$ of Sec. 11, T 16 N, R 11 W, N.M.P.M.
UTM: NAD 83, Zone 13, N 3947 629m, E 231 408m
LANDSTATUS: Tribal Trust
STATE: New Mexico County: McKinley CHAPTER: Littlewater
USGS MAPS REFERENCEAND DATE: Laguna Castillo, New Mexico 1963.
GRQUND VISIRILITY: Good Visibility, General ground cover.
IOPOGRAPHY: The site is located on a northeast trending ridge.
DRAINAGE: An un-named blue line drainage in $412 \mathrm{ft} / 126 \mathrm{~m}$ located southeast of the site.
ELEVATION(ft): $6900 \mathrm{ft} / 2103 \mathrm{~m}$ SLOPE/DIRECTION: 5 degrees east SOILTYPE: Sandy alluvial deposits.
YEGETATIONPRESENI: The vegetation includes sage, prickly pear cactus, Russian thistle and various grasses.
CULTURAL AFFILIATION(S): Historic 1950's SITETYPE: Historic Navajo habitation
PERIOD(S) OF OCCUPATION(date if known): Unknown How dated?: Interview with granddaughter Angie Burnside

SITESIZE(L. *W): $50 \mathrm{~m} \times 70 \mathrm{~m}$ TOTAL_AREA( $\mathbf{S q}, \mathrm{m}$ ): $2,900 \mathrm{~m}$ How determined?: Tape measured
ARCHITECTUREPRESENT?: Yes
Describe: Stone pad/foundation (F-1), a sandstone oven (F-2), and two hogan rings (F-3 and F-4).

## ARTIFACTS OBSERVEDICOUNTED?: No COLLECTION MADE?: No PHOTOTAKEN?: Yes

SITEDESCRIPTION: The site is a Historic Navajo habitation with four features. Mary Chavez and Helen Yazzie occupied the site in the 1950's. Features 1, 3 and 4 have been dismantled and move to new location and only the foundation remain. Feature 1 consisting of a foundation of paving sand stone slabs measuring $4 \times 4 \mathrm{~m}$. No artifacts were found with this feature. Feature 2 consists of collapsed sandstone oven measuring ca. one-meter diameter with visible oxidation on the sandstone. Feature 3 is hogan ring marked with unshaped sandstone blocks measuring 5 meters in diameter. Two 16 oz pop bottle were found in the feature. Feature 4 is hogan ring marked with unshaped sandstone blocks measuring 4.5 meters in diameter. No artifacts were found with the feature. Other artifacts on the site included metal can fragments, metal fender of a 1950's truck, stove fragments and clear glass fragments.

Causes of Disturbance: Erosional and livestock grazing. Features 1, 3 and 4 have been dismantled and move to new location and only the foundation remain.

LOCATIONOFSITERELATIVETO PROJECTAREA: The site is located on $60 \mathrm{ft} / 18 \mathrm{~m}$ east of Line A of the powerline.

EXTENT OF INVESTIGATION TO DATE: Field recording only.

RESEARCHPOTENTIAL: Good

RECOMMENDATIONS: The site boundary will be flagged for avoidance prior to any construction and no further work is needed.

## SITE ASSESSMENT UNDER 36 CER 60.4 (National Register):

INTEGRITY: The site does possess significant qualities of locational and physical integrity.
CRITERIAA-D: The site is not known to be associated with any events or persons that have made significant contributions to the broad patterns of our history or are significant in our past (criteria "a" and "b"), it does not appear to embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or that represents a significant distinguishable entity whose components may lack individual distinction (criterion " $c$ ", and has yielded or may to yield information important in history or prehistory (criterion "d").

EXCLUSIONS: N/A

## SITEASSESSMENT UNDERARPA:

The site is less than 100 years old and should not be considered an "archaeological resource" nor "of archaeological interest".

SITEASSESSMENTUNDERAIRFA: N/A

PROVIDEASITEMAP: (Including site designation, north arrow, scale, recognizable features, landmarks and relationship to project area.) See attached map.

HOW CAN THE SITE BE REACHED?: See attached U.S.G.S. map.

OTHER COMMENTS: None.


Figure 1: Plan Map of Site NM-R-17-7


Figure 2: Specific Location of the Cultural Resources along White Ridge Powerline, Phase I. Map is a composite of $7.5^{\text {' Quadrangles "Laguna Castillo Lake, NM } 1963 \text { and Borrego }}$ Pass, NM 1963."

Figure 4. Chapter Resolutions Requesting Assistance for the Construction of the 4.05 mile Phase IWhiteridge Single-Pole 14.4kv Electrical Distribution Line from the Continental Divide Electric Cooperative and a Letter from the CDEC responding to the Chapter Request

## ESBOLUTION OF HR

TRANBPORTAYIOA NND COMGOEITY DEVELOPNESN COMITYES OF THE KAVANO MATIOX COUHCIL

Approving an Eiegtria Engingering nnt conitruation Agrament Betven the isvajo Mation and the continental pivide plectrie Cooperintives. Tno. (CDJE) for the Purpore of coniotrueting Rinetrio
 Chapter Cormunity

## WHEREAS:

1. Pursuant to 2 N.N.C. Sactions 420 and 423 (D) (3), the Transportation and Community Development Comaittee of the Navajo Nation council is established and continued as a standing committee of the Navajo Nation Council and is authorizad to review, prioritize and approve capital improvement projects (CIP) funded by all funding sources; and
2. Pursuant to 2 N.N.C. Section $185(B)(2)$, the Transportation and Community Development Committee of the Navajo Nation Counoll is specifically authorized to approve contracts, expending funds to the extent or in such a manner available and provided in the approved budget of the Navajo Nation; and
3. Pursuant to Resolution CJA-04-98, the Navajo Nation Council appropriated $\$ 202,000.00$ for the purpose of constructing the Littlewater Chapter Powerline Extension to serve fifty-four (54) homes for which Account Number 3-28840-8785 is already established; and
4. An Electric Engineering and Construction Agreement between the Navajo Nation and Continental Divide Electric Cooperative, Inc. (CDEC) is developed and proposed for approval (attached hereto as Exhibit "A") which will enable CDEC to start the construction of the referenced powerilne extension project.

NOW THEREPORE BE IT RESOLVED THRT:

1. The Transportation and Community Development committee of the Navajo Nation Council hereby approves the Electric Engineering and Construction Agreement between the Navajo Nation and Continental Divide Electric cooperative, Inc. to construct the powerline extension to serve fifty-four (54) homes in the Littlewater Chapter comunity in the amount of $\$ 202,000.00$.
2. The Transportation and Comunity Development Committee of the Navajo Nation Council further authorizes the president of the Navajo Nation to execute and carry out the purpose of this Electric Engineering and Construction Agreement.

## Cextifichtion

I hereby certify that the foregoing resolution was duly considered by the Transportation and community Development committee of the Navajo Nation council at a duly called meeting at Window Rock, Navajo Nation (Arizona), at which a quorum was present, and the eame was passed by a vote of 5 in favor, 0 opposed, and 0 abstained, this 9 th day of October, 1998.


Motion: Andrew Simpson
Second: Albert Lee

## LITTLEWATER CHAPTER



## WHEREAS:

1. Pursuant to 26 N.N.C., Section 3 (A) the Littlewater Chapter is a duly recognized certified Chapter under the Navajo Nation Government, as listed at 11 N.N.C., part 1, section 10 , and
2. Pursuant to 26 N.N.C., Section 1 (B) Littlewater Chapter is vested with the authority to review all matters affecting the community and to make appropriate correction when necessary and make recommendation to the Navajo Nation and other local agencies for appropriate actions, and
3. Littlewater Chapter has been awarded $\$ 202,000.00$ for White Ridge Phase 1 power line extension to serve 14 (fourteen) existing homes, and the agreement between Navajo Nation and Continental Divide Electric Cooperative, Inc needs to be executed; and
4. Littlewater Chapter obtained right-of-way consents for Navajo allotment lands and Navajo Nation lands and waiting for approval from Navajo Nation and BIA Realty for approval of Right-of-way easement.

## NOW, THEREFORE BE IT RESOLVED THAT:

1. Littlewater Chapter hereby respectfully the Navajo Nation Community Housing and Infrastructure Department to execute a contract between Navajo Nation and Continental Divide Electric Cooperative, INC for construction of White Ridge Phase 1 electrical power line within White Ridge area for fourteen (14) homes in Littlewater New Mexico.

## CERTIFICATION

WE HEREBY CERTIFY THAT THE FOREGOING RESOLUTION was duly considered by and moved for adoption by Verna Begay, seconded by Mary Pablo, thoroughly discussed and adopted by a vote of 35 in favor 00 , opposed and 01 abstained at a duly called meeting at Litthepater Chapter, Navajo Nation (New Mexico f on this $23^{\text {rd }}$ day of May 2013.


Figure 5. Navajo Nation Fish and Wildlife Species of Concern Listing


Ms. Castillo:
The following information on species of concern ${ }^{1}$ is provided in response to your 10 March 2014 request concerning the subject project, which consists of the Continental Divide Electric Cooperative, Inc., proposed installation of 11.82 miles of power line to serve thirty-four (34) homes in the community of Littlewater, McKinley County, NM. Surface disturbance will be minimal and Right-of-Way Easement will be 30 feet wide. The proposed electrical lines will be along the existing community road.

Each 7.5-minute quadrangle containing project boundaries is addressed separately below. For potentially occurring species these species lists are quadrangle-specifie rather than project-specific. Potential for species has been determined primarily on quadrangle-wide coarse habitat characteristics and species range information. Your project biologist should determine habitat suitability at the project site(s).

A total of eight (08) species both known and/or porential are included in this response. They are:

|  | SCIENTIFIC. NAME | COMMON NAME | NESL <br> STATUS | FEDERAL. STATUS AND/OR <br> -MBTA |
| :--- | :--- | :--- | :---: | :---: |
| 1. | Antilocupra amcricana | Pronghorn | $G 3$ |  |
| 2. | Aquila chrysactos | Golden Eagle | $G 3$ | MBTA |

[^3]| 3. | Buteorgalis | Ferruginous Hawk | G3 | MBTA |
| :---: | :---: | :---: | :---: | :---: |
| 4. | Charadrius montanus | Mountain Plover | G4 | ESA Proposed Threatened: MBTA. |
| 5. | Falco percgrinus | Peregrine Falcon | G4 | MBra |
| 6. | Mustela nigripes | Black footed Ferret | G2 | ESA Endangered |
| 7. | Strix occidentalis lucida | Mexican Spotted Owl | G3 | ESA Threatened; MBTA. |
| 8. | Vulpes macrotis | Kit Fox | G4 |  |

## LAGUNA CASTILLO, NM 7.5-MINUTE QUADRANGIE

lroject Location: Littlewater/Whire Ridge P/L Project
Although the Navajo Fish and Wildlife Department (NFWD) has no record of species of concern occurring on or near the project site(s) at this time, the potential for certain species of concern to occur needs to be evaluated.

Species of concern with potential tooccur on the 7.5 -minute quadrangle(s) containing the project boundaries include the following:
. Ancilocapra umericana
Aquila chrysactos
Butcorgolis
Charadrius montanus
. Mustela nigripes
6. Vulpes macrotis

AREA 3 of The Biological Resource Land Clearance Policies \& Procedures
Area 3-Low Sensitivity Wildlife Resources: This area has a low, fragmented concentration of species of concern. Species in this area may be locally abundant on 'islands' of habitat, but islands are relatively small, limited in number and well spaced acruss the landscape. (For detailed informatiou regarding "Area 3" please refer to our website at nndfw.org).

BORREGO PASS, NM 7.5-MINUTE QUADRANGIE
Project Location: Littlewater/White Ridge P/L Project
Although the Navajo Fish and Wildlife Deparanent (NFWD) has no record of species of concern occurring on or near the project site(s) at this time, the potential for certain species of concern to occur needs to be evaluated.

Species of concern with potential thoccur on the 7.5 minurequadrangle(s) containing the project boundaries include the following:

1. Antilocapra umericana
2. Aquila chrysactos
3. Butco regalis
4. Falco percgrimus
5. Mustcla nigripes
6. Strix occidentalis lucida
7. Vulpes maciotis

AREA 3 of The Biological Resource Land Clearance Policies \& Procedures
Area 3-Low Sensitivity Wildife Resources: This area has a low, fragmented concentration of species of
concern. Species in this area may be locally abundant on 'islands' of habitat, but islands are relatively small, limited in number and well spaced across the landscape. (For detailed information regarding "Area 3' please refer to our website at andfw.org).

Potential for the black-footed ferret should be evaluated if prairie-dog towns of sufficient size (per NFWD guidelines) occur in the project arca.

Potential for Puccinellia parishii should be evaluated if wetland conditions exists that contain whitealkaline crusts.

Biological surveys need to be conducted during the appropriate season to ensure they are complete and accurate please refer to NN Species Accounts. ${ }^{4}$ Further questions pertaining to surveys should be referred to Species Account. Surveyors on the Navajo Nation must he permitred by the Director, NFWD. Contact Jeff Cole at (928) $871-6595$ for permitting procedures. Questions pertaining to surveys should be directed to the NFWD Zoologist (Chad Smith) for animals at $871-7070$ and Botanist (Andrea Hazelton) for plants at (928)523-322l. Questions regarding hiological evaluations should be directed to Pamela Kyselka (Acting Environmental Reviewer) at 871-7065.

The powerline(s) should be designed according to the Avian Power Line Interaction Committee's *Suggested Practices for Avian Protection on Power Lines: The State of the Art in $2006^{\circ}$ (Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C. and Sacramento, CA).

Potential impacts to wetlands should also be evaluated. The U.S. Fish Wildife Service's National Wetlands Inventory (NWI) maps should be examined to determine whether areas classified as wetlands are located close enough to the project site(s) to be impacted. In cases where the maps are inconclusive (e.g., due to their small scale), field surveys must be completed. For field surveys, wetlands identification and delineation methodology contained in the "Corps of Engineers Wetlands Delineation Manual' (Technical Report Y-87-1) should be used. When wetlands are present, potential impacts must be addressed in an environmental assessment and the Army Corps of Engineers, Phoenix office, must be contacted. NWI maps are available for examination at the NFWD's Natural Heritage Program (NHP) office, or may be purchased through the U.S. Geological Survey (order forms are available through the NHP). The NHP has complete coverage of the Navajo Nation, excluding Utah, at $1: 100,000$ scale; and coverage at $1: 24,000$ scale in the southwestern portion of the Navajo Nation.

The information in this report was identified by the NFWD's biologists and computerized database, and is based on data available at the time of this response. If project planning takes more than two (02) years from the date of this response, verification of the information provided herein is strongly recommended. It should not be regarded as the final statement on the occurrence of any species, nor should it substitute for on-site surveys. Also, because the NFWD's information is continually updated, any given information response is only wholly appropriate for its respective request.

For alist of sensitive species on the Navajo Nation in addition to the species listed on the Navajo Endangered Species List (NESL) please refer to our website at www.nndfw.org.

An invoice for this information is attached.

[^4]If you have any questions I may be reached at (928) 871-6472.


Sonja Detsoi, Witdlife Tech.
Natural Heritage Program
Department of Fish and Wildlife
xc: file/chrono
Figure 6．Client Home Assessment Check－off List Form for the Whiteridge
Powerline


Figure 7. Biological Evaluation Report for the 4.05 mile Phase I-Whiteridge Single-Pole 14.4kv Electrical Distribution Line (Project No. 45161, Littlewater Chapter, McKinley County, Navajo Nation, New Mexico

Biological Evaluation Survey and Report Conducted for the Navajo Nation Littlewater Chapter 4.05 mile Phase IWhiteridge Single-Pole 14.4kv Electrical Distribution Line, Project No. 45161, in Littlewater Chapter, McKinley County, Navajo Nation, New Mexico


In the immediate foreground there is a fenceline that runs from south to north, with this aspect showing the southern portion of the ROW. Notice the mesa chain in the horizon to the right that makes up part of the Continental Divide. The two homes along this segment of road, on the left in the distance, are planned to receive electrical power. These homes were also in Photograph 1.

Conducted For:
Continental Divide Electric Cooperative, Inc. Attn: Ms. Debbie Olivar, Engineering Services Manager

PO Box 1087
Grants, New Mexico 87020
(505) 285-6656

Conducted By:
Dine' Bi Keyah Environmental Mr. Steven Chischilly, Owner

PO Box 2084
Crownpoint, NM 87313
(505) 786-4147

August 15, 2014

## INTRODUCTION

The Navajo Nation Littlewater Chapter is the project sponsor for this project and they are based in Littlewater, New Mexico in the eastern portion of the Navajo Reservation. Under the National Environmental Policy Act, and a number of other federal United States environmental laws, Littlewater Chapter seeks compliance with the placement, construction, and maintenance of the proposed 4.05 mile Phase I-Whiteridge Single-Pole 14.4kv Electrical Distribution Line, Project No. 45161, in Littlewater Chapter, McKinley County, Navajo Nation, New Mexico. Upon successful survey of the 4.05 mile, 25 foot right-of-way (ROW), and associated land in the vicinity, searching potential habitat for listed species as made available by the Navajo Fish and Wildlife Department, recommendations will be made on how to avoid, prevent disturbance, and mitigate for the possible harm or destruction of identified rare, threatened and endangered species and their habitat in this project area. These species have been identified by the Navajo Fish and Wildlife Department Natural Heritage Program and they are based in Window Rock, Arizona, the tribal government capital of the Navajo Nation.

The 4.05 mile ROW, referred to as Phase I, is located in Littlewater Chapter, New Mexico on tribal trust and allotted land. The Littlewater Chapter, a part of the contiguous, larger tribal reservation, is part of the Navajo Nation and it is located in the northwestern part of New Mexico in McKinley County. The Phase IWhiteridge Single-Pole 14.4 kv Electrical Distribution Line, is located on the United States Geological Survey 7.5' quadrangle maps entitled "Laguna Castillo, 1963" and "Borrego Pass, 1963". The legal description for the project tract can be found in the attached Environmental Assessment document (Project Description, Page $6)$.

The survey and the subsequent report are conducted in accordance with the National Environmental Policy Act (1970) and the Endangered Species Act (1973), as amended. Prior to any disturbance occurning at the proposed federally funded project site that is being proposed, the project site must be surveyed for threatened and endangered species so that they may be protected, and their habitat protected, from any undue harm caused by said disturbance, in this case construction, maintenance, and potential repair of the Phase I-Whiteridge Electrical Distribution Line. Other environmental laws are also considered when the project area and surrounding vicinity is surveyed since they are applicable to the project area also.

The Phase I-Whiteridge Electrical Distribution Line ROW is located on the Navajo Nation on Allotted, Tribal Trust Land and Bureau of Land Management Land. The proposed ROW route has never had distribution lines in this location before. Thirteen homes along this ROW will receive electrical power if this project is approved.

Upon consultation with the Navajo Natural Heritage Program (NNHP), a section of the Navajo Fish \& Wildlife Department, they identified species of concern that either are known to occur on or near the site or have the potential to occur on or near the site. Species identified by the NNHP, and sought on or near the sites, are identified and listed in the letter from the Navajo Fish and Wildlife Department which can be found as Figure 7 in the Environmental Assessment document.

Eight species were identified by the NFWD as being known or having the potential to occur on or in the vicinity of the project ROW, and a listing of these species is as follows with their status under the Navajo Endangered Species List (NESL), and whether they are federally protected and their respective status under the Endangered Species Act (ESA), and Migratory Bird Treaty Act (MBTA):

Aquila chrysaetos (Golden Eagle); NESL G3; MBTA
Buteo regalis (Furruginous Hawk); NESL G3; MBTA
Charadrius montanus (Mountain Plover); NESL G4; ESA Proposed Threatened; MTBA
Antilocapra americana (Pronghorn); NESL G3
Mustela nigripes (Black footed Ferret); NESL G4; ESA Endangered
Falco peregrinus (Peregrine falcon); NESL G4; MBTA
Strix occidentalis lucida (Mexican Spotted Owl); NESL G3; ESA Threatened; MBTA
Vulpes macrotis (Kit fox); NESL G4

## METHODS

The entire 4.05 mile project ROW was hiked with potential and suitable habitat sought for each species of concern as identified by the Navajo Nation Fish \& Wildlife Department. Cliffs and buttes were scanned with binoculars and geology and soils were sought that would support plant species that may occur in this area that are on the Navajo Nation Fish and Wildlife Species of Concern listing. The sandstone mesas and cliffs found approximately 1 mile from the project site to the south, within line of site of the project ROW, were scanned for nests and the base of these mesas were hiked. Rare and threatened plant species often only grow on a particular geological formation or strata and thus, many times, these areas are sought before the plants are sought. Hiking of the site with a notebook recording plant species occurrence and noting topography and hydrology is conducted
during this hiking survey, as well as documentary of the plants growing on or near the project site captured with photographs.

Mr. Steven Chischilly, Owner and Biologist, was out hiking the project site on June 16, 17, 20, and July 24, 2014. The site was visited and photographs were taken of the site especially of the physical attributes that may become issues when considering construction and the potential for the site to provide habitat for the species of concern. Mr. Chischilly conducted a visual and hiking survey up to 1 mile from the project site, especially if it was felt that there may be potential nesting habitat available near the project site. Binoculars used were the Nikon $8 \times 29$, Pentax 10x20, and the digital camera used was the Canon PowerShot SX120 IS, and Canon Powershot S3 IS. Also, a measuring wheel was also used to determine the sizes of prairie dog towns located in or along the ROW.

The general flora and fauna encountered were identified during the survey of the site. Specifically, preferred habitats for each species listed on the attached (Exhibit "C") Navajo Nation Fish \& Wildlife Species of Concern list were sought by either looking for the species themselves or by seeking suitable habitat. Species encountered during this survey are listed in the next section of this report.

## RESULTS

Raptor species such as the golden eagle were actively sought during the pedestrian survey of this project area. Potential nesting sites were scanned while the surveyor hiked the project area and all suitable nesting habitat within 1 mile from the site was surveyed.

## Golden Eagle (Aquila chrysaetos)

No golden eagles nor were there nests located during the survey of this project ROW. The mesas and buttes were scanned and so were the larger mesas to the south that make up the Continental Divide. Binoculars were used to search the cliffs for nests. Ascent up the sandstone cliffs near the homesites was completed as well as a hiking survey along the base of the mesas that appeared to be tall enough to provide nesting habitat.

Golden eagles breed across a great range in North America, the northern mountains of the Brooks Range in Alaska to south central Mexico. They are also found and do breed in Europe and Asia. Golden eagles are resident in all western states, and this population increases in the winter when migratory birds come in from the northern breeding regions. According to Kochert and Parmeter, in New Mexico golden eagles breed in suitable habitat through-out the state (Kochert et al. 2002, Parmeter et al. 2002).

When golden eagles are breeding, they are found primarily in mountainous areas and canyons. This is often associated with mesas and rimrock terrain overlooking open deserts and grasslands. In New Mexico, the most common nesting areas are in steep-walled mountain canyons, although cliffs are the most common nesting areas. Trees or man-made structures are sometimes used. In general, the nest must be located in an area that provides them with a wide view of the area surrounding the nest or on prominent, high outcrops. Nesting location is highly positively correlated with hunting grounds and is a very important factor in nest selection (Kochert et al, 2002).

Golden eagles are carnivores and they are a bird of prey. They hunt in open grasslands or in shrubland habitat with a tendency to avoid agricultural areas. This species primarily subsists on rabbits, hares, ground squirrels, and prairie dogs, even though it is capable of killing larger prey such as small ungulates and young domestic livestock. Golden eagles establish and defend territories of 7.8 square miles to 11.6 square miles $\left(20-30 \mathrm{~km}^{2}\right)$. The nesting period extends for more than 6 months from the time the eggs are laid until the young fledge from the nest. An average of only 1 young per year is produced, with up to 15 over a lifetime of rearing young (Kochert et al 2002).

Upon talking to some of the residents, they stated that they do not see eagles in the area, only ravens and sometimes red-tailed hawks. The author of this report has surveyed and inventoried golden eagles throughout the Navajo Nation while employed with the Navajo Fish and Wildlife Department and while hired as a private consultant.

Due to the distance from the project site (more than 1 mile) to any potential nesting sites, and the low level of disturbance that will occur with this project construction, no negative impact upon this species is expected with the construction, maintenance and operation of this electrical distribution line.

## Ferruginous Hawk (Buteo regalis):

The ferruginous hawk is a broadly distributed raptor of western North America. The ferruginous hawk population has been increasing in the United States, however, they are highly sensitive to disturbance and loss or alteration of native grassland habitat. They breed across western North Amerca, into southern Canada and south to central Arizona and New Mexico. During the winter they are found in Colorado and Kansas and northern to central Mexico.
"In New Mexico, the ferruginous hawk is a breeding species across the northern two-thirds of the state, and may be found statewide during winter. Breeding generally occurs north from Clovis in the eastern plains, north from San Antonio in the Rio Grande valley, and north from the Plains of San Agustin in the western part of the state. Nesting in isolated areas further south is possible. High nesting
densities of Ferruginous Hawks have been observed in the Estancia Valley (Bechard and Schmutz 1995, Cartron et al. 2002).

Ferruginous Hawks occur in open areas containing broad expanses of prairie grassland or shrub-steppe vegetation. Landscapes with low to moderate agricultural coverage (less than 50\%) may be used for nesting and foraging, and agricultural fields may serve as important foraging areas due to high prey densities (Leary et al. 1998, Dechant et al. 2001). The species also uses transitional and edge areas between grassland and juniper savannah or pinyon-juniper woodland. It avoids areas of intensive agriculture or high human disturbance (Bechard et al. 1990).

Nesting sometimes occurs in elevated locations on the ground, particularly in broad and undisturbed grassland areas. Above-ground nesting is common in New Mexico, and occurs most frequently in isolated tree stands or rock outcrops (Stravers and Garber 1998). Power poles or other vertical structures, including artificial platforms, are also sometimes used. Non-ground-nesting hawks appear somewhat less sensitive to surrounding land use (Bechard et al. 1990). In eastern New Mexico, Ferruginous Hawks often use old homestead trees for nesting (D. Svingen, pers. comm.). In the northwest part of the state, nesting often occurs on rock spires. In woodland edge habitat, flat-topped junipers with thick support branches are a preferred nest substrate (Stravers and Garber 1998).

Nesting activities begin in early to mid-March; young fledge from late June to early July. Territory and nest site re-occupancy is common, and one of several nests within a territory may be used in alternate years. Clutch size is typically 2-4. Birds are easily disturbed during the breeding season, and usually will not reinitiate nesting if a clutch is lost or abandoned (Bechard et al. 1990, Bechard and Schmutz 1995). Estimates of home range size vary from 3-8 square kilometers in the Columbia River Basin and Great Basin, to 90 square kilometers in Washington (Janes 1985, Leary et al. 1998). Range-wide, density and productivity are closely associated with cycles of prey abundance (Bechard and Schmutz 1995). Ferruginous Hawks feed primarily on small mammals, especially ground squirrels, prairie dogs, and rabbits. In New Mexico, wintering Ferruginous Hawks show a strong association with prairie dog colonies (Bak et al. 2001)." http://nmpartnersinflight.org//ferruginoushawk.html

Nesting ferruginous hawks have been encountered and studied by the author in the Bisti Badlands on northwestern New Mexico and on the coal mining lease lands of Broken Hills Proprietary near Farmington, NM. They nest atop sandstone spires and in remote ravines where little to no human contact is the most probable.

No ferruginous hawks were observed during this field survey, nor were any nests found that would be utilized by this species. Marginal to suitable nesting habitat
does exist within 1 mile of the project vicinity for they do nest on sandstone outcrops and spires, however, with the survey of the project vicinity and the surrounding mesas, no negative effect upon the ferruginous hawk is expected with the construction, maintenance, and use of this electrical distribution line.

## Mountain Plover (Charadrius montanus):

The mountain plover is a grassland shorebird species that is native to the western Great Plains and the Colorado Plateau. Habitat loss and significant population declines has occurred since the 1970 s.
"In New Mexico, the mountain plover breeds primarily in the northeast quadrant, from Las Vegas and Mosquero north in Harding and Union Counties and north of Tres Piedras in Taos County. It also breeds occasionally at Santo Domingo Pueblo and sporadically in the western half of the state from the Plains of San Agustin west to Quemado and north to the Farmington area (Craig et al. 1985). Ligon (1961) reported extensive breeding grounds in Roosevelt County, Lea County, and on Otero Mesa in Otero County, but the species has not been reported breeding in these areas for decades. Mountain Plovers may be encountered widely across the state in appropriate habitat during spring and fall migration."


The diagram above shows the wintering and breeding range for the mountain plover in the western United States and northern Mexico.
"Mountain Plovers nest in prairie habitat used historically by large herbivore assemblages including bison, pronghorn, and prairie dogs. They prefer large, flat grassland expanses with sparse, short vegetation, and bare ground (Knopf and Miller 1994). The species is primarily associated with shortgrass prairie dominated blue grama, often mixed with buffalo grass or western wheatgrass (Knopf 1996). It also occupies semi-desert scrub and grassland habitats, dominated by short Atriplex and Artemisia species, in areas west of the Great Plains (Shackford 1991).

Mountain Plovers exhibit a strong association with prairie dog colonies, though there appears to be no obligate relationship (Knowles et al. 1982). The species nests in heavily grazed areas, or on patches of fallow or recently plowed ground or areas which mimic these conditions. In Colorado, shortgrass pastures grazed heavily in summer were used for foraging and nesting; however, Mountain Plovers may be excluded by extreme or long-term overgrazing (Dechant et al. 2001). A rangewide study found nesting in fallow or planted fields (particularly winter wheat) to be fairly common (Shackford et al. 1999). In native habitats, nests are usually located in disturbed sites with $30 \%$ or more bare ground (Knopf and Miller 1994). Burned areas may provide suitable nesting habitat until denser vegetation is reestablished. Nests in New Mexico are often located in overgrazed grassland patches, on gravelly ground with very short cover and scattered shrubs interspersed with bare areas (Tolle 1976). Nests are often constructed near rocks, cow pies, or clumps of vegetation (Knopf and Miller 1994).

