# WATER-RIGHT DOCKET

## El Morro National Monument

**Docket No:** 2

***ASHCROFT WELL.***

**Preliminary Docket Information**

04-17-1996: note to file re: elmo water right dockets nps-wrb personnel: andrew hautzinger

**NOTE TO FILE:**
RE: ELMO Water Right Dockets
NPS-WRB Personnel: Andrew Hautzinger
Date: April 17, 1996

During review of the two dockets associated with ELMO, I repeatedly came across references to a *SIEMENS WELL*, which was associated with a potential land acquisition of property of the same name. I called the park, and spoke with a Ken Adams, the Maintenance Supervisor (505) 783-4226. I asked him what wells were currently in use, and what information could He provide on wells in the vicinity. Mr. Adams informed me that the park only uses one well now, and, he has no information about any other wells in the area. This one well appears to be the *ASHCROFT WELL*, based on the location Mr. Adams provided. The *ASHCROFT WELL* is covered by ELMO Docket No. 0002. ELMO Docket No. 0001 concerns a *DAVIS BROTHERS WELL* which, according to Mr. Adams, is no longer in use (indeed, he indicated no knowledge of this well). Similarly, the *SIEMENS WELL* is not in use, nor does Mr. Adams have any knowledge of its existence; whether it, and the land associated with it, were ever acquired remains to be determined.

ACTION: Without further information, the creation of a third docket relating tothe *SIEMENS WELL* is not warranted. All materials pertaining to the *SIEMENS WELL* has been encorporated into ELMO Docket No. 2.

To assist Mr. Adams, I am sending him extra copies of various maps & drawings, which plot some nine test well locations within the park, including the wells discussed above.

**State Water Rights Documentation**

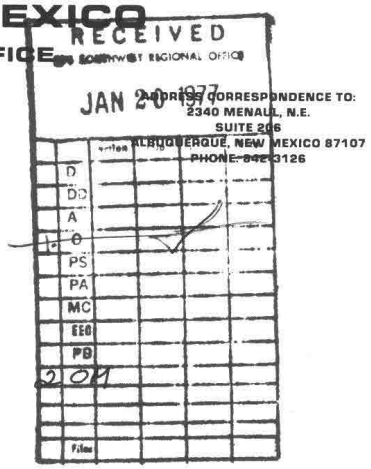
01-18-1977: letter regarding attached copy of declaration of owner of underground water right, which has been accepted for filing

# STATE OF NEW MEXICO
## STATE ENGINEER OFFICE
### DISTRICT 1

S.E. REYNOLDS
STATE ENGINEER

ADDRESS CORRESPONDENCE TO:
2340 MENAUL, N.E.
SUITE 206
ALBUQUERQUE, NEW MEXICO 87107
PHONE: 842-3126

January 18, 1977




FILE: Miscl. 32-5

United States of America
El Morro National Monument
P. O. Box 728
Santa Fe, New Mexico 87501

Gentlemen:

Attached is your copy of declaration of owner of underground water right, which has been accepted for filing.

Please refer to this number in all future correspondence.

Very truly yours,

J. L. Williams
Supervisor, District 1

JLW/kc
Encl: Declaration (1)

cc: Santa Fe w/Declaration

L54
Elmo

00-00-0000: declaration of owner of underground water right

'77 JAN 17 PM 2 07

Revised December 1975

IMPORTANT — READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM.

STATE ENGINEER OFFICE
SANTA FE, NEW MEXICO

# Declaration of Owner of Underground Water Right

HC-66961--$1.00--SF Undeclared
BASIN NAME

Declaration No. Miscl. 32-5 Date received January 17, 1977

STATEMENT

1. Name of Declarant United States of America (El Morro National Monument)
Mailing Address P.O. Box 728
County of Santa Fe, State of New Mexico

2. Source of water supply shallow water aquifer
(artesian or shallow water aquifer)

3. Describe well location under one of the following subheadings:
a. NW ¼ NW ¼ NW ¼ of Sec. 6 Twp. 9N Rge. 14W N.M.P.M., in Valencia County.
b. Tract No. _____ of Map No. _____ of the _____.
c. X = _____ feet, Y = _____ feet, N. M. Coordinate System _____ Zone in the _____ Grant.
On land owned by _____.

4. Description of well: date drilled before 10 Dec. 1959 by Mr. Ashcroft driller Roy Reynolds depth 205 feet. outside diameter of casing 6-5/8 inches; original capacity 38 gal. per min.; present capacity 13 gal. per min.; pumping lift 300 feet; static water level 149.6 feet (above) (below) land surface; 5 Oct. 1961 make and type of pump Model #3209P201, REDA, submersible 32 stage, 240 volt, single phase, 2HP
make, type, horsepower, etc., of power plant commercial power
Fractional or percentage interest claimed in well Total

5. Quantity of water appropriated and beneficially used 13AF
(acre feet per acre) (acre feet per annum)
for municipal (El Morro National Monument) purposes.

6. Acreage actually irrigated 0 acres, located and described as follows (describe only lands actually irrigated):

| Subdivision | Sec. | Twp. | Range | Acres Irrigated | Owner |
|---|---|---|---|---|---|
| All | 5 | 9N | 14W | - | U.S.A. |
| N½, NW¼ | 6 | 9N | 14W | - | U.S.A. |
| SE¼, NW¼ | 6 | 9N | 14W | - | U.S.A. |
| NE¼, SW¼ | 6 | 9N | 14W | - | U.S.A. |
| NE¼ | 6 | 9N | 14W | - | U.S.A. |
| N½, SE¼ | 6 | 9N | 14W | - | U.S.A. |

(Note: location of well and acreage actually irrigated must be shown on plat on reverse side.)

7. Water was first applied to beneficial use 1906 and since that time
month day year
has been used fully and continuously on all of the above described lands or for the above described purposes except as follows: "This notice is given as a matter of comity, cooperation and information. It does not indicate consent to the jurisdiction of the State in regard to the rights of the United States to the use of water described in this notice. This notice is not intended to affect previously vested rights under either Federal or State law to the use of this water or any other water"

8. Additional statements or explanations
This well and land was purchased by U.S.A. from Rulon A. and Ivy M. Ashcroft on 1/12/62. This well replaced a well located in the SW¼, SE¼, NE¼ Sec. 6, T9N, R12W NMPM which was originally drilled in 1939 by U. S. The Ashcroft well was reamed from a 6" to 8" in 1961 by U.S.A.

I, Theodore Thompson, Acting Regional Director, NPS being first duly sworn upon my oath, depose and say that the above is a full and complete statement prepared in accordance with the instructions on the reverse side of this form and submitted in evidence of ownership of a valid underground water right, that I have carefully read each and all of the items contained therein and that the same are true to the best of my knowledge and belief.

Theodore Thompson, declarant.

by: _____

Subscribed and sworn to before me this 14th day of January, A.D. 19 77

My commission expires June 10, 1978 Notary Public

FILED

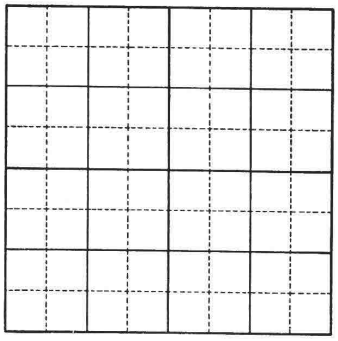
'77 JAN 18 AM 8 55
STATE ENGINEER OFFICE
ALBUQUERQUE, N. MEX.

UNDER NEW MEXICO LAW A DECLARATION IS ONLY A STATEMENT OF DECLARANT'S CLAIM. ACCEPTANCE FOR FILING DOES NOT CONSTITUTE APPROVAL OR REJECTION OF THE CLAIM.

**Locate well and areas actually irrigated as accurately as possible on following plat:**

**Section (s)** ..... **Township** ..... **Range** ..... **N. M. P. M.**

See accompanying map



**INSTRUCTIONS**

Declaration shall be executed (preferably typewritten) in triplicate and must be accompanied by a **$1.00 filing** fee. Each of triplicate copies must be properly signed and attested.

A separate declaration must be filed for each well in use.

All blanks shall be filled out fully. Required information which cannot be sworn to by declarant shall be supplied by affidavit of person or persons familiar with the facts and shall be submitted herewith.

Secs. 1-3. Complete all blanks.

Sec. 4. Fill out all blanks applicable as fully as possible.

Sec. 5. Irrigation use shall be stated in acre feet of water per acre per year applied on the land. If used for domestic, municipal, or other purposes, state total quantity in acre feet used annually.

Sec. 6. Describe only the acreage actually irrigated. When necessary to clearly define irrigated acreages, describe to nearest 2½ acre subdivision. If located on unsurveyed lands, describe by legal supdivision "as projected" from the nearest government survey corners, or describe by metes and bounds and tie survey to some permanent, easily-located natural object.

Sec. 7. Explain and give dates as nearly as possible of any years when all or part of acreage claimed was not irrigated.

Sec. 8. If well irrigates or supplies supplemental water to any other land than that described above, or if land is also irrigated from any other source, explain under this section. Give any other data necessary to fully describe water right.

If additional space is necessary, use a separate sheet or sheets and attach securely hereto.



## Land History

00-00-0000: the within deed is accepted on behalf of the united states as of january 17, 1962, under the authority contained in the

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

The within deed is accepted on behalf of the United States as of January 17, 1962, under the authority contained in the Department of the Interior and Related Agencies Appropriation Act, 1961 (74 Stat. 104), and delegated by sections 1 and 7 of Departmental Order No. 2640, as amended, delegating authority to Assistant Directors of this Service to accept deeds.

Henry A. Jolson

Assistant Director

00-00-0000: warranty deed

R 1 4 7 Copy

...E WARRAN... Rev. 11-59 -New Mexico Statutory Form

# WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS; THAT WE, RULON A. ASHCROFT and IVY M. ASHCROFT, husband and wife, of the County of Valencia, State of New Mexico, For and in consideration of EIGHTEEN THOUSAND DOLLARS ($18,000) ~~XXXXXXXXXXXX~~ paid, grant to THE UNITED STATES OF AMERICA and its assigns the following described real estate in Valencia County, New Mexico.

The North half of the Northwest quarter (N½NW¼) of Section Six (6) consisting of Lot 1 and the Northeast quarter of the Northwest quarter (NE¼NW¼) of Township Nine (9) North, Range Fourteen (14) West, New Mexico Principal Meridian, containing 79.12 acres more or less.

TOGETHER with all water and water rights thereon or appurtenant thereto, of whatsoever nature, that may be owned, claimed, or subject to use by the vendors and which may pertain to, or be used in connection with, the above described lands.

This conveyance is made with warranty covenants, except: SUBJECT TO a right-of-way for New Mexico Highway, State Route No. 53, which is described in Grant of Right of Way Easement dated May 20, 1950, and filed for record June 7, 1950, in Book R/W 1, page 200 Records, Valencia County, New Mexico.

AND subject to reservations as contained in patent number 1011588, dated February 1, 1928, from the United States of America.

with warranty covenants.

WITNESS our hands and seals this 12th day of January, 19 62.

(Seal) Rulon A. Ashcroft (Seal)

(Seal) Ivy M. Ashcroft (Seal)

## ACKNOWLEDGMENT FOR NATURAL PERSONS

STATE OF NEW MEXICO }
COUNTY OF ... } ss.

The foregoing instrument was acknowledged before me this ... day of ..., 19...

by ... (Name or Names of Person or Persons Acknowledging)

My commission expires ...

(Seal) ...

COUNTY
FOR RECORDER'S USE ONLY

STATE OF NEW MEXICO }
COUNTY OF VALENCIA } ss.
This instrument was filed for record on the ... day of JAN 17 1962 at 3:46 o'clock P.M. and duly recorded in Book ... Page ... of the records of said County.
Fee ... Deputy Recorder

DEXED




Notary Public

THE VALLIANT CO ALBUQUERQUE N. M. ARIZ.

00-00-0000: land to be acquired sheet

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
BRANCH OF LANDS

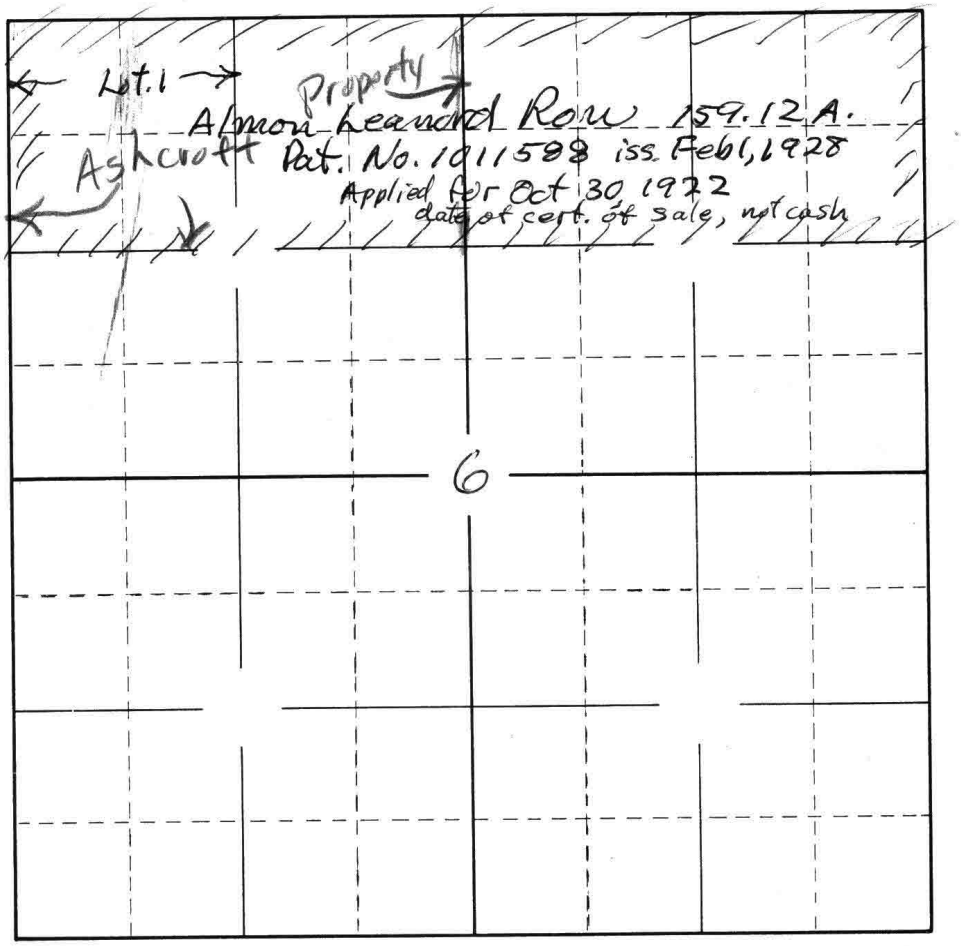
State N. Mex. **LAND TO BE ACQUIRED** Tract No. _____

County _____ Deed No. _____

Civil Subdivision _____ Area 159.12 acres El Morro Name of Park or Area

Patentee Owner Almon Leonard Row Address _____

Section 6 Township 9 N Range 14 W Meridian N. Mex Pr.