Mountain Plovers are loosely colonial in breeding. In Colorado, estimated plover densities of 8 adults per square kilometer were reported (Wunder et al. 2003). Average reported density for a variety of Wyoming sites was 4.5 adults per square kilometer (Plumb et al. 2005). Plovers arrive on their New Mexico breeding grounds in early March, and most depart by August. Egg-laying begins mid- to lateApril. Renesting may occur following nest failure (Knopf 1996)."
http://nmpartnersinflight.org/mountainplover.html
The author has not had the chance to work with this bird species and has never seen this bird species in its natural environment although it does say in the literature that they at times nest as far north as Farmington, NM down to Quemado, NM.

No mountain plovers were observed during this field survey, nor were any nests found that would be utilized by this species. Due to the lack of suitable habitat, as described above, for nesting in the vicinity of the project site, and the proximity to a busy dirt road less than a quarter mile from the project ROW, no negative effect upon the mountain plover is expected with the construction, maintenance, and use this proposed electrical distribution line.

## Peregrine Falcon (Falco peregrinus):

Peregrine falcon have made a remarkable recovery since their population numbers plummeted in the 1950s through the 1970s caused by organochlorine pesticide contamination, in particular DDT which is a pesticide and bioaccumulates and causes egg shell weakness. The peregrine falcon is a fairly rare breeder in New Mexico, and is vulnerable to human disturbance around nest sites.

The Peregrine Falcon is found throughout the world and inhabits larges parts of the north and southern hemispheres. They have reoccupied their original range
as they have become more and more prevalent after the ban of DDT in the United States in 1972, and worldwide is was banned for agricultural use by the Stockholm Convention. Peregrines are distributed in clumps and patches across the entire north American continent from the Pacific to the Atlantic, and from northern Alaska to Canada and then to southern Mexico (White et al 2002). In New Mexico, they breed in the mountains and river canyons of western New Mexico east to the Sangre de Cristo, Sandia/Manzano, and Sacramento mountains; it is a rare visitor to the lower elevations statewide (Williams 1999, Parmeter 2002).

The peregrine falcon occupies many biomes and in the western United States it generally occupies mountain and canyon habitats including high elevations above $10,000 \mathrm{ft}$. Breeding areas are associated with water and they nest of cliffs in general between 50-200 m ( $\sim 50-218 \mathrm{yds}$ ) in height being preferred. Peregrines also nest on tall buildings instead of cliffs (White et al 2002).
"In New Mexico, almost all nests are constructed on ledges on relatively tall cliffs, in remote areas with minimal human disturbance. The same nest location is often re-used from year to year. Clutch size is typically 3 or 4, and a single brood per season is raised. Annual productivity may be variable due to changes in abiotic conditions and prey abundance (White et al. 2002). Peregrine Falcons prey mostly or entirely on birds. In New Mexico, a variety of locally available species are taken, including doves, swifts, flickers, jays, meadowlarks, and others. At one aerie, remains of 62 bird species were identified (S. Williams, unpubl. data). Peregrine Falcons pass through the state on migration from March-May, and July-November. Most breeding activity takes place from April-June" (White et al, 2002).

The author has found a nesting pair of peregrine falcon when conducting a survey in the Carrizo Mountains on the Navajo Nation. The peregrine was in pursuit of a passerine bird species and the eyrie was located later that morning on the side of a cliff approximately 300 feet high. Navajo Nation Fish and Wildlife were contacted and the eyrie was located on a map for them.

No peregrine falcons were observed during this field survey, nor were any nests or eyries found that would be utilized by these species. Due to the lack of high cliffs for nesting and the lack of bird species needed for prey items generally associated with a water supply in the vicinity of the project site, and the fact that cliffs in excess of 300 feet are located more than 1 mile away from the project ROW, no negative effect upon the peregrine falcon is expected with the construction, maintenance, and use of this electrical distribution line.

## Black Footed Ferret (Mustela nigripes):

"The black-footed ferret is 18 to 24 inches long, including a 5 to 6 inch tail. It weighs only one-and-a-half to two-and-a-half pounds, with males slightly larger than females. The black-footed ferret is well adapted to its prairie environment. Its color
and markings blend so well with grassland soils and plants, that it is hard to detect until it moves. It is a slender, wiry animal with a black face mask, black feet, and a black-tipped tail. The rest of its short, sleek fur is a yellow-buff color, lighter on the belly and nearly white on the forehead, muzzle, and throat. It has short legs with large front paws and claws developed for digging. The ferret's large ears and eyes suggest it has acute hearing and sight, but smell is probably its most important sense for hunting prey underground in the dark.

New Mexico counties in which this species is known to or believed to occur include Colfax and Taos counties, and in Arizona, the counties which are known to or believed to have black footed ferrets include Coconino and Yavapai counties.

Black-footed ferrets are highly specialized predators that depend on prairie dogs for food and shelter. More than 90 percent of the ferrets' diet is made up of prairie dogs. Ferrets and prairie dogs live in prairie dog towns in underground tunnels called burrows.

Black-footed ferrets require prairie dog burrows for shelter. Prairie dogs use prairie and grassland habitat ranging from the mid-west to the western United States. They are considered a key indicator species for the health of prairie and grassland habitat. In addition to the black-footed ferret, many species reside in prairie dog burrows including burrowing owls, snakes, lizards, mice and a variety of insects.

There are five different species of prairie dogs in North America. Currently, the Gunnison's prairie dog is the only species found in Arizona. The black-tailed prairie dog was previously found in south eastern Arizona, but was extirpated in the early 1900s.

Ferrets select their territories based on high prairie dog densities, so biologists determine prairie dog numbers prior to releasing captive animals. They use the Density Mapping Method, which requires transecting through prairie dog towns while counting and recording the activity of the burrows using a global positioning system (GPS). The data and GPS points are downloaded to generate a map showing high quality prairie dog habitat." Arizona Game and Fish, 2013
http://www.azgfd.gov/w c/blackfooted ferret.shtml
Due to the lack of prairie dog burrows or towns in the vicinity of the project site, within at least 0.5 miles, no negative effect upon the black footed ferret is expected with the construction, maintenance, and use of electrical distribution line. Additionally, according to Mr. Chad Smith, Zoologist, with the Navajo Fish and Wildlife Department, linear projects are not of great concern when they go through prairie dog towns and that of more concern are projects that disturb large tracts of
the towns (Personal Communication, 2014). No negative impact upon the blackfooted ferret is expected.

## Mexican Spotted OwI (Strix occidentalis lucida):

"Unlike most owls, Mexican spotted owis have dark eyes. They are an ashychestnut brown color with white and brown spots on their abdomen, back and head. Their brown tails are marked with thin white bands. Young owls less than 5 months old have a downy appearance. Females are larger than males.

Spotted owls are residents of old-growth or mature forests that possess complex structural components (uneven aged stands, high canopy closure, multi-storied levels, high tree density). Canyons with riparian or conifer communities are also important components. In southern Arizona and New Mexico, the mixed conifer, Madrean pine-oak, Arizona cypress, encinal oak woodlands, and associated riparian forests provide habitat in the small mountain ranges (Sky Islands) distributed across the landscape. Owls are also found in canyon habitat dominated by vertical-walled rocky cliffs within complex watersheds, including tributary side canyons. Rock walls with caves, ledges, and other areas provide protected nest and roost sites. Canyon habitat may include small isolated patches or stringers of forested vegetation including stands of mixed-conifer, ponderosa pine, pine-oak, pinyon-juniper, and/or riparian vegetation in which owls regularly roost and forage. Owls are usually found in areas with some type of water source (i.e., perennial stream, creeks, and springs, ephemeral water, small pools from runoff, reservoir emissions). Even small sources of water such as small pools or puddles create humid conditions. Roosting and nesting habitats exhibit certain identifiable features, including large trees (those with a trunk diameter of 12 inches (in) (30.5 centimeters (cm)) or more (i.e., high tree basal area)), uneven aged tree stands, multi-storied canopy, a tree canopy creating shade over 40 percent or more of the ground (i.e., moderate to high canopy closure), and decadence in the form of downed logs and snags (standing dead trees). Canopy closure is typically greater than 40 percent. Owl foraging habitat includes a wide variety of forest conditions, canyon bottoms, cliff faces, tops of canyon rims, and riparian areas. Juvenile owls disperse into a variety of habitats ranging from high-elevation forests to pinyonjuniper woodlands and riparian areas surrounded by desert grasslands. Observations of long-distance dispersal by juveniles provide evidence that they use widely spaced islands of suitable habitat which are connected at lower elevations by pinyon-juniper and riparian forests.

Owls feed on small mammals, particularly mice, voles, and woodrats. They will also take birds, bats, reptiles and arthropods. The Mexican spotted owl is a "perch and pounce" predator, using elevated perches to find prey items using sight and sound. They can take prey on the wing, particularly birds. Most hunting is at night, however, there are some reports of diurnal foraging.

Mated pairs are territorial. The breeding season activity centers tend to be smaller than the non-breeding season activity centers, with considerable overlap between the two. Adults may or may not leave the territory during the winter. Most adults remain on the same territory year after year. Juveniles leave their natal territory in September, and while they are capable of moving long distances, many successfully establish themselves nearby. Some juveniles will travel through a variety of vegetation communities until they settle down. Distribution: The owl occupies a broad geographical area, but does not occur uniformly throughout its range. Instead, the owl occurs in disjunct localities that correspond to isolated mountain systems and canyons. The owl is frequently associated with mature mixed-conifer (Douglas-fir (Psuedotsuga menziesii), white fir (Abies concolor), limber pine (Pinus flexilis) or blue spruce (Picea pungens)), pine-oak (ponderosa pine (Pinus ponderosa) and Gambel oak (Quercus gambellii)), and riparian forests (various species of broadleaved deciduous trees and shrubs). Ninety-one percent of known owls existing in the United States between 1990 and 1993 occurred on land administered by the U.S. Forest Service, the primary administrator of lands supporting owls. Most owls have been found within the 11 National Forests of Arizona and New Mexico. It is unknown why Colorado and Utah support fewer owls.

Mated pairs of owls defend a breeding territory at least during the nesting season (March through August). Clutch size is small (generally 1 to 3 eggs), and eggs hatch in early May. A second clutch may be laid if the first fails. The females brood the young owlets almost constantly the first couple of weeks, then may be gone hunting for several hours a day. Owlets fledge at 4 to 5 weeks old (early to mid June), and leave the nest before they can fly, moving to the tree branches or the ground while still under parental care. Dispersal from the nest area usually occurs from mid-September to early October. Mexican spotted owls breed sporadically, and not all birds nest every year. Local conditions, particularly for the prey base, may govern nesting success.

Actions that open up or remove mature or old-growth forests (logging, wildfire, road or site construction that results in fragmentation of the forest) are detrimental to the local owl population. Human activity (hiking, shooting, off-road vehicle activity) in or near nesting, roosting, or foraging sites may result in abandonment of an area, and indirectly may affect habitat parameters from trampling, vegetation removal, or increased fire risk." United States Fish and Wildlife Service, 2013. http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B074

The author has worked with Mexican spotted owls in the past and worked approximately 6 summers conducting inventories and surveys for this species throughout the Navajo Nation including the Carrizo Mountain, Chuska Mountains, Navajo Canyon, Navajo Mountain, and Black Mesa. Nests were located in Navajo

Canyon, Buffalo Springs, Crystal, Falling Iron Cliffs, to name a few locations on the Navajo Nation.

Due to the lack of potential habitat within 1 mile of the project ROW, no negative effect is expected upon this species with the construction, maintenance, and use of this proposed electrical distribution line.

## Pronghorn (Antilocapra Americana)

## Geographic Range

"Antilocapra americana is endemic to North America and distributed throughout the treeless plains, basins, and deserts of western North America, from the southern prairie provinces of Canada, southward into the western United States and to northern Mexico. Distribution of populations within this range is discontinuous. In 1959, a population was introduced to Hawaii. However, by 1983 the population was roughly 12 individuals and headed for extinction. (IUCN, 2008;
Stocker, 1985)

## Habitat

Pronghorns are primarily found in grassland, sage scrub or chapparal, and desert. The southern portion of their range consists mainly of arid grasslands and open prairies. Throughout the rest of their range they are common in sage scrub and chaparral as well, areas of dense shrubs with tough leaves. Pronghorns are particularly dependent on sage brush for forage in these areas. Pronghorn feed primarily on sage, forbs, and grasses. They have also been known to consume cacti in some areas. There is an overlap in forage preferences with domestic sheep and cattle, so some competition for food occurs. Overgrazing by sheep has been implicated in pronghorn die offs, especially in winter. Pronghorn habitat ranges from sea-level to about 3500 m . Their need for free standing, fresh water varies with the moisture content of the vegetation they consume. They may have to travel a great distance to find a water source. In winter, northern populations depend heavily on sage brush. Pronghorn are commonly found along wind-blown ridges where vegetation has been cleared of snow, although they will dig through snow with their hooves to get to vegetation. (Anderson, 2002; Bleich, et al., 2005; Feldhamer, et al., 2004)

- Range elevation

0 to $3,350 \mathrm{~m}$
Physical Description

Pronghorns are small ungulates with barrel-shaped bodies. Females stand 860 mm at the shoulder and males 875 mm at the should. Females are approximately 1406 mm in body length and males are approximately 1415 mm . The tail is up to 105 mm long and ears are up to 143 mm long. Their body weight is from 35 to 70 kg , depending on sex and age. Their hair is dense and very coarse and is airfilled, providing excellent insulation. Guard hairs are hollow and underlain by finer, shorter underfur. Guard hairs are erectile for heat regulation. As more air becomes trapped in fur, the more they are insulated from external temperatures. Their dorsal fur is a rufous brown and they have creamy underbellies, rumps, and neck patches. Males have short black manes on the neck, from 70 to 100 mm in length, as well as a neck patch and a black stripe that runs across the forehead from horn to horn. Females lack these black facial patches, but have a small mass of black hair around their nose. Their ears are small and point slightly inward at the tip. Pronghorns have a patch of white, erectile fur on their rumps that is visible at great distances. The mucous membranes and eyelashes are coal black. Southern populations are paler in overall color than northern populations. The horns are erect, with a posterior hook and a short anterior prong. The prong gives rise to the common name "pronghorn". This pronged pattern is unique to this species. The horn is a keratinized sheath, black in color, and is deciduous. Horn sheaths grow over a bony extension of the frontal bone, which is now called the cancellous bone in ungulates. A new sheath forms under the old, which splits and is dropped just after the rut each year. Both sexes have horns, although the horns of females are generally small or absent, and never exceed ear length. Female horns average about 120 mm and the prongs are not prominent. The horn begins to grow at the age of six months and will be shed by 18 months. The maximum horn height for males will occur within 2 to 3 years of age and will average 250 mm , exceeding the length of the ear. (Feldhamer, et al., 2004; Hays, 1868; Hildebrand and Goslow, 2001; Hill, et al., 2004; O'Gara, 1978; Schroeder and Robb, 2005; Stocker, 1985)

Pronghorn limbs are specialized for cursoriality, giving them enhanced speed and endurance. They are the fastest known New World mammal, traveling at speeds of $98 \mathrm{~km} / \mathrm{h}$ when sprinting, and can hold a sustained speed of 59 to 65 $\mathrm{km} / \mathrm{h}$. The advantages to having speed and endurance include the ability to forage over large areas, to seek new food sources when familiar sources fail, and the ability to escape predators. Pronghorns have unguligrade foot posture, which lengthens the legs by allowing them to stand on the tips of their digits. The length of the radius bone is as long, or longer, than the femur. The ulna is reduced and partially fused to the radius. The clavicle in ungulates has been lost and the scapula has been reoriented to lie flat against the side of their chest where it is free to rotate roughly $20^{\circ}$ to $25^{\circ}$ in the same plane in which the leg swings. The ulna and radius have been reduced to eliminate the twisting and rotating of the elbow. The reduction of bone and associated muscles in the distal limbs decreases limb weight, giving them more speed. Pronghorns have modified their
joints to act as hinges allowing only motion in the line of travel. This has been done by introducing interlocking spines and grooves in their joints. All these adaptations have made pronghorns excel in cursorial locomotion, but they can no longer jump because they have lost the suspension mechanism that cervids have. This explains their apparent fear of fences. (Feldhamer, et al., 2004; Hays, 1868; Hildebrand and Goslow, 2001; Hill, et al., 2004; O'Gara, 1978; Schroeder and Robb, 2005; Stocker, 1985)

The dental formula of Antilocapra americana is $0 / 3-0 / 1-3 / 3-3 / 3$, where incisors and canines only occur on the lower jaw. Pronghorns have hypsodont crown height; discernable roots do not occur, allowing the cheek teeth to be ever growing. An approximate age when the molars erupt varies slightly; the first comes in at 2 months and the second and third come in around 15 months of age. Replacement of incisors varies as the first is replaced at 15 months, the second at 27, and the third at 39 months. Canines are replaced between 39 and 41 months. Premolars are all replaced at 27 months of age. The sequence of tooth eruption, replacement, and wear is used to estimate the age of pronghorns. Cementum annuli analysis of the first permanent incisor is used for older age classes. (Feldhamer, et al., 2004; Hays, 1868; Hildebrand and Goslow, 2001; Hill, et al., 2004; O'Gara, 1978; Schroeder and Robb, 2005; Stocker, 1985)

Maximal rate of oxygen intake in pronghorns determines the peak at which the animal can synthesize ATP by aerobic catabolism. This then determines how intensely the animal can exercise. Pronghorns are an extreme example of evolutionary specialization for high oxygen consumption. When comparing body weight to weight-specific consumption of oxygen, pronghorns have values three times higher than the that expected for their body size. This high oxygen consumption makes pronghorns Earth's fastest sustained runner. Unlike cheetahs, also one of the fastest animals on Earth, pronghorns produce ATP required to run fast aerobically. They have exceptionally large lungs for their body size and exceptional abilities to maintain high rates of blood circulation. (Feldhamer, et al., 2004; Hays, 1868; Hildebrand and Goslow, 2001; Hill, et al., 2004; O'Gara, 1978; Schroeder and Robb, 2005; Stocker, 1985)" AnimalUniversity, University of Michigan
http://animaldiversity.ummz.umich.edu/accounts/Antilocapra_americana/
The author asked about this species to several residents in the project ROW and they informed the author that they do occur in this area, but more to the north and east of the proposed project ROW about maybe 50 miles away. No tracks, scat, or any pronghorn individuals were seen during the survey of the project ROW, however they have been seen during a separate time by the author near Ojo Encino, NM. Due to the proximity to homesteads, dogs, highways, and humans, this species might not prefer to inhabit the area along this project ROW. Due to the lack of sightings, tracks, scats, and residents did say that do not occur
in this area, no negative effect on this species is expected with the construction, maintenance, and use of this proposed electrical distribution line.

## Kit Fox (Vulpes microtus)

The kit fox has been thought by some to be a subspecies of the swift fox. This fox currently inhabits desert and semi-arid regions between the Sierra Nevada Mountains and the Rocky Mountains and on down into Baja California and the North Central states of Mexico; it is also found in the San Joaquin Valley of California.

Several features distinguish the kit fox from the swift fox. Kit fox ears are larger and set closer together than the swift fox. The head of the kit fox is slightly broader between the eyes and the snout is narrower. The kit fox has a longer tail, relative to the body, than the swift fox.

Their diet consists of the most readily available small mammals in the region, especially rodents and rabbits. The relationship of kit fox populations to populations of banner-tailed kangaroo rats (Dipodomys spectabilis) in the San Joaquin Valley and to black-tailed jack rabbits (Lepus californicus) in Utah have been well documented.

The length of the kit fox ranges from 730-840 mm, and their weight ranges from $1.4-2.7 \mathrm{~kg}$ (http://www.mnh.si.edu/mna/image info.cfm?species id=428).

The author has observed red-tailed foxes on the campus of Navajo Technical University in the past 5 years. One summer they denned in a pile of concrete construction rubble on the outskirts of campus. That was the only time this species was denning this close to humans, within a Navajo community with many dogs present.

No kit foxes were found or observed during the survey of this project ROW. There were dens that were located that appeared to be used by canine animals, however no animals were ever seen during this survey. Due to the lack of finding significant evidence that this species exists in the project vicinity, no negative impact on this species is expected with the construction, operation, and maintenance of this electrical distribution line construction.

No other species of concern as identified by the Navajo Nation Fish and Wildlife Department were encountered during the survey of this 4.050 mile Phase IWhiteridge Single-Pole 14.4kv Electrical Distribution Line ROW. No negative effect upon the identified species of concern is expected for the listed by the Navajo Fish and Wildlife Department. No wetlands were found within 1 mile of the project

ROW, no wetlands are expected to be negatively affected with the construction, operation, and maintenance of this proposed electrical distribution line.

Plant species encountered during the pedestrian field survey of the site resulted in the following flora and fauna being found and noted:

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Flora:
One Seed Juniper (Juniperus osteosperma)
Pinyon Pine (Pinus edulis)
Indian Ricegrass (Oryzopsis hymenoides)
Rubber Rabbitbrush (Chrysothamnus nauseosus)
Snakeweed (Gutierrezia sarothrae)
Yucca (Yucca glauca)
Jumping Cholla (Opuntia fulgida)
Tamarisk (Tamarisk species)
Big Sage (Artemisia tridentata)
Alkali Sacaton (Sporobolu airoides)
Four Wing Saltbush (Atriplex canescens)
Wolfberry (Lycium pallidum)
Tarbush (Flourensia cernua DC.)
Mormon Tea (Ephedra viridis)
Silverleaf Nightshade (Solanum elaeagnifolium Cav.)
Blue Grama (Bouteloua gracilus)
Fauna:
Eastern fence lizard (Scleroporus undulafus)
Golden eagle (Aquila chrysaetos)
Mourning Dove (Zenaida macroura)
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No species of concern were found during the survey of the project site as identified by the Navajo Nation Fish and Wildlife Department. It must be understood that the time at which this survey was conducted was not optimal in terms of seeking particular species, however, based upon the experience of the surveyor concerning where these species have been found and their respective preferred habitat, and the fact that no threatened or endangered species were encountered during this survey, it is highly unlikely that species of concern will be negatively affected by the proposed action. Additionally, the time of year that these sites were surveyed, namely late spring and early spring, is a very good time to seek the golden eagle and the peregrine falcon since this is the time that they are most active and vocal. No negative affect upon identified rare, threatened or endangered species is expected with the construction of this project as described earlier.

During the survey of this site, no flowing water or standing water was encountered and no riparian areas including riparian plant species were encountered. No negative impact is expected upon wetlands with the construction, maintenance,
and operation of this proposed project since no wetlands were encountered nor found in or along the project ROW.

## CONCLUSION

No raptor species, or other species of concern, were encountered during this survey of this proposed electrical distribution line. No negative impact upon species of concern are expected with the construction, operation, and maintenance of this electrical distribution line to these rural homes.

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Attachments
Note: The following attachments can be found in the Attachments portion of the Environmental Assessment
General Map of the Navajo Nation
General Map of Eastern Navajo Agency and the general location of the Project Site
Project Map of Site
Fish \& Wildlife Species of Concern Listing
```


## Photographs 2 to 8 of the Project Site and Vicinity

(Photograph 1 is on page 12)


Photograph 2. This is a picture of an old bridge located in an arroyo near the project ROW. The wet soil and water ponding is a result of the photograph being taken during the annual monsoons.

raotograpn 3. Inis area experiences periodic flooding during the monsoon season and during winter snowmelt. The homes in the distance will be receiving the electrical line being proposed by this project and the horse presumably belongs to a local family.


Photograph 4. This area is inundated by water during the monsoon season. The dirt road to the left is used as the access to the homes along the project ROW and the homes on the ridge in the distance are expected to receive electrical power from this proposed project. The area that is in the foreground is not a wetland since it does not meet the criteria for a wetland such as hydric soils, hydrophilic plants, and water does not pond on this site for more than a week or so.


Fnotograph 5. This is common topography in the project vicinity, well eroded and rounded mesa with xeric vegetation found throughout the area. These areas were checked for nesting birds, including the Ferruginous Hawk and Golden Eagle.


Photograph 6. This photograph shows an old shed near a homesite, not the orange stake in the foreground signifying this homesite (not the shed) will be getting electrical power. This photograph was taken facing a northerly direction.

rnotograpn f.A hazard of working in the deserts during the summer months, especially near prairie dog towns and trash dumps.


Photograph 8. Valley in which a large prairie dog town was found. This photograph was taken facing east however the prairie dog colony runs from left to right up this valley. This prairie dog town is not in the ROW of this proposed project.

rnotograph 9. This photograph is of a large den and may be a coyote's den or fox. The tracks that lead into and out of the den were canine. This den was found very close to the project ROW.


Photograph 10. This photograph is of a prairie dog den that has been dug out by either badgers or dogs/coyotes. This is seen by the claw marks found on the sides of the burrow. This burrow was found in out of the project ROW up a wide, shallow valley with plenty of grasses and shrubs.

## Environmental Assessment

ENVIRONMENTAL ASSESSMENT CONDUCTED FOR THE 5.85 MILE PHASE II-WHITERIDGE SINGLE-POLE 14.4 kv ELECTRICAL DISTRIBUTION LINE (Project No. 50547), IN LITTLEWATER CHAPTER, MCKINLEY COUNTY, NAVAJO NATION, NEW MEXICO


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December 21, 2015

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## ABSTRACT <br> Mitigation is recommended in concert with construction, maintenance and use of the Phase II-Whiteridge Single-Pole 14.4kv Electrical Distribution Line, in

 Littlewater Chapter, McKinley County, Navajo Nation, New Mexico.New discoveries are previously unidentified cultural resources that include, but are not limited to: archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs, or practices. Areas in which these cultural resources are encountered are to be immediately reported to the Historic Preservation Department in Window Rock, Arizona (928-871-7148), and simultaneously, all operations on and in the vicinity of the discovery are to cease.

It is recommended that the CDEC consult with the New Mexico Army Corps of Engineers (ACOE) regarding the disturbance of arroyos located along the ROW. Disturbance of arroyos that are categorized as waterways of the United States are protected from disturbance under the Clean Water Act, and consultation is recommended should any arroyos are to be crossed or if the banks are to be disturbed by heavy equipment. Should mitigation not be required as deemed by the ACOE, or if consultation with the ACOE leads to the successful adoption and implementation of mitigated measures to prevent the negative effects of potential water contamination, then no negative impact upon water resources is expected with the implementation of this proposed distribution line installation.

According to the project staking CDEC Engineer, there will be only a truck carrying the electrical poles that are to be within the ROW, and they will be used to auger the holes for pole placement. All other equipment will be kept on existing roads, like vehicles with equipment, additional tools, and other poles. Raptor safe electrical lines will be installed as not to electrocute raptors on this distribution line project (Ms. Genevieve Castillo, Personal Communication, 2014).

All solid waste and hazardous waste will be disposed of properly at a compliant landfill or hazardous waste landfill per the requirements under Navajo Nation law and Federal law.

To minimize excessive physical impacts, it is recommended that construction be limited to associated access roads and within the boundaries of the 20 feet right-of-way wherever possible.

No wetlands were located within this project ROW nor in the immediate vicinity of the project area. No negative impacts are expected upon rare, threatened, or endangered species associated with these habitats nor is there any expectation that these other sensitive species will be impacted in the project ROW and up to 1 mile from the project site with the construction, operation, and maintenance of this electrical distribution line.

With the successful institution and full compliance of all mitigation, no negative impact is expected upon the environment with the construction, operation and maintenance of the proposed 5.85 mile Phase II - Whiteridge Single-Pole 14.4 kv Electrical Distribution Line in Littlewater Chapter, McKinley County, Navajo Nation, New Mexico.

## Section I. DESCRIPTION OF PROPOSED ACTION

## A. PROJECT DESCRIPTION

The Navajo Indian Reservation is located in northeastern and northwestern New Mexico, and southeastern Utah, and is the largest Native American reservation in the United States. The Navajo Indian Reservation is 27,425 square miles (17,552,000 acres) in size. The Navajo Indian Reservation is the homeland of the Navajo People, with the earliest archaeological evidence of Navajo being in the area linked to the date of 1541 for a structure located near what is the Navajo Reservoir near Farmington, NM (Winter, et. al, 1992). This homeland, primarily in northeastern Arizona and northwestern New Mexico, is in excess of 17.5 million acres with most of this land held in tribal trust by the Bureau of Indian Affairs, with a small percentage held by private allotees. The private land held by allotees is primarily found near the exterior of the Navajo Nation border where the Navajo Nation boundary abuts state, federal and other privately held lands, primarily in the eastern and southern portions of the Navajo Nation. These areas are referred to as "checkerboard" lands (Figure 1 and 2; Map of the Navajo Nation and Littlewater Chapter).

The Navajo Indian Reservation is governed by a sovereign tribal governmental entity and this is the Navajo Nation Government. The project this report is written for is on the checkerboard area with mixed jurisdiction of allotted land, BLM land, BIA trust land, all within the chapter boundary of Littlewater Chapter, New Mexico. The focus of this Environmental Assessment is to determine the environmental impacts and potential impacts to the human environment for the 5.85 mile Phase II - Whiteridge Single-Pole 14.4 kv electrical distribution line located in Littlewater, New Mexico. The width of the ROW to be surveyed is a minimum of 20 feet. The Littlewater Chapter would like to contract with the local electrical company, Continental Divide Electric Cooperative, to install and maintain a single pole 14.4 kv electrical distribution line to serve residents within their chapter who presently do not have electrical service. Indeed, the Continental Divide Electric Cooperative has jurisdiction on the checkerboard portion that makes up Littlewater Chapter.

The route proposed for Phase II of the White Ridge powerline project is as follows:
"The fieldwork was conducted by Denise R. E. Copeland of the Capital Improvement Office and Lucinda A. Henry, R-O-W Agency for Littlewater Chapter on January 9, 22, 24, 28; and February 26, 27; September 25, 2014. The project area is located eastern portion of the Littlewater Chapter. The specific location of the project area is depicted on U.S.G.S. quad map: Laguna Castillo, New Mexico 1963, and Borrego Pass, New Mexico, 1963. The legal location is in T 16 N, R 11 W in Section 13 and T 16 N 10 W Sections 17, 18, 19 and 20, in McKinley County,

New Mexico. The land status of the project area is Tribal Trust and Indian Allotted. A total of 70.94 acres of land was inspected for this project." Copeland, 2015.

On the Navajo Nation, a chapter is akin to a county government within a state; however the chapters are located within the boundaries of the Navajo Indian Reservation and represent Navajo citizens within each chapter boundary. Each chapter is relatively autonomous and conducts its' business in a manner that strives to best serve the community. A conglomeration of chapters have a representative from respective chapters that serves on the Tribal Council, and the Tribal Council is the entity that makes and approves laws that will be enforced on the Navajo Indian Reservation. There are 110 chapters recognized on the Navajo Nation. With this background information and summary, a discussion can now begin regarding the proposed development and construction of a 5.85 mile singlepole 14.4 kv electrical distribution line. Littlewater Chapter is located within the Navajo community of Littlewater, New Mexico, in northwestern New Mexico, twelve miles east of Crownpoint, NM in McKinley County.

The 5.85 mile ROW is under the control of the Littlewater Chapter and the ROW has already been surveyed and staked by the Continental Divide Electric Cooperative (Genevieve Castillo, Personal Communication, 2014). The land is tribal trust land and allotted land, although the ROW easement is under the control of the chapter, the 5.85 mile ROW still needs to obtain permission from the Bureau of Indian Affairs Environmental Quality Office due to the fact that the installation of the electrical distribution line is partially on tribal lands and constitutes a federal action (Figure 4; Chapter Resolutions from the Littlewater Chapter). Construction of this electrical distribution line is scheduled for 2016 upon successful completion of all National Environmental Policy Act (NEPA) documents and requirements (Ms. Genevieve Castillo, Personal Communication, 2014).
"Proposed construction and maintenance activities will include the following:

1. Poles will be hauled to the project area by truck and pole trailer, where they will be distributed at intervals of approximately 400 feet apart along the right-of-way.
2. A construction crew will then attach cross-arms, insulators, ground wires, and other necessary hard ware to each pole prior to erection.
3. A truck-mounted auger will excavate holes measuring about 18 inches in diameter and averaging 5-6 feet deep for each pole location. A similar hole will be excavated for any necessary anchors. A boom, also mounted on the truck, will then raise each pole into its freshly augered hole. The pole will then be aligned and plumbed followed immediately by back filling and tamping the dirt spoils into the hole.
4. After the poles are erected, conductive wire will be reeled off truck-mounted cable spools to be lifted and strung onto each pole. Tension will then be applied to the cable at which time it will then be attached to insulators on the poles.
5. The construction crew will properly remove and dispose of all debris resulting from activities associated with construction. Surface disturbance will be confined to the approved rights-of-way and existing roads. Generally, trees will not be cut except where necessary for safety. The rights-ofway will not be bladed and will be reseeded and reclaimed in accordance with Tribal and Federal stipulations." Copeland, 2015.

Per the requirements under the National Environmental Policy Act (NEPA) of 1970, an Environmental Assessment of the proposed project area is required prior to project commencement. In addition to the Environmental Assessment, a Biological Evaluation is to be conducted for threatened and endangered species, as required by the Endangered Species Act of 1973 (as amended), and an Archaeological Survey is also to be conducted, per the requirements of the Historic Preservation Act of 1966.

According to Ms. Genevieve Castillo, Littlewater Chapter Manager, the project area has been selected for this electrical distribution line based upon the location of present, existing home-sites and the shortest, most economical way of getting from one home to the next within reason of addressing geologic conditions and the minimization conflict with other existing right-of-ways. The archeological clearance has been conducted prior to the EA and will be addressed in the archeological summary portion of this EA.

## B. PURPOSE AND NEED:

The mission statement of the Littlewater Chapter is as follows:

## "MISSION STATEMENT:

As a self-governing community, Littlewater Chapter will maintain its sustainability through economic development by utilizing alternative funding sources to support services to its community members for the purpose of establishing accountability and promoting self-sufficiency through the teachings of our traditional values and culture."

The Littlewater Chapter provides these services through governmental services through requests by resolution from the chapter, or by any other form of documented request to the Navajo Nation Tribal Council. Through these methods, services are carried out in accordance with the Local Governance Act (LGA) that the Littlewater Chapter has been granted. The granting of Littlewater Chapter LGA status allows the chapter to self-govern itself without having to approach the Navajo Nation Council for approval for funding or approval for projects as considered needed in the best interest of its constituents by the chapter.
"..Local Governance Act certification is a boon for chapters, offering authorities like business site leasing, home site leasing, alternative forms of government, local ordinances, and a streamlined expenditure process." (Navajo Nation Division of Community Development, July 2011, Volume 1, Issue 2).

Based upon the mission and goals of the Littlewater Chapter, the chapter has decided to install a 5.85 mile single-pole 14.4 kv electrical distribution line on Tribal Trust and Allotted Land. The Littlewater Chapter has sought funding for this venture and has obtained funds in the amount of $\$ 295,456.90$ and thus the agreement between the Navajo Nation and the Continental Divide Electric Cooperative needs to be executed so that this power line can be constructed (Figure 4: Chapter Resolution). The new project cost was provided by Ms. Genevieve Castillo and the cost break-down is as follows for all three phases of this electrical distribution line: Phase I (\$377,477.56), Phase II (\$295,456.90), and Phase III $(\$ 162,761.76)$ for a grand total of $\$ 835,696.22$.

Many Navajos that live on the Navajo Nation continue to not only haul potable water for the drinking and bathing needs, but also for their livestock. Additionally, some Navajo must also deal with the lack of electricity at their homes, these are mostly homes that are located in remote areas. This lack of drinking water and electrical infrastructure causes hardship on these families since it takes additional time and effort to prepare for school and work during the limited window of time when there is sunlight available, or in the light of a kerosene lantern or flashlights. Also, many times they try to find alternatives to conducting household chores or enjoy family time düring the daylight hours. Often this means reverting to kerosene
lamps or photovoltaic panels, the latter being expensive since batteries are quite costly and repairs to these systems by a qualified technician is almost non-existent. The proposed 5.85 mile Phase II-Whiteridge electrical line will provide this needed security and freedom to enjoy appliances and lighting well into the night and before dawn. It will alleviate much of the stress and energy needed to prepare meals, clothing, homework, and all other similar chores or tasks for the following day. A listing of families to be served by this electrical distribution line is found below. Many of the people scheduled to obtain electrical power with this project have been living for many years without electricity and thus, with the installation of electrical power to their homes, they will be better able to live in these remote areas. They will be better able to provide for their family members, particularly their young children that need light to do their homework and hot water to bathe and shower with, and properly cooked foods for general good health and nutrition. Additionally, they will increase their general quality of life, although other conditions may remain such as muddy and rough roads, collecting and hauling fuel, wood and coal for heat, and enduring the remoteness and solitude.

It is important to understand that these homeowners listed below likely have additional family members inhabiting their respective residences with them and that this project will benefit these additional household members also. A detailed listing of these homes, homeowners, and other issues related to their ability to obtain electrical power is listed in Figure 6.



Table provided by Ms. Genevieve Castillo, Chapter Manager, Littlewater Chapter, 505-786-2120. The names in blue are the individuals to obtain electricity to their homes in the Phase I Whiteridge Project. The names in the color fuschia will obtain electrical power to their homes in the Phase II Whiteridge Project, for which this report is written.

## C. LOCATION/VICINITY MAP

The proposed Phase II-Whiteridge Power Line is located in McKinley County, New Mexico on the Navajo Indian Reservation. The Navajo Nation is broadly broken into different regions and they are northern, southern, western, central and eastern. This project is located in the eastern agency of the Navajo Nation in the Littlewater Chapter (Figure 1 and 2).

The Phase II-Whiteridge Electrical Distribution Line is located on the United States Geological Survey 7.5' quadrangle maps entitled "Laguna Castillo, 1963" and "Borrego Pass, 1963". The legal description for the project tract is found on page 6 of this document, taken from the attached archaeological reports.

## SECTION II. FORMATION OF ALTERNATIVES

 A. NO ACTION ALTERNATIVEThe no action alternative does not support the on-going initiatives by the Navajo Nation Government, the Littlewater Chapter, and the residents that reside along the ROW in their desire to obtain needed electricity to these homes within this ROW. The no action alternative will force families living in this remote area of the Navajo Nation to continue to live life without electricity thus causing them continued hardship in working and living on this part of the Navajo Nation.

The lack of construction of the proposed electrical line will cause continued hardships upon the residents by not allowing them access to electricity needed for everyday purposes such as cooking, lighting, cooling, heating, washing, and even for lifesaving medical purposes in areas such as respiratory and oxygen, mobility and rehab, home accessibility, wound therapy, sleep therapy, and ostomy and incontinence.

The no action alternative also does not support the philosophy of the Navajo Nation Government, including the Littlewater Chapter, and the residents along the Phase II-Whiteridge Single-Pole 14.4kv Electrical Distribution Line, for community development and providing needed services to the Navajo People, especially the much needed infrastructure for electricity to this remote community. The timely and proper construction of powerline will improve the living conditions of the Navajo residents that will benefit from the long term availability of electricity for their homes. Additionally, the construction will allow these families to better provide for their families and they will be able to be more productive in their daily lives since they will be able to have much better access to electricity instead of having to spend time and money to get the resources to light, heat, and cool their homes.

## B. ALTERNATIVE PROJECT SITE

There are no alternative project sites that can be utilized for said construction since the homes to be served are stationary and are found in this location. If an alternative site is selected, then even more time will be needed for ROW survey and preparation and securing the land from the local residents and chapter approval would also need to be obtained. Additional surveys of alternative ROWs will mean that archaeological, biological, and a legal survey would need to be conducted causing additional time and money to be spent. It is in the professional judgment of the Continental Divide Electric Cooperative that, due to location of these homes in this ROW, this route is preferred and has been selected for the Phase II-Whiteridge Single-Pole 14.4kv Electrical Distribution Line (Ms. Genevieve Castillo, Personal Communication, 2014).

The selection of another project site would be very time-consuming, for an EA would need to be conducted and the required surveys and documents would need to be secured for the site, such as the Threatened and Endangered Species Listing, Biological Evaluation, Archaeological, Survey, Homeowner Consent Form, and ROW survey.

## C. PREFERRED ALTERNATIVE

The preferred alternative is to utilize the surveyed ROW as secured by the Littlewater Chapter. The chapter has also passed a chapter resolution approving the use of this ROW for construction of said electrical distribution line, and the biological, archaeological, and legal surveys have been conducted for this construction ROW. It is in the best interest of the local residents of the Littlewater Chapter to construct this electrical distribution line in the current ROW since most of the NEPA compliance documents have been completed and the survey crew has already been compensated.

Additionally, as stated previously, the Continental Divide Electric Cooperative has selected this site based upon suitable and appropriate cost effective measures minimizing distances between home-sites with the ROW they have selected (Ms. Genevieve Castillo, Personal Communication, 2014).

## SECTION III. DESCRIPTION OF AFFECTED ENVIRONMENT A. LAND RESOURCES <br> 1. TOPOGRAPHY

The project construction ROW is located in the northwestern region of New Mexico in sandstone outcrops and groundwater basins that are found in this region. The topography of the area can be described as a high desert scrub environment with rolling mesas, and clay based soils found in the valley which have arroyos found within them. The arroyos are generally dry and generally only have flowing water during the monsoon season or during periods of snow melt.

The project site is on the northern flanks of a long chain of mesas that make up the Continental Divide. The construction tract is located approximately 3 miles east of the community of Littlewater, New Mexico in a desert scrub plant community. To the south of the project ROW, at approximately 2 miles, is a sandstone mesa running from west to east which as mentioned is part of the Continental Divide. This mesa is 8,600 feet in height at Hosta Butte which is located to the southwest of the project area at approximately 15 miles.

The Phase II-Whiteridge Single-Pole 14.4 kv Electrical Distribution Line is found in a north-south trending valleys which continue to the south up canyons that lead to the Mesa which makes up part of the Continental Divide, and the valleys go north to become rolling, grassy hills and small outcrops of sandstone escarpment.

The valleys in this vicinity contain many mesas, washes, and buttes. The valleys and draws, found north of the mesa that makes up part of the Continental Divide, flow to the north and northwest and enter tributaries that enter into the Chaco Wash, then into the Dead Man's Wash, which drains the San Juan Watershed into the San Juan River, then ultimately into the Colorado River.


Photograph 1. This photograph shows homes in the distance that will be getting the electrical distribution line, and a general view of the topography. The mesa chain in the background (south) is the Continental Divide.

## 2. GEOLOGY AND SOIL

LITTLEWATER AND BORREGO PASS, NM GEOLOGY AND SOILS REPORT-LEE EVERSOLE, PROFESSIONAL GEOLOGIST
http://www.ose.state.nm.us/Pub/TechnicalReports/TechReport-035.pdf GENERAL

This report includes an analysis of stratigraphic units, relief and topography, water drainage trends, and soils regarding the geology of Crownpoint, Littlewater, and Borrego Pass, New Mexico. This region lies in McKinley County, New Mexico on the broad expanse of the geological structure known as the Colorado Plateau. Regional relief and topography, in conjunction with sparse, semi-arid vegetation, has resulted in unique erosional structures - sedimentary outctrops, primarily mesas, buttes, sheer-walled canyons, and wide sediment-laden plains stretching north toward the Bisti Badlands and San Juan Basin. Volcanic structures such as widespread ash deposits, cinder structures, and lava flows are also visible. General elevations vary between 6,000 to 8,000 asl. Because the region generally receives less than 18 inches of annual rainfall, permanent bodies of surface water are altogether absent; however playa streams and ponds, often contained by small
earthen dams, exist here. Alluvial and Aeolian deposits are common. Mining and ranching comprise the principal occupations. The nearest trade centers to Borrego Pass, Littlewater, and Crownpoint are Grants, in Cibola County and Gallup in McKinley County.

## STRUCTURAL

The prominent geological feature in the area of interest is the Colorado Plateau, a wide geologic province that covers parts of four states including New Mexico's northwestern corner of New Mexico. A major tectonic even, the Laramide orogeny, dated approximately 75 million years ago, was the most substantial geologic event that is responsible for modern features on the Colorado Plateau. The Plateau averages about 6,500 to 7,000 feet above seas level and is characterized by relatively horizontal erosional outcrops such as buttes, mesas, and badlands formed over millions of years. Its uplift, due to the Laramide Orogeny, reflected a very gradual plate subduction from the west that resulted in wide and uniform uplift and a unique landscape.
The Laramide Orogeny is responsible for two other geologic events that characterized major geologic aspects bordering the area outlined in this report. Just north of the Littlewater- Borrego Pass area is another sequentially large geologic feature known as the San Juan Basin, also formed 75 million years ago during orogenic events. The Basin is a compressional feature known for its vast resources of hydrocarbon fuel deposits and uranium. Volcanic features and ongoing magmatic activity further relates to the Laramide. Sacred to the Dine people, Mount Taylor is a dormant volcano viewable from Borrego Pass. Shiprock, another Diné sacred feature, is a volcanic neck with radiating basaltic dikes that is north of the area. Smaller cinder cones, widespread volcanic ash deposits forming distinctive badlands, lava flows, and hot springs further evidence the active and dormant volcanic activities in regions near to Littlewater and Borrego Pass. The inland distance from the ancient western continental boundary confounded geologists for years as to the origins of these volcanics, but these, further, can be
explained by the shallow descent of the Pacific Plate beneath the North American Plate in late-Cretaceous time.


The San Juan Basin, a region known for its wealth of natural resources, formed from various orogenies affecting the area, namely the Laramide. This broad downwarped structure extends form the lower reaches of McKinley County north to Colorado. Littlewater and Borrego Pass situate along the southern fringes. Rock units associated with the basin generally dip toward the basin's center. This translates to an overall gentle dip of rocks in our area of interest to the north. The Continental Divide follows just west of our area of interest, and is within miles of Borrego Pass. Mount Powell ( 8,748 feet) and Hosta Butte ( 8,620 feet) identify the Divide. Although the Littlewater-Borrego Pass area is separate from the domal Zuni Mountain Uplift to the south, the uplift has warped distinctive cuestas north. Viewable from Borrego Pass, these cuestas dip gradually to the north, the direction which defines a general slope toward the area of interest.

## LITHOLOGY AND STRUCTURE

Sediments overlying this entire region - from the southern extremities of the San Juan Basin covering nearly the entire expanse north to Farmington, are Cretaceous in age. These are underlain by rock units predominantly of the same age, although upper Paleozoic rocks surface in very local formations. So much of New Mexico's Colorado Plateau consists of Aeolian and alluvial deposits. The underlying rock, consequently, is the source of many of these sediments. Low rainfall and semi-arid conditions have resulted in sparse vegetation, and this occurrence has been exacerbated by deforestation. This, in combination with the high altitude, results in accelerated erosion rates. During the July-August
monsoons, excessive erosion from during flash flooding can re-sculpt the landscape. Some sediments are second generation alluvial deposits; they had already formed the original streambed before being eroded once more and deposited for a second time.


Within southern McKinley County, exposed rock outcrops range from Permian (upper Paleozoic) to Quaternary. The units generally dip to the north at gentle angles often less than five degrees. Of the rock units, sandstone predominates; lesser beds of limestone and shale are not uncommon. Rocks of late Cretaceous age cover most of the area; just north of the Zuni Mountains, from the uplift process, younger rocks of Jurassic, Triassic, and Permian age have been uplifted and exposed. Resulting from the uplift, Jurassic-age rocks appear as vertical red palisades near the town of Thoreau, twenty miles south of Borrego Pass. This is the Entrada Sandstone. Just north of these Entrada Sandstone outcrops that run perpendicular to the cross-cutting Highway 371, a narrow outcrop of Jurassic Todilto Limestone reaches the surface and is mined for construction-grade aggregate. Whereas the Entrada is a desert-dune formation rich in iron oxides, the Todilto represents the transgressing and regressing seas of Jurassic times. Both are members of the San Rafael Group, in which seas levels - or altogether absence of seas - provided the physical qualities of rock. Some of the highest outcrops in the region, such as those adjacent the Continental Divide on the highest mesas above Borrego Pass, are replete with shark's teeth representing, obviously, a transgressing sea. In areas surrounding Borrego Pass, various
sections of Cretaceous age rocks are overlain by Tertiary lava flows. Volcanic ash commonly infiltrates various units throughout the region.

Although surficial rocks dating back to PreCambrian times have been mapped just outside the McKinley County borders, most rocks within the county are much younger and date back to the Mesozoic Era. In our area of study, of three Mesozoic time periods, the Triassic, Jurassic, and Cretaceous, youngest to oldest respectively, the Cretaceous is most represented. These rocks are underlain by older units, some of which are fossiliferous; some are rich in uranium oxides and hydrocarbons, mostly oil, coal, and gas; some provide excellent properties for underground aquifers. Because of these significant properties, even rocks that are not surficial must be analyzed.

Of the Permian-age rocks, the Glorieta Sandstone and overlying San Andres Limestone appear at the surface at the southeastern extent of McKinley County. Otherwise they are predominantly subsurface.
Eventually, these units thin out and later, are truncated. At Ambrosia Lake just east of Borrego Pass, both formations were represent in drill cores. The Glorieta is a well-sorted, medium-grained, sandstone primarily of a quartz composition and ranging in colors from white to light brown. Where the unit outcrops, the sandstone occasionally exhibits a yellowish hue from a result of weathering. Like so many units in the Plateau region, it is frequently cross-bedded. The San Andres Limestone lies directly overtop. In places, the San Andres is missing, and the Glorieta, highly resistant toward the top of the sequence, is overlain by Triassicage rocks. The upper third of the San Andres limestone is significant in that it is highly fossiliferous. The Glorieta and San Andres units commonly, in unison, form a single aquifer. Buried too deeply for well-use throughout much of McKinley County, its depths near Thoreau and Prewitt are shallow enough to allow access. Deterioration of water quality, however, especially near mining activities, has resulted in contamination, and the water is non-potable. Industrialization near

Prewitt and mining activities near Grants have depleted and contaminated this aquifer.

Sequential younger, the Chinle formation overlies the San Andres or, where it is absent, the Glorieta. The Chinle is late Triassic. This readily identifiable unit is divided into three parts, each with substantial thicknesses totaling over 1,600 feet. The unit lies at the surface south of McKinley County, along the Zuni Mountains and Highway 66, and in valleys to the north. Older sections - the lowest third of the unit - consist mostly of thin beige silty-sandstones, dark brown or purple siltstones, and layers of conglomerate. Noticeable amounts of petrified wood are common throughout the unit. Purple layers of siltstone and mudstone also forge into the middle sequences of yellow and gray sandstones. A pebble-sized conglomerate is also visible in these middle units. Younger expanses of the Chinle formation are characterized by intervening lenses of multi-colored mudstones, siltstones, nodular limestone, and sandstones. A distinct erosional surface near the top of this unit where it meets the Wingate Sandstone reflect receding seas.