☐ Land to be acquired
☐ Private Land
☐ Federal Land
☐ State Land
☐ County Land

Scale: One Inch Equals _____ Remarks

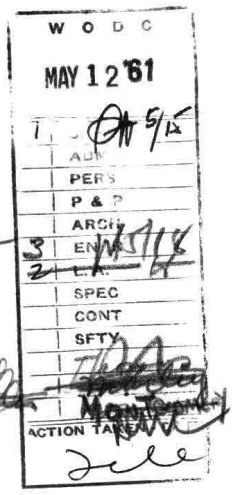
Patent Record (Tract Book) Reviewed
1/29/62 HEDR

**Administrative Agreements**

05-10-1961: memorandum to director regarding permit to install utility facility within public right-of-way

Region Three
Santa Fe, New Mexico

MAY 10 1961




Memorandum

To: Director

From: Assistant Regional Director

Subject: Permit to install utility facility within Public Right-of-Way, El Morro National Monument

Attached for the Alien Docket No. 2 is a copy of a permit to install utility facility within public right-of-way received from State Highway Commission of New Mexico. This permit in particular allows us to cross State Road No. 53 with the waterline from the Ashcroft well to headquarters area.

We have inserted copy of this in Alien Docket No. 2 and by copies of this memorandum are sending this permit to WODC and Superintendent El Morro National Monument for insertion in their dockets.

(SIGNED)
George W. Miller
Assistant Regional Director

In duplicate

Attachments (2)

Copy to: Chief, WODC (2)
Superintendent El Morro National Monument

33

00-00-0000: application for permit to install utility facilities within public right of way

Form MP-2
2-15-61

4246

# APPLICATION FOR PERMIT TO INSTALL UTILITY FACILITIES WITHIN PUBLIC RIGHT OF WAY

TO: STATE HIGHWAY COMMISSION
P. O. Box 1641
Santa Fe, New Mexico

☐ Renewal Permit
☒ Original Permit
(Check one)

1. The undersigned National Park Service

address; Region Three Office, P. O. Box 1728, Santa Fe, New Mexico
herewith makes application to install the following utility facility:
4" conduit for installation of 2" water line to cross State Road 53 near El Morro, New Mexico.

(water, sewer, oil, gas, steam, electric, telephone or other)

(Also give voltage, pressure, type of liquid if other than water or sewage)

in the following location: NE¼NW¼ Sec. 6, T. 9 N., R. 14 W., N.M.P.M. and crosses the centerline of State Road 53 at Station 6940+55.

(Give County, number and name of highway, highway engineering stations, section, township, range or other information so location can be readily ascertained.)

2. For the purposes of this application "Within" shall be construed as meaning "on, over, across, under, above and along."

a. "Chief Highway Engineer" shall be construed as meaning the "Chief Highway Engineer or his representative," hereinafter referred to as Engineer.

b. "State" shall be construed as meaning: the "State of New Mexico, all governmental subdivisions, boards, commissions, agencies, officers and employees thereof."

c. "Applicant" shall be construed as meaning: the "Individual, firm, corporation, association, governmental subdivision, or other organizations making this application, or the successors of any of the above."

d. "Commission" shall mean State Highway Commission.

e. "Utility facility" shall be construed as meaning, but not limited to, any publicly, privately cooperatively, municipally or governmentally owned facility used for carriage, distribution or transmission of water, gas or electricity, either for power, or communications, oil and products derived therefrom, sewage, steam and other products carried by means of pipelines, conduits, wires, culverts, ditches or conveyors or other methods.

3. This application is for a crossing subsurface

(Crossing or parallel) (Subsurface or overhead)

installation.

A "crossing installation" is one where the smaller angle of intersection between the utility line and the center line of the highway is greater than 45°; where the angle of intersection is less than 45° the installation will be deemed parallel.

4. If application is for a parallel installation, justification as to why the utility facility cannot be located on private right of way must be furnished. (Use blank space below paragraph 27.)

5. Applicant proposes to install parallel utility facility: -

feet inside the - right of way line.
(north, south, east, west)

If it is proposed to install overhead utility facility more than two (2) feet or subsurface utility facility more than six (6) feet inside right of way line, give reasons for doing so: (Use blank space below paragraph 27.)

6. The top of all sub-surface crossing installations of utility facilities must be at least thirty-six (36) inches below lowest point of the highway cross-section along the alignment of the utility installation.

The top of all parallel utility installations must be at least thirty-six (36) inches below grade along the alignment of the utility installation.

If applicant proposes installation at lesser depth, give reasons. (Use blank space below paragraph 27.)

7. Applicant proposes to cross right of way which has a finished permanent type surface pavement —asphalt, concrete or similar paving, by -

(Jacking, boring, tunneling or pavement cut)

a. If applicant desires to cross by making a pavement cut, give reasons for doing so:_____

(Use blank space below paragraph 27)

Where application for paving cut is justified the application will be held in abeyance pending receipt of cash bond in an amount to be fixed by the Engineer to insure replacement of paving and compaction of soil in a satisfactory manner. Bond may be waived and the amount will be based on type and age of paving to be cut and the total area involved. Maximum bond will be $250.00.

8. There is attached hereto a diagramatic or dimensioned drawing showing the location of proposed installation, width of right of way, height or depth of utility facility above or below grade, survey ties and other pertinent features. If application is for a parallel installation, the general status of land abutting right of way should be indicated as to buildup, irrigated, grazing, residential, commercial and setbacks, etc. Installations on bridges or other highway structures require special detail drawings.

9. Applicant desires this permit to be in effect for 25 years.

Permit will not be issued for a period longer than 25 years; must be renewed by Applicant upon expiration and the burden of timely renewal is on the Applicant.

10. The signing of the application by the Engineer and return to Applicant shall validate this application as a permit.

OVERHEAD INSTALLATIONS:

11. Applicant proposes to install the crossing utility facility so that lowest member or portion of facility will be at least eighteen (18) feet above main traveled portion of highway All installations, including parallel facilities, shall comply with the current National Electric Safety Code.

12. *All permits are granted subject to the following express conditions and by signing this application the Applicant signifies that Applicant has read, understands and will abide these conditions.*

13. That no permit granted hereunder shall be construed as granting any easement or property right, but shall merely constitute the granting of a revocable license.

14. That the construction work to be undertaken pursuant to the permit herein applied for will be commenced not later than May 5, 1961, and completed not later than May 20, 1961. Notice of the actual commencement of construction shall be given to District Three Office, State Highway Department, 2400 Broadway, Albuquerque, New Mexico (appropriate District Office) not less than three (3) days prior to commencement of construction unless waived by notation to this effect on the application.

15. That installation of utility facilities within the right of way shall be in strict conformity with this application and drawings as the same may be modified by the Engineer and no departure therefrom may be made without the written consent of the Engineer and all construction shall be subject to the supervision of the Engineer. All facilities shall be so placed that they will not interfere with or endanger any existing utility facility already in right of way or any highway structure.

16. That all construction work undertaken pursuant to this application will be so carried on that danger, inconvenience and delay to the traveling public will be held to a minimum and where interference with traffic is unavoidable, traffic control and safety precautions shall be in accordance with any safety code adopted by the Commission.

17. That the Applicant will, except as otherwise ordered by the Engineer, restore the highway right of way, and all bridges or other structures thereon or adjacent thereto which have been altered or affected by construction work performed hereunder, in accordance with sound construction practices and Commission specifications applicable to such work of restoration and shall cause the work to be done in a workmanlike manner.

18. That if any damage is caused to the highway right of way or to any bridge, structure or improvement thereon or adjacent thereto by reason of the installation, maintenance, alteration or removal of the facilities or other appurtenances of the Applicant, the Applicant will reimburse Commission the full amount thereof promptly upon demand by the Engineer; provided, however, that the obligations imposed under this paragraph shall not apply in the event the damage resulted from causes beyond the control of the Applicant.

~~19. That the Applicant will at all times indemnify and save harmless the State from any and all claims of every kind or character caused by or incident to the installation, maintenance, alteration, removal or condition of the utility facilities in the right of way and will promptly reimburse the State for any and all expenses incurred by the State in resisting any such claim or claims.~~

~~Nothing herein shall be construed to mean that the Applicant hereunder will indemnify and save harmless the State from any claim caused by or incident to any neglect, carelessness or breach of duty on the part of the State.~~

20. That all such utility facilities installed within the right of way shall at all times be kept in such repair so as not to damage the highway, inconvenience or endanger the traveling public and shall be kept free from advertisements, posters and the like.

21. That if the Applicant should at any time fail to promptly and fully perform any of the obligations imposed upon Applicant hereby, and after notice thereof, the Engineer may, at his option, (a) cause the obligations to be fully carried out and performed, and the Applicant will promptly reimburse the commission for all costs and expenses incident thereto, (b) may summarily order the removal of such utility facility and if Applicant fails to comply within a reasonable time, the Engineer may direct the removal of the utility facility with all costs and expenses incident thereto to be borne by Applicant.

Form MP-2

4246

22. That if by reason of any change in the location, construction, grade or any other matter affecting the highway upon which any utility facility is located because of changing traffic conditions or otherwise, it shall become advisable in the opinion of the Engineer that said utility facility be removed relocated or otherwise modified, the Applicant, upon written notice from the Engineer, shall remove, relocate or modify such utility facility without undue delay and in such manner as the Engineer may direct or approve at the Applicant's expense and without expense to the State.

23. All utility facilities to be installed on public right of way under the dual jurisdiction of the State and a subordinate governmental entity shall comply with all applicable rules and regulation of such subordinate government entity properly and lawfully in force and including provisions of local franchises not in conflict with the rules and regulations of the Commission.

24. The Commission makes no warranty either express or implied as to the continued existence of any highway in any particular location and expressly assumes no obligation with regard to the utility facility upon change, vacation or abandonment of any highway or portion thereof.

25. Neither the making of this application nor anything herein contained shall constitute a waiver on the part of the Applicant of any rights or claims had or made by Applicant with respect to the occupancy of the streets and highways under the Constitution and Laws of the State of New Mexico nor shall anything herein contained in anywise prejudice or impair any rights or claims existing independently of this application with respect to the construction, operation and maintenance of the Applicant's utility system in the State of New Mexico.

26. This application is hereby granted subject to the following special provisions changes or amendments:

27. Applicant shall notify Engineer of removal or discontinuance of use of utility facility or any portion thereof.

**28. Nothing herein contained shall be construed as binding the National Park Service to expend in any one fiscal year any sum in excess of appropriations made by Congress for that fiscal year or to involve the United States in any contract or other obligations for the further expenditures of money in excess of such appropriations.**

**29. No member of or Delegate to Congress, or Resident Commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom.**

Executed at **Santa Fe, New Mexico**, this **2nd** day of **May**, 19**61**.

**United States of America**
**National Park Service**

By _____
Applicant

**Thomas J. Allen**
**Regional Director**
(Title)

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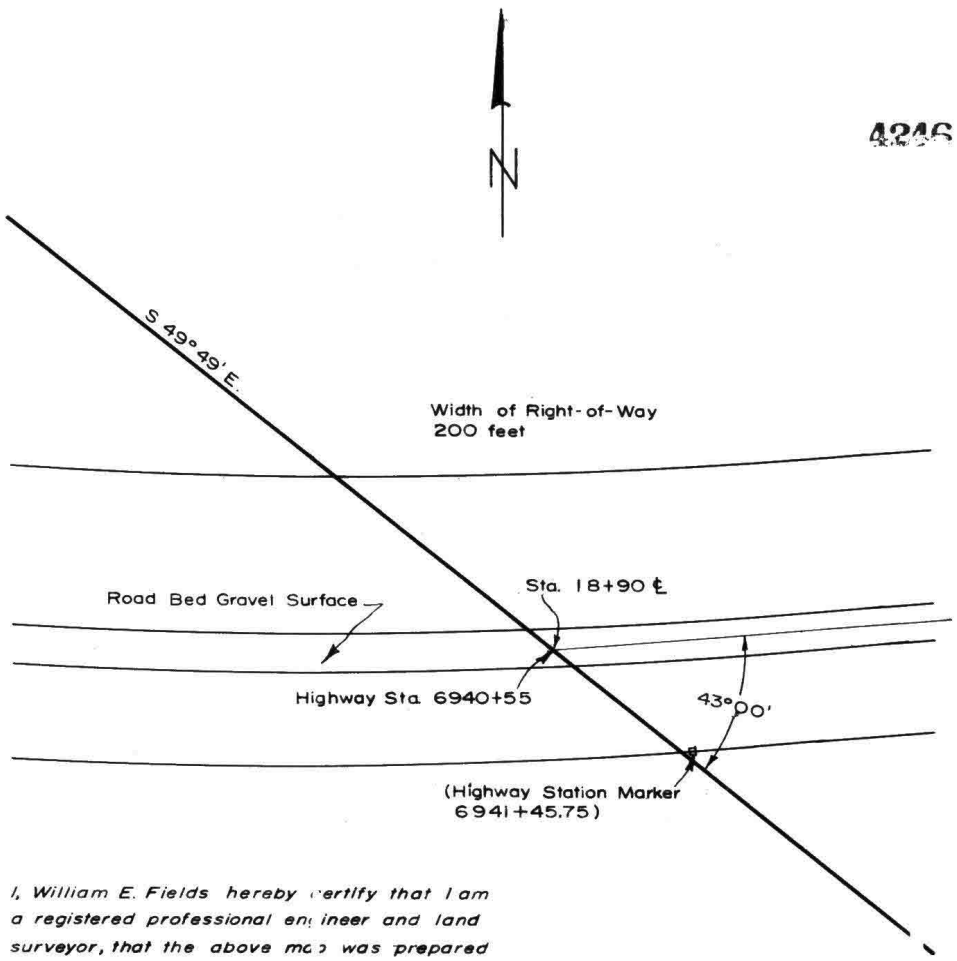
APPROVAL of this permit is hereby given this 2nd day of May, 1961.

STATE HIGHWAY COMMISSION OF NEW MEXICO

E. S. WHITE
Chief Highway Engineer

By: _____
Maintenance Engineer

4246




*I, William E. Fields hereby certify that I am a registered professional engineer and land surveyor, that the above map was prepared from field note of an actual survey made by me and that the same is true and correct to the best of my knowledge and belief.*

William E. Fields

*William E. Fields*
*P.E. & L.S. No. 1403*
*May 2, 1961*

SKETCH SHOWING PROPOSED CROSSING OF S.R. 53 BY 2" WATER LINE TO BE INSTALLED BY NATIONAL PARK SERVICE TO EL MORRO NATIONAL MONUMENT.

NM-EM-7108

05-02-1961: letter to w. e. fields regarding enclosed copy of 'application for permit to install utility facilities within public right of wa

# NEW MEXICO
# STATE HIGHWAY COMMISSION

COMMISSION
GEORGE LAVENDER, CHAIRMAN, SANTA FE
JOHN F SUDDERTH, VICE CHAIRMAN, HOBBS
J. R. KASTLER, SECRETARY, RATON
FRANK TATSCH, MEMBER, SILVER CITY
H. E. LEONARD, MEMBER, ALBUQUERQUE

D. B. DIXON
CHIEF HIGHWAY ENGINEER

P - Water & Sewer

P. O. BOX 1641
SANTA FE, NEW MEXICO

May 2, 1961

National Park Service
Region Three Office,
P. O. Box 1728
Santa Fe, New Mexico

ATTENTION: W. E. Fields

Gentlemen:

We are enclosing herewith one copy of "Application for Permit to Install Utility Facilities Within Public Right of Way", approved by this Department as follows:

A 4" conduit for installation of 2" water line to cross SR 53 near El Morro, New Mexico. NE¼NW¼ Sec. 6, T 9 N, R 14 W, NMPM and crosses the centerline os SR 53 at Sta. 6940/55.

SHD 4246

One copy of each sheet of this permit is being sent to Mr. J. A. Bird, District Engineer, State Highway Department, P. O. Box 1311, Albuquerque, New Mexico.

When you have completed this installation, please notify Mr. Bird.

In case it is decided that this installation will not be made, please notify this office directly that you desire the permit canceled.

Very truly yours,

T. B. WHITE
Chief Highway Engineer

By: S. A. Bennett

S. A. Bennett
Maintenance Engineer

nc
Encl. - As Indicated
c. c. - " "

30

**Supporting Hydro Data**

00-00-0000: analytical statement

FORM 9-1367 (9-1960)
U. S. DEPT. OF INTERIOR
GEOLOGICAL SURVEY

# ANALYTICAL STATEMENT - GW

9N.14W.6.100 NPS

COUNTY Valencia 79783

LAB NO. 54093

Location El Morro Nat'l. Monument, Ramah, N.Mex. NW¼ sec.6 T9N R14W

Source (type of well) Drilled

Owner U.S.Gov't., El Morro Nat'l. Mon., Ramah, N.M.

Date drld Aug.1961 Cased to ____ ft

Depth 202' Diam ____

WBP Chinle

Water level static 151 ft below surf.

Sampled after pumping 30 minutes

Yield 15 GPM (meas ~~MEM~~) pump

Pt of coll Well disch. tap

Appearance Clear

Temp (°F) 58 Use Ps

Collector Paul A. Berger

Chemist LJA

Date completed May 12, 1964

Checked by RLL

Date transmitted ____

NPS & NMGW

Date of collection Apr. 7, 1964

Ignition Loss ____ Color 0

Dissolved Solids:

Residue at 180°C 267

Calculated (Sum) 264

Tons per Acre Foot 0.36

Hardness as $CaCO_3$ 126

Non-carbonate Hardness 0

I No. 41 SAR 1.6 pH 7.9

Specific Conductance (micromhos at 25°C) 413

Rmks: Water is chlorinated with HTH

| | epm | ppm |
|---|---|---|
| $SiO_2$ | | 31 |
| Fe (total) | | 0.13 |
| Ca | 1.80 | 36 |
| Mg | 0.72 | 8.8 |
| Na | 1.83 | 42 |
| K | 0.08 | 3.2 |
| Na+K | 4.43 | |
| $HCO_3$ | 3.54 | 216 |
| $CO_3$ | 0.00 | 0 |
| $SO_4$ | 0.33 | 16 |
| Cl | 0.45 | 16 |
| F | 0.01 | 0.2 |
| $NO_3$ | 0.08 | 5.2 |
| | 4.41 | B 0.09 |

Provisional records, subject to revision.

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USGS-WRD
Form GW

# ANALYTICAL STATEMENT

COUNTY Valencia

LAB NO. 50347

Location El Morro Natl. Monument well

Source (type of well) Drilled

Owner ____

Date drld ____ Cased to ____ ft

Depth 225' Diam ____

WBP ~~TR chinle and some~~ *

Water level ____ ft

Sampled after pumping 3 min.

Yield ____ GPM (meas or est)

Pt of coll ____

Appearance ____

Temp (°F) 75 Use ____

Collector HEK

Chemist E. F. Williams

Date completed Oct. 10, 1962

Checked by K.Ong & R.Lepp

Date transmitted NOV - 2 1962

APR - 4 1963 4 NPS

Date of collection Sept. 2, 1962 09

Ignition Loss ____ Color ____

Dissolved Solids:

Residue at 180°C ____

Calculated (Sum) 273

Tons per Acre Foot 0.37

Hardness as $CaCO_3$ 130

Non-carbonate Hardness 0

I No. 43 SAR 1.8 pH 7.6

Specific Conductance (micromhos at 25°C) 431

~~*basalt from surface,~~ -treated with chlorine

* from alluvium underlying basalt.

| | epm | ppm |
|---|---|---|
| $SiO_2$ | | 29 |
| Fe | | |
| Ca | 1.65 | 33 |
| Mg | 0.95 | 12 |
| Na | | |
| K | | |
| Na+K | 2.00 | 46 |
| $HCO_3$ | 3.59 | 219 |
| $CO_3$ | 0.00 | 0 |
| $SO_4$ | 0.37 | 18 |
| Cl | 0.45 | 16 |
| F | 0.01 | 0.2 |
| $NO_3$ | 0.18 | 11 |
| | 4.60 | |

Provisional records, subject to revision.

04-17-1967: ground water analysis

Geological Survey
Experimental qw-gw (1966)

UNITED STATES DEPARTMENT OF THE INTERIOR
Ground Water Analysis

Water Resources Division

State N.MEX 36 County VALENCIA VA Latitude ° ' " N, S Longitude ° ' " Seq. No. Date coll. M D Y 04 17 67

Local well No. a 9W4.6 HISTORIC POOL Owner b N.P.S. EL MORRO NAT'L MON. Collected by PAUL A. BERGER Lab. Anal. A-1 + TOT FE NO FE SOL'N Project No. 20NPS-C

WBF CATCHMENT BASIN Appearance Wc SL. CLOUDY Wa Lab. No. C61445 Sampling depth 12 Type c

Kx10⁶ 23.8 T 346 R KCl 4900 (71) 7.1

pH 6.8 6.8 Temperature °F (65) 55

$SiO_2$ f 51.21 10 ml (1.7) 1.7 Abs .033

| | ppm | epm |
|---|---|---|
| Ca 0.93 0.00 0.93 — 50 ml | (9.3) 9.3 | 0.46 |
| Mg — ml | (1.5) 1.5 | 0.12 |
| Subtotal cations (Ca, Mg) | | 0.58 |
| Na 2.1 0-10 8.5 5 ppm = 50.0 — ml | (0.8) 0.8 | 0.03 |
| K 0-10 15.5 — ml | (1.6) 1.6 | 0.04 |
| Subtotal cations (Ca, Mg, Na, K) | | 0.65 |
| $HCO_3$ 1.45 0.00 1.45 — 50 ml | (29) 29 (14) | 0.48 |
| $CO_3$ — 50 ml | 0 | 0.00 |

| | ppm | epm |
|---|---|---|
| $SO_4$ 9.1 — ml | (7.0) 7.0 | 0.15 |
| Cl f 20 10 ml 0.42 0.00 0.42 −0.07 = 0.35 — 21 ml 0.5 mg | (1.4) 1.4 | 0.04 |
| Mg · $AgNO_3$ 3.5 3.00 | | |
| Source of data d — Card Q | | |
| F — 10 ml Abs 1.462 .0013 | (0.1) 0.1 | 0.01 |
| $NO_3$ 11.8 10 ml Abs .022 | (0.3) 0.3 | 0.00 |
| $PO_4$ — f Abs — Abs — % | | |
| $HPO_4$ — % $H_2PO_4$ — | | |
| Total anions | | 0.68 |
| B 1.32 f — 1.0 ml Abs .028 | (0.04) 0.04 | |
| Al — ml Abs (Al + Fe) — | | |
| Remarks and explanation on other side | | |

| | ppm | epm |
|---|---|---|
| Fe f 1.94 — ml Total 25 ml Abs .231 | (0.45) 0.45 | |
| Dissol. — ml Abs | | |
| Mn f — ml Total — ml Abs | | |
| Dissol. — ml Abs | | |
| Cu — ml | | |
| Pb — ml | | |
| Zn — ml | | |
| Subtotal cations (Al, Fe, Mn, Cu, Pb, Zn) | | |
| Subtotal cations (Ca, Mg, Na, K) | | |
| Total cations | | |

Dissolved solids
Residue at 180° 200 ml OVER
Dish No. t 60.1646
Calculated 60.1539 0.0107 (38) 38

Hardness
Ca, Mg 50 ml (29) 29
Noncarbonate 1.45 0.00 1.45 (5) 5

Color (12) 12 Card R

+ .25

Provisional records, subject to revision.

C61445

State | County | Lat. | Long. | Seq. No. | Date | Samp. depth | c

Remarks:

GRAVITY FLOW.
USE: FIRE FIGHTING
WATER LEVEL: SURFACE
POOL IS NO LONGER USED EXCEPT FOR FIRE FIGHTING.
DISTRIBUTION SYSTEM HAS BEEN ABANDONDED.

Renn 100ml 0.5
0.32
0.00
0.32
-0.04
0.28 (1.4)

Renn DS 200
X-135
60.9262
60.9173
0.0089 (44)

Br ____ ml (26 28)

I ____ ml (29 31)

Alk. as $CaCO_3$ (32 35)

Free $CO_2$ (36 38)

SAR (0.1) 0.1 (39 41)

RSC (42 44)

Organics

MBAS (ABS) ____ ml (45 47)

(48 50)

(51 54)

Radiochemical

Alpha (pc/l) (55 57)

Beta (pc/l) (58 60)

Ra (pc/l) (61 63)

U (ug/l) (64 66)

Other data (67-79)[e]

a Master card A (21-34)
b Master card A (52-66)
c Type:
1. Pumped
2. Bucket
3. Forest
4. Spigot
5. Bailer
6. Special
d Source of data:
1. USGS
2. UPHS
3. State Health
4. State
5. Industrial
6. Private
7. Vocational

e Indicate constituent and card colu

Card S 80 S

Chemist Richard L. Lepp Checked by E. F. WILLIAMS
Date began MAY 3 1967 Date transmitted ____
Punched by ____ Verified ____

Provisional records, subject to revision.

(2)

G.W. Type Analysis A-1, no Fe sol. USGS CHEMICAL ANALYSIS Account 20NP Project 34

State New Mexico County Valencia Location 9N.14W.6.300 El Morro Nat'l. Mon.

Latitude-Longitude _____ Well No. Historic Pond Date Collected 2-28-68

Owner U.S.Gov't., El Morro Nat'l. Mon., Ramah, NM 87321 Date Drilled _____ Source Historic Pond Depth (ft.) 12 Diam. (in.) _____

pH..... 6.6 Temp.(°C) 9

Hardness as $CaCO_3$: Total, mg/L ..... 30

Noncarbonate, mg/L. 6

Color.. 40 Sodium-adsorption ratio..... 0.1

%Na.... 5 Tons per acre ft... _____

Density, g/ml at 20°C _____

W.B.F. Catchment Basin

Producing Intervals _____

W.L. 0

Sampled after Pumping(Time) None

Yield 0

Point of Collection Historic Pond

Appearance Turbid

Use Not used.

Collected by Paul A. Berger

Remarks:

Chemist RLL, BR, SWM, EP Checked By EFW

Date Completed 3-21-68

Date Transmitted _____

Laboratory No. 63339

Specific Conductance, micromhos at 25°C ..... 64

Concentrations in milligrams per liter (mg/L)

| | | | |
|---|---|---|---|
| Silica ($SiO_2$)..... | 1.8 | Bicarbonate ($HCO_3$)..... | 30 |
| | | Carbonate ($CO_3$)..... | 0 |
| Calcium (Ca)..... | 8.2 | | |
| | | Sulfate ($SO_4$)..... | 3.2 |
| Magnesium (Mg)..... | 2.3 | | |
| | | Chloride (Cl)..... | 1.3 |
| Sodium (Na)..... | 0.6 | | |
| | | Fluoride (F)..... | 0.1 |
| Potassium (K)..... | 1.3 | | |
| | | Nitrate ($NO_3$)..... | 0.3 |
| Na+K (Calculated)..... | | | |
| Dissolved Iron (Fe).... | | Boron (B)..... | 0.01 |
| Total Iron (Fe)..... | 1.6 | Dissolved Solids: Sum of Constituents..... | 34 |
| | | Residue on Evaporation at 180°C..... | 48 |

Provisional records, subject to revision

04-17-1967: ground water analysis

4

Geological Survey — Experimental ( ) qw-gw (1966)

UNITED STATES DEPARTMENT OF THE INTERIOR — Ground Water Analysis

Water Resources Division

State N.MEX 36 (1-2) County VALENCIA VA (3-4) Latitude (5-10, 11 N,S) Longitude (12-18) Seq. No. (19) Date coll. M D Y 04 17 67 (20-25)

WELL #1 — EL MORRO NAT'L MON.