A lower unit in the Glen Canyon Group, late Triassic, the Wingate Sandstone commonly sits stop the Chinle formation. The Wingate formation is a distinctive unit comprised of red-brown to orange cross-bedded sandstones ranging from thirty feet thick near Prewitt to almost a hundred feet thick near Thoreau. These varying thicknesses again reflect varying sea depths at the origin of deposition.

Sedimentary Jurassic-age units also appear within or near the area outlined in this report. Outcrops of the Jurassic San Rafael Group and fossiliferous Morrison Formation are exposed in southeastern McKinley County. The oldest unit of San Rafael Group in McKinley County is the Entrada Sandstone. This is overlain by younger units: the Todilto Limestone, Summerville Formation, and Bluff Sandstone respectively, all units that vary in thicknesses throughout the area. San Rafael Group members appear sporadically as narrow belts and tongues in isolated escarpments delineating the southwestern third of McKinley County.

An unconformity exists where the Entrada Sandstone sits atop the Wingate Sandstone. This sandstone is distinctive in various ways. It forms the vertical red cliffs north of Interstate 40 that weather into round summits indicative of exfoliated boulders. The upper expanse of the Entrada is a resistant orange-red fine-grained sandstone with predominant crossbedding. North of these prodigious Interstate outcrops, the Entrada dips below the surface. The very resistant and extremely hard Todilto Limestone often caps the Entrada Sandstone above which, in many places, it represents an unconformity. The Todilto Limestone is generally a gray color, fine-grained, and lacks fossils. Despite the thinness of its beds, its properties make it valued as a construction aggregate. Weathering produce rectangular blocks common to limestones. Near Haystack Mountain east of Prewitt, the limestone reaches a thickness of twenty-five feet. Rich in the uranium ore, carnotite, which appears in yellowish pockets, this site has been extensively mined of the popular oxide. The yellow pockets often are carried away by erosive activities where they congregate as yellowish deposits commonly mixed with amber at the bases of trees and shrubs.

The younger Jurassic Summerville Formation overlies the Todilto Limestone. Noticeably less resistant than the Todilto, it forms as rounded knobs and weathers into weathers into friable talus deposits. The Summerville units consist of variablysized and erratically sorted multi-colored sandstones, siltstones, and shales, redbrown, to green, to white. In southern McKinley County, the formation varies from thirty to two hundred feet thick.

Overlying the Summerville Formation, the resistant, fine-grained Bluff Sandstone, in southern McKinley County, also displays varying thicknesses. At many places north of Interstate 40, this cross-bedded, light-gray to light- brown hard sandstone forms vertical cliffs. On Haystack Mountain, the unit reaches a thickness of nearly three-hundred feet where it underlies the gradually-sloping Morrison Formation.

The renowned, highly fossiliferous Morrison Formation forms substantial outcrops in southern McKinley County. Like the San Rafael Group, the Morrison consists of numerous members; from oldest to youngest, they are the Recapture, Westwater Canyon, and the Brushy Basin members. The Recapture situates above the Bluff Sandstone and at times diminishes laterally as an erosional unconformity. The member consists primarily of dark brown red-brown siltstones, shales, and fine-grained sandstones, all interstratified with each other at vastly varying thicknesses typical of the unit. Wedges of conglomeratic coarse-grained sandstones and thin green limestones are also evident in places. The leads to varying resistances and slopes within the formation itself; however, the Recapture member general displays low weathering resistance.

The Westwater Canyon member of the Morrison, relative to the other members, displays moderate to high resistance and forms steep cliffs above the Recapture Member and below the Brushy Basin member. The Westwater Canyon member consists of poorly sorted sandstone with defined cross-bedding throughout, commonly gray to white, or light yellow-brown, with fine to coarse quartz grains. The member, in places, also displays thin conglomerates with clay, cherts, and petrified wood inclusions. Like the other members of the Morrison, the Westwater Canyon varies in thickness from thirty to three-hundred feet in southern McKinley County. Significance of the Westwater Canyon member relates to its vast uranium oxide depositions that are present as large masses of the ore mineral, coffinite, in sandstone blocks, lenses and elongate pods extending up to a mile long.

Overlying the Westwater Canyon member, the Brushy Basin member often intertongues with this older member. Varying grain size within this unit allows for deposits ranging from mudstone to coarse sandstone. Thin beds of limestone may also be present. The mudstones display evidence of gypsum and bentonite, and the concentrations of each add to the whitish colorations within the deposit. This
unit in particular is composed of gradational variations in the deposits. Carbonaceous and calcareous materials commonly have intermixed with sand, silt, and clay particles. The intertonguing of this member leads to highly variable thicknesses, but generally these thicknesses range from 50 to 150 feet. Sandstone lenses in the Brushy Basin also contain uranium ores especially near Ambrosia Lake where various mining operations have persisted.

Throughout McKinley County, Cretaceous rocks and direct underlying units provide most of the sediments. In southeastern sections of the county, their exposure predominates. Cretaceous-age sandstones comprise the cliff-forming units that rise above Littlewater and Borrego Pass in southern McKinley County. In many areas, the Cretaceous rocks are overlain by younger basalt flows. These strata consist of alternating thick sequences of marine, deltaic, coastal and intercontinental deposits evidence in shales, siltstones, and mudstones of highly varying resistances and thicknesses. Intertonguing results is these changes in thickness and abrupt changes in lithologies. In ascending order, the Cretaceous formations in southern McKinley County consist of the lower Cretaceous Dakota Sandstone, mid-Cretaceous Mancos Shale, and the upper Cretaceous Mesaverde Group.

The distinctive Dakota Sandstone lies unconformably over Late Jurassic rocks. This highly resistant sandstone forms the caprock on various escarpments near or within the study area. The composition of the Dakota lends to its very high resistance. The unit consists of yellow-brown, to gray, to purplish hued coarsegrained quartz sandstone interlaced with lenses of conglomerate and low-grade coal. Cross-bedding is very evident in the lower part of the unit whereas conglomeratic tongues and carbonaceous shales form in the upper rocks. On the slopes of the older Morrison Formation, blocks of Dakota Sandstone frequently appear from slope retreat. In southeastern McKinley County, thicknesses vary from 50 to 150 feet thick. The formation then continues beneath the surface, dipping
north, for the entire breadth of the county. Mines near Ambrosia Lake have recovered small amounts of uranium oxides within this formation.

Above the Dakota Sandstone, the younger Mancos Shale, of mid to Late Cretaceous age appears. Its low weathering resistance makes the Mancos Shale a valley-former, as it does at Smith Lake and Ambrosia Lake. This characteristic of the formation results in vast alluvial deposits lying upon and often obscuring its outcrops. The Mancos is a very substantial lithologic unit. Characteristic of marine sediments, the shale is, in places, highly calcareous. Known for being very fissile, the Mancos Shale is generally medium to dark gray in color. Lower rocks consist of three fossiliferous sandstone beds. Another fossiliferous sandstone bed appears near the top of the unit.

In our area of study, the late Cretaceous Mesaverde Group is most prominent. Units of this group form the of Late Cretaceous age form the high, precipitous cliffs overlooking Littlewater and Borrego Pass. This group ranges in thickness up to 1,500 feet and is composed of alternating, beds of sandstone, siltstone, clay deposits, and coal. Origins of these sequences are primarily continental desert and coastal deposits. In the area of our study, the Group consists of the Gallup Sandstone, Crevasse Canyon Formation, Point Lookout Sandstone, and the Menefee Formation from oldest to youngest.

The Gallup Sandstone comprises a narrow continuous arc of sandstone separated by ninety feet of carbonaceous gray-black shale throughout southeastern McKinley County. The fine-grained silty basal sandstones are mostly light to dark brown in color. Upper sandstone rocks are much thicker, up to 125 feet thick, and may appear pink or light gray. A cliff-former, the upper sandstone often displays beehive weathering features and is more resistant.

Overlying the Gallup Sandstone of the Mesaverde Group, the Crevasse Canyon Formation also displays three distinctive layers of strata. These are, from oldest to youngest, the Dileo Cqal Member, the Dalton Sandstone Member, and the Gibson Coal Member. The Dilco Coal Member ranges up to 200 feet and consists of thin sandstones and shales with lenses of coal. It is mildly resistant and forms gentle slopes above the Gallup Sandstone. The Dalton Sandstone member is a white to light-brown unit sandstone that disintegrates into massive blocks. The uppermost member of the Crevasse Canyon Formation, the Gibson Coal, consists of alternating sandstones, thick shales, and coal beds ranging in thickness from 250 to 400 feet. The highly resistant Point Lookout Sandstone forms the caprock on the high mesas overlooking Borrego Pass and Littlewater. This member is a thick, dark-orange, reddish-brown sandstone with prominent crossbeds. Because of its arkosic concentrations, these medium-grained sandstones are rich in iron oxides that lead to reddish weathering streaks in places. Black manganese stains are also prominent on the sides of escarpments. The units' thicknesses range from 75 to 300 feet. The uppermost unit of Mesaverde Group, the Menefee Formation outcrops in the eastern portion of the study area. This member consists of gray and brown claystones and shale, thin coal beds, and brown sandstone. The Menefee Formation contains small amounts of water allowing the unit to serve as an aquifer to the San Mateo communities. The formation's low resistance lends to the formation of gentle slopes directly above the more prominent Point Lookout Sandstone.

Tertiary and Quaternary age materials in our area of study primarily consist of extrusive volcanic materials - basalt, rhyolite, and andesite - extruded from the late Tertiary volcanics that predominated throughout the region. Dikes, sills, and other intrusive plutons are common to this area, and some are associated the Mount Taylor eruption system. Volcanic vents from extinct cinder cones have also contributed to the extrusive igneous rocks, basaltic cinder, and ash that
predominate throughout the region. These extrusive materials have settle mostly upon the Cretaceous rocks exposed in the area of study.

## B. WATER RESOURCES

## 1. SURFACE WATER

During a pedestrian survey of the project ROW, and a review of the topographic maps of the project area, there is no naturally occurring surface water in the Littlewater Chapter vicinity other than small wells, cienegas, and Laguna Castillo, or, translated into English, "Lake Castle". Laguna Castillo is an area that is periodically inundated with water during periods of snow melt, or during the monsoon season. This area in not located near the project ROW. There is no standing or flowing water in the project ROW, nor in the immediate vicinity except during brief periods during the monsoon season and during winter snow pack runoff.

Ponded surface water from monsoon season precipitation or winter snow pack melt, within the chapter boundary is considered potable by livestock, with tested and monitored wells and pump houses in the area providing human drinking water (Ms. Genevieve Castillo, Personal Communication, 2014).

## 2. GROUND WATER/HYDROLOGY

"The San Juan Basin of New Mexico has long been considered as an area having very limited groundwater potential. Farmington, the largest city in the basin, as well as the City of Aztec, have depended exclusively on surface water from the Animas River for their municipal water supplies. Shiprock is dependent upon the San Juan River. Wells at Cuba, New Mexico tap the Ojo Alamo Sandstone, however these are low-yielding wells that produce highly-mineralized water. Elsewhere in the basin, isolated wells have been drilled at trading posts, as well as for stock and domestic purposes. However these have often been low capacity wells tapping the shallowest available aquifer.

Only Crownpoint, New Mexico, has had a dependable supply of groundwater. The first four wells drilled at the community tapped Cretaceous strata, including the Gallup Sandstone and the shallower Crevasse Canyon sands. Well No. 5 was completed in the Westwater Canyon member of the Morrison Formation in 1958 and well No. 6 was completed in the same deposit three years later. During the same period, a tremendous amount of information about the Westwater Canyon was being obtained in the Ambrosia Lake area where major uranium ore deposits were being mined from the Westwater sandstones. As exploration for uranium has spread into the deeper parts of the San Juan Basin, it has become obvious that the Westwater Canyon is the principal aquifer in the southern part of the basin." (Kelly, 1977)

Based upon this summary, the Westwater formation below the Crownpoint community is the foremost reliable source of potable water in this region. The Navajo Tribal Utility Authority has wells that have been drilled that have tapped into these strata and this is where the communities of Crownpoint, Littlewater, and Standing Rock currently receive their water supply.

Surface water within the reservation boundaries may be seen only during the late summer thunderstorms and late-winter and spring from meager melting snow accumulations. The direction of surface water runoff in the northern reservation is north to northeast. Almost all waters eventually drain into the San Juan River. As with most arid regions, a small amount of interior drainage is likely.

The lack of surface water requires the Littlewater community to rely on the wells located at Crownpoint entirely for water supply. Springs on and near the reservation yield restricted amounts of water with moderate mineral content. Several springs and wells in the general area of the checkerboard area do not contain potable water for human use, and also because some of the wells have elevated levels of uranium.

Littlewater obtains potable water from the water wells at Crownpoint with most of the community receiving its potable water from these ground water wells. Water is obtained from wells that are several feet to hundreds of feet in depth, and treated to become potable water. They are treated by the Navajo Tribal Utility Authority and this entity also ensures that the water is safe and potable. Under the Safe Drinking Water Act of 1996, all public water systems must meet United States Environmental Protection Agency drinking water standards.

## C. AIR RESOURCES

## 1. QUALITYNISIBILITY

Increased fuel-wood and coal burning in the winter months decreases air quality in the area, but in general, air quality is considered good. As seen in preliminary data from air monitoring stations across the reservation, air quality in the winter months decreases dramatically in the early morning and late evening hours when fuel-wood and coal burning increases, and when air circulation drops (Personal Communication, Mangus Slinkey, Navajo Nation EPA, 2010). This is more than likely to occur in Littlewater since a most of the home heating is wood and also due to the fact that most homes of Littlewater are located in a small valleys. This is especially evident in valleys and drainages where thermal inversions can occur and in areas with high human inhabitation and vehicle traffic causing an abundance of airborne particulates.

The proposed project does not intend to produce a significant amount of particulate pollution, perhaps only from the increased number of heavy equipment on roads in the area during the installation of the distribution line poles, but this will only be minimal. In general, visibility at the site is excellent.

## 2. CLIMATE

The following description of the climate for the state of New Mexico was obtained from the Western Regional Climate Center western database in Reno, NV (http://www.wrcc.dri.edu/narratives/newmexico/).
"Temperature
Mean annual temperatures range from $64^{\circ} \mathrm{F}$ in the extreme southeast to $40^{\circ} \mathrm{F}$ or lower in high mountains and valleys of the north; elevation is a greater factor in determining the temperature of any specific locality than its latitude. This is shown by only a $3^{\circ} \mathrm{F}$ difference in mean temperature between stations at similar elevations, one in the extreme northeast and the other in the extreme southwest; however, at two stations only 15 miles apart, but differing in elevation by 4,700 feet, the mean annual temperature are $61^{\circ}$ and $45^{\circ} \mathrm{F}$ - a difference of $16^{\circ} \mathrm{F}$ or a little more than $3^{\circ}$ decrease in temperature for each 1,000 -foot increase in elevation.

During the summer months, individual daytime temperatures quite often exceed $100^{\circ} \mathrm{F}$ at elevations below 5,000 feet; but the average monthly maximum temperatures during July, the warmest month, range from slightly above $90^{\circ} \mathrm{F}$ at lower elevations to the upper 70's at high elevations. Warmest days quite often occur in June before the thunderstorm season sets in; during July and August, afternoon convective storms tend to decrease solar insolation, lowering temperatures before they reach their potential daily high. The highest temperatures of record in New Mexico are $116^{\circ}$ at Orogrande on July 14, 1934, and at Artesia on June 29, 1918. A preponderance of clear skies and low relative humidities permit rapid cooling by radiation from the earth after sundown; consequently, nights are usually comfortable in summer. The average range between daily high and low temperatures is from $25^{\circ}$ to $35^{\circ} \mathrm{F}$.

In January, the coldest month, average daytime temperatures range from the middle 50 s in the southern and central valleys to the middle 30 s in the higher elevations of the north. Minimum temperatures below freezing are common in all sections of the State during the winter, but subzero temperatures are rare except in the mountains. The lowest temperature recorded at regular observing stations in the State was $-50^{\circ} \mathrm{F}$ at Gavilan on February 1, 1951. An unofficial low temperature of $-57^{\circ} \mathrm{F}$ at Ciniza on January 13, 1963, was widely reported by the press.

The freeze-free season ranges from more than 200 days in the southern valleys to less than 80 days in the northern mountains where some high mountain valleys have freeze in summer months.

## Precipitation

Average annual precipitation ranges from less than 10 inches over much of the southern desert and the Rio Grande and San Juan Valleys to more than 20 inches at higher elevations in the State. A wide variation in annual totals is characteristic of arid and semiarid climates as illustrated by annual extremes of 2.95 and 33.94 inches at Carlsbad during a period of more than 71 years.

Summer rains fall almost entirely during brief, but frequently intense thunderstorms. The general southeasterly circulation from the Gulf of Mexico brings moisture for these storms into the State, and strong surface heating combined with orographic lifting as the air moves over higher terrain causes air currents and condensations. July and August are the rainiest months over most of the State, with from 30 to 40 percent of the year's total moisture falling at that time. The San Juan Valley area is least affected by this summer circulation, receiving about 25 percent of its annual rainfall during July and August. During the warmest 6 months of the year, May through October, total precipitation averages from 60 percent of the annual total in the Northwestern Plateau to 80 percent of the annual total in the eastern plains.

Winter precipitation is caused mainly by frontal activity associated with the general movement of Pacific Ocean storms across the country from west to east. As these storms move inland, much of the moisture is precipitated over the coastal and inland mountains ranges of California, Nevada, Arizona, and Utah. Much of the remaining moisture falls on the western slope of the Continental Divide and over northern and high central mountain ranges. Winter is the driest season in New Mexico except for the portion west of the Continental Divide. This dryness is most noticeable in the Central Valley and on eastern slopes of the mountains.

Much of the winter precipitation falls as snow in the mountain areas, but it may occur as either rain or snow in the valleys. Average annual snowfall ranges from about 3 inches at the Southern Desert and Southeastern Plains stations to well over 100 inches at Northern Mountain stations. It may exceed 300 inches in the highest mountains of the north.

## Floods

General floods are seldom widespread in New Mexico. Heavy summer thunderstorms may bring several inches of rain to small areas in a short time. Because of the rough terrain and sparse vegetation in many areas, runoffs from
these storms frequently cause local flash floods. Normally dry arroyos may overflow their banks for several hours, halting traffic where water crosses highways; damaging bridges, culverts, and roadways; and if in an urban area, possibly causing considerable property damage. Snowmelt during April to June, especially in combination with a warm rain, and heavy general rains during August to October may occasionally cause flooding of the larger rivers. Although streams in New Mexico have risen substantially during several floods, the overflows cannot be termed disastrous because comparatively little real property damage has resulted in this lightly industrialized and sparsely populated State. During spring snowmelt, main rivers may exceed flood stage and cause some damage to property along their banks.

Years in which there have been high flood discharges in major New Mexico river basins since 1903 are: Rio Grande - 1904, 1905, 1929, 1935, and 1941; Pecos - 1904, 1905, 1915, 1916, 1937, 1941, 1942, and 1966; Canadian - 1904, 1913, 1937, and 1965; San Juan - 1909, 1911, 1927, 1929, and 1942; and Gila - 1941 and 1965.

## Climate of New Mexico <br> Topographic Features

New Mexico, fifth largest State in the Union, with a total area of 121,412 square miles, is approximately 350 miles square, and lies mostly between latitudes $32^{\circ}$ and $37^{\circ} \mathrm{N}$ and longitudes $103^{\circ}$ and $109^{\circ} \mathrm{W}$. The State's topography consists mainly of high plateaus or mesas, with numerous mountain ranges, canyons, valleys, and normally dry arroyos. Average elevation is about 4,700 feet above sea level. The lowest point is just above the Red Bluff Reservoir at 2,817 feet where the Pecos River flows into Texas. The highest point is Wheeler Peak at 13,161 feet. The principal sources of moisture for the scant rains and snows that fall on the State are the Pacific Ocean, 500 miles to the west, and the Gulf of Mexico, 500 miles to the southeast. New Mexico has a mild, arid or semiarid, continental climate characterized by light precipitation totals, abundant sunshine, low relative humidities; and a relatively large annual and diurnal temperature range. The highest mountains have climate characteristics common to the Rocky Mountains.

The State is divided into three major areas by mountain ranges and highlands, oriented in a general north-south directions, which merge in the north. The Northern Mountains and Central Highlands, between longitudes $105^{\circ}$ and $106^{\circ}$ W, are the western boundary of the Northeastern and southeastern Plains which slope gradually eastward and southeastward. The northern part of these eastern plains lies within the Arkansas River Basin and is drained mostly by the Canadian River, which flows southward then eastward into Oklahoma to its confluence with the Arkansas, and the Cimarron River in the extreme
northeastern corner. The Pecos River rises in the Sangre de Cristo Mountains and flows southward through the Southeastern Plains into Texas, and then southeastward to join the Rio Grande. West of the mountain ranges that form the Continental Divide, whose height decreases to a markedly lower elevation in southern New Mexico, rivers drain into the Gulf of California through the Colorado River system. Principal tributaries flowing westward into the Colorado River are the San Juan River in the north, the Gila River in the south, and the San Francisco tributary of the Gila and other headwater streams of the Little Colorado River in the west-central area. The largest closed basins in the west are the Plains of St. Augustine in Catron County and the Rio members Basin in Grant and Luna Countries. Between the Northern Mountains and the Central Highland system and the Continental Divide system is the Rio Grande Valley which widens toward the south. The Rio Grande rises in the San Juan Mountains of southern Colorado, flows southward through New Mexico, then southeastward along the Texas-Mexico border into the Gulf of Mexico. The closed Tularosa Basin in southern New Mexico is an intermountain area east of the Central Valley.

## Temperature

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Summer rains fall almost entirely during brief, but frequently intense thunderstorms. The general southeasterly circulation from the Gulf of Mexico brings moisture for these storms into the State, and strong surface heating combined with orographic lifting as the air moves over higher terrain causes air currents and condensations. July and August are the rainiest months over most of the State, with from 30 to 40 percent of the year's total moisture falling at that time. The San Juan Valley area is least affected by this summer circulation, receiving about 25 percent of its annual rainfall during July and August. During the warmest 6 months of the year, May through October, total precipitation averages from 60 percent of the annual total in the Northwestern Plateau to 80 percent of the annual total in the eastern plains.

Winter precipitation is caused mainly by frontal activity associated with the general movement of Pacific Ocean storms across the country from west to east.
As these storms move inland, much of the moisture is precipitated over the coastal and inland mountains ranges of California, Nevada, Arizona, and Utah. Much of the remaining moisture falls on the western slope of the Continental Divide and over northern and high central mountain ranges. Winter is the driest season in New Mexico except for the portion west of the Continental Divide. This dryness is most noticeable in the Central Valley and on eastern slopes of the mountains.

Much of the winter precipitation falls as snow in the mountain areas, but it may occur as either rain or snow in the valleys. Average annual snowfall ranges from about 3 inches at the Southern Desert and Southeastern Plains stations to well over 100 inches at Northern Mountain stations. It may exceed 300 inches in the highest mountains of the north.

Floods
General floods are seldom widespread in New Mexico. Heavy summer thunderstorms may bring several inches of rain to small areas in a short time. Because of the rough terrain and sparse vegetation in many areas, runoffs from these storms frequently cause local flash floods. Normally dry arroyos may overflow their banks for several hours, halting traffic where water crosses highways; damaging bridges, culverts, and roadways; and if in an urban area, possibly causing considerable property damage. Snowmelt during April to June, especially in combination with a warm rain, and heavy general rains during August to October may occasionally cause flooding of the larger rivers. Although streams in New Mexico have risen substantially during several floods, the overflows cannot be termed disastrous because comparatively little real property damage has resulted in this lightly industrialized and sparsely populated State. During spring snowmelt, main rivers may exceed flood stage and cause some damage to property along their banks.

Years in which there have been high flood discharges in major New Mexico river basins since 1903 are: Rio Grande - 1904, 1905, 1929, 1935, and 1941; Pecos — 1904, 1905, 1915, 1916, 1937, 1941, 1942, and 1966; Canadian - 1904, 1913, 1937, and 1965; San Juan - 1909, 1911, 1927, 1929, and 1942; and Gila - 1941 and 1965.

## Severe Storms

On rare occasions, a tropical hurricane may cause heavy rain in eastern and central New Mexico as it moves inland from the western part of the Gulf of Mexico, but there is no record of serious wind damage from these storms. Also on rare occasions, a tropical storm moving inland from the Gulf of California area may cause heavy rain in southwestern New Mexico.

Tornadoes are occasionally reported in New Mexico, most frequently during afternoon and early evening hours from May through August. There is an average of nine tornadoes a year, but damage has been light because most occur over open, sparsely populated country. The tornado causing the most loss of life and injuries occurred in 1930 at Wagon Mound with 3 deaths, 19 injuries, and property loss of $\$ 150,000$. Greater property damage, $\$ 450,000$, but fewer casualties - 1 death and 8 injuries - resulted from a destructive tornado at Maxwell in 1964.

Thunderstorms are relatively frequent in summer, averaging from 40 in the south to more than 70 in the northeast, the latter area having the second greatest thunderstorm frequency in the country. Occasionally, these heavy thunderstorms are accompanied by hail, with the greatest hail frequency occurring near and to the east of Los Alamos. When hail falls over an agricultural area, considerable local crop damage may result.

## Sunshine

Plentiful sunshine occurs in New Mexico, with from 75 to 80 percent of the possible sunshine being received. In winter, this is particularly noticeable with from 70 to 75 percent of the possible sunshine being received. It is not uncommon for as much as 90 percent of the possible sunshine to occur in November and in some of the spring months. The average number of hours of annual sunshine ranges from near 3,700 in the southwest to 2,800 in the north-central portions.

## Relative Humidity

Average relative humidities are lower in the valleys but higher in the mountains because of the lower mountain temperatures. Relative humidity ranges from an average of near 65 percent about sunrise to near 30 percent in mid-afternoon; however, afternoon humidities in warmer months are often less than 20 percent and occasionally may go as low as 4 percent. The low relative humidities during periods of extreme temperatures ease the effect of summer and winter temperatures.

## Wind

Wind speeds over the State are usually moderate, although relatively strong winds often accompany occasional frontal activity during late winter and spring months and sometimes occur just in advance of thunderstorms. Frontal winds may exceed 30 mph for several hours and reach peak speeds of more than 50 mph . Spring is the windy season. Blowing dust and serious soil erosion of unprotected fields may be a problem during dry spells. Winds are generally stronger in the eastern plains than in other parts of the State. Winds generally predominate from the southeast in summer and from the west in winter, but local surface wind directions will vary greatly because of local topography and mountain and valley breezes.

## Evaporation

Potential evaporation in New Mexico is much greater than average annual precipitation. Evaporation from a Class A pan ranges from near 56 inches in the north-central mountains to more than 110 inches in southeastern valleys. During
the warm months, May through October, evaporation ranges from near 41 inches in the north-central to 73 inches in the southeast portions of the State.

## Drought

Periods of recent extreme meteorological drought, as defined by palmer drought index of -4.0 or lower, have been noted in the mid-1930's in the Northeastern Plains and Central Highlands, in 1947 in the Central Highlands, in the 1950's throughout the State, in 1963-64 in the Northern Mountains, in 1964 in the Southeastern Plains, and in 1967 in the Northern Mountains. The largest general drought since 1930 was in the 1950's."

The climate of the Littlewater, NM vicinity, data taken from the Western Regional Climate Center for Crownpoint, NM, can be described as having hot summers, and moderately cold winters with nighttime lows often below freezing from November through March. Spring weather is highly variable with extended periods of wind. Fall weather is usually mild and in the late summer months of July and August, the monsoon season arrives with abundant rainfall and thunderstorms. Temperatures range from an average maximum temperature of $84.7^{\circ} \mathrm{F}$ in July to an average minimum temperature of $18.6^{\circ} \mathrm{F}$ in January. Precipitation is generally light, with an average of 10.75 inches per year, although heavy rain and flooding does occur in the spring and summer (Western Regional Climate Center, 2014). The average temperatures and precipitation amounts were taken from weather station data that was collected from 1914 to 1969.

## WEATHER STATION: CROWNPOINT, NEW MEXICO (292219)

Period of Record Monthly Climate Summary
Period of Record: 7/ 1/1914 to 11/13/1969
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Annual
Average Max. Temperature ( F )
$40.746 .553 .062 .872 .382 .084 .782 .577 .867 .053 .243 .3 \quad 63.8$
Average Min. Temperature (F)
18.623 .527 .635 .644 .353 .659 .056 .551 .040 .327 .720 .8
38.2

Average Total
Precipitation (in.)
$\begin{array}{lllllllllll}0.56 & 0.56 & 0.55 & 0.53 & 0.58 & 0.63 & 2.16 & 2.14 & 1.18 & 0.76 & 0.50 \\ 0.61 & 10.75\end{array}$

Average Total
SnowFall (in.)
$\begin{array}{lllllllllllll}3.8 & 5.7 & 2.6 & 0.9 & 0.1 & 0.0 & 0.0 & 0.0 & 0.0 & 0.2 & 1.7 & 5.0 & 20.1\end{array}$

| Average Snow | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | ---: | ---: |
| Depth (in.) |  | possible |  | observations | for |  | period | of |  | record. |  |  |  |
| Percent | of | per |  |  |  |  |  |  |  |  |  |  |  | Max. Temp.: 52.4\% Min. Temp.: 51.7\% Precipitation: 85.9\% Snowfall: 36.2\% Snow Depth: 31.5\%