Local well No.[a] 9-14-6 Owner[b] N.P.S. RAMAH, N.M. Collected by PAUL A. BERGER Lab. Anal. A-1 + TOT FE NO FE SOL'N. Project No. 20NPS-C

WBF ____ Appearance Wc CLEAR Wa ____ Lab. No. C61446 Sampling depth 202 (26-29) Type[c] PUMPED 1 (30)

AREA BETWEEN MALPAI & CHINLE FM.

Kx10⁶ 23.7 T 347 R KCl 842 (412) (31-35)

pH 7.8 7.8 (36-38) Temperature °F (56) 56 (39-41)

f 51.2 — 10 ml (32) 32 (42-44) Abs .628

| | ppm | epm |
|---|---|---|
| Ca 1.62 + 0.00 = 1.62; f 25 ml (32) 32 (45-49) | | 1.60 |
| Mg ____ ml (11) 11 (50-53) | | 0.88 |
| Subtotal cations (Ca, Mg) | | 2.48 |
| Na 43 (53.0) 0-100 ____ ml (42) 42 (54-58) | | 1.83 |
| K 33.4 0-10 ____ ml (3.3) 33 (59-61) | | 0.08 |
| Subtotal cations (Ca, Mg, Na, K) | | 4.39 |
| $HCO_3$ 12,70 + 2,00 = 10,70 (1051); 50 ml (214) 214 (62-65) | | 3.51 |
| $CO_3$ 0 50 ml 0 (66-67) | | 0.00 |

| | ppm | epm |
|---|---|---|
| $SO_4$ 14 ml; f 20 — 10 ml; 0.87 − 0.07 = 0.80; (16) 16 (68-72) | | 0.33 |
| Cl 25 ml; 0.5 mg; Mg · $AgNO_3$ 5.85 − 0.85 − 0.10 = 0.75; (15) 15 (73-78) | | 0.42 |
| Source of data d 79 ____ Card Q 80 Q | | |
| F 10 ml Abs 1.460 − .0014; (0.1) 01 (26-28) | | 0.01 |
| $NO_3$ 11,8 10 ml Abs .420; (5.0) 50 (29-32) | | 0.08 |
| $PO_4$ ____ f Abs ____; Abs ____ % (33-35) | | |
| $HPO_4$ ____ % $H_2PO_4$ ____ | | |
| Total anions | | 4.35 |
| B 1.32 f — 1.0 ml; Abs .065; (0.09) 009 (36-38) | | |
| Al ____ ml (39-41); Abs (Al + Fe) ____ | | |

Remarks and explanation on other side

| | ppm | epm |
|---|---|---|
| Fe f 1.94 — ml; (0.03) 003; Total 25 ml Abs .015 (42-45); Dissol. ____ ml Abs ____ | | |
| Mn f ____ ml; Total ____ ml Abs ____ (46-49); Dissol. ____ ml Abs ____ | | |
| Cu ____ ml (50-52) | | |
| Pb ____ ml (53-54) | | |
| Zn ____ ml (55-57) | | |
| Subtotal cations (Al, Fe, Mn, Cu, Pb, Zn) | | |
| Subtotal cations (Ca, Mg, Na, K) | | |
| Total cations | | |
| Dissolved solids Residue at 180° 200 ml (259) 259 (58-63) | | |
| Dish No. X-127 58,6736; Calculated 58,6218 + 0,0518 (261) 261 (64-69) | | |
| Hardness Ca, Mg 50 ml (124) 124 (70-73) | | |
| Noncarbonate 8,20 + 2,00 = 6,20 — 0 (74-77) | | |
| Color (3) 78-79 3 | Card R 80 R | |

-.5 106

Provisional records, subject to revision.

04-17-1967: ground water analysis cont.

r61446

State | County | Lat. | Long. | Seq. No. | Date | Samp. depth | c

Remarks:

D.D. AUG. 1961
WL = 151 Ft BELOW SURFACE
PPD 20 MIN,
YIELD 12 GM. Est,
Pc = PUMP TAP
USE: P,S,
SOURCE: DRILLED WELL

Br _____ ml — 26 28

I _____ ml — 29 31

Alk. as $CaCO_3$ — 32 35

Free $CO_2$ — 36 38

SAR (1.6) 1.6 — 39 41

RSC — 42 44

Organics

MBAS (ABS) _____ ml — 45 47

48 50

51 54

Radiochemical

Alpha (pc/l) — 55 57

Beta (pc/l) — 58 60

Ra (pc/l) — 61 63

U (ug/l) — 64 66

Other data (67-79)e

a Master card A (21-34)
b Master card A (52-66)
c Type:
1. Pumped 4. Spigot
2. Bucket 5. Bailer
3. Forest 6. Special
d Source of data:
1. USGS 5. Industrial
2. UPHS 6. Private
3. State Health 7. Vocational
4. State

Provisional records, subject to revision.

e Indicate constituent and card colu[illegible]

Card S 80 S

E. F. WILLIAMS

Chemist Richard L. Lepp Checked by _____

Date began MAY 3 1967 Date transmitted _____

Punched by _____ Verified _____

G.W. Type Analysis A-1, no Fe soln. **USGS CHEMICAL ANALYSIS** Account 20NP Project 34

State New Mexico County Valencia Location 9N.14W.6.100 El Morro Nat'l. Mon.

Latitude-Longitude _____ Well No. 1 Date Collected 2-28-68

Owner U.S.Gov't. El Morro Nat'l. Mon., Ramah, NM 87321 Date Drilled Aug.,1961 Source Drilled Depth (ft) 202 Diam.(in) _____

pH..... 7.9 Temp.(°C) 13

Hardness as $CaCO_3$: Total, mg/L ..... 127

Noncarbonate, mg/L. 0

...r.. 3 Sodium-adsorption ratio..... 1.6

%Na.... 40 Tons per acre ft... _____

Density, g/ml at 20°C _____

W.B.F. Chinle - bottom of Malpais and top of Chinle

Producing Intervals _____

W.L. 151' below

Sampled after Pumping(Time) 28 min.

Yield 12 GM pumping

P ...f Collection Well disch., tap

Appearance Clear

Use Public Supply

Collected by Paul A. Berger

Remarks:

Chemist RLL, BR, SWM, EP Checked By EFW

Date Completed 3-21-68

Date Transmitted _____

Laboratory No. C63338

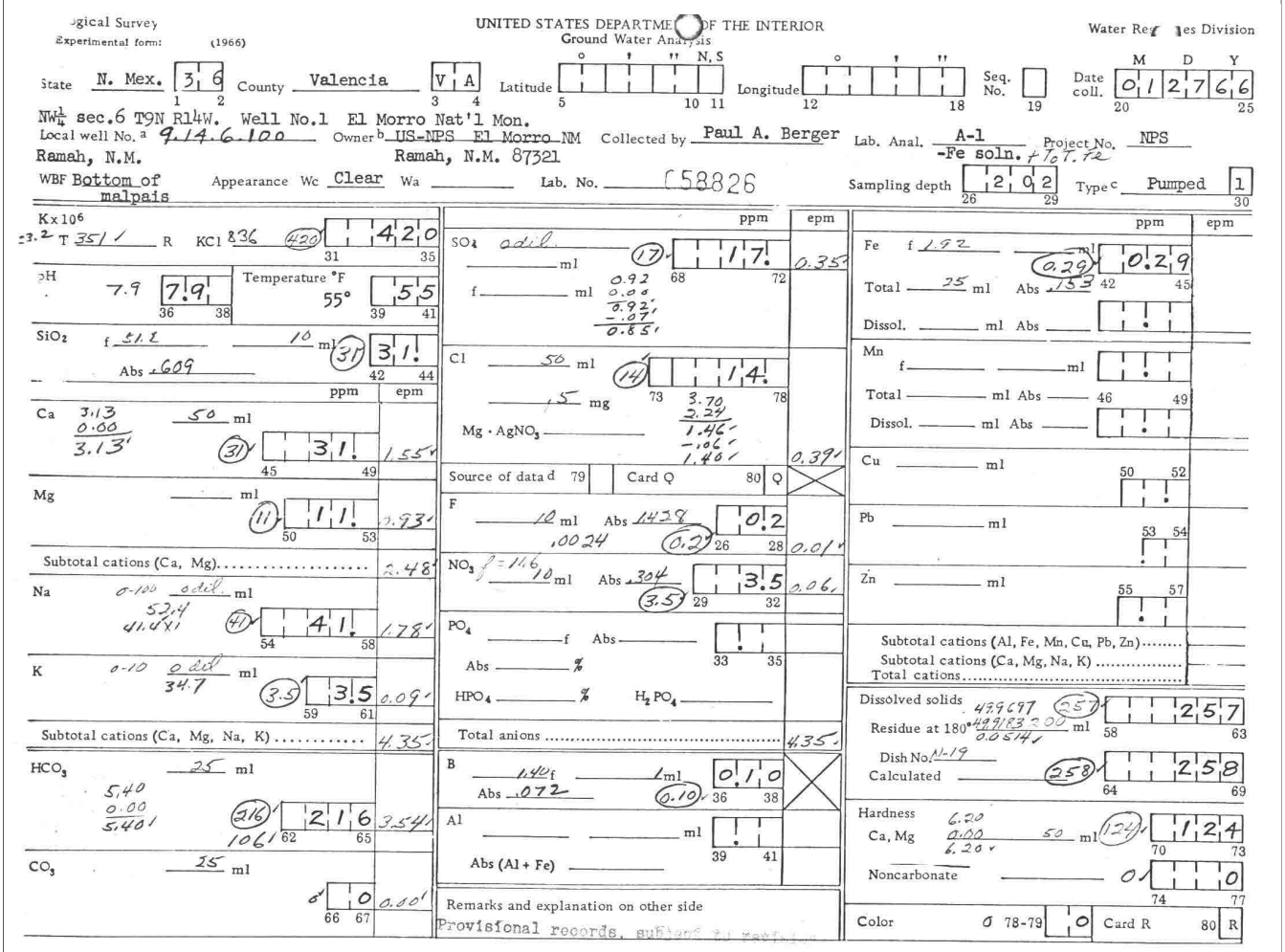
Specific Conductance, micromhos at 25°C ..... 414

Concentrations in milligrams per liter (mg/L)

| | | | |
|---|---|---|---|
| Silica ($SiO_2$)..... | 32 | Bicarbonate ($HCO_3$)..... | 214 |
| | | Carbonate ($CO_3$)..... | 0 |
| Calcium (Ca)..... | 33 | | |
| | | Sulfate ($SO_4$)..... | 16 |
| Magnesium (Mg)..... | 11 | | |
| | | Chloride (Cl)..... | 14 |
| Sodium (Na)..... | 41 | | |
| | | Fluoride (F)..... | 0.2 |
| Potassium (K)..... | 3.3 | | |
| | | Nitrate ($NO_3$)..... | 4.5 |
| Na+K (Calculated)..... | | | |
| Dissolved Iron (Fe).... | | Boron (B)..... | 0.07 |
| Total Iron (Fe)..... | 0.09 | Dissolved Solids: Sum of Constituents..... | 260 |
| | | Residue on Evaporation at 180°C..... | 258 |

Provisional records, subject to revision

01-27-1966: ground water analysis



gical Survey
Experimental form: (1966)

UNITED STATES DEPARTMENT OF THE INTERIOR
Ground Water Analysis

Water Re[illegible]es Division

State N. Mex. 35 1 2 | County Valencia V A 3 4 | Latitude ° ' " N, S 5 10 11 | Longitude ° ' " 12 18 | Seq. No. 19 | Date coll. M D Y 01 27 66 20 25

NW¼ sec.6 T9N R14W. Well No.1 El Morro Nat'l Mon.
Local well No.[a] 9.14.6.100 | Owner[b] US-NPS El Morro NM | Collected by Paul A. Berger | Lab. Anal. A-1 -Fe soln. | Project No. NPS
Ramah, N.M. | Ramah, N.M. 87321
WBF Bottom of malpais | Appearance Wc Clear | Wa | Lab. No. C58826 | Sampling depth 26 202 29 | Type[c] Pumped 1 30

Kx10⁶ 23.2 T 351 / R | KCl 836 (420) 4 2 0 31 35

pH 7.9 7.9 36 38 | Temperature °F 55° 5 5 39 41

$SiO_2$ f 51.2 10 ml (31) 3 1. 42 44
Abs .609

| | ppm | epm |
|---|---|---|
| Ca 3.13 / 0.00 / 3.13' 50 ml (31) 3 1. 45 49 | 1.55' |
| Mg ml (11) 1 1. 50 53 | 0.93' |
| Subtotal cations (Ca, Mg) | 2.48' |
| Na 0-100 adil 52.4 / 41.6x1 ml (41) 4 1. 54 58 | 1.78' |
| K 0-10 0 adil 34.7 ml (3.5) 3 3.5 59 61 | 0.09' |
| Subtotal cations (Ca, Mg, Na, K) | 4.35' |
| $HCO_3$ 25 ml 5.40 / 0.00 / 5.40' (216) 2 1 6 62 65 | 3.54' |
| $CO_3$ 25 ml 0 0 66 67 | 0.00' |

| | ppm | epm |
|---|---|---|
| $SO_4$ adil ml (17) 1 1 7. 68 72 | 0.35' |
| f ml 0.92 / 0.00 / 0.92' / -.07' / 0.85' | |
| Cl 50 ml (14) 1 1 4. 73 78 | |
| .5 mg 3.70 / 2.24 / 1.46' / -.06' / 1.40' | |
| $Mg \cdot AgNO_3$ | 0.39' |
| Source of data d 79 | Card Q 80 Q |
| F 10 ml Abs .1439 / .0024 (0.2) 0 2 26 28 | 0.01' |
| $NO_3$ f=146 10 ml Abs .304 (3.5) 3.5 29 32 | 0.06' |
| $PO_4$ f Abs | |
| Abs % 33 35 | |
| $HPO_4$ % $H_2PO_4$ | |
| Total anions | 4.35' |
| B 1.40 f / Abs .072 ml 0 1 0 (0.10) 36 38 | |
| Al ml 39 41 | |
| Abs (Al + Fe) | |
| Remarks and explanation on other side: Provisional records, subject to [illegible] | |

| | ppm | epm |
|---|---|---|
| Fe f 1.92 / 0.29 ml (0.29) 0 2 9 | |
| Total 25 ml Abs .153 42 45 | |
| Dissol. ml Abs | |
| Mn f ml | |
| Total ml Abs 46 49 | |
| Dissol. ml Abs | |
| Cu ml 50 52 | |
| Pb ml 53 54 | |
| Zn ml 55 57 | |
| Subtotal cations (Al, Fe, Mn, Cu, Pb, Zn) | |
| Subtotal cations (Ca, Mg, Na, K) | |
| Total cations | |
| Dissolved solids 439.697 / 439/83 x 100 / 0.0514' (257) 2 5 7 ml 58 63 | |
| Residue at 180° | |
| Dish No. N-19 | |
| Calculated (258) 2 5 8 64 69 | |
| Hardness 6.20 / 0.00 / 6.20' | |
| Ca, Mg 50 ml (124) 1 2 4 70 73 | |
| Noncarbonate 0 74 77 | |
| Color 0 78-79 | Card R 80 R |

State | County | Lat. | Long. | Seq. No. | Date | Samp. depth | c

Remarks:

Source: drilled
DD: 8/61
WL: static 151' below
Sampled after pumping (time): 24 min.
Yield: 10 GM pump
PC: well discharge tap
Use: Ps

Provisional records, subject to revision.

APR 13 1966
O'NEILL

Chemist _____ Checked by 5/4/66 KO

Date began _____ Date transmitted _____

Punched by T5 Verified _____

58826

Br _____ ml . 26 28

I _____ ml . 29 31

Alk. as $CaCO_3$ 32 35

Free $CO_2$ . 36 38

SAR (1.8) 1.6 39 41

RSC 42 44

Organics

MBAS (ABS) _____ ml . 45 47

. 48 50

51 54

a Master card A (21-34)
b Master card A (52-66)
c Type:
1. Pumped 4. Spigot
2. Bucket 5. Bailer
3. Forest 6. Special
d Source of data:
1. USGS 5. Industrial
2. UPHS 6. Private
3. State Health 7. Educational
4. State

Radiochemical

Alpha (pc/l) 55 57

Beta (pc/l) 58 60

Ra (pc/l) . 61 63

U (ug/l) . 64 66

Other data (67-79)e

e Indicate constituent and card columns.

Card S 80 S

5

G.W. Type Analysis A-I no Fe sol. **U.S. GEOLOGICAL SURVEY ANALYTICAL NOTES** Project N.P.S. Collector Paul A. Bo

State New Mexico County Valencia City (at or near) El Morro Nat'l Mon. Ramah, New Mexico NW1/4 sec6 T9N R14W

Latitude-Longitude Well No. Drilled Well #1 Date Collected April 6, 1965

Owner U. S. Govt. El Morro Nat'l Mon. New Mexico Date Drilled 8/61 Cased to Depth (ft) 202 Diam.(in)

pH 8.0 8.0 Temp.(°F) 56°

Hardness as $CaCO_3$ Total 126 126

Noncarbonate 0 0

Color 1 1 S.A.R. 1.6 1.6

%Na 41 41 T/af 0.35 0.35

Density (g/ml)

W.B.F. Bottom of Malpais

Producing Intervals

W.L. 151' below surface

Sampled after Pumping(Time) 22 min.

Yield 10 G.M. Pump

Point of Collection Well Disch. Tap

Appearance Clear

Use Public Supply

Remarks:

LEWIS ALARY Chemist Checked By

Date Completed MAY -4 1965

Date Transmitted

Laboratory No. 058704

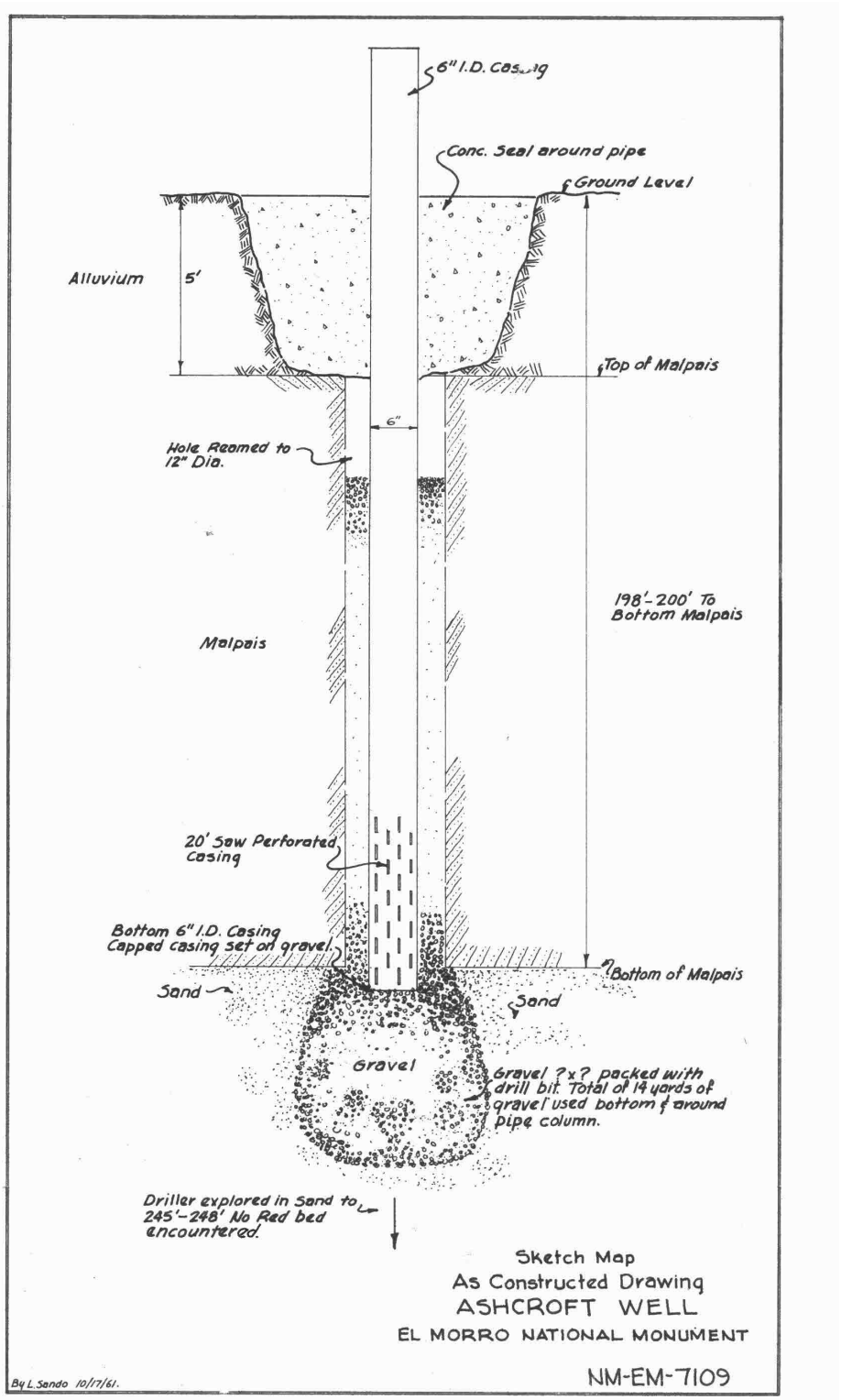
Spec. Cond. (micromhos at 25°C): T 24.4 R KCl 3251 R Sample 772 (410) 410

| | PPM | EPM |
|---|---|---|
| Silica f 446 vol 10 o.d. 0.636 (32) | 32 | |
| Calcium EPM TH 2.52 vol 10 1.23 0.58 0.70 (34) | 34 | 1.70 |
| Magnesium vol 50 12.90 6.60 6.30 (10) | 10 | 0.82 |
| Sodium vol 25-50 range 45.7 47.7 45.2 (41) | 41 | 1.79 |
| Potassium vol 5 range 3.3 3.3 3.3 (3.4) | 3.4 | 0.09 |
| Na+K (Calculated) | | |
| Iron f 446 vol 10 In sol.: o.d. Total: o.d. 0.246 (0.4) | 0.45 | |
| | | |
| TOTAL CATIONS | | 4.82 |

| | PPM | EPM |
|---|---|---|
| Bicarbonate 30.70 20.00 10.70 (210) 105 vol 50 | 214 | 3.51 |
| Carbonate (0) | 0 | 0.00 |
| Sulfate 0.70 0.37 0.33 vol 10 (17) | 17 | 0.35 |
| Chloride 0.36 0.09 0.27 0.76 vol 25 AgNO3 0.5 (15) | 15 | 0.42 |
| Fluoride vol 10 o.d. 1.469 (0.2) | 0.2 | 0.01 |
| Nitrate f 1.3 vol 10 o.d. 0.2201 (4.4) | 4.4 | 0.07 |
| Boron f 1.30 vol 1.0 o.d. 0.068 (0.09) | 0.09 | |
| Sum of Constituents (356) | 246 | |
| Residue on Evaporation at 180°C vol 200 dish 1 (235) | 235 | |
| TOTAL ANIONS | | 4.35 |

Provisional records, subject to revision.

10-17-1961: sketch map as constructed drawing ashcroft well el morro national monument



L-54

Aug 29 9 25 AM '60

Region Three
Santa Fe, New Mexico

AUG 2 1960

Memorandum

To: Regional Chief of Operations

From: Regional Chief of Lands

Subject: Test Well No. 5, El Morro National Monument

Drilling of test well No. 5 was delayed because of failure of the "drill table" or mechanism that gives rotation to the drill stem. Because of damage to the gears, it was necessary to order new parts and rebuild the drill table. Parts were late arriving and drilling of test hole No. 5 was started Saturday, August 20.

Test well No. 5 was located in the NE¼ NE¼ NW¼ NE¼ of Section 5 about 700 feet west of test well No. 4 and 93 feet south (paced distance) of the north boundary fence. This is roughly 610 feet north of the Davis Brothers' well.

The test well was completed the morning of August 21 and was dry. The driller's log shows:

| | | |
|---|---|---|
| Top Soil | 0.0 to | 0.5 |
| Malpais | 0.5 to | 146.0 |
| Red Bed | 146.0 to | 157.0 |

Typed copies of the logs for the five test wells are attached for reference.

The red bed was moist enough to ball up on the bit and damp enough that no cuttings were returned to the surface. The formation was similar to entry No. 7, test hole No. 3 "148 to 155 red clay" and drilling with water at test hole No. 3 failed to produce water. Drilling at test site No. 3 was abandoned at 185 feet in a sandstone brown shale formation. In view of this experience plus the fact that most producing wells in this vicinity have a malpais depth of about 200 feet we decided to abandon drilling at 157 feet, and not to drill additional test holes at this time. Therefore, the driller (sub-contractor) was released so that he could proceed with other work.

According to Bradley's survey for a water line at El Morro (NM-EM-2110, October 22, 1951) the Davis Brothers' well is 1,929.1 feet from the NE corner of Section 5. Bradley's tie from the well to

Kell phoned 9/6 to report that Ed Smith, Region and U.S.G.S. had decided to case and deepen well 5, and develop it and Davis well as water supply.

Simmons well 3618
Ash-pit would be just (to south) of the site.

Al case Lassen

00-00-0000: driller's log coffey drilling co.

DRILLER'S LOG
COFFEY DRILLING CO.
605 West 66 Avenue
UN 3-4871 Phone UN 3-4092
Gallup, New Mexico

FOR National Park Service (Cowley Brothers sub-contract) ADDRESS El Morro Nat. Mon.

Section 5 Township 9 North Range 14 West County Valencia

| FROM | TO | |
|---|---|---|
| | | HOLE NUMBER 1 - July 21, 1960 |
| 0.0 | 1.5 | Top Soil - Blow Sand |
| 1.5 | 31.0 | Malpais |
| 31.0 | 36.0 | Red Volcanic Ash and Dust |
| 36.0 | 39.0 | Malpai, Red Ash and Dust |
| 39.0 | 124.0 | Malpais |
| 124.0 | 130.0 | Red Bed (Lost Circulation at 80 feet) |
| 130.0 | 165.0 | Red Shale |
| DRY | | |
| | | HOLE NUMBER 2 - July 25, 1960 |
| 0.0 | 1.0 | Blow Sand |
| 1.0 | 122.0 | Malpais |
| 122.0 | 136.0 | Red Bed |
| | | HOLE NUMBER 3 - July 26, 1960 |
| 0.0 | 15.0 | Blow Sand and Clay |
| 15.0 | 31.0 | Malpais |
| 31.0 | 54.0 | Sand and Clay |
| 54.0 | 115.0 | Malpais |
| 115.0 | 148.0 | Red Sand (went on water) |
| 148.0 | 155.0 | Red Clay |
| 155.0 | 168.0 | Sand |
| 168.0 | 182.0 | Broken Rock |
| 182.0 | 185.0 | Sandstone and Br. Shale |
| DRY BAILED | | |
| | | HOLE NUMBER 4 - August 8, 1960 |
| 0.0 | 188.0 | Malpais(Lost Circulation 40 feet) Encountered Water and Mud at 178 feet. |
| 188.0 | 193.0 | Red Bed (Many cavities in Malpais from 40 feet to 150 feet.) Bailed @ 3¼GPM |
| | | HOLE NUMBER 5 - August 20, 1960 |
| 0.0 | 0.5 | Top Soil |
| 0.5 | 146.0 | Malpais |
| 146.0 | 157.0 | Red Bed |
| DRY | | |

the corner is N. 69° 14 1/2' E. which places the Davis Brothers' well in the NW¼ SE¼ NW¼ NE¼ of Section 5. This well is reported to be 222 feet deep and is cased with a 4 1/4 inch I. D. casing. The drilled hole is reported to be 8 inches in diameter. Mr West (U.S.G.S.) reports the water level stands at 161 feet. Change order No. 2 provided for test bailing of the Davis Brothers' well, but because of the small diameter of the casing and the size of the bailer (3 3/4 inch O. D.) it was decided not to test bail at this time. If test bailing is done, the casing should be pulled and the well should be tested with a pump or a larger bailer.