(source: Western Regional Climate Center, 2014)

## D. BIOTIC RESOURCES

## 1. DESCRIPTION OF ECOSYSTEM/BIOLOGICAL COMMUNITIES

A biological description of the community within which the ROW is found can be characterized as being found in wide, shallow valleys that are covered with sparse xeric grasses and shrubs. Although the area looks very sparse and barren, there exists within these desert habitats in the northern parts of New Mexico, over 50 wildlife species and over 400 species of plants (http://nmbiodiversity.org/nmbiodiversity.php). These species can endure very high and low temperatures with great tenacity and adaptability. At the time of visiting the ROW, there were very few plants species other than tumbleweed (Salsola kali) or Alkali sacaton (Sporobolus airoides (Torr.)) and very little grass, including Indian Ricegrass (Oryzopsis hymenoides) and a few Greasewood (Sarcobatus vermiculus) bushes. The ROW itself appears to have been grazed by livestock for years and very few palatable plant species exist on the site. There is evidence that livestock graze in the ROW seeking food and grazing, there are hoofprints and dung throughout the area. Some areas are worse than others, some allottees allow more grazing than others, thus increasing the likelihood of desertification in these fenced allotted areas.
"New Mexico is enormously rich in biodiversity. Across plants and vertebrate animals, New Mexico has the 4th highest native species richness of any of the U.S. states ${ }^{1}$. The large size of our state and nearness to the U.S. southern border are major contributers to our species richness. Another important factor is that several ecoregions converge in New Mexico including the Colorado Plateau, the Southern Rocky Mountains, the Arizona-New Mexico Mountains, the Central and Southern Short-grass Prairies, the Chihuahuan Desert, and the Apache Highlands. While these factors contribute to New Mexico's large species richness, the level of endemism (species found only in New Mexico) is relatively low. New Mexico ranks 11 th in endemism ${ }^{1}$.

Among U.S. states, New Mexico has the 4th highest diversity of plants, 3rd highest diversity of mammals and of reptiles, and the 2nd highest diversity of birds ${ }^{1}$. At this time, we do not know invertebrates well enough to say how many species we have in New Mexico or to compare quantitatively against other states. Nevertheless, it seems quite likely that the species richness of insects, spiders, and other arachnids is quite high in New Mexico. As expected for a dry state, our species
richness for amphibians and freshwater fishes is relatively low compared to other states ${ }^{1}$ (27th and 38th respectively).

The table below seeks to summarize the number of documented species in New Mexico across the entire taxonomic spectrum. At the present time, we have good estimates for species numbers in vertebrates and vascular plants, but our understanding of the other taxonomic groups is too limited to allow us to offer even a plausible guess as to the number of species. As such, we are a long way from being able to generate a legitimate estimate for the total number of species in New Mexico.

|  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| Viruses | ?? | ?? | ?? | ?? | ?? |
| Monera | ?? | ?? | ?? | ?? | ?? |
| Protists | ?? | ?? | ?? | ?? | ?? |
| Fungi | ?? | ?? | ?? | ?? | ?? |
| Non-vascular Plants | ?? | ?? | ?? | ?? | ?? |
| Mosses ${ }^{2}$ | 287 | 0 | 0 | 0 | 287 |
| Vascular Plants ${ }^{3}$ | 3,174 | 440 | ?? | $1 ?$ | 3,614 |
| Ferns \& Fern Allies ${ }^{3}$ | 80 | 0 | 0 | 0 | 80 |
| Gymnosperms ${ }^{3}$ | 27 | 0 | 0 | 0 ? | $27 ?$ |
| Dicots ${ }^{3}$ | 2,470 | 304 | ?? | 1? | 2,775 |
| Monocots ${ }^{3}$ | 597 | 136 | ?? | 0 ? | 732 |
| Invertebrate Animals | ?? | ?? | ?? | ?? | ?? |
| Vertebrate Animals | 696 (816) | 51 | 4 | 21 | $\begin{gathered} 772 \\ (892) \end{gathered}$ |


| Fishes $^{4}$ | 57 | 30 | 1 | 9 | 107 |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Amphibians $^{5}$ | 22 | 1 | 2 | 1 | 26 |
| Reptiles $^{5}$ | 101 | 1 | 1 | 0 | 103 |
| Birds $^{6}$ | $361(481)$ | 5 | 0 | 2 | 368 <br> $(488)$ |
| Mammals $^{7}$ | 155 | 14 | 0 | 9 | 178 |

${ }^{1}$ B.A. Stein. 2002. States of the Union: Ranking America's Biodiversity. Arlington, Virginia: NatureServe."

## 2. WILDLIFE

Limited wildlife, or sign of wildife, was observed during the survey of the project area. This lack of wildlife may be due to the close proximity and prevalence of dogs, constant land use and disturbance, length of time on site, and the close proximity to human inhabitation (the ROW goes through homesites along the way). The following species were noted during the survey of the site, and the site vicinity:

1. Common raven (Corvus corax)
2. Common Flicker (Colaptes auratus)
3. Northern Harrier (Circus cyaneus)
4. Red-tailed Hawk (Buteo jamaicensis)
5. Mohave Rattlesnake (Crotalus scutalatus)
6. Blue Grama (Boutelous gracilis)
7. Indian Ricegrass (Oryzopsis hymenoides)
8. Four-o'clock (Mirabilis sp)
9. Prickly Pear (Opuntia sp.)
10. Jumping Cholla (Opuntia bigelovii)
11. Wolfberry (Lycium berlandieri)
12. Globemallow (Sphaeralcea ambiqua)
13. Side-oats Grama (Bouteloua curtipendula)
14. Alkali Sacaton (Sporobolus airoides)
15. Russian Thistle (Salsola Kall)
16. Pinyon Pine (PInus edulis)
17. One-seed Juniper (Juniperus osteosperma)
18. Buffalo Grass (Buchloe dactyloides)
19. Yucca (Yucca Glauca)
20. Sclerocactus sp. (Sclerocactus sp.)

No other wildlife species were located during the survey of this project site and vicinity.

## 3. VEGETATION

Due in part to the disturbance which has occurred in the ROW, vegetation includes many species which are native and others which are invaders and introduced species. A vegetative survey was conducted of the ROW and a listing of species was generated. As stated earlier, this site is highly disturbed with apparently uncontrolled or heavy grazing on site, also there are the beginnings of blowouts throughout the area which can lead to boondocks and ultimately desertification. Desertification can then lead to loss of topsoil, a decrease of biodiversity, and erosion and the formation of arroyos.

Existing vegetation found on the proposed project site and in the vicinity of the ROW residences include:

1. One seed juniper (Juniperus osteosperma)
2. Rubber Rabbitbrush (Ericameria nauseosa)
3. Broom snakeweed (Gutierrezia sarothrae)
4. Sage (Artemisia tridentate)
5. Fourwing saltbush (Atriplex canescens)
6. Wolfberry (Lyceum barbarum)
7. Yucca (Yucca elata)
8. Greasewood (Sarcobatus vermiculatus)
9. Blue Grama (Boutelous gracilis)
10. Indian Ricegrass (Oryzopsis hymenoides)
11. Four-o'clock (Mirabilis sp)
12. Prickly Pear (Opuntia sp.)
13. Jumping Cholla (Opuntia bigelovii)
14. Wolfberry (Lycium berlandieri)
15. Globemallow (Sphaeralcea ambiqua)
16. Side-oats Grama (Bouteloua curtipendula)
17. Alkali Sacaton (Sporobolus airoides)
18. Russian Thistle (Salsola Kali)
19. Pinyon Pine (Plnus edulis)
20. One-seed Juniper (Juniperus osteosperma)
21. Yucca (Yucca Glauca)
22. Sclerocactus sp. (Sclerocactus sp.)
23. Mormon tea (Ephedra viridis)
24. Rocky Mountain Bee Plant (Cleome surrulata)
25. AGRICULTURE

Livestock sign, tracks, and manure, were seen in and along the ROW. Although most of these allotments are fenced and individually owned by individuals or families, there is sign of livestock in all of the allotments that were surveyed. Some of the rangelands that are fenced are better than others showing that there is decreased grazing pressure or that there is different management techniques used based upon control of the allotment.

No agricultural crops have been grown on the project site or in the immediate vicinity of the project site over the past 25 years (Genevieve Castillo, Personal Communication, 2014).

## E. CULTURAL RESOURCES

1. TRADITIONAL CULTURAL PROPERTIES

According to the Navajo Nation Historic Preservation Department Traditional Cultural Properties (TCPs) are defined as:
"places with no physical material remains. Demonstrable sacred place with material remains are recorded as sites and evaluated appropriately. A sacred place is defined as a place that has traditionally been considered important to an Indian tribe or member thereof, because of a religious event that happened there, because it played a part in life-cycle rituals, because it contains specific natural products of cultural and religious importance, because it figures in or is mentioned in traditional folklore and sacred songs, because it is considered the dwelling place or embodiment of spiritual beings, because it is conducive to communication with spiritual beings, or because it has other specified and continuing multi-tribal importance, or may be considered important only to small segments of the society, such as chapters, clans, families, or individuals."

The ROW itself is not considered to be in any way sacred to the Littlewater chapter residents. The site has been used in the past for grazing but has not been used for anything else (Genevieve Castillo, Personal Communication, 2014). Allotee resident homesites and access roads exist within and along the ROW.

## 2. ARCHAEOLOGICAL RESOURCES

An archaeological survey and report was conducted in 2015 for the Littlewater Chapter and a summary of the subsequent reports are attached in the Cultural Resource Inventory Determination Forms and the full, entire reports themselves (Figure 3). The report was obtained from the Littlewater Chapter in November 2015. This survey was for the 5.85 mile Phase II-Whiteridge R-O-W which includes a combined acreage of 14.19 acres with a total acreage inspected of 70.94 acres for the ROW and areas outside of the ROW.

According to the archaeological report, there are in-use sites within the area surveyed, but they do not meet the 50-year guideline for inclusion into the National Register of Historic Places, except where two sites were identified as they appear to be eligible for the National Register of Historic Places under criterion " d ", however it also states that no historic properties will be affected since they do not meet the age criterion and are not of "archaeological interest". As stated in the report cultural resources findings "No historic properties will be affected. Notice to proceed for the undertaking is recommended" (Figure 3).

## F.

## G. SOCIOECONOMIC CONDITIONS

## 1. EMPLOYMENT AND INCOME

## Littlewater Chapter:

As of 2010, the total population of the Llttlewater Chapter was 427 people, and the land area of this chapter is 101.5 square miles ( 64,960 acres). The 2000 Census revealed that the population of Littlewater Chapter has a population that consists 201 male residents, and 226 female residents. This averages out to 0.23 people per square mile. According to the 2010 U.S. Census, the population that lives within the boundaries that comprise Littlewater Chapter consists of American Indian (94.59\%), White (3.89\%), African American (0.08\%), Asian (0.08\%), and other races ( $1.36 \%$ ). This amounts to the following of individuals found within this chapter by race: American Indian (1,047), White (36), African American (6), and some other race (3).

Of the people working in Littlewater Chapter most of the employed local residents are employed with the following entities: education ( $22 \%$ ), public administration (14\%), professional, scientific, management (9\%), construction (20\%), manufacturing ( $16 \%$ ), retail trade (5\%), and agriculture, forestry, fishing, hunting and mining (14\%). The total civilian workforce in Littlewater Chapter over the age of 18 is 277 (U.S. Census Bureau, 2011).

Aside from employment opportunities listed above, many residents of the Littlewater vicinity supplement their income through livestock raising and marketing (ranching), and arts and crafts for income.

Fifty-six percent drive to work, $19 \%$ carpooled, less than $0.5 \%$ used public transportation, and $9 \%$ used other means. Sixteen percent worked from home and, on average, it took commuters 34.7 minutes to get to work. The total enrollment in Littlewater Chapter in 2009 was 18 for kindergarten and nursery school, and 18 for elementary school, and 130 for high school students. College or graduate school enrollment was 5 .

As of 2009, the percentage of people in Littlewater Chapter that lived below the poverty level was $60 \%$ according to the United States Census, $84 \%$ were under 18 years of age, and $50 \%$ of the people 65 years old and older were living in poverty (http://www.census.gov/acs/www/).

## Navajo Nation Demographics

The average size of a Navajo household, according to the 2000 census, is 4.54 persons per household and the median age is 22.3 years of age. The state of Arizona Navajo population accounts for $47.76 \%$ of all Navajo and the per capita income for the Navajo Nation, as of 1990, was $\$ 4,106$. Median Navajo income for families living on the Navajo Nation in 2000 was $\$ 27,303$ with $47.2 \%$ of the total Navajo population living below the poverty level (Census 2000).

The unemployment rate on the Navajo Nation was $25.06 \%$ in 2000, with $26.3 \%$ of the Navajo population having obtained a high school diploma ( 25 years or older), and $0.78 \%$ of the population on the Navajo Nation having a graduate degree (Census 2000).

Of the estimated 56,188 houses on the Navajo Nation in 1990, 19,399 were vacant and $50.85 \%$ lacked complete plumbing, $46.95 \%$ lacked complete kitchen facilities, and $77.5 \%$ lacked telephones (Etsitty, 1996).

The birth rate per 1000 population is $32.5 \%$ and the life expectancy is 73.7 years for residents of the Navajo Indian Reservation. The infant death rate is $10.1 \%$ per 1000 (Etsitty, 1996).

As of 2010, the total population of Navajos is listed as 332,000 with 286,000 being full blooded Navajo and Native American populations in the United States grew twice as fast as the general population from 2000 to 2010.

## Geography:

The Navajo Reservation covers a 27,000 square mile area on the Colorado Plateau that can be compared to that of the size of the state of West Virginia. It is comprised of the states Arizona, New Mexico, and Utah. The arid deserts and alpine forests with high plateaus, mesas, and mountains reaching as high as 10,500 feet in altitude and as low of 5,500 feet in the desert regions characterize the topography of Navajo land. Pre-Cenozoic period volcanic activities, wind and water erosions have formed and carved the Navajo Nation's many majestic mesas, mountains and canyons today. Navajo land boasts a number of world-renowned scenic wonders of the Southwest such as: Canyon de Chelly, Shiprock peak, Monument Valley, the Chuska Mountains, Antelope Canyon, and many more. The
beauty and the culture of the Navajo Nation draw over three million tourists annually from all over the world.

While the Navajo Nation does contain several eye-appealing natural wonders, the majority of it is desolate and bare. Natural resource mining - for uranium, coal, etc. - has left massive amounts of land hazardous and hard to develop.

## Demographics2:

According to the 2012 American Community Survey - 3-year estimate (ACS), the Navajo Nation currently holds a population of 177,078 people, with $48.7 \%$ of the population being male and $51.3 \%$ being female. Of this population, 169,774 (95.9\%) were American Indians. After the American Indians, White constituted the second largest racial group on the Navajo Nation. The 2010 ACS counted 6,525 Whites living on the Navajo Nation, which constitutes 3.7 percent of the total population of the Navajo Nation. It is estimated that the actual growth rate of the Navajo population is considerably higher; however, because of the lack of employment opportunities on the Navajo Nation, many younger Navajos move to cities like Phoenix, Albuquerque, and Salt Lake City - thereby reducing the population size of the Navajo Nation and causing a lower population growth rate.

The Navajo population is relatively young. This is reflected by the fact that the median age of the overall population residing on the Navajo Nation in 2012 was 28.8 years, whereas the median age of the population of the United States was 37.3 years old. These figures are according to a release of the American Community Survey for the year 2012, which has replaced the long form of the Decennial censuses.

## Education:

The 2012 ACS showed that there were 32,310 high school graduates on the Navajo Nation for the 25-years-and-over age medium, as compared to the $1,777,463$ students who completed high school education in Arizona, New Mexico and Utah - which is $3.04 \%$ of the U.S. population's $58,410,105$ high school graduates.

Only 7.1\% of Al graduates obtained a Bachelor's Degree or higher compared to $26.7 \%$ of their peers completing the same higher education accomplishments within Arizona, $25.7 \%$ within New Mexico and $30.1 \%$ within Utah.

## Employment/Unemployment:

According to the 2012 ACS, 44.7\% of the Navajo Nation population (ages 16 and over) was in the labor force. This number has drastically increased from $28.46 \%$ during 2000 Census. The 2012 ACS also found $64.1 \%$ of the U.S. population in general to be in the labor force. The numbers for Arizona, New Mexico and Utah were $60.5 \%, 60.7 \%$, and $68.5 \%$ respectively. To be in the labor force a person (a) has to be over the age of 16; (b) must not be institutionalized (i.e., in schools, in health or other institutions); and (c) must be looking for a job during the past six months.

The unemployment rate on the Navajo Nation has always been high, but has drastically reduced since 2001. In 2001 the unemployment rate was $42.2 \%$, but has since decreased to $23.3 \%$ according to the 2012 ACS. Though the unemployment rate has nearly dropped in half, it is still twice as much compared to the rest of the U.S. (10.1\%).

The largest industry for employment on the Navajo Nation was in the educational services, health care, and social assistance sector, which employed $39.3 \%$ of the civilian population. The next highest industries, in order, include: arts, entertainment, and recreation, and accommodation and food services (10.4\%), public administration (9.5\%), and construction and retail trade (9.0\% each).

The 2012 ACS found 56,671 individuals in the labor force on the Navajo Nation, which constituted $32 \%$ of the total population. Comparatively, $63.7 \%$ of the total population of the United States is in the labor force. The 2012 population of the Navajo Nation was estimated to be 177,078 people. If we were to apply the Navajo Nation's Labor Force-population ratio, the Navajo Nation's Labor Force in 2012 would be 56,664 (177,078.32). However, if we were to apply the US Labor Forcepopulation ratio to the Navajo population, there would be 112,798 individuals in the labor force of the Navajo Nation (177,078 X $637=112,798$ ). Thus the number of individuals in our labor force varies depending upon which percentage we use to calculate it, which in turn, determines the unemployment rate.

There is this common belief among political leaders and government officials that $80 \%$ of the jobs on the Navajo Nation are to be found in the Government sector. This is not true. According to the 2012 ACS, 18,933 individuals were directly working for all forms of Government combined - Navajo, Federal, State and County. This amounted to $43.6 \%$ of the total employment on the Navajo Nation. This is compared to the 22,875 individuals that were employed through private wage and salary, or $52.6 \%$ of the population. Of the private and wage salary workers, the number one occupational field was in service occupations at $26.1 \%$ followed by management, business, science, and arts occupations at $25.7 \%$.

Per Capita Income:

As the unemployment rate on the Navajo Nation has been steadily decreasing, the Per Capita Income has been steadily rising. This is attributed to the number of people in the labor force getting jobs and the raises given particularly to the Navajo government employees in recent years, as well as to the regular COLA's given to the Federal, State, and other government employees.

While the Per Capita Income has been on the rise, it is considerably lower on the Navajo Nation as compared to Arizona, New Mexico, and Utah. The Per Capita Income on the Navajo Nation is 10,537. In Arizona, New Mexico, and Utah, the Per Capita Income is $24,602,23,193$, and 23,255 respectively.

## Poverty Rate:

The relatively high unemployment rate on the Navajo Nation, and hence low income, has resulted in a very high Poverty Rate. The 2012 ACS found $41.9 \%$ of the Navajo individuals living below poverty level. The numbers were astoundingly smaller for the U.S. (15.7\%), Arizona (18.3\%), New Mexico (21\%) and Utah (13.2\%). In depth, current data on the Navajo Nation Poverty Rate is not yet available." Vandever, 2014, Navajo Technical University Marketing Plan.

## G. RESOURCE/LAND USE PATTERNS

Mining does not actively occur within the project ROW and no hunting or gathering occurs in the project vicinity nor does the site have any timber for harvesting. People in the immediate vicinity do use the project area for anything other than to graze their livestock and there were family cemetery plots encountered during the pedestrian survey of the ROW.

The site does not appear to be extremely valuable to wildlife due to the close proximity to houses in Littlewater Chapter and there is very little suitable habitat in the area for most species on the species of concern listing as generated by the Navajo Fish and Wildlife Department. Due to the dogs associated with these residences, including feral dogs living in the area which would preclude any wildlife from coming onto the property or getting established in the vicinity other than common avian species such as ravens.

## H. OTHER VALUES

The proposed power line construction in the ROW, will not pose a public health and safety problem, nor will the proposed construction and use of the project area significantly increase the sound or noise in the area. Indeed, the installation and construction of said project will benefit the local community with access to electricity for these remote, rural homes, and will allow the community members in
this location to not have to rely on batteries, backup generators, or photovoltaic panels.

## Section IV. ENVIRONMENTAL CONSEQUENCES OF PROPOSED ACTION A. BIOTIC IMPACTS

The displacement of some natural vegetation occupying the project area will occur with the construction of this power line project. Natural regeneration should occur over time as disturbance will not be so great as to permanently disturb and disrupt the native flora and fauna of this area.

The Navajo Natural Heritage Program (NNHP) of Window Rock, Arizona, identified no threatened or endangered species that may occupy the site, or occupy areas in close proximity. This list is based upon historical records and suitable habitat, as determined by a Heritage Program Zoologist and Botanist. No threatened and endangered species were found to inhabit the respective project site or in the area surrounding the project area. No adverse impacts are expected upon threatened and endangered species with the construction and operation of this project. A biological survey was conducted and no suitable habitat was found.

## B. PHYSICAL IMPACTS

Physical impacts are planned. Temporary access roads will be utilized within the ROW. The roads that are formed within the ROWs will be utilized on a very infrequent basis by the power line company to make repairs and any other maintenance needs. These roads, or more appropriately, trails, will not be used very much, mainly during the time of active distribution line installation and during periods of needed service and repair.

Since, during times of high moisture deposition, like during the annual monsoon season, the area has water that ponds for short periods of time however these are not considered to be wetlands due to the lack of wetland vegetation, hydric soils and the lack of water on these areas for more than a few weeks at a time. These sites naturally pond and are not wetlands based upon the Army Corps of Engineers definition of a wetland (refer to photographs).

## C. SOCIOECONOMIC IMPACTS

The construction and operation of the 5.85 mile Phase II-Whiteridge Single-Pole 14.4 kv Electrical Distribution Line will improve and benefit the socioeconomic conditions of the Littlewater Chapter community. With the construction of the power line, there will be short-term employment for construction workers and laborers from the Navajo Nation and surrounding communities. This will have a positive effect on the local economy and growth of these respective communities.

No adverse socioeconomic impacts are foreseen with the construction and installation of this power line.

## D. ARCHAEOLOGICAL IMPACTS

No archaeological impacts are expected with the strict incorporation of previously stated stipulations made by the Navajo Nation Historic Preservation Department. If these stipulations regarding Traditional Cultural Properties are followed then no negative effects to archaeological resources is expected.

## E. SOLID WASTE DISPOSAL AND HAZARDOUS MATERIALSWASTE

Solid waste generated while this power line is being constructed and installed will be disposed of at a compliant landfill per Navajo Nation law. All parties involved with this project will dispose of their respective waste at a compliant landfill (Genevieve Castillo, Personal Communication, 2014).

All hazardous waste will be properly disposed of according to Federal and Tribal waste laws. Large quantities of hazardous waste are not expected to be generated by this project. All hazardous materials will be transported, handled, and stored in compliance with all Federal and Tribal laws (Genevieve Castillo, Personal Communication, 2014).

## Section V. MITIGATION MEASURES OF IMPACTS TO PROPOSED ACTION A. BIOTIC IMPACTS

Many of the biological resources currently inhabiting the project site will be disturbed.
No negative impacts are expected upon threatened and endangered species during the preparation, construction, and operation of this power line project. No mitigation measures are necessary with regards to biological resources for no threatened or endangered species are expected.

## B. PHYSICAL IMPACTS

Physical impacts are expected with the construction of this power line. Disturbance from heavy equipment and vehicles used to transport and install equipment will occur, in addition to all other needed equipment to move building materials on to the site and to off load them. To minimize excess physical impacts, it is recommended that construction be limited to associated ROW and any access roads to the ROW for delivery of power poles and equipment.

It is recommended that the CDEC consult with the New Mexico Army Corps of Engineers (ACOE) regarding the disturbance of arroyos located along the ROW.

Disturbance of arroyos that are categorized as waterways of the United States are protected from disturbance under the Clean Water Act, and consultation is recommended should any arroyos are to be crossed or if the banks are to be disturbed by heavy equipment. Should mitigation not be required as deemed by the ACOE, or if consultation with the ACOE leads to the successful adoption and implementation of mitigation measures to prevent the negative effects of potential water contamination, then no negative impact upon water resources is expected with the installation of this proposed distribution line.

## C. ARCHAEOLOGICAL IMPACTS

New discoveries are previously unidentified cultural resources that include, but are not limited to: archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs, or practices. Areas in which these cultural resources are encountered are to be immediately reported to the Historic Preservation Department in Window Rock, Arizona (928-871-7198), and simultaneously, all operations on and in the vicinity of the discovery are to cease.

No cultural resources are expected to be negatively affected with the construction and operation of this ROW construction project.

## D. SOCIOECONOMIC IMPACTS

The proposed project will benefit, for the very long term, the socioeconomic status of Littlewater and surrounding communities. With the construction of this project, construction personnel will be hired, and some of their payroll will end up in the community of Littlewater and surrounding communities. Surrounding families can benefit from this project socio-economically since the construction of an electrical distribution line in their community will increase their access to electricity and all associated benefits with having access to electrical appliances, including medical equipment and supplies.

No socioeconomic mitigation is foreseen or considered needed with regards to the construction of this project.

## E. THREATENED AND ENDANGERED SPECIES MITIGATION

No threatened or endangered species were located during the pedestrian survey of the 5.85 mile, 20 -foot wide ROW project area. No negative impact upon threatened or endangered species is expected with the construction and operation of this power line project. To minimize the potential disturbance to any nesting bird species that may occur near the project area, it is recommended that construction
occur outside of February 15 through June 30 to prevent this activity from potentially disturbing these species. This is a recommendation only since no active or inactive nests were located from any raptor species and may be heeded at the discretion of the project sponsor.
F. SOLID/HAZARDOUS WASTE DISPOSAL

No mitigation is deemed necessary since all waste generated on site from construction will be disposed of in a solid waste landfill or hazardous waste landfill as required under tribal and federal law.

## Section VI. CONCLUSION/SUMMARY

With the successful institution and full compliance of all mitigation, no negative impact is expected upon the environment with the construction and operation of this project.

Section VII. CONSULTATION AND COORDINATION

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## B. REFERENCES CITED

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Steven Chischilly, Owner
Dine' Bi Keyah Environmental
P.O. Box 2084

Crownpoint, N.M. 87313
(505) 406-6740 or (505) 786-4147

Date $\qquad$

## ATTACHMENTS:

Figure 1 General Map of the Navajo Nation
Figure 2 Map of the Eastern Navajo Agency and the Littlewater Chapter
Figure $3 \quad$ Resources Compliance Forms for the 5.85 mile Phase IIWhiteridge electrical distribution line and the full archaeological report including maps, legal survey, and maps of the archaeological sites in Littlewater Chapter, McKinley County, Navajo Nation, New Mexico
Figure 4 Chapter Resolution Requesting Assistance for the Construction of the 5.85 mile Phase II-Whiteridge SinglePole 14.4kv Electrical Distribution Line from the Continental Divide Electrical Cooperative and the Letter from the CDEC responding to the Chapter Request
Figure 5 Navajo Nation Fish and Wildlife Species Listing
Figure 6
Client Home Assessment Check-off List Form for Whiteridge Powerline Project
Figure $7 \quad$ Biological Evaluation Report for the 5.85 mile Phase IIWhiteridge Single-Pole 14.4kv Electrical Distribution Line ROW and Surrounding Vicinity
Photographs 1-20 Photographs of the Whiteridge Electrical Distribution Line ROW

## Figure 1. General Map of the Navajo Nation


http://www.ovc.edu/missions/indians/navajres.htm

Figure 2: Map of Eastern Navajo Agency of the Navajo Nation and Littlewater Chapter, New Mexico

http://www.geocities.com/navajonation1/Navajoland/EasternNavajoAgency.JPG

# Figure 3: Resources Compliance Forms for the 5.85 mile Phase II-Whiteridge Electrical Distribution Line archaeological report including maps, legal survey, and the maps of the archaeological sites in Littlewater Chapter, McKinley County, Navajo Nation, New Mexico 



THE NAVAJO NATION
Historlc Preservatlon Department
PO Box 4950, Window Rock, AZ 85515 TEL: (928) 871-7198/7134 FAX: (928) 871-7886

TRADITIONAL CULTURAL PROPERTY (TCP) RECORD SEARCH VERIFICATION FORM






## CULTURAL RESOURCE COMPLIANCE FORM

| ROUTE COPIES TO: |
| :---: |
| $\boxed{A D D I}$ |

PROJECT TITLE: A Cultural Resource Inventory of the White Ridge Powerline Phase II, Littlewater Chapter, MeKinley County, New Mexico

## LEAD AGENCY: BIA/NR

5PONSORS: 1. Navajo Nation Copilal Improvement Office, P.O. Box 1510, Window Rock, AZ 86515
3. Debbie Olivar, Continental Divide Electric Cooperative, Inc., P. O. Box 1087, Grants, NM 87020
2. Genevieve Castillo, Littlewater Chapter, P. O. Box 1898, Crownpoint, NM 87313

PROJECT DESCRIPTION: The undertaking consists of construction a single-phase powerline extension 20 - ft right-of-way for 30,899.31-ft/5.85-miles on Tribal Trust land ( 5.86 -acres) and Indian Allotment ( 8.33 -acres). The total area of effect for the project is 14.19 -acres. Ground disturbing octivities will include installation of utlities and will be intensive and extensive with the use of heavy equipment.

| LAND STATUS: | avojo Tribal Trust 8 Indian Allorment |
| :---: | :---: |
| CHAPTER: | Litlewater |
| LOCATIONS: | T. 16 N, R. 11 W; Sec. 13; Borrego Poss Quadrangle, McKinley County, New Mexioo NMPM |
|  | T. 16 N, R. 10 W; Sec. 17, 18, 19, 820 , Borrego Pass Quadrangle, Mckinley County New Moxico NMPM |


| PROJECT ARCHAEOLOGIST: | Denise R. E. Copeland |
| :---: | :---: |
| NAVAJO ANTIQUITIES PERMIT NO.: | NTC |
| DATE INSPECTED: | 01/09/14 to 09/25/14 |
| DATE OF REPORT: | 10/26/15 |
| TOTAL ACREAGE INSPECTED: | 70.94 cc . Total (29.29 Tribol Trusi and 41.65 Indian Allotments) |
| METHOD OF INVESTIGATION: | Class lil pedestrian inventory with transects spaced 15 m apart. |



No further work is warranted.
In the event of a discovery ["discovary" means any previously unidentified or incorrectly identified cultural rasources including but not limited to archaeological deposits, human remains, or locotions reportedly associated with Notive American religious/traditional beliefs or proctices], all oper ations in the immediate vidnity of the discovery must coase, and the Novajo Nation Historic Preservation Department must be notffled at (928) 871-7198.

HPD-15-806 / DCDI 14-007
Page 2, continued

FORM PREPARED BY: Tamara Bilife
FINALIZED: December 1, 2015


Than 12.15.15

ARCHAEOLOGICAL INVENTORY REPORT DOCUMENTATION PAGE (HPD 2010)

| 1. HPD REPORT NO.: |  |  |
| :---: | :---: | :---: |
| 2. TITLE OF REPORT: A Cultural Resource Inventory of the White Ridge Powerline Phase II, Littlewater Chapter, McKinley County, New Mexico. <br> AUTHOR(S): Denise R.E. Copeland |  |  |
|  |  |  |
| 5. CONSULTANT NAME AND ADDRESS: <br> Gen. Charge: Denise R.E. Copeland, Principal Archaeologist <br> Org. Name: Capital Improvement Offica <br> Org. Address: P.O. Box 335 <br> Fruitland, New Mexico 87416 Ph: 505 368-1059 |  |  |
|  |  |  |