Mr. West plans to submit a report and his recommendations for drilling of a water well for the El Morro supply. It is reasonable to expect we can develop 3 g.p.m. at test site No. 4 if the well is properly developed and gravel packed. It is also reasonably certain there is 3 g.p.m. available at the Davis Brothers' well. This is a potential of 6 g.p.m. if the two wells were combined. It is also possible, if a well is drilled at test site No. 4, to drill to a depth of 225 or 250 feet and perhaps pick up an additional 3 g.p.m. or a total of 6 from one well. This theory is based upon the information Mr. West has on the two wells. If 6 g.p.m. could be developed from test site No. 4, we could still obtain 3 g.p.m. from the Davis Brothers' well for a total of about 9 g.p.m. This is about all we can expect from our own property on Section 5.

If it is determined 6 g.p.m. is not adequate for the investment involved, some other source will need to be considered. There is attached a sketch map showing the location of the test well sites and the closest known sources of water. None of the potential sources, if they can be obtained for a price, are adequate for development without improvement of the existing wells in Section 1 or 6 or drilling a larger well on our own Section 5 and gravel packing. The cost of improving either the "Siemens" or Ashcroft well will require drilling an entirely new hole adjacent to the existing well. This cost, or the cost of drilling and casing a well on our own property, will be $9,000 to $10,000 exclusive of land, water rights or pipeline. The pipeline distance and costs will be approximately equal from any of the three potential sources.

We should ask WODC to make an analysis of the two or three potential sources and determine our source of supply and total costs based upon the information now available.

(STONED)

John E. Kell
Regional Chief of Lands

Attachment

Copy to: Director (2)
Superintendent, El Morro
Chief, WODC (2)

AUG 24 1960

Approved for distribution _____ Date: _____
Thomas J. Allen, Regional Director

**Other Supporting Information**

RECEIVED
NATIONAL PARK SERVICE
WASHINGTON OFFICE
JAN 21 8 25 AM '77

L54(SWR)OM

JAN 18 1977

File
El Morro
Water Rights
Ours File

Memorandum

To: Superintendent, El Morro

From: Hydraulic Engineer, Water Resources, SWR

Subject: Water Rights, El Morro

Enclosed is a copy of the Declaration of Owner of Underground Water Right with accompanying map for your information and files.

In accordance with the State of New Mexico Water Rights regulations the State Engineer will give us a permit number and at some date in the future may have one of its engineers verify that the contents of both are true and correct as expressed with a field visit to the area.

We will provide all recipients of the memorandum with a conformed copy of the application upon its being received from the State Engineer's office.

PROTECT OUR WATER

[SIGNED]
Garland Moore

Enclosures

cc:
General Supt., Navajo Lands Group w/enclosures
Chief, Division of Natural Resources, WASO (Atten: Vic Berte') w/enclosures

09-01-1976: memorandum to associated regional director regarding water supply/water rights, el morro national monument

Bente'

File
EL MORRO
WATER RIGHT
CONS 726

L54(SWR)OM

SEP 1 1976

Memorandum

To: Associate Regional Director, Park Operations

Through: Regional Chief of Maintenance, SWR

From: Hydraulic Engineer, Water Resources, SWR

Subject: Water Supply/Water Rights, El Morro National Monument

In response to a verbally expressed concern by General Superintendent Art White, it appears that rumors are circulating around El Morro National Monument that Mr. George Pettit, our western neighbor, is planning to sell his property, either in subdivided lots or in total. Mr. Pettit owns a major portion of Sec. 1, T9N, R14W, NMPM.

Should Mr. Pettit or his successors choose to develop this area, water will be needed. Any large scale withdrawals of ground water will overtax the limited aquifer (alluvium-basset aquifer) thereby either reducing or totally destroying the production rate of the well serving El Morro.

In my opinion, the National Park Service should be prepared to initiate the following courses of action, depending upon the future outcome of Mr. Pettit's property.

1. Declare a water right under State of New Mexico statutes for El Morro at the earliest date. Note - the Reservation Principle to water rights is only applicable to the S½ NE¼; N½ SE¼, Sec. 6, T9N, R14W, NMPM. The remaining property of El Morro National Monument is, by our policy statement on water rights, covered by New Mexico Water Law.

2. Do nothing at this time. Should the area be developed, be prepared to file suit against all irrigators and domestic well owners for damages to our water source (proof required)

OR be prepared to drill a well 1,500 feet deep to intercept such waters that are available in the Shinarump Conglomerate (est. 15 gpm) or to drill a well 3,500 feet to intercept the more productive Gallup Sandstone aquifer (est. 80 gpm).

Other alternative courses of action which were reviewed but were not considered feasible are:

1. To purchase Mr. Pettit's property under authority of the Act of August 7, 1946 (60 Stat. 885) paragraph "g". In house discussions suggest that the purchase of land which will increase the acreage of El Morro by some 300 - 400 acres is beyond the intent of the Act.

2. Seek Congressional approval to extend the authorized boundaries of El Morro to include Mr. Pettit's property. Such an action appears to be infeasible as the aquifer is shallow but broad in extent in almost all directions. We'll have to buy up the whole valley.

In the absence of instructions to the contrary, I will proceed with the paper work to declare our water right at El Morro with the State of New Mexico.

Should you have any questions -- YELL. Additional back up information is available.

WATER RIGHTS IS PRECIOUS

SIGNED

Garland Moore

cc:
General Supt., Navajo Lands Group
Supt., El Morro
Chief, Division of Natural Resources, WASO (Atten: Vic Berte')
Moore, OM, SWR

04-10-1964: memorandum to superintendent regarding water quality analysis, ashcroft well, el morro national monument

254-4-14-64
W. R. Copy.

Southwest Region
Santa Fe, New Mexico

L54
ELMO

APR 10 1964

Memorandum

To: Superintendent, El Morro

From: Acting Assistant Regional Director, Operations

Subject: Water Quality Analysis, Ashcroft Well, El Morro National Monument

Arrangements have been made for the Quality of Water Branch of the U. S. Geological Survey to prepare a chemical analysis of domestic water in your area.

When you receive the sample bottle you should fill it with water from the Ashcroft well and return it as soon as possible.

Results of this analysis will be distributed by this office when they are received.

(SIGNED)

Jerome C. Miller

cc: Director (2)
WODC (2)
Thomas M. Moran

10-07-1963: memorandum to superintendent regarding log of ashcroft well, el morro

MARLEY
PESmith

October 7, 1963

L54

Memorandum

To: Superintendent, El Morro

From: Chief Engineer, WCDC

Subject: Log of Ashcroft Well, El Morro

During his recent field trip to El Morro, you requested of Coordinating Project Supervisor Marley that the subject well log be furnished you if such a log could be found in our files. Transmitted herewith is as much of a log as we have been able to uncover. This is in the form of Sketch No. NM-EM-7109.

Also attached is pertinent correspondence emanating from the Regional Office which makes reference to the well and to pumping tests conducted on the well.

In addition to the information furnished, we have found an earlier memorandum dated April 28, 1961 also originating in the Regional Office and addressed to us (File L-54) which states in part as follows:

> 1. "The well as it was drilled is 205 feet deep. The water was found at a depth of 200 feet in an aquifer made up of very fine particles of soil. This aquifer is apparently five feet deep and lies between a very dense formation of malpais or basalt and red burned sandstone formation. This malpais is not of the general type in that it is much more dense than most and apparently is not water bearing although the driller's report on this well indicates that a seep was encountered at a depth of 150 feet. This seep was of sufficient quantity to aid in drilling with a rotary rig."

We hope the attached information will help you in handling your situation which we understand involves decreased production in the well.

SIGNED

P. E. Smith

Enclosures

cc:
Reg.Dir.,Southwest
Proj.Supv.,Matteson

Informational to: Alleman, Reynolds

DSMarley:cg

FILE COPY

43

02-26-1962: memorandum to assistant solicitor regarding objections 4, 5, and 6 of attorney general's preliminary title opinion relat

February 26, 1962

L1425-AL

Memorandum

To: Assistant Solicitor, National Parks

From: Assistant Chief of Lands, National Park Service

Subject: Objections 4, 5, and 6 of Attorney General's Preliminary Title Opinion Relating to 79.12 Acres of Land, More or Less, Being Acquired from Rulon A. Ashcroft and Ivy M. Ashcroft, his Wife, for El Morro National Monument

This is to advise you that this Service finds administratively acceptable the easements and rights referred to in objections 4, 5, and 6 of the Attorney General's preliminary title opinion dated December 21, 1961, and these will not interfere with the contemplated use of the land.

HARRY K. SANDERS

Harry K. Sanders
Assistant Chief of Lands

Copy to: Regional Director, Region Three (2)
Mr. Dunn
Lands

LPTindal:lt

El Morro

WR Corr
D 1/29/62

Region Three
Santa Fe, New Mexico

L1425
Ashcroft

JAN 10 1962

Memorandum

To: Superintendent, El Morro

From: Regional Director

Subject: Completion of Acquisition Tract No. 3, 79.12 Acres, More or less, Acquired from Rulon A. Ashcroft and Ivy M. Ashcroft, his wife, for addition to El Morro National Monument

Attached is a copy of our letter of January 8 to Mr. Ashcroft regarding completion of the subject property under Contract No. 14-10-0100-1271. We have copied Items 1 through 7 of the Attorney General's opinion that must be satisfied before payment can be made.

In a telephone conversation on January 5, Mr. Kell arranged with Mr. Ashcroft to meet him as Los Lunas after the deed has been executed and Mr. Kell will assist Mr. Ashcroft to make certain that the abstract is extended to a date subsequent to the recording of the deed before delivery of the check.

As we have explained to Mr. Ashcroft the 1962 taxes are now a lien on the property but are not yet due or payable. You should obtain from Mr. Ashcroft an amount sufficient to cover the 1962 taxes and then submit the check or money to this office for deposit in National Park Service Suspense Account No. 14X6875(10). This will then enable you to make a statement that you have on deposit an amount of money estimated to be sufficient to cover the 1962 taxes.

We have also attached partially completed long and short form Certificate of Inspection and Possession which should be completed by you. We have omitted No. 6 on both long and short forms since we are not certain whether Mr. Lambson is occupying the corral on the property or not. If so, it should be shown on both long and short forms and a second disclaimer obtained. If this use is to continue it should be covered by a Special Use Permit.

The B & W Drilling Company reamed the Ashcroft Well under Contract No. 14-10-0333-804 and final payment and Release of Claims was received October 11, 1961.

The Martin Construction Company constructed the pumphouse and the pipeline across a portion of the Ashcroft property under Contract No. 14-10-0333-811. At the time this correspondence was prepared we had not made final payment or obtained the Release of Claims. This date must necessarily be left blank until final payment is made. If all of the work remaining to be done under the Contract has been completed you should advise this office and we can make the final payment and advise you so that the proper date can be inserted on the Possessory Rights Form in the space provided.

Your completion of the long and short form Possessory Rights Report should preferably be subsequent to the final payment to Mr. Ashcroft and we will advise you when this payment has been made.

We have prepared the two affidavits required by the Attorney General which Mr. Ashcroft will have executed and bring with him to Los Lunas. This will satisfy the Attorney General's objections to Item 7. Item 1 will be satisfied when you receive the check for the taxes and Items 2, 3 and 4 will be satisfied by your Possessory Rights Report Form. Your memorandum of transmittal to this office should advise that Items 4, 5 and 6 will not interfere with the contemplated use of the land.

(SIGNED)
Thomas J. Allen
Regional Director

Attachments

Copy to: Director (2)

December 28, 1961

L54-ALW

Memorandum

To: Finance Officer

From: Acting Chief of Lands

Subject: Payment of Voucher for $18,000 Covering Purchase of 79.12 Acres of Land (Tract No. 3, Comprising Ashcroft Well) from Rulon A. and Ivy M. Ashcroft for Addition to El Morro National Monument

There is attached, in duplicate, a voucher in the amount of $18,000, payable to Rulon A. Ashcroft and Ivy M. Ashcroft, covering the purchase of 79.12 acres of land, more or less, pursuant to Contract No. 14-10-0100-1271, approved May 24, 1961, together with two certified copies of the Attorney General's preliminary title opinion dated December 21, 1961.

Kindly place the voucher in line for payment, to be made from Water Rights Funds, Account 0343 (102.5), in accordance with Work Order 6 WR 62B.

SIGNED

Harry K. Sanders
Acting Chief of Lands

Attachments 4

Copy to: Regional Director, Region Three
Supt., El Morro
Assistant Solicitor, National Parks (RJL:MMe 33-32-216-2)
Mr. Dunn
Lands

LPTindal:lt

12-19-1961: memorandum to regional director regarding acquisition of ashcroft well and 79.12 acres, tract no. 3, rulon a. and inez

El Morro

WR copy

December 19, 1961

L54-ALW

Memorandum

To: Regional Director, Region Three

From: Acting Chief of Lands

Subject: Acquisition of Ashcroft Well and 79.12 Acres, Tract No. 3, Rulon A. and Inez M. Ashcroft, Husband and Wife, El Morro

As of this date, the subject acquisition is nearing completion. The addition of this and other land to the M nument is authorized by act of June 14, 1950 (64 Stat. 211), copy attached. Section 2 of the Act specifies that a Secretarial order or orders shall be issued upon the acquisition of property pursuant to the Act, setting forth the revised boundaries of the Monument to include the property thus acquired. Please advise if all lands proposed for acquisition under the 1950 Act have been acquired or is in the process of acquisition and if the preparation of a Secretarial order should now be initiated.

SIGNED

Harry K. Sanders
Acting Chief of Lands

Attachment

Copy to: Superintendent, El Morro, w/identical attachment
Mr. Ben Thompson
Mr. Dunn

VABerte:HKS:lct

10-25-1961: memorandum (air mail) to regional director regarding water supply project

Marley 10/25

PESmith

October 25, 1961

L54
CR/5427

Memorandum (AIR MAIL)

To: Regional Director, Region Three

From: Supervisory Engineer, WODC

Subject: Water Supply Project, El Morro

The memorandum of October 18 by Mr. J. C. Miller forwarding pump test data and Sketch NM-EM-7109 has been received. We accept the advice of Geologist Sam West of the USGS concerning the capacity of pump installation the Ashcroft well will support. We are glad to learn of his opinion that the well will produce 10 gpm. Such a supply of water should handle all proposed development at El Morro.

Project Supervisor Novak has been furnished a copy of your memorandum, and by copy of this memorandum we are directing him to take necessary action to provide an opening in the well cap for an electric probe to check the water level in the well from time to time.

FILE COPY

(Sgd.) P. E. Smith

P. E. Smith
Supervisory Engineer

In duplicate

Copy to: Supt.,El Morro (AIR MAIL)
Proj.Supv.Novak @ Capulin Mtn. (AIR MAIL)

Informational to: Alleman, Riddell, Stratton, Wright

DSMarley:jh

40

10-18-1961: memorandum to chief, western office of design and construction regarding production test ashcroft well, report by geo

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Region Three
Santa Fe, New Mexico

IN REPLY REFER TO:
I54
CR-A5427

OCT 18 1961

W O D C
OCT 20 '61
CHF
ADM
PERS
P & P
RCH
ENGR
L. A.
SPEC
CONT
SFTY
Moyle
Stratton
Wright
ACTION TAKEN - DATE
Sent to Rovak 10/20
Memo to Reg III 10/25/61

Memorandum

To: Chief, Western Office of Design and Construction

From: Acting Regional Director

Subject: Production Test Ashcroft Well, Report by George Johnston, Park Road Engineer, El Morro National Monument

Mr. Johnston's report dated October 12 covering the work at El Morro during the period September 27 through October 7, 1961 is attached.

We have also attached a sketch map NM-EM-7109 showing the conditions as exist based on discussions with Mr. Johnston, Civil Engineer Fields, and the Contractor Glado Williamson. It is our opinion after reviewing Mr. Johnston's report that the best test made of the well was the three hour test made on October 5 after the contractor raised the end of the outflow pipe and choked the discharge by means of a reducer and 1" pipe. The three hour test from 3:25 to 6:25 P.M. shows a production of slightly more than 10 gpm. From 4:25 until 6:25 P.M. the drawdown was stable and did not exceed 182.5. It is our opinion that the recovery in 35 minutes of 32.9 feet is good. Both Mr. Johnston and the driller reported some cloudiness at the start of the pumping but according to their report the water was clear and no sand was produced after the first few minutes of each test.

We have discussed this test with Geologist Sam West who assisted Civil Engineer Fields in the testing April 18 through 20 of this year. Mr. West agrees that the well will support a 10 gpm pump. The bottom of the well is capped and the well has been gravel packed. He recommends setting the pump about five feet off the bottom of the well or at an elevation of 195.0 feet. It will also be advisable to make provision for a 1/2" opening in the cap at the top (Sanitary

39

Well Seal) as shown in the upper right hand corner of the Working Drawings, Sheet 2 of 7, Dwg. NM-EM-3114. This opening is to provide for an electric probe for checking the well if it becomes necessary at some future date. If the screened vent shown in this same detail is 1/2" or larger I.D. and a screwed fitting the return bend could be unscrewed to admit the probe. If this is a welded fitting an additional 1/2" hole with a cap or plug should be provided.

Jerome C. Miller
Acting Regional Director

In duplicate

Attachments

Copy to: Director (2)
Superintendent El Morro
Geologist Sam West, USGS

10-12-1961: memorandum to regional chief of operations regarding report on field trip to el morro national monument

Region Three
Santa Fe, New Mexico

A5427

October 12, 1961

Memorandum

To: Regional Chief of Operations
Through: Regional Chief of Maintenance

From: Park Road Engineer

Subject: Report on Field Trip to El Morro National Monument, September 27 through October 7, 1961.

This trip was made for the purpose of supervision of the reaming and developing Ashcroft Well at El Morro National Monument. I arrived at El Morro Wednesday, September 27, and reported to Superintendent McNeil. Prior to my arrival all work had been completed except two items: (1) Sealing the top five feet of the well with concrete. (2) The pumping and developing at 10 to 15 g.p.m. According to information received, there are 200-feet of 6 5/8" O.D. or I.D. casing in the well with two-feet above the ground. At the time of my arrival the contractor was absent for the purpose of securing a pump and gas motor for pumping the well. No electric power was available at the well, and the contractor used a gas engine as a source of power.

The following data is furnished showing the time the Contractor worked during the above period together with important data concerning the development of the well:

September 28 - The Contractor bailed the well one hour and installed a Peerless Pump capable of pumping 80 gallons per minute. The pump was installed at an approximate level of 196-feet below the ground level.

October 2 - Contractor arrived with a gas engine and pumped four hours between the period 3 p.m. to 7 p.m. The amount of water pumped was approximately 30 g.p.m. for a period of 10 minutes after which time the average pumping was 10 g.p.m.

October 3 - The Contractor started pumping at 9:30 a.m. and pumped continuously for 28 hours. During the first 12 minutes the average rate of pumping was approximately 30 g.p.m. at which time the average dropped to 10 g.p.m.

Tests were made periodically during the above 28 hours and through the night. The production was tested by means of a bucket that when measured held four-gallons and a watch with a large second hand. The average production was 10 g.p.m. during the first four hours. A test showing a production of 9 g.p.m. was made at 1:30 p.m. At approximately 12 p.m. (Midnight) the pump had reduced production to approximately 5 g.p.m.

October 4 - The above rate of production was continued until the next day at 1:30 p.m., at which time the Contractor was instructed to discontinue pumping. This ended the 28-hour test.

The low production of 5 g.p.m. might be explained by the discovery of small broken seams in the threads connecting the pipe which carries the water from the bottom of the well to the surface. It was found in removing the pipe that water was leaking from the various breaks which could have caused air to be drawn in and thereby reduce production from the pump. We therefore feel that the well is very capable of carrying and producing more than 5 g.p.m.

Later I reported to Mr. Kell by telephone and discussed the possibility of installing a pump with the capacity of 10 to 15 g.p.m. which was specified in the contract. We also discussed the possible necessity of more pumping time for a more thorough test.

It was decided to request the Contractor (as specified in the contract) to secure an electric probe for testing the well more thoroughly and secure: (1) static water level (2) draw-down time and (3) recovery time.

October 5 - The Contractor decided that by raising the end of the outflow pipe, choking the 2" discharge by use of a reducer and 1" nipple, he could slow the pump to produce the 10 to 15 g.p.m. called for in the contract. During this test which started at 3:25 p.m. on October 5, we used a different can for measurement. This can held five-gallons and the 1" pipe nipple acting as a choke enabled us to make more accurate measurements.

Pumping was resumed at 3:25 p.m. and new tests were started. The static water level was measured with the electric probe and found to be 149.6-feet. The following is a tabulation made during the draw-down time while the pump was operating.

The water was murky or slightly doudy during the first ten minutes of each test. However, this appeared to be silt and no noticeable quantity of sand was produced in either test.

| Time | Gallons | Number of Seconds | Water Level |
|---|---|---|---|
| 3:25 P.M. | 5 | 18 | 149.6 Feet |
| 3:40 " | 5 | 22 | 185.0 " |
| 3:45 " | 5 | 22 | 185.0 " |
| 3:50 " | 5 | 23 | 185.0 " |
| 4:25 " | 5 | 28 | 182.5 " |
| 4:40 " | 5 | 27 | 182.5 " |
| 4:55 " | 5 | 28 | 182.5 " |
| 5:25 " | 5 | 27 | 182.5 " |
| 6:00 " | 5 | 27 | 182.5 " |
| 6:25 " | Pumping Discontinued | | |

Recovery tests, using an electric probe, were made after the pumping was discontinued and the results were as follows:

| | | | |
|---|---|---|---|
| P.M. | | | |
| 6:30 " | | | 170.0 " |
| 6:35 " | - | - | 161.0 " |
| 6:40 " | - | - | 156.6 " |
| 6:50 " | - | - | 151.6 " |
| 6:55 " | - | - | 150.42 " |
| 7:00 " | - | - | 150.0 " |
| 7:10 " Water returned to Static level | - | - | 149.6 " |

Total recovery time for 32.9-feet was 35 minutes.

October 6 - A concrete seal of a part of the open hole was made by pouring an estimated .5 of a cubic yard of concrete. The top eight-feet of the well casing was standing in an open hole approximately 8-feet deep and three to four-feet in diameter. This material had caved in on top of the gravel packing around the well casing. The Contractor used his bailer for cleaning the clay and removing a part of the water standing around the casing. Several gallons of water was bailed by hand before we began mixing concrete. Approximately five-feet of this open hole was therefore filled by concrete.

October 7 - The Contractor was instructed to weld at least a foot of 6 5/8" casing on top of the existing casing standing on the well. This work was accomplished early during the morning of October 7.

A tentative survey was made of a proposed sewer line extension from a small house occupied by Ranger Montgomery. Superintendent McNeil assisted me in measuring this proposed sewer line extension from which an estimate could be made.

I left El Morro at 4:45 p.m. en-route to Albuquerque.

(SIGN)

George J. Johnston
Park Road Engineer

Approved for distribution: _____ Date: OCT 16 1961
Regional Director

Copy to: Director (2)
Chief, WODC (2)
Supt, El Morro

07-27-1961: letter to james a. bird regarding requested the status of permit no. 4246

Region Three
Santa Fe, New Mexico

JUL 31 8 38 AM '61

L54
ELMO

JUL 27 1961

New Mexico State Highway Department
District No. 3
Albuquerque, New Mexico

El Morro

Attention: James A. Bird
District Engineer

Dear Sir:

This is in reply to your letter of July 21 wherein you requested the status of Permit No. 4246, dated May 2, 1961 for installation of a 4" conduit for installation of a 2" water line to cross State Road 53 near El Morro, New Mexico. for Ashcroft well supply

This project was completed on May 4, 1961.

Sincerely yours,

Thomas J. Allen
Regional Director

Copy to: Director (2)
Chief, WODC (2)
Supt., El Morro

07-25-1961: letter to mr. ashcroft regarding prepared draft of the warranty deed to be used to convey your property

Jul 28 8 43 AM '61

El Morro

Region Three
Santa Fe, New Mexico

L1425
Ashcroft

Mr. Rulon A. Ashcroft
Dalton Pass Trading Post
Crownpoint, New Mexico

Dear Mr. Ashcroft:

In accordance with your telephone call of last week we have prepared a draft of the warranty deed to be used to convey your property to the United States.

We are keeping the original in this office and if the deed as drafted meets with your approval a copy of the deed together with the abstract and other related papers will be mailed to the Washington Office for review by the Attorney General. As Mr. Kell explained, the review of the abstract has taken more time than anticipated in this office. The grant of right-of-way easement as shown in Book R/W 1, page 200, between Mrs. H. B. Dintleman and Valencia County, May 20, 1950 contains a reservation which will be objectionable to the Attorney General. This reservation gives a full and unrestricted right to Valencia County and the State of New Mexico to use material either on or off said land. While we do not anticipate the state exercising this right we are certain that the Attorney General will object to such broad language and will probably require a quitclaim deed from the state before acceptance can be made.

We will advise you further regarding this point as soon as possible.

Sincerely yours,

(SIGNED)

Thomas J. Allen
Regional Director

Enclosure

Copy to: Director (2) without enclosure
Supt., El Morro without enclosure

06-01-1961: letter to rulon a. ashcroft regarding on may 23 assistant director jackson e. price approved license to test and option t

WR 6/7
DJ

Region Three
Santa Fe, New Mexico

L1425
Ashcroft
X-154

JUN 1 1961

Certified Mail

Mr. Rulon A. Ashcroft
Dalton Pass Trading Post
Crownpoint, N. M.

Dear Mr. Ashcroft:

On May 23 Assistant Director Jackson E. Price approved License to Test and Option to Purchase executed by you and Mrs. Ashcroft on the 15th day of March 1961. Your signed copy is enclosed.

We are furnishing reproduced copy to Superintendent McNeil for his records.

As Mr. Kell has explained to you our Service will now require a draft of a deed proposed to be used to convey the land together with the mineral and water rights. We will also need an abstract of title or a title insurance policy in the form approved by the Department of Justice. If a title insurance policy is issued it must be in a form approved by the Attorney General and we have attached a mimeographed copy of a type of title insurance policy that is acceptable.

The Attorney General will accept either abstract of title or a title insurance policy so long as it is in the form attached.

If there are not too many instruments or changes in ownership of the property the abstract of title might not be any more expensive than the title insurance policy. The Valencia County Abstract, Frank Copelan, Manager, Los Lunas, New Mexico, is an abstractor approved by the Attorney General's Office to do abstract work in Valencia County.

The draft of the deed conveying the property to the United States must recite the true purchase price rather than "$10.00 or other valuable considerations". If you need any assistance in preparing the deed or obtaining the title evidence we will be glad to arrange assistance.

06-01-1961: letter to rulon a. ashcroft regarding on may 23 assistant director jackson e. price approved license to test and option t

Mr. McNeil will have two forms to complete in addition to those submitted by you. We should receive the draft of the deed, the abstract (or title insurance policy) and papers which McNeil will prepare in one package so that all required papers can be sent to the Attorney General for his opinion at one time.

The forms that McNeil will prepare should be prepared after the draft of the deed and title evidence is obtained and we suggest you send all papers through Superintendent McNeil for transmittal to this office.