| 8. SPONSOR NAME AND ADDRESS:  <br> Ind. Respon.: Debbie Olivar (See project for other Sponsors) <br> Org. Name: Continental Divide Electric Cooperative, Inc. <br> Org. Address: P.O. Box 1087 <br>  Grants, New Mexico 87020 <br> Phone: 505 285-6656 |  |  |
|  |  |  |
|  |  |  |
| 12. REPORT ATTACHMENTS: <br> a. Description of Undertaking: The undertaking consists of construction of 20 ft 6.1 m R-O-W for $30,899.31 \mathrm{f} / 5.85 \mathrm{mi}$. of a single-phase powerline extension for 15 families and one church on Phases II and III of the White Ridge Powerline. Ground disturbing activities will include installation of utilities. <br> b. Existing Data Review: As part of this project, the archival data of the Navajo Nation Historic Preservation Department (NNHPD) in Window Rock were consulted. Within $1 \mathrm{~km}(0.05 \mathrm{mi})$ of this project, 18 previously completed projects are known to have taken place (HPD\# 79-006, 79-112, 79-256, 80-108, 80-407, 89-029, 89-259, 93-044, 94-288, 98-819, 02625, 03-434, 03-499, 03-760, 04-732, 06-1004, 06-1006 and 07-084) and no sites are known to exist in the project area. A Traditional Cultural Property (TCP) Record Search was conducted on July 22, 2014. No TCPs are known to exist in the project area. <br> c. Area Environmental and Cultural Setting: The project area is in the White Ridge area of the Littlewater Chapter. The project is located in the southem portion of the San Juan Basin and is characterized as a broad open valley surrounded in the distance by flat-topped sandstone mesas. The San Juan Basin is bounded by the Chaco Slope on the south. The major geological features of the area are the Continental Divide, Borrego Pass, and Heart Butte. The project area consists of low hills and ridges with gentle slopes. Vegetation consists of buffalo berry, four-winged saltbush, hedgehog cactus, pinyon, juniper, prickly pear cactus, Russian thistle, snakeweed, and various grasses. <br> d. Field Methods: Ms. Debbie Olivar, Engineering Services Manager, Continental Divide Electric Cooperative, Inc., supplied the project location map to the author. The project area was flagged by T\& D Services and all PI stakes were found at the time of the inventory. The area was investigated using a Class III ( $100 \%$ ) level pedestrian survey strategy. A 100 $\mathrm{ff} / 30.5 \mathrm{~m}$ wide survey corridor on Indian Allotted land ( 41.65 ac ), and TNT (29.29 ac), centered on the powertine R-OW was inspected by walking along one side and returning on the opposite side. The fieldwork was conducted by author and Ms. Lucinda A. Henry, Littlewater Chapter R-O-W Agent. A total of 70.94 acres was inspected during the cultural resource inventory. The staked powerline location was rechecked on September 25, 2014 after the legal survey was completed. The author interviewed following Chapter Officials, Staff, and residents throughout the inventory regarding TCP's and none were identified near the area. |  |  |
| 13. CULTURAL RESOURCE FINDINGS: <br> a. Location/identification of Each Resource: Nineteen in-use sites (IUS-1-16) and one site (NM-R-32-32) were identified within the proposed project area. See page 6 of report. <br> b. Evaluation of Significance of Each Resource: The in-use sites IUS-1 to IUS-16 and the site NM-R-32-32 do not meet the 50 -year guideline for inclusion into the National Register of Historic Places. No historic properties will be affected. |  |  |
| 14. MANGEMENT SUMMARY (RECOMTMENDATIONS): Notice to proceed for the undertaking is recommended. |  |  |
| 15. CERTIFICATION: <br> SIGNATURE: $\qquad$ <br> Direct Charge Name: Denise R.E. Copeland |  |  |

# A CULTURAL RESOURCES INVENTORY OF THE WHITERIDGE POWERLINE PHASE II, LITTLEWATER CHAPTER, McKINLEY COUNTY, NEW MEXICO 

DCD1 14-007

October 26, 2015

## PREPARED BY:

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SUBMITTED TO:
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PREPARED FOR:<br>Capital Improvement Office<br>Navajo Nation Division of Community Development<br>P.O. Box 1510<br>Window Rock, Arizona 86515<br>928 871-6509<br>and<br>Debbie Olivar<br>Continental Divide Electric Cooperative, Inc.<br>P. O. Box 1087<br>Grants, New Mexico 87020<br>505 285-6656<br>and<br>Genevieve Castillo Littlewater Chapter<br>P. O. Box 1898

# ABSTRACT <br> A CULTURAL RESOURCES INVENTORY OF THE WHITE RIDGE POWERLINE PHASES II, LITTLEWATER CHAPTER, McKINLEY COUNTY, NEW MEXICO 

DCD1 14-007

On behalf of the Capital Improvement Office of the Navajo Nation Division of Community Development, the Littlewater Chapter and the Continental Divide Electric Cooperative, Inc; a cultural resources inventory has been completed for the powerline extension for 15 homes and one church. For the purposes of Tribal Trust (TNT) Land, and Indian Allotment Land on this project, the Bureau of Indian Affairs, Navajo Area Office is the lead agency for meeting the requirements of Section 106 of the National Historic Preservation Act.

The fieldwork was conducted by Denise R. E. Copeland of the Capital Improvement Office and Lucinda A. Henry, R-O-W Agency for Littlewater Chapter on January 9, 22, 24, 28; and February 26, 27 and September 25, 2014. The project area is located eastern portion of the Littlewater Chapter. The specific location of the project area is depicted on U.S.G.S. quad map: Laguna Castillo, New Mexico 1963, and Borrego Pass, New Mexico, 1963. The legal location is in T 16 N, R 11 W in Sections 13 and T 16 N, R 10 W in Sections 17, 18, 19 and 20, in McKinley County, New Mexico. The land status of the project area is Tribal Trust and Indian Allotted A total of 70.94 acres of land was inspected for this project.

A total 17 cultural resources were located within the project area. These resources include 16 in-use sites (IUS1 to 16), and one newly recorded sites (NM-R-32-32). Data on traditional cultural properties (TCP's) were collected by interviewing residents being served at their homes, and the following Chapter Officials: George S. Jim, President, June Barbone, Secretary/Treasurer and Genevieve Castillo, Chapter Manager, at the Littlewater Chapter House.

The in-use sites (1-16) do not appear to possess integrity and/or are less than 50 years old, and/or do not appear to meet an exception to the general exclusions. Sites NM-R-32-32 is not eligible for the for the National Register of Historic Places the site do not meet the age criterion and are not of "archaeological interest" and do not merit protection under ARPA:

As the project is currently designed, the undertaking should have no effect on significant historic properties and a notice to proceed is recommended.

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# A CULTURAL RESOURCES INVENTORY OF THE WHITE RIDGE PHASE II POWERLINE PROJECT, LITTLEWATER CHAPTER, MC KINLEY COUNTY, NEW MEXICO <br> DCD1 14-007 

## INTRODUCTION

On behalf of the Littlewater Chapter and the Capital Improvement Office of the Navajo Nation Division of Community Development, a cultural resources inventory has been completed for the White Ridge Powerline Extension Phase II. This work was conducted to evaluate the potential for this undertaking to effect significant cultural properties. The Bureau of Indian Affairs, Navajo Area Office is the lead agency for meeting the requirements of Section 106 of the National Historic Preservation Act for Tribal Trust (TNT) Land and Indian Allotment Land.

The fieldwork was conducted by Denise R. E. Copeland of the Capital Improvement Office and Ms. Lucinda A. Henry, Littlewater Chapter R-O-W Agent on January 9, 22, 24, 28; February 26, 27 and; September 25, 2014. The project area is located southeast of the Littlewater Chapter House along the White Ridge Road.

## DESCRIPTION OF UNDERTAKING

The undertaking will involve the construction of ca. 5.85 mi of single-pole 14.4 kv overhead electrical distribution lines. The project area was previously, legally surveyed and flagged by the engineering company, T \& D Services, Albuquerque, New Mexico. The ground disturbance activities will include the placement of power poles and periodic patrol for repairs and routine maintenance conducted by the Continental Divide Electric Cooperative, Grants, New Mexico. BIA/Navajo Region is the lead agency for the project. Approximately 15 families will be served by this project. The right-of-way will be $6.1 \mathrm{~m}(20 \mathrm{ft})$ wide on Tribal Trust (TNT) Land and Indian Allotment Land.

Proposed construction and maintenance activities will include the following:

1. Poles will be hauled to the project area by truck and pole trailer, where they will be distributed at intervals of approximately 400 feet apart along the right-of-way.
2. A construction crew will then attach cross-arms, insulators, ground wires, and other necessary hard ware to each pole prior to erection.
3. A truck-mounted auger will excavate holes measuring about 18 inches in diameter and averaging 5-6 feet deep for each pole location. A similar hole will be excavated for any necessary anchors. A boom, also mounted on the truck, will then raise each pole into its freshly augered hole. The pole will then be aligned and plumbed followed immediately by back filling and tamping the dirt spoils into the hole.
4. After the poles are erected, conductive wire will be reeled off truck-mounted cable spools to be lifted and strung onto each pole. Tension will then be applied to the cable at which time it will then be attached to insulators on the poles
5. The construction crew will properly remove and dispose of all debris resulting from activities associated with construction. Surface disturbance will be confined to the approved rights-of-way and existing roads. Generally, trees will not be cut except where necessary for safety. The rights-of-way will not be bladed and will be reseeded and reclaimed in accordance with Tribal and Federal stipulations.

A line by line description of the line lengths and project vs．survey area is given in Table 1．The proposed Right－ of－way is ca． 14.19 acres（TNT 5.86 acres，IA 8.33 acres）．A total of 70.94 acres was inspected for cultural resources in association with the powerline project．

## PROJECT LOCATION

The project location is located within the Littlewater Chapter of the BIA Eastern Agency Checkerboard area of the Navajo Indian Reservation（Figure 1）．The project area is located 2.33 mi to the southeast of the Littlewater Chapter House．The specific location of the project area is depicted on U．S．G．S．quad maps：Laguna Castillo，New Mexico 1963，and Borrego Pass，New Mexico，1963，（Figure 2）．The legal location is in T 16 N，R 11 W in Section 13 and T 16 N R 10W in Sections 17，18，19，and 20，in McKinley County，New Mexico．The land status of the project area is Tribal Trust and Indian Allotted．Line by line legal descriptions of the project are given in Table 2 and the UTM coordinates for the project are given in Table 3.


## LJTTL宫W思な區 <br> CHAPTER

Figure 1：General Location of the White Ridge Powerline．

TABLE 1
Line by Line Description of the Powerline

| Line \＃ | Land Status TNT | Length of Line |  | ROWAcres | Survey Corridor Acres |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | \＃of Feet | Meters |  |  |
| Line－B |  | 3，169．29 | 966.00 | 1.46 | 7.28 |
|  | Indian Allotment | 12，044．16 | 3，671．06 | 5.53 | 27.65 |
| Tap B－1 | Indian Allotment | 3.807 .95 | 1，160．66 | 1.75 | 8.74 |
| Tap B－1a | Indian Allotment | 303.03 | 92.36 | 0.14 | 0.70 |
| Tap B－2 | Indian Allotment | 1，987．38 | 605.75 | 0.91 | 4.56 |
|  | TNT | 7，782．53 | 2，372．12 | 3.57 | 17.87 |
| Tap B－2a | TNT． | 1，400．09 | 426.75 | 0.64 | 3.21 |
| Tap B－3 | TNT | 404.88 | 123.41 | 0.19 | 0.93 |
|  | TOTAL | 30，899．31 | 9，418．11 | 14.19 | 70.94 |



Figure 2: Specific Location of UTM Coordinates Along the White Ridge Powerline Phase II. Map is 7.5' Quadrangle Borrego Pass, NM 1963."

TABLE 2
Legal Description of the Powerline

| Location | T/R | Section | Land Status | Map |
| :---: | :---: | :---: | :---: | :---: |
| Line B | T16N, R11W | 13 | TA1754 | Borrego Pass, NM |
|  | T16N, R10W |  | IA 1754 |  |
|  |  | 18 | 1A 981 |  |
|  |  | 17 | IA 3081 |  |
|  |  | 17 | IA 3057 |  |
|  |  | 18 | TNT |  |
| Tap B-1 | T16N, R10W | 18 | IA 980 | Borrego Pass, NM |
|  |  | 19 | IA 3060 |  |
|  |  | 19 | IA 3062 |  |
| Tap B-1a | T16N, R10W | 19 | IA 3060 | Borrego Pass, NM |
| Tap B-2 | T16N, R10W | 18 | IA 981 | Borrego Pass, NM |
|  |  | 17 | IA 3081 |  |
|  |  | 20 | TNT |  |
| TAP B-2a | T16N, R10W | 20 | TNT | Borrego Pass, NM |
| Tap B-3 | T16N, R10W | 18 | TNT | Borrego Pass, NM |

TABLE 3
UTM Coordinate Locations of the Powerline (NAD 83, Zone 13)

|  | Point |  | Northing |
| :--- | :---: | :---: | :---: |
| Line | 1 | 3944652 | 231924 |
| Line-B BOL | 2 | 3944727 | 232331 |
| Line-A | 3 | 3944857 | 232499 |
| Line-A | 4 | 3944898 | 233184 |
| Tap B-1 BOL | 5 | 3944434 | 233178 |
| Tap B-1 | 6 | 3943952 | 233276 |
| Tap B-1a BOL | 7 | 3943905 | 233197 |
| Tap B-1a EOL | 8 | 3943749 | 233301 |
| Tap B-1 EOL | 9 | 3944989 | 234691 |
| Tap B-2 BOL | 10 | 3944995 | 234782 |
| Line B | 11 | 3945559 | 235066 |
| Line B | 12 | 3946081 | 234852 |
| Line B | 13 | 3946033 | 234416 |
| Tap B-3 BOL | 14 | 3946142 | 234358 |
| Line B-3 EOL | 15 | 3946023 | 234325 |
| Line B EOL | 16 | 3944361 | 235180 |
| Tap B-2 | 17 | 3943805 | 235883 |
| Tap B-2 | 18 | 3943710 | 236324 |
| Tap B-2a BOL | 19 | 3944114 | 236186 |
| Tap B-2a EOL | 20 | 3943399 | 236694 |
| Tap B-2 | 21 | 3942935 | 236407 |
| Tap B-2 EOL |  |  |  |

U.S.G.S Quad Map

Borrego Pass, NM

## AREA ENVIRONMENTAL AND CULTURAL SETTING

The project area is in the White Ridge area of the Littlewater Chapter. The project is located in the southern portion of the San Juan Basin and is characterized as a broad open valley surrounded in the distance by flat-topped sandstone mesas. The San Juan Basin is bounded by the Chaco Slope on the south. The major geological features of the area are the Continental Divide, Borrego Pass, and Heart Butte. The project area consists of low hills and ridges with gentle slopes that vary for $0-10 \%$.

The elevation within the powerline ranges from 6800 ft to 7000 ft above mean sea level. Several unnamed drainages flow through the project area to the north. The project area consists of grasslands and scattered stands of juniper and pinyon. Vegetation consists of buffalo berry, four-winged saltbush, grama grass, hedgehog cactus, pinyon, juniper, prickly pear cactus, Russian thistle, snakeweed, and various grasses. The general area is characterized by disturbances of dirt and gravel roads, erosion, fence lines, foot trails, livestock grazing, pipelines, trash debri along roads, and waterlines.

## EXISTING DATA REVIEW

As part of this project, the archival data of the Navajo Nation Historic Preservation Department (NNHPD) in Window Rock, Arizona, were consulted. Within $1 \mathrm{~km}(0.05 \mathrm{mi})$ of this project, 18 previously completed projects are known to have taken place (HPD\# 79-006, 79-112, 79-256, 80-108, 80-407, 89-029, 89-259, 93-044, 94-288, 98-819, 02-625, 03-434, 03-499, 03-760, 04-732, 06-1004, 06-1006 and 07-084) and no sites are known to exist in the project area. Traditional Cultural Property (TCP) Record Search was
conducted on July 22, 2014. No TCPs are known to exist in the project area.

## FIELD METHODS

Ms. Debbie Olivar, Engineering Services Manager, of the Continental Divide Electric Cooperative, Inc., of Grants, New Mexico, supplied the project location map to the author. The project area was previously flagged by T \& D Services, Albuquerque, New Mexico, and all PI stakes were found at the time of the inventory. The area was investigated using a Class III ( $100 \%$ ) level pedestrian survey strategy. A $100 \mathrm{ft} / 30.5 \mathrm{~m}$ wide survey corridor on Indian Allotted land ( 41.65 ac ), TNT ( 29.29 ac ), centered on the powerline R-O-W was inspected by walking along one side and returning on the opposite side. The fieldwork was conducted by Denise R. E. Copeland of the Capital Improvement Office and Ms. Lucinda A. Henry, Littlewater Chapter R-O-W Agent on January 9, 22, 24, 28; and February 26, 27 and September 25, 2014. A total of 70.94 acres was inspected during the cultural resource inventory. T \& D Services completed the legal Survey on September 25, 2014 and the archaeologist rechecked the staked powerline location. For the TNT Land, and Indian Allotted Land; the BIA/NR is the lead agency for the project.

The sites (NM-R-32-32) were documented newly recorded site by using a Silva Ranger hand-held compass and a 100 m long measuring tape. No artifact collections were made and photographs were taken.

Data on traditional cultural properties (TCP's) were collected by interviewing residents being served at their homes, and the following Chapter Officials: George S. Jim, President, June Barbone, Secretary/Treasurer and Genevieve Castillo, Chapter Manager, at the Littlewater Chapter House.

## RESOURCE DEFINITIONS

The following describe the NNHPD definitions for cultural resources (NNHPD Permit Package 2015).
Isolated Occurrence: Any non-structural remains of a single event; alternatively, any non-structural assemblage of approximately 10 or fewer artifacts or other material within an area of approximately 10 square meters or less, especially if it is of questionable human origin, if it appears to be the result of fortuitous causes, or it lacks integrity. Rock art, burials, sacred places, and formal features are not recorded as isolated occurrences.
Traditional Cultural Properties: These are places with no physical matenal remains. Demonstrable sacred places with material remains are recorded as sites and evaluated appropriately. A sacred place is defined as a place that has traditionally been considered important to an Indian tribe or a member thereof, because of a religious event that happened there, because it played a part in life-cycle rituals, because it contains specific natural products of cultural or religious importance, because it figures in or is mentioned in traditional folklore and sacred songs, because it is considered the dwelling place or embodiment of spiritual beings, because it is conducive to communication with spiritual beings. Or because it has other specified and continuing significance in Indian religion or culture. This importance may be of uni-tribal or multi-tribal importance, or may be considered important only to smaller segments of the society, such as chapters, clans, families or individuals.

Site: The location of an event, belief, or activity, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself maintains historic, archaeological, or
traditional cultural value regardless of the value of any existing structure. A site is anything that falls within the preceding definition and is more than an isolated occurrence. (Note: does not include isolated historic trash dumps less than ten to twenty years old).

## CULTURAL RESOURCE FINDINGS

Seventeen cultural resources were located within the project area. These resources include 16 in-use sites (IUS-1-16), and one newly recorded site (NM-R-32-32). The homeowners provided the dates of the in-use sites (1-16). The dates of homes and the description information are shown in Table 4. The specific locations of the cultural resources in the project area are depicted on U.S.G.S. quad maps: Borrego Pass, New Mexico, 1963 and Laguna Castillo, New Mexico 1963, (Figure 3).

TABLE 4 In-Use Sites

| Line | IUS | Description |
| :---: | :---: | :---: |
| Line B | 1 | Arlene Saunders/Frame hogan and an outhouse (2013) |
| Tap B-1 | 2 | Katherine Largo/Frame house, brick building w/ bathroom addition (1980's) |
| Tap B-1a | 3 | Curtis Sloan/Frame house, trailer and shed (1980's) |
| Tap B-1 | 4 | Benjamin Sloan/Frame house and an outhouse (1980's) |
| Line B | 5 | Louva Chavez/Frame grey house w/green roof (1980's), outhouse, brown frame stucco house(1980's) |
|  | 6 | Chee Largo/Cream frame house w/ bathroom addition (1980's) |
|  | 7 | Emerson Chavez/Cream Frame house w/brown roof (1980's), corral, and Shed |
|  | 8 | Gracie Mescal/Grey frame house w/ brown roof (1980's), solar power, and chicken coop |
| Tap B-3 | 9 | Lucita Yazzie/Trailer w/service pole (2000's) |
|  | 10 | Church/Gray frame building w/red trim - metal roof (1980's) |
|  | 11 | Fred Pablo/Rock house w/stucco frame addition (1970's), shed lean-to corral, sheep corral |
| Line B | 12 | Vicki Pablo/Tan frame house w/green roof (1990's) and an outhouse |
|  | 13 | Mary Pablo/Brown frame house (1980's), shed and a dog house |
| Tap B-2 | 14 | Dixie Largo/Cinder block house-red w/brown roof (1990's), tan metal warehouse in fenced area |
|  | 15 | Alexender Woody/Trailer, numberous cars (2000's) |
|  | 16 | Laura Yazzie/Frame House and a shed (1980's) |

## NEWLY DOCUMENTEDSITE:

SITE NO.: NM-R-32-32
LEGAL LOCATION: NE $1 / 4$ of Sec. 18, T 16 N, R 10 W, N.M.P.M.
UTM: NAD 83 Zone 13, N 3946 072m, E 234 768m
LAND STATUS: Tribal Trust
SITE ENVIRONMENT: The site is located on northeast slope of a northwest trending ridge.
SITE SIZE (L $\times$ W) $4 \mathrm{~m} \times 5 \mathrm{~m} \quad$ TOTAL AREA (Sq. m): 20 m
SITE DESCRIPTION: The site is a storage area for livestock dating about 1970's and consists of one feature ( $\mathrm{F}-1$ ) a pile of irregular sandstone blocks in an area $4 \times 4$ meters. The only artifact is a 55 gallon barrel cut down $1 / 4$ from the top. It appears to have been used as a feeder.


[^5]

Figure 4: Plan View of Site NM-R-32-32

## EVALUATION OF SIGNIFICANCE

The historic properties have been evaluated for their significance in regards to the National Register of Historic Places, the Archaeological Resources Protection Act, and the American Indian Religious Freedom Act.

## National Register

The National Register of Historic Places was created by the National Register Preservation Act in 1966. The Register was to be "...composed of districts, sites, buildings, structures and objects significant in American history, architecture, archaeology, engineering, and culture (Title I, Sec. 101)". A set of criteria was later established by which properties could be evaluated to determine if they merited placement on the Register. These regulations or guidelines are expressed in 36 CFR 60.4 and are as follows:
The quality of significance in American history, architecture, archaeology, engineering, and culture is present in district sites, buildings, structures, and objects that possess integnity of location, design, setting, materials, workmanship, feeling, and association and
(a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
(b) that are associated with the lives of persons significant in our past; or that embody the distinctive characteristics of a type, period, or method of construction,
(c) or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
(d) that have yielded, or may be likely to yield information important in prehistory or history.

There are certain classes of properties that are normally not considered eligible for Register consideration that include cemeteries, birthplaces or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original location, reconstructed historic buildings, buildings primarily commemorative in nature, and properties that have significance within the past 50 years. There are exceptions to these general exclusion guidelines (see 36 CFR 60.4).

Coupled with the above general criteria, the criteria of integrity must also be met for Register consideration. In this category integrity is evaluated in terms of its physical and locational values: does the site or its features possess the integrity needed to allow the site to meet the appropriate criterion for which it is considered significant? As an example prehistoric site that might be significant under criterion " $d$ " but has been apparently completely disturbed would probably not be considered to have any sufficient integrity for the fruitful investigation of important scientific question and would thus not be considered eligible for the Register. As another example, an old traditional hogan may be considered eligible for the Register under criterion " c " as embodying the distinctive characteristics of a type, period, or method of construction. If that hogan is surrounded by modern cinderblock houses and trailers, thus disrupting integrity of location, setting, and feeling, it could still be considered eligible for the Register if those aspects of integrity that directly relate to its significance under criterion "c" (e.g., design, materials, and workmanship), are intact.

The following presents a criterion-by-criterion evaluation of the cultural resources recorded by this project.
Criterion A: Sites NM-R-32-32 is not known to be associated with events that are significant in our past.
Criterion B: Sites NM-R-32-32 is not known to be associated with individuals that are significant in our past.
Criterion C: Sites NM-R-32-32 does not appear to represent a significant and distinguishes entity whose components may lack individual distinction.
Criterion D: Sites NM-R-32-32 is not likely to yield information important in history.
Exclusions: None
Eligible Sites: None

District Consideration: A District is defined as "... possessing a significant concentration, linkage, or continuity of sites, buildings, structures or objects united historically or aesthetically by plan or physical development (National Park Service 1986:41)". Because an exhaustive inventory and documentation program has not been completed, and the exact limits of the community are not yet known, the exact nature of any district boundary cannot be suggested at this time.

## Archaeological Resources Protection Act

Archaeological Resources Protection Act (ARPA) was established in 1979 with the express purpose being in part
"...to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites which are on public lands and Indian lands...". For a property to qualify for protection under ARPA, it must qualify as an "archaeological resource", which is defined as "... any material remains of human life or activity which are capable of providing scientific or humanistic understandings of past human behavior, cultural adaptation, and related topics through the application of scientific or scholarly techniques..."

Sites NM-R-32-32 do not meet the age criterion and are not of "archaeological interest" and do not merit protection under ARPA:

## American Indian Religious Freedom Act

The American Indian Religious Freedom Act (AIRFA) was established in 1978. Its purpose was to establish as United States policy the protection and the preservation of Native American rights to practice their traditional religions. The freedom of worship is to include but not be "...limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonies and traditional rites (Sec. 1)". Though there are a few specific examples and some generalizations that may be made, the identification of resources associated with this project that may have some application to AIRFA is difficult at best.

Sites NM-R-32-32 is not considered potentially important under AIRFA.

## DETERMINATION OF EFFECT

Pursuant to 36 CR 800.9, the undertaking has been evaluated for its effects on potentially National Register significant historic properties. This evaluation is also considered applicable to ARPA and AIRFA values as well.

Provided that the management recommendations discussed below are followed, this undertaking should have no effect on significant historic properties.

## MANAGEMENT RECOMMENDATIONS

It is recommended that compliance be granted for this undertaking. No further work is required for the project.

## General Project Recommendations

If any previously undetected cultural resources are discovered during the undertaking (e.g., pottery, bone, stone tools), all activity should cease in that area and the Navajo Nation Historic Preservation Officer (928 871-7880) should be immediately notified. Upon inspection of the remains, direction on how to proceed will be given pursuant to 36 CFR 800.11.

Upon completion of the project, the location of the significant cultural values within or directly adjacent to the final Right-of-Way should be placed on the final "as builts". These plans should carry the following or a similar notice: "Caution. Unauthorized disturbance of archaeological sites is prohibited. Criminal and civil penalties may apply". A copy of these final plans should be submitted to the Navajo Nation Historic Preservation Department for placement with the project file.

## REFERENCES

Navajo Nation Historic Preservation Department
2015 Navajo Nation Policy to Protect Traditional Cultural Properties. NNHPD, Window Rock, Arizona.
2015 Interim Fieldwork and Report Standards Guidelines, NNHPD, NNHPD, Window Rock, Arizona.
Van Valkenburgh, Richard F.
1941 Dine Bikeyah, U.S. Dept. of Interior, U.S. Indian Service, Navajo Agency, Window Rock, Arizona.

## Appendix

# NAVAJO NATION ARCHAEOLOGY DEPARTMENT <br> Site Survey and Management Forms 

SITENO: NM-R-32-32 DATERECORDED: February 22, 2014 COMPANY: CIO/DCD
ARCHAEOLOGISI: Denise R.E. Copeland
PROJECT NO.AND NAME: A Cultural Resource Inventory of the White Ridge Powerline Phase II and III, Littlewater Chapter, McKinley County, New Mexico DCD1 14-007

LEGALLOCATION: NE $1 / 4$ of Sec. 18, T 16 N, R 10 W, N.M.P.M.
UTM: NAD 83 Zone 13, N 3946 072m, E 234 768m
LAND STATUS: Tribal Trust
STATE: New Mexico County: McKinley CHAPTER: Littlewater
USGS MAPS REFERENCEAND DATE: Borrago Pass, NM 1963.
GROUND VISIBILITY: Good Visibility, General ground cover.
IOPOGRAPHY: The site is located on northeast slope of a northwest trending ridge.
DRAINAGE: Unnamed blue line drainage is located to the ca. 300 meters.
ELEVATION(ft): $6,970 \mathrm{ft}$ 2,124m SLOPE/DIRECTION: NE 3 degrees SOILTYPE: Sandy
VEGEIATIONPRESENT: The vegetation includes various grasses. CULTURAL
AFEILIATION(S): Historic Navajo SITETYPE: Special Activty RERIOD(S)OF
OCCUPATION (date if known): A.D. 1970's How dated?: **
SITESIZE(L *W): $4 \mathrm{~m} \times 5 \mathrm{~m}$ TOTAL_AREA(Sq,m): 20 sq m How determined?: Tape measured

## ARCHITECTUREPRESENT?: no Describe: none

ARTIEACTS OBSERVED/COUNTED?: Yes COLLECTION_MADE?: No RHOTOTAKEN?: No
SITE DESCRIPTION: The site is a storage area for livestock dating about 1970's and consists of one feature (F-1) a pile of irregular sandstone blocks in an area $4 \times 4$ meters. The only artifact is a 55 gallon barrel cut down $1 / 4$ from the top. It appears to have been used as a feeder.
CONDITION OF SITE: Fair (75\% undisturbed) Causes of Disturbance: Erosional and livestock grazing.
LOCATION OF SITERELATIVETO PROJECT AREA: The site is located on the Line B of the powerline.

EXIENT OF INVESTIGATIONTO DATE: Field recording only.

## SITE ASSESSMENT UNDER 36 CFR 60.4 (National Recister):

INTEGRITY: The site does not possess significant qualities of locational and physical integrity.
CRITERIAA-D: The site is not known to be associated with any events or persons that have made significant contributions to the broad patterns of our history or are significant in our past (criteria "a" and "b"), it does not appear to embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or that represents a significant distinguishable entity whose components may lack individual distinction (criterion " c ", and has not yielded nor yielded information important in history or prehistory (criterion "d").

EXCLUSIONS: N/A

## SITEASSESSMENT UNDER ARPA:

The site is not over 100 years old and should not be considered an "archaeological resource" nor "of archaeological interest".

## SITEASSESSMENT UNDER AIRFA: N/A

PROVIDEA SITEMAP: (Including site designation, north arrow, scale, recognizable features, landmarks and relationship to project area.) See attached map.

HOW CAN THE SITE BE REACHED?: See attached U.S.G.S. map.

OTHER COMMENTS: None.

Figure 2: Specific Location of the Cultural Resources along Line B, Taps B-1, B-1a, B-2, B-2a and B-3 of the White Ridge Powerline. Map is 7.5' Quadrangle Borrego Pass, NM 1963.


Figure 2: Specific Location of the Cultural Resources along Line B. Taps B-1, B-1a, B-2, B-2a and B-3 of the White Ridge Powerline. Map is 7.5' Quadrangle Borrego Pass, NM 1963.

Figure 4. Chapter Resolutions Requesting Assistance for the Construction of the 5.85 mile Phase IIWhiteridge Single-Pole 14.4kv Electrical Distribution Line from the Continental Divide Electric Cooperative and a Letter from the CDEC responding to the Chapter Request

## REBOLUTION OF THE

TRANBPORTATIOK AMD COMOUNITY DEVELOPKEATT COMIITEEE OF the matino mation council

Approving an Electric Enginearing and construction Agrocment Between the yavato Mation and the continental Divide Blectric Cooperatives, Inc. (CDBC) for the purpone of constructing zlectric Distribution Iines to Fifty-Four (54) Hoper in the Ifittiowatex Chapter compunity

## WHEREAB:

1. Pursuant to 2 N.N.C. Sections 420 and 423 (D) (3), the Transportation and Community Development Committee of the Navajo Nation Council is established and continued as a standing committee of the Navajo Nation council and is authorized to review, prioritize and approve capital improvement projects (CIP)funded by all funding sources; and
2. Pursuant to 2 N.N.C. Section $185(B)(2)$, the Transportation and Commity Development Committee of the Navajo Nation council is specifically authorized to approve contracts, expending funds to the extent or in such a manner available and provided in the approved budget of the Navajo Nation: and
3. Pursuant to Resolution CJA-04-98, the Navajo Nation Council appropriated $\$ 202,000.00$ for the purpose of constructing the Littlewater Chapter Powerline Extension to serve fifty-four (54) homes for which Account Number 3-28840-8785 is already established; and
4. An Electric Engineering and construction Agreement between the Navajo Nation and continental Divide Electric Cooperative, Inc. (CDEC) is developed and proposed for approval (attached hereto as Exhibit "A") which will enable CDEC to start the construction of the referenced powerline extension project.

## NON THEREPORE BE IT REAOLVED TEXT:

1. The Transportation and Community Development Committee of the Navajo Nation Council hereby approves the Electric Engineering and Construction Agreement between the Navajo Nation and Continental Divide Electric Cooperative, Inc. to construct the powerline extension to serve fifty-four (54) homes in the Iittlewater Chapter community in the amount of $\$ 202,000.00$.
2. The Transportation and Community Development Committee of the Navajo Nation Council further authorizes the President of the Navajo Nation to execute and carry out the purpose of this Electric Engineering and Construction Agreement.

## CERTIFICATIOS

I hereby certify that the foregoing resolution was duly considered by the Transportation and Community Development Committee of the Navajo Nation Council at a duly called meeting at Window Rock, Navajo Nation (Arizona), at which a quorum was present, and the same was passed by a vote of 5 in favor, 0 opposed, and 0 abstained, this 9 th day of october, 1998.


```
Motion:- Andrew Simpson
```

second: Albert Lee

## LITTLEWATER CHAPTER



## WHEREAS:

1. Pursuant to 26 N.N.C., Section 3 (A) the Littlewater Chapter is a duly recognized certified Chapter under the Navajo Nation Government, as listed at 11 N.N.C., part 1, section 10, and
2. Pursuant to 26 N.N.C., Section 1 (B) Littlewater Chapter is vested with the authority to review all matters affecting the community and to make appropriate correction when necessary and make recommendation to the Navajo Nation and other local agencies for appropriate actions, and
3. Littlewater Chapter has been awarded $\$ 202,000.00$ for White Ridge Phase 1 power line extension to serve 14 (fourteen) existing homes, and the agreement between Navajo Nation and Continental Divide Electric Cooperative, Inc needs to be executed; and
4. Littlewater Chapter obtained right-of-way consents for Navajo allotment lands and Navajo Nation lands and waiting for approval from Navajo Nation and BIA Realty for approval of Right-of-way easement.

## NOW, THEREFORE BE IT RESOLVED THAT:

1. Littlewater Chapter hereby respectfully the Navajo Nation Community Housing and Infrastructure Department to execute a contract between Navajo Nation and Continental Divide Electric Cooperative, INC for construction of White Ridge Phase 1 electrical power line within White Ridge area for fourteen (14) homes in Littlewater New Mexico.

## CERTIFICATION

WE HEREBY CERTIFY THAT THE FOREGOING RESOLUTION was duly considered by and moved for adoption by Verna Begay, seconded by Mary Pablo, thoroughly discussed and adopted by a vote of 35 in favor 00 , opposed and 01 abstained at a duly called meeting at Litthewater Chapter, Navajo Nation (New Mexico on this $23^{\text {rd }}$ day of May 2013.


Figure 5. Navajo Nation Fish and Wildlife Species of Concern Listing


NAVAJO NATION
Department of Fish \& Wildlife Nayajo Natural Heritage Program P.O. Box 1480

Window Rock, AZ 86515

Phone: 928.871.6472 * Fax: 928.871.7603 - http://nnhp.nndfw.org
Ben Sheily, President
Rex Lev Jimh Vice-President

10 May 2014
File*:14LTWC-01
Genevieve Castillo, Chaprer Manager
Littlewater Chapter
P.O. Box 1898

Crownpoint, NM 87313


NAVAJO ENDANGERED SPECIES LIST (NESL) INFORMATIONIFOR WAY IE 2014
PROJECT: WHITE RIDGE POWER LINE PHASE I, PHASE II, PHASE III LITTLEWATER, McKINLEY COUNTY, NM


Ms. Castillo:
The following information on species of concern ${ }^{1}$ is provided in response to your 10 March 2014 request concerning the subject project, which consists of the Continental Divide Electric Cooperative, Inc., proposed installation of 11.82 miles of power line to serve thirty-four (34) homes in the community of Littlewater, McKinley County, NM. Surface disturbance will be minimal and Right-of-Way Easement will be 30 feet wide. The proposed electrical lines will be along the existing community road.

Each 7.5-minute quadrangle containing project boundaries is addressed separately below. For potentially occurring species these species lists are quadrangle-specific rather than project-specific. Potential for species has been determined primarily on quadrangle-wide coarse habitat characteristics and species range information. Your project biologist should determine habitat suitability at the project site(s).

A total of eight ( 08 ) species both knowh and/or potential are included in this response. They are:

|  | SCIENTIFIC NAME | COMMON NAME | NESL <br> STATUS | FEDERAI STATUS AND/OR <br> *MBTA |
| :--- | :--- | :--- | :---: | :---: |
| 1. | Antilocapra americana | Pronghorn | $G 3$ |  |
| 2. | Aquila chrysactos | Golden Eagle | $G 3$ | MBTA |

[^6]| 3. | Buteo regalis | Ferruginous Hawk | G3 | MBTA |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 4. | Charadrlus montanus | Mountain Plover | G4 | ESA Proposed Threatened: MBTA. |  |
| 5. | Falco peregrinus | Peregrine Falcon | G4 | MBTA |  |
| 6. | Mustela nigripes | Black-footed Ferret | G2 | ESA Endangered |  |
| 7. | Strix occidentalis lucida | Mexican Spotted Owl | G3 | ESA Threatened; MBTA. |  |
| 8. | Vulpes macrotis | Kit Fox | G4 | Mry, |  |

*MBTA = Migratory Bird Treaty Act

## LAGUNA CASTILLO, NM 7.5-MINUTE QUADRANGLE

Project Location: - Littlewater/White Ridge P/L Project
Although the Navajo Fish and Wildlife Department (NFWD) has no record of species of concern occurring on or near the project site(s) at this cime, the potential for certain species of concern to occur needs to be evaluated.

Species of concern with potential to occur on the 7.5 -minute quadrangle(s) containing the project boundaries include the following:

1. Antilocapra americana
2. Aquila chrysactos
3. Buteo regalis
4. Charadrius montanus
5. Mustela nigripes
6. Vulpes macrotis

AREA 3 of The Biological Resource Land Clearance Policies \&s Procedures
Area 3-Low Sensitivity Wilddife Resources: This area has a low, fragmented concentration of species of concern. Species in this area may be locally abundant on islands' of habitat, but islands are relatively small, limited in number and well spaced across the landscape. (For detailed information regarding "Area 3' please refer to our website at nndfw.org).

BORREGO PASS, NM 7.5-MINUTE QUADRANGLE
Project Location: Littlewater/White Ridge P/L. Project
Although the Navajo Fish and Wildlife Deparment (NFWD) has no record of species of concern occurring on or near the project site(s) at this time, the potential for certain species of concern to occur needs to be evaluated.

Species of concern with potential to 0 ccur on the 7.5 -minure quadrangle(s) containing the project boundaries include the following:

1. Ancilocapra americana
2. Aquila chrysaetos
3. Buteo regalis
4. Falco peregrinus
5. Mustela nigripes
6. Strixoccidentalis lucida
7. Vulpes macrotis

AREA 3 of The Biological Resource Land Clearance Policies \& Procedures
Area 3-Low Sensitivity Wildlife Resources: This area has a low, fragmented concentration of species of
concern. Species in this area may be locally abundant on 'islands' of habitat, but islands are relatively small, limited in number and well spaced across the landscape. (For detailed information regarding "Area 3' please refer to our website at nndfw.org).

Potential for the black-footed ferret should be evaluated if prairie-dog towns of sufficient size (per NFWD guidelines) occur in the project area.

Potential for Puccinellia parishii should be evaluated if wetland conditions exists that contain white alkaline crusts.

Biological surveys need to be conducted during the appropriate season to ensure they are complete and accurate please refer to NN Species Accounts. ${ }^{4}$ Further questions pertaining to surveys should be referred to Species Account. Surveyors on the Navajo Nation must be permitted by the Director, NFWD. Contact Jeff Cole at (928) $871-6595$ for permitting procedures. Questions pertaining to surveys should be directed to the NFWD Zoologist (Chad Smith) for animals at $871-7070$ and Botanist (Andrea Hazelton) for plants at (928)523-3221: Questions regarding biological evaluations should be directed to Pamela Kyselka (Acting Environmental Reviewer) at 871-7065.

The powerline(s) should be designed according tothe Avian Power Line Interaction Committee's "Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006" (Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C. and Sacramento, CA).

Potential impacts to wetlands should also be evaluated. The U.S. Fish \& Wildlife Service's National Wetlands Inventory (NWI) maps should be examined to determine whether areas classified as wetlands are located close enough to the project site(s) to beimpacted. In cases where the maps are inconclusive (e.g., due to their small scale), field surveys nust be completed. For field surveys, wetlands identification and delineation methodology contained in the "Corps of Engineers Wetlands Delineation Manual" (Technical Report Y-87-1) should be used. When wetlands are present, potential impacts must be addressed in an environmental assessment and the Army Corps of Engineers, Phoenix office, must be contacted. NWI maps are available for examination at the NFWD's Natural Heritage Program (NHP) office, or may be purchased through the U.S. Geological Survey (order forms are available through the NHP). The NHP has complete coverage of the Navajo Nation, excluding Utah, at 1:100,000 scale; and coverage at 1:24,000 scale in the southwestern portion of the Navajo Nation.

The information in this report was identified by the NFWD's biologists and computerized database, and is based on data available at the time of this response. If project planning takes more than two (02) years from the date of this response, verification of the information provided herein is strongly recommended. It should not be regarded as the final statement on the occurrence of any species, nor should it substitute for on-site surveys. Also, because the NFWD's information is continually updated, any given information response is only wholly appropriate for its respective request.

For alist of sensitive species on the Navajo Nation in addition to the species listed on the Navajo Endangered Species List (NESL) please refer to our website at www.nndfw.org:

An invoice for this information is attached.

[^7]If you have any questions I may be reached at (928) 871-6472.


Sonja Detsoi, Wildlife Tech.
Natural Heritage Program
Department of Fish and Wildlife
xc: file/chrono



Figure 7. Biological Evaluation Report for the 5.85 mile Phase II-Whiteridge Single-Pole 14.4 kv Electrical Distribution Line (Project No. 50547, Littlewater Chapter, McKinley County, Navajo Nation, New Mexico

Biological Evaluation Survey and Report Conducted for the Navajo Nation Littlewater Chapter 5.85 mile Phase IIWhiteridge Single-Pole 14.4kv Electrical Distribution Line, Project No. 50547, in Littlewater Chapter, McKinley County, Navajo Nation, New Mexico


In the immediate foreground there is a fenceline that runs from south to north, with this aspect showing the southern portion of the ROW. Notice the mesa chain in the horizon to the right that makes up part of the Continental Divide. The two homes along this segment of road, on the left in the distance, are planned to receive electrical power. These homes were also in Photograph 1.

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August 15, 2014

## INTRODUCTION

The Navajo Nation Littlewater Chapter is the project sponsor for this project and they are based in Littlewater, New Mexico in the eastern portion of the Navajo Reservation. Under the National Environmental Policy Act, and a number of other federal United States environmental laws, Littlewater Chapter seeks compliance with the placement, construction, and maintenance of the proposed 5.85 mile Phase II-Whiteridge Single-Pole 14.4kv Electrical Distribution Line, Project No. 50547, in Littlewater Chapter, McKinley County, Navajo Nation, New Mexico. Upon successful survey of the 5.85 mile, 20 foot right-of-way (ROW), and associated land in the vicinity, searching potential habitat for listed species as made available by the Navajo Fish and Wildlife Department, recommendations will be made on how to avoid, prevent disturbance, and mitigate for the possible harm or destruction of identified rare, threatened and endangered species and their habitat in this project area. These species have been identified by the Navajo Fish and Wildlife Department Natural Heritage Program and they are based in Window Rock, Arizona, the tribal government capital of the Navajo Nation.

The 5.85 mile ROW, referred to as Phase II, is located in Littlewater Chapter, New Mexico on tribal trust and allotted land. The Littlewater Chapter, a part of the contiguous, larger tribal reservation, is part of the Navajo Nation and it is located in the northwestern part of New Mexico in McKinley County. The Phase IIWhiteridge Single-Pole 14.4 kv Electrical Distribution Line, is located on the United States Geological Survey 7.5' quadrangle maps entitled "Laguna Castillo, 1963" and "Borrego Pass, 1963". The legal description for the project tract can be found in the attached Environmental Assessment document (Project Description, Page $6)$.

The survey and the subsequent report are conducted in accordance with the National Environmental Policy Act (1970) and the Endangered Species Act (1973), as amended. Prior to any disturbance occurring at the proposed federally funded project site that is being proposed, the project site must be surveyed for threatened and endangered species so that they may be protected, and their habitat protected, from any undue harm caused by said disturbance, in this case construction, maintenance, and potential repair of the Phase I-Whiteridge Electrical Distribution Line. Other environmental laws are also considered when the project area and surrounding vicinity is surveyed since they are applicable to the project area also.

The Phase II-Whiteridge Electrical Distribution Line ROW is located on the Navajo Nation on Allotted, Tribal Trust Land and Bureau of Land Management Land. The proposed ROW route has never had distribution lines in this location before.

Fifteen homes and one church will receive electrical power along this ROW if project is approved.

Upon consultation with the Navajo Natural Heritage Program (NNHP), a section of the Navajo Fish \& Wildlife Department, they identified species of concern that either are known to occur on or near the site or have the potential to occur on or near the site. Species identified by the NNHP, and sought on or near the sites, are identified and listed in the letter from the Navajo Fish and Wildlife Department which can be found as Figure 7 in the Environmental Assessment document.

Eight species were identified by the NFWD as being known or having the potential to occur on or in the vicinity of the project ROW, and a listing of these species is as follows with their status under the Navajo Endangered Species List (NESL), and whether they are federally protected and their respective status under the Endangered Species Act (ESA), and Migratory Bird Treaty Act (MBTA):

Aquila chrysaetos (Golden Eagle); NESL G3; MBTA
Buteo regalis (Furruginous Hawk); NESL G3; MBTA
Charadrius montanus (Mountain Plover); NESL G4; ESA Proposed Threatened; MTBA
Antilocapra americana (Pronghorn); NESL G3
Mustela nigripes (Black footed Ferret); NESL G4; ESA Endangered
Falco peregrinus (Peregrine falcon); NESL G4; MBTA
Strix occidentalis lucida (Mexican Spotted Owl); NESL G3; ESA Threatened; MBTA
Vulpes macrotis (Kit fox); NESL G4

## METHODS

The entire 5.85 mile project ROW was hiked with potential and suitable habitat sought for each species of concern as identified by the Navajo Nation Fish \& Wildlife Department. Cliffs and buttes were scanned with binoculars and geology and soils were sought that would support plant species that may occur in this area that are on the Navajo Nation Fish and Wildlife Species of Concern listing. The sandstone mesas and cliffs found approximately 1 mile from the project site to the south, within line of site of the project ROW, were scanned for nests and the base of these mesas were hiked. Rare and threatened plant species often only grow on a particular geological formation or strata and thus, many times, these areas are sought before the plants are sought. Hiking of the site with a notebook recording plant species occurrence and noting topography and hydrology is conducted during this hiking survey, as well as documentary of the plants growing on or near the project site captured with photographs.
during this hiking survey, as well as documentary of the plants growing on or near the project site captured with photographs.

Mr. Steven Chischilly, Owner and Biologist, was out hiking the project site on June $16,17,20$, and July 24,2014 . The site was visited and photographs were taken of the site especially of the physical attributes that may become issues when considering construction and the potential for the site to provide habitat for the species of concern. Mr. Chischilly conducted a visual and hiking survey up to 1 mile from the project site, especially if it was felt that there may be potential nesting habitat available near the project site. Binoculars used were the Nikon 8x29, Pentax 10x20, and the digital camera used was the Canon PowerShot SX120 IS, and Canon Powershot S3 IS. Also, a measuring wheel was also used to determine the sizes of prairie dog towns located in or along the ROW.

The general flora and fauna encountered were identified during the survey of the site. Specifically, preferred habitats for each species listed on the attached (Exhibit "C") Navajo Nation Fish \& Wildlife Species of Concern list were sought by either looking for the species themselves or by seeking suitable habitat. Species encountered during this survey are listed in the next section of this report.

## RESULTS

Raptor species such as the golden eagle were actively sought during the pedestrian survey of this project area. Potential nesting sites were scanned while the surveyor hiked the project area and all suitable nesting habitat within 1 mile from the site was surveyed.

## Golden Eagle (Aquila chrysaetos)

No golden eagles nor were there nests located during the survey of this project ROW. The mesas and buttes were scanned and so were the larger mesas to the south that make up the Continental Divide. Binoculars were used to search the cliffs for nests. Ascent up the sandstone cliffs near the homesites was completed as well as a hiking survey along the base of the mesas that appeared to be tall enough to provide nesting habitat.

Golden eagles breed across a great range in North America, the northern mountains of the Brooks Range in Alaska to south central Mexico. They are also found and do breed in Europe and Asia. Golden eagles are resident in all western states, and this population increases in the winter when migratory birds come in from the northern breeding regions. According to Kochert and Parmeter, in New Mexico golden eagles breed in suitable habitat through-out the state (Kochert et al. 2002, Parmeter et al. 2002).

When golden eagles are breeding, they are found primarily in mountainous areas and canyons. This is often associated with mesas and rimrock terrain overlooking open deserts and grasslands. In New Mexico, the most common nesting areas are in steep-walled mountain canyons, although cliffs are the most common nesting areas. Trees or man-made structures are sometimes used. In general, the nest must be located in an area that provides them with a wide view of the area surrounding the nest or on prominent, high outcrops. Nesting location is highly positively correlated with hunting grounds and is a very important factor in nest selection (Kochert et al, 2002).

Golden eagles are carnivores and they are a bird of prey. They hunt in open grasslands or in shrubland habitat with a tendency to avoid agricultural areas. This species primarily subsists on rabbits, hares, ground squirrels, and prairie dogs, even though it is capable of killing larger prey such as small ungulates and young domestic livestock. Golden eagles establish and defend territories of 7.8 square miles to 11.6 square miles $\left(20-30 \mathrm{~km}^{2}\right)$. The nesting period extends for more than 6 months from the time the eggs are laid until the young fledge from the nest. An average of only 1 young per year is produced, with up to 15 over a lifetime of rearing young (Kochert et al 2002).

Upon talking to some of the residents, they stated that they do not see eagles in the area, only ravens and sometimes red-tailed hawks. The author of this report has surveyed and inventoried golden eagles throughout the Navajo Nation while employed with the Navajo Fish and Wildlife Department and while hired as a private consultant.

Due to the distance from the project site (more than 1 mile) to any potential nesting sites, and the low level of disturbance that will occur with this project construction, no negative impact upon this species is expected with the construction, maintenance and operation of this electrical distribution line.

## Ferruginous Hawk (Buteo regalis):

The ferruginous hawk is a broadly distributed raptor of western North America. The ferruginous hawk population has been increasing in the United States, however, they are highly sensitive to disturbance and loss or alteration of native grassland habitat. They breed across western North Amerca, into southern Canada and south to central Arizona and New Mexico. During the winter they are found in Colorado and Kansas and northern to central Mexico.
"In New Mexico, the ferruginous hawk is a breeding species across the northern two-thirds of the state, and may be found statewide during winter. Breeding generally occurs north from Clovis in the eastern plains, north from San Antonio in the Rio Grande valley, and north from the Plains of San Agustin in the western part of the state. Nesting in isolated areas further south is possible. High nesting
densities of Ferruginous Hawks have been observed in the Estancia Valley (Bechard and Schmutz 1995, Cartron et al. 2002).

Ferruginous Hawks occur in open areas containing broad expanses of prairie grassland or shrub-steppe vegetation. Landscapes with low to moderate agricultural coverage (less than 50\%) may be used for nesting and foraging, and agricultural fields may serve as important foraging areas due to high prey densities (Leary et al. 1998, Dechant et al. 2001). The species also uses transitional and edge areas between grassland and juniper savannah or pinyon-juniper woodland. It avoids areas of intensive agriculture or high human disturbance (Bechard et al. 1990).

Nesting sometimes occurs in elevated locations on the ground, particularly in broad and undisturbed grassland areas. Above-ground nesting is common in New Mexico, and occurs most frequently in isolated tree stands or rock outcrops (Stravers and Garber 1998). Power poles or other vertical structures, including artificial platforms, are also sometimes used. Non-ground-nesting hawks appear somewhat less sensitive to surrounding land use (Bechard et al. 1990). In eastern New Mexico, Ferruginous Hawks often use old homestead trees for nesting (D. Svingen, pers. comm.). In the northwest part of the state, nesting often occurs on rock spires. In woodland edge habitat, flat-topped junipers with thick support branches are a preferred nest substrate (Stravers and Garber 1998).

Nesting activities begin in early to mid-March; young fledge from late June to early July. Territory and nest site re-occupancy is common, and one of several nests within a territory may be used in alternate years. Clutch size is typically 2-4. Birds are easily disturbed during the breeding season, and usually will not reinitiate nesting if a clutch is lost or abandoned (Bechard et al. 1990, Bechard and Schmutz 1995). Estimates of home range size vary from 3-8 square kilometers in the Columbia River Basin and Great Basin, to 90 square kilometers in Washington (Janes 1985, Leary et al. 1998). Range-wide, density and productivity are closely associated with cycles of prey abundance (Bechard and Schmutz 1995). Ferruginous Hawks feed primarily on small mammals, especially ground squirrels, prairie dogs, and rabbits. In New Mexico, wintering Ferruginous Hawks show a strong association with prairie dog colonies (Bak et al. 2001)." http://nmpartnersinflight.org//ferruginoushawk.html

Nesting ferruginous hawks have been encountered and studied by the author in the Bisti Badlands on northwestern New Mexico and on the coal mining lease lands of Broken Hills Proprietary near Farmington, NM. They nest atop sandstone spires and in remote ravines where little to no human contact is the most probable.

No ferruginous hawks were observed during this field survey, nor were any nests found that would be utilized by this species. Marginal to suitable nesting habitat
does exist within 1 mile of the project vicinity for they do nest on sandstone outcrops and spires, however, with the survey of the project vicinity and the surrounding mesas, no negative effect upon the ferruginous hawk is expected with the construction, maintenance, and use of this electrical distribution line.

## Mountain Plover (Charadrius montanus):

The mountain plover is a grassland shorebird species that is native to the western Great Plains and the Colorado Plateau. Habitat loss and significant population declines has occurred since the 1970s.
"In New Mexico, the mountain plover breeds primarily in the northeast quadrant, from Las Vegas and Mosquero north in Harding and Union Counties and north of Tres Piedras in Taos County. It also breeds occasionally at Santo Domingo Pueblo and sporadically in the western half of the state from the Plains of San Agustin west to Quemado and north to the Farmington area (Craig et al. 1985). Ligon (1961) reported extensive breeding grounds in Roosevelt County, Lea County, and on Otero Mesa in Otero County, but the species has not been reported breeding in these areas for decades. Mountain Plovers may be encountered widely across the state in appropriate habitat during spring and fall migration."


The diagram above shows the wintering and breeding range for the mountain plover in the western United States and northern Mexico.
"Mountain Plovers nest in prairie habitat used historically by large herbivore assemblages including bison, pronghorn, and prairie dogs. They prefer large, flat grassland expanses with sparse, short vegetation, and bare ground (Knopf and Miller 1994). The species is primarily associated with shortgrass prairie dominated blue grama, often mixed with buffalo grass or western wheatgrass (Knopf 1996). It also occupies semi-desert scrub and grassland habitats, dominated by short Atriplex and Artemisia species, in areas west of the Great Plains (Shackford 1991).

Mountain Plovers exhibit a strong association with prairie dog colonies, though there appears to be no obligate relationship (Knowles et al. 1982). The species nests in heavily grazed areas, or on patches of fallow or recently plowed ground or areas which mimic these conditions. In Colorado, shortgrass pastures grazed heavily in summer were used for foraging and nesting; however, Mountain Plovers may be excluded by extreme or long-term overgrazing (Dechant et al. 2001). A rangewide study found nesting in fallow or planted fields (particularly winter wheat) to be fairly common (Shackford et al. 1999). In native habitats, nests are usually located in disturbed sites with $30 \%$ or more bare ground (Knopf and Miller 1994). Burned areas may provide suitable nesting habitat until denser vegetation is reestablished. Nests in New Mexico are often located in overgrazed grassland patches, on gravelly ground with very short cover and scattered shrubs interspersed with bare areas (Tolle 1976). Nests are often constructed near rocks, cow pies, or clumps of vegetation (Knopf and Miller 1994).

Mountain Plovers are loosely colonial in breeding. In Colorado, estimated plover densities of 8 adults per square kilometer were reported (Wunder et al. 2003). Average reported density for a variety of Wyoming sites was 4.5 adults per square kilometer (Plumb et al. 2005). Plovers arrive on their New Mexico breeding grounds in early March, and most depart by August. Egg-laying begins mid- to lateApril. Renesting may occur following nest failure (Knopf 1996)."
http://nmpartnersinflight.org/mountainplover.html
The author has not had the chance to work with this bird species and has never seen this bird species in its natural environment although it does say in the literature that they at times nest as far north as Farmington, NM down to Quemado, NM.

No mountain plovers were observed during this field survey, nor were any nests found that would be utilized by this species. Due to the lack of suitable habitat, as described above, for nesting in the vicinity of the project site, and the proximity to a busy dirt road less than a quarter mile from the project ROW, no negative effect upon the mountain plover is expected with the construction, maintenance, and use this proposed electrical distribution line.

## Peregrine Falcon (Falco peregrinus):

Peregrine falcon have made a remarkable recovery since their population numbers plummeted in the 1950s through the 1970s caused by organochlorine pesticide contamination, in particular DDT which is a pesticide and bioaccumulates and causes egg shell weakness. The peregrine falcon is a fairly rare breeder in New Mexico, and is vulnerable to human disturbance around nest sites.

The Peregrine Falcon is found throughout the world and inhabits larges parts of the north and southern hemispheres. They have reoccupied their original range
as they have become more and more prevalent after the ban of DDT in the United States in 1972, and worldwide is was banned for agricultural use by the Stockholm Convention. Peregrines are distributed in clumps and patches across the entire north American continent from the Pacific to the Atlantic, and from northern Alaska to Canada and then to southern Mexico (White et al 2002). In New Mexico, they breed in the mountains and river canyons of western New Mexico east to the Sangre de Cristo, Sandia/Manzano, and Sacramento mountains; it is a rare visitor to the lower elevations statewide (Williams 1999, Parmeter 2002).

The peregrine falcon occupies many biomes and in the western United States it generally occupies mountain and canyon habitats including high elevations above $10,000 \mathrm{ft}$. Breeding areas are associated with water and they nest of cliffs in general between 50-200 m ( $\sim 50-218 \mathrm{yds}$ ) in height being preferred. Peregrines also nest on tall buildings instead of cliffs (White et al 2002).
"In New Mexico, almost all nests are constructed on ledges on relatively tall cliffs, in remote areas with minimal human disturbance. The same nest location is often re-used from year to year. Clutch size is typically 3 or 4 , and a single brood per season is raised. Annual productivity may be variable due to changes in abiotic conditions and prey abundance (White et al. 2002). Peregrine Falcons prey mostly or entirely on birds. In New Mexico, a variety of locally available species are taken, including doves, swifts, flickers, jays, meadowlarks, and others. At one aerie, remains of 62 bird species were identified (S. Williams, unpubl. data). Peregrine Falcons pass through the state on migration from March-May, and July-November. Most breeding activity takes place from April-June" (White et al, 2002).

The author has found a nesting pair of peregrine falcon when conducting a survey in the Carrizo Mountains on the Navajo Nation. The peregrine was in pursuit of a passerine bird species and the eyrie was located later that morning on the side of a cliff approximately 300 feet high. Navajo Nation Fish and Wildlife were contacted and the eyrie was located on a map for them.

No peregrine falcons were observed during this field survey, nor were any nests or eyries found that would be utilized by these species. Due to the lack of high cliffs for nesting and the lack of bird species needed for prey items generally associated with a water supply in the vicinity of the project site, and the fact that cliffs in excess of 300 feet are located more than 1 mile away from the project ROW, no negative effect upon the peregrine falcon is expected with the construction, maintenance, and use of this electrical distribution line.

## Black Footed Ferret (Mustela nigripes):

"The black-footed ferret is 18 to 24 inches long, including a 5 to 6 inch tail. It weighs only one-and-a-half to two-and-a-half pounds, with males slightly larger than females. The black-footed ferret is well adapted to its prairie environment. Its color
and markings blend so well with grassland soils and plants, that it is hard to detect until it moves. It is a slender, wiry animal with a black face mask, black feet, and a black-tipped tail. The rest of its short, sleek fur is a yellow-buff color, lighter on the belly and nearly white on the forehead, muzzle, and throat. It has short legs with large front paws and claws developed for digging. The ferret's large ears and eyes suggest it has acute hearing and sight, but smell is probably its most important sense for hunting prey underground in the dark.

New Mexico counties in which this species is known to or believed to occur include Colfax and Taos counties, and in Arizona, the counties which are known to or believed to have black footed ferrets include Coconino and Yavapai counties.

Black-footed ferrets are highly specialized predators that depend on prairie dogs for food and shelter. More than 90 percent of the ferrets' diet is made up of prairie dogs. Ferrets and prairie dogs live in prairie dog towns in underground tunnels called burrows.

Black-footed ferrets require prairie dog burrows for shelter. Prairie dogs use prairie and grassland habitat ranging from the mid-west to the western United States. They are considered a key indicator species for the health of prairie and grassland habitat. In addition to the black-footed ferret, many species reside in prairie dog burrows including burrowing owls, snakes, lizards, mice and a variety of insects.

There are five different species of prairie dogs in North America. Currently, the Gunnison's prairie dog is the only species found in Arizona. The black-tailed prairie dog was previously found in south eastern Arizona, but was extirpated in the early 1900s.

Ferrets select their territories based on high prairie dog densities, so biologists determine prairie dog numbers prior to releasing captive animals. They use the Density Mapping Method, which requires transecting through prairie dog towns while counting and recording the activity of the burrows using a global positioning system (GPS). The data and GPS points are downloaded to generate a map showing high quality prairie dog habitat." Arizona Game and Fish, 2013 http://www.azgfd.gov/w c/blackfooted ferret.shtml

Due to the lack of prairie dog burrows or towns in the vicinity of the project site, within at least 0.5 miles, no negative effect upon the black footed ferret is expected with the construction, maintenance, and use of electrical distribution line. Additionally, according to Mr. Chad Smith, Zoologist, with the Navajo Fish and Wildlife Department, linear projects are not of great concern when they go through prairie dog towns and that of more concern are projects that disturb large tracts of
the towns (Personal Communication, 2014). No negative impact upon the blackfooted ferret is expected.

## Mexican Spotted Owl (Strix occidentalis lucida):

"Unlike most owls, Mexican spotted owls have dark eyes. They are an ashychestnut brown color with white and brown spots on their abdomen, back and head. Their brown tails are marked with thin white bands. Young owls less than 5 months old have a downy appearance. Females are larger than males.

Spotted owls are residents of old-growth or mature forests that possess complex structural components (uneven aged stands, high canopy closure, multi-storied levels, high tree density). Canyons with riparian or conifer communities are also important components. In southern Arizona and New Mexico, the mixed conifer, Madrean pine-oak, Arizona cypress, encinal oak woodlands, and associated riparian forests provide habitat in the small mountain ranges (Sky Islands) distributed across the landscape. Owls are also found in canyon habitat dominated by vertical-walled rocky cliffs within complex watersheds, including tributary side canyons. Rock walls with caves, ledges, and other areas provide protected nest and roost sites. Canyon habitat may include small isolated patches or stringers of forested vegetation including stands of mixed-conifer, ponderosa pine, pine-oak, pinyon-juniper, and/or riparian vegetation in which owls regularly roost and forage. Owls are usually found in areas with some type of water source (i.e., perennial stream, creeks, and springs, ephemeral water, small pools from runoff, reservoir emissions). Even small sources of water such as small pools or puddles create humid conditions. Roosting and nesting habitats exhibit certain identifiable features, including large trees (those with a trunk diameter of 12 inches (in) (30.5 centimeters (cm)) or more (i.e., high tree basal area)), uneven aged tree stands, multi-storied canopy, a tree canopy creating shade over 40 percent or more of the ground (i.e., moderate to high canopy closure), and decadence in the form of downed logs and snags (standing dead trees). Canopy closure is typically greater than 40 percent. Owl foraging habitat includes a wide variety of forest conditions, canyon bottoms, cliff faces, tops of canyon rims, and riparian areas. Juvenile owls disperse into a variety of habitats ranging from high-elevation forests to pinyonjuniper woodlands and riparian areas surrounded by desert grasslands. Observations of long-distance dispersal by juveniles provide evidence that they use widely spaced islands of suitable habitat which are connected at lower elevations by pinyon-juniper and riparian forests.

Owls feed on small mammals, particularly mice, voles, and woodrats. They will also take birds, bats, reptiles and arthropods. The Mexican spotted owl is a "perch and pounce" predator, using elevated perches to find prey items using sight and sound. They can take prey on the wing, particularly birds. Most hunting is at night, however, there are some reports of diurnal foraging.

Mated pairs are territorial. The breeding season activity centers tend to be smaller than the non-breeding season activity centers, with considerable overlap between the two. Adults may or may not leave the territory during the winter. Most adults remain on the same territory year after year. Juveniles leave their natal territory in September, and while they are capable of moving long distances, many successfully establish themselves nearby. Some juveniles will travel through a variety of vegetation communities until they settle down. Distribution: The owl occupies a broad geographical area, but does not occur uniformly throughout its range. Instead, the owl occurs in disjunct localities that correspond to isolated mountain systems and canyons. The owl is frequently associated with mature mixed-conifer (Douglas-fir (Psuedotsuga menziesii), white fir (Abies concolor), limber pine (Pinus flexilis) or blue spruce (Picea pungens)), pine-oak (ponderosa pine (Pinus ponderosa) and Gambel oak (Quercus gambellii)), and riparian forests (various species of broadleaved deciduous trees and shrubs). Ninety-one percent of known owls existing in the United States between 1990 and 1993 occurred on land administered by the U.S. Forest Service, the primary administrator of lands supporting owls. Most owls have been found within the 11 National Forests of Arizona and New Mexico. It is unknown why Colorado and Utah support fewer owls.

Mated pairs of owls defend a breeding territory at least during the nesting season (March through August). Clutch size is small (generally 1 to 3 eggs), and eggs hatch in early May. A second clutch may be laid if the first fails. The females brood the young owlets almost constantly the first couple of weeks, then may be gone hunting for several hours a day. Owlets fledge at 4 to 5 weeks old (early to mid June), and leave the nest before they can fly, moving to the tree branches or the ground while still under parental care. Dispersal from the nest area usually occurs from mid-September to early October. Mexican spotted owls breed sporadically, and not all birds nest every year. Local conditions, particularly for the prey base, may govern nesting success.

Actions that open up or remove mature or old-growth forests (logging, wildfire, road or site construction that results in fragmentation of the forest) are detrimental to the local owl population. Human activity (hiking, shooting, off-road vehicle activity) in or near nesting, roosting, or foraging sites may result in abandonment of an area, and indirectly may affect habitat parameters from trampling, vegetation removal, or increased fire risk." United States Fish and Wildlife Service, 2013. http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B074

The author has worked with Mexican spotted owls in the past and worked approximately 6 summers conducting inventories and surveys for this species throughout the Navajo Nation including the Carrizo Mountain, Chuska Mountains, Navajo Canyon, Navajo Mountain, and Black Mesa. Nests were located in Navajo

Canyon, Buffalo Springs, Crystal, Falling Iron Cliffs, to name a few locations on the Navajo Nation.

Due to the lack of potential habitat within 1 mile of the project ROW, no negative effect is expected upon this species with the construction, maintenance, and use of this proposed electrical distribution line.

## Pronghorn (Antilocapra Americana)

## Geographic Range

"Antilocapra americana is endemic to North America and distributed throughout the treeless plains, basins, and deserts of western North America, from the southern prairie provinces of Canada, southward into the western United States and to northern Mexico. Distribution of populations within this range is discontinuous. In 1959, a population was introduced to Hawaii. However, by 1983 the population was roughly 12 individuals and headed for extinction. (IUCN, 2008;
Stocker, 1985)

## Habitat

Pronghorns are primarily found in grassland, sage scrub or chapparal, and desert. The southern portion of their range consists mainly of arid grasslands and open prairies. Throughout the rest of their range they are common in sage scrub and chaparral as well, areas of dense shrubs with tough leaves. Pronghorns are particularly dependent on sage brush for forage in these areas. Pronghorn feed primarily on sage, forbs, and grasses. They have also been known to consume cacti in some areas. There is an overlap in forage preferences with domestic sheep and cattle, so some competition for food occurs. Overgrazing by sheep has been implicated in pronghorn die offs, especially in winter. Pronghorn habitat ranges from sea-level to about 3500 m . Their need for free standing, fresh water varies with the moisture content of the vegetation they consume. They may have to travel a great distance to find a water source. In winter, northern populations depend heavily on sage brush. Pronghorn are commonly found along wind-blown ridges where vegetation has been cleared of snow, although they will dig through snow with their hooves to get to vegetation. (Anderson, 2002; Bleich, et al., 2005; Feldhamer, et al., 2004)

- Range elevation 0 to $3,350 \mathrm{~m}$

Physical Description

Pronghorns are small ungulates with barrel-shaped bodies. Females stand 860 mm at the shoulder and males 875 mm at the should. Females are approximately 1406 mm in body length and males are approximately 1415 mm . The tail is up to 105 mm long and ears are up to 143 mm long. Their body weight is from 35 to 70 kg , depending on sex and age. Their hair is dense and very coarse and is airfilled, providing excellent insulation. Guard hairs are hollow and underlain by finer, shorter underfur. Guard hairs are erectile for heat regulation. As more air becomes trapped in fur, the more they are insulated from external temperatures. Their dorsal fur is a rufous brown and they have creamy underbellies, rumps, and neck patches. Males have short black manes on the neck, from 70 to 100 mm in length, as well as a neck patch and a black stripe that runs across the forehead from horn to horn. Females lack these black facial patches, but have a small mass of black hair around their nose. Their ears are small and point slightly inward at the tip. Pronghorns have a patch of white, erectile fur on their rumps that is visible at great distances. The mucous membranes and eyelashes are coal black. Southern populations are paler in overall color than northern populations. The horns are erect, with a posterior hook and a short anterior prong. The prong gives rise to the common name "pronghorn". This pronged pattern is unique to this species. The horn is a keratinized sheath, black in color, and is deciduous. Horn sheaths grow over a bony extension of the frontal bone, which is now called the cancellous bone in ungulates. A new sheath forms under the old, which splits and is dropped just after the rut each year. Both sexes have horns, although the horns of females are generally small or absent, and never exceed ear length. Female horns average about 120 mm and the prongs are not prominent. The horn begins to grow at the age of six months and will be shed by 18 months. The maximum horn height for males will occur within 2 to 3 years of age and will average 250 mm , exceeding the length of the ear. (Feldhamer, et al., 2004; Hays, 1868; Hildebrand and Goslow, 2001; Hill, et al., 2004; O'Gara, 1978; Schroeder and Robb, 2005; Stocker, 1985)

Pronghorn limbs are specialized for cursoriality, giving them enhanced speed and endurance. They are the fastest known New World mammal, traveling at speeds of $98 \mathrm{~km} / \mathrm{h}$ when sprinting, and can hold a sustained speed of 59 to 65 $\mathrm{km} / \mathrm{h}$. The advantages to having speed and endurance include the ability to forage over large areas, to seek new food sources when familiar sources fail, and the ability to escape predators. Pronghorns have unguligrade foot posture, which lengthens the legs by allowing them to stand on the tips of their digits. The length of the radius bone is as long, or longer, than the femur. The ulna is reduced and partially fused to the radius. The clavicle in ungulates has been lost and the scapula has been reoriented to lie flat against the side of their chest where it is free to rotate roughly $20^{\circ}$ to $25^{\circ}$ in the same plane in which the leg swings. The ulna and radius have been reduced to eliminate the twisting and rotating of the elbow. The reduction of bone and associated muscles in the distal limbs decreases limb weight, giving them more speed. Pronghorns have modified their
joints to act as hinges allowing only motion in the line of travel. This has been done by introducing interlocking spines and grooves in their joints. All these adaptations have made pronghorns excel in cursorial locomotion, but they can no longer jump because they have lost the suspension mechanism that cervids have. This explains their apparent fear of fences. (Feldhamer, et al., 2004; Hays, 1868; Hildebrand and Goslow, 2001; Hill, et al., 2004; O'Gara, 1978; Schroeder and Robb, 2005; Stocker, 1985)

The dental formula of Antilocapra americana is $0 / 3-0 / 1-3 / 3-3 / 3$, where incisors and canines only occur on the lower jaw. Pronghorns have hypsodont crown height; discernable roots do not occur, allowing the cheek teeth to be ever growing. An approximate age when the molars erupt varies slightly; the first comes in at 2 months and the second and third come in around 15 months of age. Replacement of incisors varies as the first is replaced at 15 months, the second at 27, and the third at 39 months. Canines are replaced between 39 and 41 months. Premolars are all replaced at 27 months of age. The sequence of tooth eruption, replacement, and wear is used to estimate the age of pronghorns. Cementum annuli analysis of the first permanent incisor is used for older age classes. (Feldhamer, et al., 2004; Hays, 1868; Hildebrand and Goslow, 2001; Hill, et al., 2004; O'Gara, 1978; Schroeder and Robb, 2005; Stocker, 1985)

Maximal rate of oxygen intake in pronghorns determines the peak at which the animal can synthesize ATP by aerobic catabolism. This then determines how intensely the animal can exercise. Pronghorns are an extreme example of evolutionary specialization for high oxygen consumption. When comparing body weight to weight-specific consumption of oxygen, pronghorns have values three times higher than the that expected for their body size. This high oxygen consumption makes pronghorns Earth's fastest sustained runner. Unlike cheetahs, also one of the fastest animals on Earth, pronghorns produce ATP required to run fast aerobically. They have exceptionally large lungs for their body size and exceptional abilities to maintain high rates of blood circulation. (Feldhamer, et al., 2004; Hays, 1868; Hildebrand and Goslow, 2001; Hill, et al., 2004; O'Gara, 1978; Schroeder and Robb, 2005; Stocker, 1985)" AnimalUniversity, University of Michigan
http://animaldiversity.ummz.umich.edu/accounts/Antilocapra_americana/
The author asked about this species to several residents in the project ROW and they informed the author that they do occur in this area, but more to the north and east of the proposed project ROW about maybe 50 miles away. No tracks, scat, or any pronghorn individuals were seen during the survey of the project ROW, however they have been seen during a separate time by the author near Ojo Encino, NM. Due to the proximity to homesteads, dogs, highways, and humans, this species might not prefer to inhabit the area along this project ROW. Due to the lack of sightings, tracks, scats, and residents did say that do not occur
in this area, no negative effect on this species is expected with the construction, maintenance, and use of this proposed electrical distribution line.

## Kit Fox (Vulpes microtus)

The kit fox has been thought by some to be a subspecies of the swift fox. This fox currently inhabits desert and semi-arid regions between the Sierra Nevada Mountains and the Rocky Mountains and on down into Baja California and the North Central states of Mexico; it is also found in the San Joaquin Valley of California.

Several features distinguish the kit fox from the swift fox. Kit fox ears are larger and set closer together than the swift fox. The head of the kit fox is slightly broader between the eyes and the snout is narrower. The kit fox has a longer tail, relative to the body, than the swift fox.

Their diet consists of the most readily available small mammals in the region, especially rodents and rabbits. The relationship of kit fox populations to populations of banner-tailed kangaroo rats (Dipodomys spectabilis) in the San Joaquin Valley and to black-tailed jack rabbits (Lepus californicus) in Utah have been well documented.

The length of the kit fox ranges from 730-840 mm, and their weight ranges from $1.4-2.7 \mathrm{~kg}$ (http://www.mnh.si.edu/mna/image info.cfm?species id=428).

The author has observed red-tailed foxes on the campus of Navajo Technical University in the past 5 years. One summer they denned in a pile of concrete construction rubble on the outskirts of campus. That was the only time this species was denning this close to humans, within a Navajo community with many dogs present.

No kit foxes were found or observed during the survey of this project ROW. There were dens that were located that appeared to be used by canine animals, however no animals were ever seen during this survey. Due to the lack of finding significant evidence that this species exists in the project vicinity, no negative impact on this species is expected with the construction, operation, and maintenance of this electrical distribution line construction.

No other species of concern as identified by the Navajo Nation Fish and Wildlife Department were encountered during the survey of this 4.050 mile Phase IWhiteridge Single-Pole 14.4kv Electrical Distribution Line ROW. No negative effect upon the identified species of concern is expected for the listed by the Navajo Fish and Wildlife Department. No wetlands were found within 1 mile of the project

ROW, no wetlands are expected to be negatively affected with the construction, operation, and maintenance of this proposed electrical distribution line.

Plant species encountered during the pedestrian field survey of the site resulted in the following flora and fauna being found and noted:

Flora:
One Seed Juniper (Juniperus osteosperma)
Pinyon Pine (Pinus edulis)
Indian Ricegrass (Oryzopsis hymenoides)
Rubber Rabbitbrush (Chrysothamnus nauseosus)
Snakeweed (Gutierrezia sarothrae)
Yucca (Yucca glauca)
Jumping Cholla (Opuntia fulgida)
Tamarisk (Tamarisk species)
Big Sage (Artemisia tridentata)
Alkali Sacaton (Sporobolu airoides)
Four Wing Saltbush (Atriplex canescens)
Wolfberry (Lycium pallidum)
Tarbush (Flourensia cemua DC.)
Mormon Tea (Ephedra vinidis)
Silverleaf Nightshade (Solanum elaeagnifolium Cav.)
Blue Grama (Bouteloua gracilus)
Fauna:
Eastern fence lizard (Scleroporus undulafus)
Golden eagle (Aquila chrysaetos)
Mourning Dove (Zenaida macroura)
No species of concern were found during the survey of the project site as identified by the Navajo Nation Fish and Wildlife Department. It must be understood that the time at which this survey was conducted was not optimal in terms of seeking particular species, however, based upon the experience of the surveyor concerning where these species have been found and their respective preferred habitat, and the fact that no threatened or endangered species were encountered during this survey, it is highly unlikely that species of concern will be negatively affected by the proposed action. Additionally, the time of year that these sites were surveyed, namely late spring and early spring, is a very good time to seek the golden eagle and the peregrine falcon since this is the time that they are most active and vocal. No negative affect upon identified rare, threatened or endangered species is expected with the construction of this project as described earlier.

During the survey of this site, no flowing water or standing water was encountered and no riparian areas including riparian plant species were encountered. No negative impact is expected upon wetlands with the construction, maintenance,
and operation of this proposed project since no wetlands were encountered nor found in or along the project ROW.

## CONCLUSION

No raptor species, or other species of concern, were encountered during this survey of this proposed electrical distribution line. No negative impact upon species of concern are expected with the construction, operation, and maintenance of this electrical distribution line to these rural homes.

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Biological Evaluation Conducted By:

Steven Chischilly, Owner/Biologist
Dine' Bi Keyah Environmental
PO Box 2084
Crownpoint, NM 87313
Navajo Nation
Attachments
Note: The following attachments can be found in the Attachments portion of the Environmental Assessment
General Map of the Navajo Nation
General Map of Eastern Navajo Agency and the general location of the Project
Site
Project Map of Site
Fish \& Wildlife Species of Concern Listing

## Photographs 2 to 8 of the Project Site and Vicinity

(Photograph 1 is on page 12)


Photograph 2. This is a picture of an old bridge located in an arroyo near the project ROW. The wet soil and water ponding is a result of the photograph being taken during the annual monsoons.


Photograph 3. This area experiences periodic flooding during the monsoon season and during winter snowmelt. The homes in the distance will be receiving the electrical line being proposed by this project and the horse presumably belongs to a local family.


Photograph 4. This area is inundated by water during the monsoon season. The dirt road to the left is used as the access to the homes along the project ROW and the homes on the ridge in the distance are expected to receive electrical power from this proposed project. The area that is in the foreground is not a wetland since it does not meet the criteria for a wetland such as hydric soils, hydrophilic plants, and water does not pond on this site for more than a week or so.


Photograph 5. This is common topography in the project vicinity, well eroded and rounded mesa with xeric vegetation found throughout the area. These areas were checked for nesting birds, including the Ferruginous Hawk and Golden Eagle.


Photograph 6. This photograph shows an old shed near a homesite, not the orange stake in the foreground signifying this homesite (not the shed) will be getting electrical power. This photograph was taken facing a northerly direction.


Photograph 7. A hazard of working in the deserts during the summer months, especially near prairie dog towns and trash dumps.


Photograph 8. Valley in which a large prairie dog town was found. This photograph was taken facing east however the prairie dog colony runs from left to right up this valley. This prairie dog town is not in the ROW of this proposed project.


Photograph 9. This photograph is of a large den and may be a coyote's den or fox. The tracks that lead into and out of the den were canine. This den was found very close to the project ROW.


Photograph 10. This photograph is of a prairie dog den that has been dug out by either badgers or dogs/coyotes. This is seen by the claw marks found on the sides of the burrow. This burrow was found in out of the project ROW up a wide, shaliov*valley with plenty of grasses and shrubs.

RIGHT-OF-WAY CHECK LIST


1. Terms \& Conditions: (a) General


Check to see if ROW terms and conditions form contains standard provisions.

## 1:XAMPLES:

(a) compliance with Navajo and federal laws
(b) no waiver of sovereign immunity
(c) consent to Navajo Nation jurisdiction

Note! NTUA rights-of-way do not generally require compensation to the Navajo Nation unless it serves a commercial purpose. If the terms and conditions provide for compensation make sure that the grantee provides the BIA with a copy (proof) of any payment to the Navajo Nation within at least five days of payment.
2. Term -- twenty (20) years or less.

EXCEPTIONS:
(a) IHS P.L. 86-121 projects can be perpetual
(b) BIA roads 75 years
(c) N.M./AZ State roads can be perpetual ie. as long as it is used for state highway
(d) If an applicant is seeking longer than a twenty (20) year term, the applicant must explain why in writing in order that the Navajo Nation can make an informed
 decision whether to recommend it, unless a longer term is preauthorized.
3. Variation on standard terms and conditions.

(d) other
4. Resources and Development Committee Resolution.

Resources and Development Committee has final approval authority -- Nae bid iyati

Resolution not necessary where right-of-way is sought by another governmental entity.

## EXCEPTIONS:

(a) IIIS P.L. 86-121 rights-of way do not need a Resources and Development Committee Resolution - see Resolution RCF-41-95. NLD can give consent if terms similar to approved form
(h) NTUA rights-of-way do not need Resources and Development Committee approval The NLD has been delegated the authority to consent on behalf of the Navajo Nation provided that the right-of-way terms and conditions are consistent with the approved standard form and the application is supported by:

1. Letter of application
2. Legal description
3. Right-of-way location maps
4. Biological Resources Compliance Form
5. Cultural Resources Compliance form
6. Field Clearance Documents
7. Chapter Resolution
8. Environmental Assessment (EA) and/or Addendum
9. Other pertinent documents if required


See RCD -104-10
5. Check exhibits for land user/permittee consent
(a) trust land needs grazing permittees' consents If some permittees consent and others do not then this must" be explained in the resolution/legislation
(d) check to see if surface damages, if sought, has been placed in an escrow account

grazing official sign off if trust land
(f) NAPI consent if the proposed right-of-way is within NAPI lands.
6. Check to see if all required Divisions, Departments, etc., have reviewed and surnamed the SAS package.


Project Review Office/ Navajo Land Department
Fish \& Wildlife Department
Historic Preservation Department
Navajo Environmental Protection Agency
Minerals


## Division of Natural Resources

7. If additional terms and conditions are suggested by NNEPA. Fish \& Wildlife Department or others, try to determine if they are necessary. The concerns may already be covered

8. Check the content of proposed resolution or legislation to ensure it expressly incorporates in a Resolved Clause the right-of-way terms and conditions. Check to see if there is a legal description and whether it appears to be accurate.
9. Check to see if all documents are attached:


Environmental $A$ assessment (EA) unless categorical exclusion applies (IHS projects)

EA for thane I 3 Archaeological clearance Inveatoiy Report.
Cultural Resources Compliance Form
(d) Threatened and Endangered Species/Biological Survey(e) Letter from the Fish \& Wildlife Department or an EA indicating that a biological survey is not necessary i.e. (the project will not have a significant It) Biopact). Radical Resources Comphance torn.
ID (G) FONSI for both phase I 3 Phase. II


AA/10-9-2012

Ben Shelly President Rex Lee Jim Vice President

May 17, 2013

Jerry DeGroat, Realty Specialist<br>Bureau of Indian Affairs<br>Eastern Navajo Agency<br>P.O. Box 328<br>Crownpoint, New Mexico 87313

Dear Mr. DeGroat:
The Littlewater Chapter, d.b.a. Continental Divide Electric Cooperative, Inc. (CDEC) 200 E. High St., P.O. Box 1087, Grants, New Mexico 87020, has submitted a permission to survey request to conduct a walk-on survey for maps, archaeological, environmental and ethnographic surveys and studies for proposed eiectric right-of-way on Navajo Nation Trust Lands in the Littlewater Chapter vicinity, New Mexico. The proposed survey is more particularly described on the attached survey map.

The request for Littlewater Chapter, d.b.a. CDEC is hereby granted, subject to the following terms and conditions:

1. The rights of local Navajo people will be respected and protected.
2. Personnel with the Division of Natural Resources (DNR) will retain the right to monitor the field survey.
3. The field survey will be conducted at your own risk. The Navajo Nation will not be held liable for any personal injury or property damage that might occur during the course of the field survey.
4. Vehicles will be kept on existing roads and trails. Surface disturbance will be kept to an absolute minimum while conducting the field survey.

Letter to Jerry DeGroat
May 17, 2013
Page two
5. The Permittee will comply with all applicable Tribal and Federal laws and regulations.
6. Approval of right-of-way, business site lease or any actual construction is not implied.

$$
\begin{aligned}
& \text { Sincerely, } \\
& \text { Howard Phillip Draper, Program \& } \\
& \text { Specialist } \\
& \text { Navajo Land Department, DNR }
\end{aligned}
$$

Hpd
ATTACHMENTS
Xc: $\quad \begin{aligned} & \text { project file } \\ & \text { Littlewater Chapter }\end{aligned}$

Approving the Grant of Right-of-Way to Continental Divide Electric Cooperative, Inc., for the "Littlewater Chapter/Whiteridge" power line projects Phase I and II located on Navajo Nation Trust Lands in Litttlewater Chapter, McKinley County, New Mexico.

WHEREAS:

1. Pursuant to 2 N.N.C. Section 501 (B)(2), the Resources and Development Committee of the Navajo Nation Council has authority to grant final approval for all land withdrawals, nonmineral leases, permits, licenses, rights of way, surface easements and bonding requirements on Navajo Nation lands and unrestricted (fee) land. This authority shall include subleases, modifications, assignments, leasehold encumbrances, transfers, renewals, and terminations; and
2. The Continental Divide Electric Cooperative, Inc., P.O. Box 1087, Grants, New Mexico 87020, has submitted a Right-of-Way (RQW) application for Littlewater Chapter/Whiteridge power line projects Phase I and II on, over and across Navajo Nation Trust Lands in Littlewater vicinity, McKinley County, New Mexico attached hereto and incorporated herein as Exhibit "A"; and
$9,420.88$ 4.33
3. The proposed Phase I is 21.775 .13 feet long, 20 feet wide, consisting of 10.25 acres, more or less, and the proposed Phase II is $30,89.34$ feet long, 20 feet wide, consisting of 5.86 acres, more or less, located in/various Sections of Township 16 North, Ranges 10-11 West, and

4. The Project Review Section with the Navajo Land Department has obtained a document from Mr. Herbert Enrico Sr., the District 20 Land Board, attached hereto as Exhibit "C"; and
5. The environmental and archaeological studies have been completed and attached hereto and made a part hereof.

NOW, THEREFORE, BE IT RESOLVED THAT:

1. The Resources and Development Committee of the Navajo Nation Council hereby approves the Grant of Right-of-Way to Continental Divide Electric Cooperative, Inc. for the "Littlewater Chapter/Whiteridge" power line projects Phase I and II located on Navajo Nation Trust Lands in Littlewater Chapter, McKinley County, New Mexico. The location is more particularly described on the survey map attached hereto as Exhibit "B."
2. The Resources and Development Committee of the Nayajo Nation Council hereby approves the ROW subject to, but not limited to, the following terms and conditions attached hereto and incorporated herein as Exhibit "D."
3. The Resources and Development Committe of the Navajo Nation Council hereby authorizes the President of the Navajo Nation to execute any and all documents necessary to affect the intent and purpose of this resolution.

I hereby certify that the foregoing resolution/was duly considered by the Resources and Development Committee of the Navajo Nation Council at a duly called meeting at Window Rock, Navajo Nation (Arizona), at which a quorum was present and that the same was passed by a vote of $\qquad$ in favor, opposed, and $\qquad$ abstained, this $\qquad$ day of $\qquad$ 2016.

| George Jim | Paul D. Pablo | June Barbone | Leonard Tsosie | Herbert Enrico, Sr. |
| :--- | :--- | :--- | :--- | :--- |
| President | Vice President | Secretary/Treasurer | Council Delegate | Land Board Member |

July 182016

Howard Draper
Project Review
Natural Resource
Navajo Nation
Window Rock, AZ

Dear Mr. Draper;
Continental Divide Electric/Little Water Chapter has submitted 164 package for Navajo Nation consent for the electrical power extension, will service 34 homes within White Ridge/Little Water Chapter and is a CDBG project, but is funded by Navajo Nation Supplemental.

Due to time limit for construction and to completion of the project, applicants are requesting Navajo Nation Consent to be grant as soon as possible so the customers will be able to enjoy having electricity in their homes. The Allotment owners and BLM has given their consents, house wiring has been completed.

I appreciate your time and effort to help the chapter with this important project, should have any questions, please contact me at 505/879-3918


Lucinda Henry
Right of way Agent

## THE NAVAJO NATION PROJECT BUDGET SUMMARY





[^0]:    *I understand and accept the conditions of compliance, and acknowledge that lack of signature may be grounds for the Department not recommending the above described project for approval to the Tribal Decision-maker.

[^1]:    In the event of a discovery ["discovery" means any previously unidentified or incorrectly identified cultural resources including but not limited to archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs or practices], all operations in the immediate vicinity of the discovery must cease, and the Navajo Nation Historic Preservation Department must be notified at (928) $871-7198$.

[^2]:    1 Dine Bi Keyah Environmental. Environmental Assessment Conducted for the 4.05 Mile Phase I Whiteridge Single Pole 14.4 kV Electrical Distribution Line Project No. 45161 in Littlewater Chapter McKinley County Navajo Nation New Mexico. December 2015.
    2 Dine Bi Keyah Environmental. Environmental Assessment Conducted for the 5.85 Mile Phase II Whiteridge Single Pole 14.4 kV Electrical Distribution Line Project No. 50547 in Littlewater Chapter McKinley County Navajo Nation New Mexico. December 2015
    3 USDOI BIA Navajo Region. FONSI EA-16-12796 4.05 Mile Phase I Whiteridge Electric Distribution Line Project No. 45161. May 2016.
    4 USDOI BIA Navajo Region. FONSI EA-16-12795 5.85 Mile Phase II Whiteridge Electric Distribution Line Project No. 50547. May 2016.

[^3]:    ${ }^{1 n}$ Species of concern" include protected, candidate. and other rare or otherwise sensitive species, including cerlain native species und species of economic or cultural significance. For each species, the following uribal and fedcral statuses are indicated: Navajo Endangered Species List (NESL), federal Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), and Eagle Protection Act (ELPA). No legal protection is afforded species with only ESA candidate or NESL group 4 status; please be aware of these species during surveys and inform the NFWD of observations. Docurnentation that these species are more numerous or widesprend than currently known, and addressing these species in project planning and management is important for conservation und may contribute to onsuring they will not be uplisted in the fiture. Species without ESA or NESL. legal protection (e.g., NESL, group 4 species) are only included in responses on a regular basis and may nol be included in this response. Please refer to the NESL for a list of group 4 species: contact me if you need a copy.

[^4]:    ${ }^{4}$ Available free of chargc on our website at http://nnhp.navajofishandwildlife.org/

[^5]:    Figure 3: Specific Location of the Cultural Resources along Line B, Taps B-1, B-1a, B-2, B-2a and B-3 of the White Ridge Powerline. Map is 7.5' Quadrangle Borrego Pass, NM 1963.

[^6]:    ${ }^{1}$ "Species of concern" include protected, candidate, and other rare or otherwise sensitive species, including certain native species and species of economic or cultural significance. For each species, the following tribal and federal statuses are indicated: Navajo Endangered Species List (NESL), federal Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), and Eagle Protection Act (EPA). No legal protection is afforded species with only ESA candidate or NESL group 4 status; please be aware of these species during surveys and inform the NFWD of observations. Documentation that these species are morc numerous or widespread than currently known, and addressing these species in project planning and management is important for conservation and may contribute to ensuring they will not be uplisted in the future. Species without ESA or NESL legal protection (e.g., NESL group 4 species) are only included in responses on a regular basis and may not be included in this response. Please refer to the NESL for a list of group 4 species; contact me if you need a copy.

[^7]:    ${ }^{4}$ Available free of charge on our website at http://nnhp.navajofishandwildlife.org/