Sincerely yours,

(SIGNED)

Thomas J. Allen
Regional Director

Copy to: Director (2)
Superintendent El Morro National Monument

06-01-1961: memorandum to chief regarding water supply system, el morro national monument

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Region Three
Santa Fe, New Mexico

IN REPLY REFER TO:
L54

JUN 1 - 1961

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Memorandum

To: Chief, Western Office Design and Construction

From: Regional Chief of Operations

Subject: Water Supply System, El Morro National Monument

Assistant Director Price approved the Option portion of the License to Test and Option to Purchase Contract for the Ashcroft property and well, El Morro National Monument on May 23.

This option provides that the United States, upon acceptance of the option, shall have the right to retain and use the well, together with land for access and for pipeline right-of-way. We have asked for wage rates and they are expected momentarily and as soon as they are received we are ready to advertise the contract for reaming, casing and gravel packing of the well. You have previously been advised that a six-inch (Orangeburg) sewer pipe has been placed under the road to carry the pipeline.

We have $29,478.63 unallotted and Superintendent McNeil has $13,241.82 unobligated. This makes a total of $42,720.45 available. The cost of reaming the well, gravel packing and re-setting the casing must come out of this amount and it is estimated, although no bids have been received, that this work can be done for approximately $6,000. Therefore, there should be approximately $36,720.45 available, for the balance of the project.

We believe that this will be sufficient to do the work including a distribution line to serve the picnic area. However, we suggest the line to the picnic area be included as an alternate in the event the cost of the pipeline, pumphouse and the well (casing and reaming) should exceed anticipated expenditures.

Jerome C. Miller
Regional Chief of Operations

In duplicate

Copy to: Director (2)
Superintendent El Morro

36

05-24-1961: memorandum to regional director regarding approval of option to purchase with water rights runds e. morro national

MAY 24 1961

L54-CBL

Memorandum

To: Regional Director, Region Three

From: Assistant Director

Subject: Approval of Option to Purchase with Water Rights Funds El Morro National Monument Tract No. 3, Comprising the Ashcroft Well and 79.12 Acres of Land

Mr. Carpenter transmitted by memorandum of May 9 three executed copies and one conformed copy of a 4-month option dated March 15, 1961, expiring July 15, 1961, by which Rulon A. Ashcroft and Ivy M. Ashcroft, his wife, offer to sell to the United States, for $18,000, Tract No. 3, containing 79.12 acres of land, including all mineral and water rights in the N½NW¼ Sec. 6, T. 9 N., R. 14 W., P.M., within the El Morro National Monument.

The 79.12 acres, situate in the northwest corner of the Monument, are level mesa classified as good grazing lands. The tract is traversed by State Route 53 and, consequently, is attractive for commercial development for motel, cafe, and service station sites. Its acquisition is important to forestall nonconforming uses, reduce administrative costs, and round out the Monument lands.

The pressing motivation is the acquisition of the Ashcroft well sunk in the northwest corner of the tract, urgently needed for Monument use. The number of visitors are annually increasing by about 17 percent and in 1960 reached a total of 18,900. The available amount of potable water is now insufficient and it is imperative that the supply be augmented by the Ashcroft well. This well has been selected from the two local privately owned wells and five test wells drilled by the National Park Service on Federal land as the best source of water.

The property was appraised for market value as of January 9, 1961, by Mr. Martin W. Eckert of the Western Land Service, Albuquerque,

New Mexico, designated as Tract 1 in his report with an analysis supported by comparable sales, summarized as follows:

| | |
|---|---|
| 79.12 acres of land traversed by an arterial highway with frontage susceptible of commercial development @ $50 an acre | $4,000, rounded |
| One 8" uncased well 205 feet deep, assumed capacity 20 to 25 gpm | 15,000 |
| Total value, land and well | $19,000 |

Mr. Eckert appraised the Ashcroft well on the basis that a later test of the unconfirmed reported yield would show the well to be equally as good as the nearby Siemens well, and refers to Table 2 of the unpublished USGS report, Geology and Water Supply of El Morro National Monument, New Mexico, Dec. 1960, by S. W. West. This report indicates that the Siemens well is 251 feet deep with a measured yield of 25 gpm with a heavy sand load.

The Geological Survey, in collaboration with NPS engineers, tested the Ashcroft well April 18 and 19, 1961. The test showed that the well is capable of yielding at least 15 gpm of water with a much lower sand content, and less than half the drawdown for the same yield, than the Siemens well, and that adequate improvements and development should improve the performance. Mr. A. van V. Dunn, Chief, Water Resources Section, Branch of Lands, advises that the reports on the Ashcroft well tests show that the conditions for purchase exceed those prescribed in Mr. P. E. Smith's (Supervising Engineer NPS, WODC) memoranda of April 14 and May 15 for Monument water needs and water system design. The test made in pursuance of the provisions contained in a license to test a water well, made a part of the option, also met the required conditions recited therein as precedent to exercising the option, namely the production of at least 15 gpm without excessive sand or drawdown.

Since the option consideration of $18,000 is $1,000 less than the appraised value and appears reasonable, and the well tests are acceptable, I have today approved the option pursuant to Sections 1 and 6 of Departmental Order No. 2640, as amended, delegating authority to Assistant Directors of this Service to accept options. The approved option has been assigned Contract No. 14-10-0100-1271.

Water rights funds are available for the purchase of this property.

One signed copy and two conformed copies of the approved option are attached. The signed copy should be delivered to the vendors, one conformed copy forwarded to the Superintendent, and the other retained for your records.

We will require a draft of the deed conveying the land and mineral and water rights, an abstract of title, title insurance, or other title data in the form approved by the Department of Justice, and the usual possessory rights reports, all to be submitted to the Attorney General for his opinion as to the sufficiency of the title evidence.

Option paragraph (7) provides that the United States, upon acceptance of the option, shall have the right to retain and use the well, together with land for access and for a pipe line right-of-way conveying the water southeastward to the headquarters and to run under State Highway 53. The State Highway Commission approved a permit May 2, 1961, for the installation of a 2" water line in a 4" conduit crossing under the highway.

(SGD) JACKSON E. PRICE

Assistant Director

In duplicate

Attachments 3

Copy to: Assistant Solicitor, National Parks, w/c of option
Lands
✓Water Resources Section, with conformed copy of option
Accounts, w/original and conformed copy of option.
Please obligate $18,000 under Account 0543 (102.5 El Morro), in accordance with 5th revision of Work Order 6 WR 61, which is being submitted separately.
Budget

CRWSmith:AvVD:lt 5/19/61

00-00-0000: license to test a water well and option to purchase el morro national monument

UNITED STATES
EPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

LICENSE TO TEST A WATER WELL AND OPTION TO PURCHASE
EL MORRO NATIONAL MONUMENT

The undersigned grantors, Rulon A. Ashcroft and Ivy M. Ashcroft, husband and wife, in consideration of the sum of $ 25.00 and a written report of the production pump test, do hereby grant to the United States of America and its assigns permission, authority and license to make a pump test showing the productivity of a water well on real property owned by the undersigned grantors and described as follows:

A well located in the northwest corner of Lot 1, ($NW^4NW^4$), Section 6, Township 9 North, Range 14 West, NMPM, Valencia County, New Mexico.

It is understood that the grantee, United States of America, may, in order to determine the true productivity of the above-described well, make such tests, acting through a contractor, as may be necessary. The United States of America acting through a contractor is granted the right to remove the existing stub casing if necessary, and install such casing and/or equipment as may be necessary in order to make the contemplated tests.

At the end of the test period the United States may elect to leave the casing in the well pending purchase or rental of the casing from the contractor. The casing may be left in place for as long as twelve months from the date of completion of the well test.

In the event the above-mentioned water well produces an adequate amount of water (expected to be at least 15 gallons per minute) without excessive sand or drawdown, the United States may exercise the option provisions of this instrument.

It is further understood and agreed that the United States of America, acting through its contractor, will restore the area, replace the existing stub casing and leave the area in a neat and orderly condition after the tests have been completed if the option provisions below have not been exercised.

LAND PURCHASE OPTION AND CONTRACT PROVISIONS
ASHCROFT PROPERTY, TRACT NO. 3 - EL MORRO NATIONAL MONUMENT

Contract No. 14-10-0100-1271

(1) As further consideration for the payment of the sum aforesaid, there is hereby given to the United States of America and its assigns the right, power, and option, at any time within four months from the date hereof

upon receipt of written communication from an authorized representative of the United States of America, hereinafter called the Purchaser, the Seller will sell and at his own expense convey free of all encumbrances whatsoever, except any that may be administratively waived by the Purchaser, to the United States of America by proper deed of conveyance, acceptable to the Attorney General, under the conditions hereinafter provided, all of that real property, tenements, hereditaments, and its appurtenances, including such mineral and water rights, easements, and rights-of-way appertaining thereto which the said Seller has or may use in connection therewith situate and lying in the County of Valencia, State of New Mexico, containing 79.12 acres, more or less, and more particularly described as follows:

The $N^{\frac{1}{2}}NW^{\frac{1}{4}}$ of Section 6 (consisting of Lot 1 and the $NE^{\frac{1}{4}}NW^{\frac{1}{4}}$) T. 9 N., R. 14 W., N.M.P.M. containing 79.12 acres more or less.

(2) The Seller further agrees that the price at which said property will be sold to the Purchaser as hereinbefore provided shall be $ 18,000.00 .

(3) The Seller agrees that if he is unable to show and establish title to the property aforesaid, satisfactory to the Attorney General, then, and in that event, the Purchaser may, in its discretion, institute judicial proceedings for the acquisition of said property. In such an event, the price stated in No. 2 above, is hereby agreed to, or will be stipulated to, by the Seller as the value of the aforedescribed property, if acquired by the Purchaser under judicial proceedings.

(4) That, to the best of the Seller's knowledge and belief at the time of the execution of this option to purchase, the title to the aforesaid property is encumbered only by the following taxes, mortgages, liens, or other encumbrances:

(a) A right-of-way easement for an R.E.A. Power Line (Continental Divide Electric Co-operative) extends along the northerly boundary of the property.

(b) A right-of-way for New Mexico Highway, State Route No. 53 crosses the property approximately through the center in an east-west direction.

(c) A portion of the Zuni-Ramah telephone line may cross a portion of the property.

(d) The statutory lien for 1961 taxes, which are not yet due or payable.

The vendors cannot have any rights-of-way easements Items 1 through 3 above released and the property will be conveyed subject to the above-mentioned rights-of-way.

(5) The Seller further agrees, after written acceptance of this option, and upon request by the proper representative of the United States, to do the following as soon as possible and without expense to the Government:

(a) Deliver to the Purchaser a draft of general warranty deed (or such other deed or conveyance as may be satisfactory to the Attorney General) proposed to be executed by the Seller to convey the aforesaid property, accompanied by a duly executed standard Government voucher required by the Purchaser to support payment for the property.

(b) Provide the Purchaser with an abstract of title, certificate of title, title insurance policy or combined title certificate and insurance policy, or other evidence of title in a form and by an issuing part satisfactory to the Attorney General. The Attorney General will make a preliminary title examination and report setting forth any curative title data the Seller shall provide to assure the Purchaser a satisfactory title.

(c) Correct any title defects disclosed by the Attorney General's title report. The Seller shall pay all taxes which have become liens upon the above-described property and no part thereof shall be apportioned to or payable by the Purchaser. The Seller will obtain a release of the aforesaid property from all taxes. The Seller will at his expense, when directed by the Purchaser's representative, record Seller's properly executed deed, pay for such recording fees and revenue stamps as may be required, and have, or arrange to have, the abstract, certificate, or title insurance policy extended to show an unencumbered fee simple title to the aforesaid property to be vested in the Purchaser, at which time the Purchaser will deliver the purchase price check to the Seller.

(d) If the abstract, certificate of title, etc., described in (b) above, is not furnished by the Seller within 60 days after request therefor by the Purchaser, it may be procured at Seller's expense by the Purchaser and the cost thereof shall be deducted from the purchase price recited herein. Any necessary extension of said abstract, certificate of title, etc., shall also be included in this provision.

(e) Any loss or damage occurring prior to acceptance of title to the aforesaid property by the Purchaser by reason of the unauthorized cutting or removal of products therefrom or because of fire shall be borne by the Seller; and in the event any such loss or damage occurs, the Purchaser may elect to refuse acceptance of the conveyance unless an equitable adjustment in the purchase price is made.

(6) The Seller further agrees that during the period covered by this instrument officers and accredited agents of the United States shall have, at all proper times, unrestricted rights and privilege to survey and enter upon said property for all lawful purposes in connection with the negotiations for the acquisition thereof.

(7) It is agreed when the United States of America, acting through the Secretary of the Interior, or other authorized representative, shall have accepted this option for the purchase of the property as herein provided then, and in that event, this instrument shall constitute a contract of bargain and sale between the parties hereto. Upon notice to the Seller's of such acceptance, and pending the transfer of title to the United States, the United States shall have the right to retain and use the well previously tested, together with so much of the land surface as may be reasonably necessary for access to the well and for a pipeline conveying water therefrom to El Morro National Monument.

(8) No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of the contract or to any benefit that may arise therefrom. Nothing in this paragraph, however, shall invalidate this contract if made with a corporation for its general benefit.

(9) The Seller represents that he /___/ has, /X/ has not, employed or retained a company or person (other than a full time employee) to

solicit or secure this contract and agrees to furnish information relating thereto as requested by the contracting officer. (Seller shall check the appropriate box in this statement and if a company or person has been employed or retained to procure this contract, Standard Form 119 shall be completed by the Seller and appended hereto).

Rulon A. Ashcroft

Ivy M. Ashcroft

State of New Mexico )
) ss
County of Valencia )

The foregoing instrument was acknowledged before me this 15th day of March 1961, by Rulon A. Ashcroft and Ivy M. Ashcroft, husband and wife.

Mary Fidel
Notary Public

My commission expires: February 1, 1964

Approved: MAY 23 1961
(Date)

(SGD) JACKSON E. PRICE

Assistant Director, National Park Service

05-12-1961: memorandum to chief, western office of design and construction regarding conduit across state road 53

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Region Three
Santa Fe, New Mexico

IN REPLY REFER TO:
L-54
El Morro

MAY 12 1961

Memorandum

To: Chief, Western Office of Design and Construction

From: Regional Chief of Operations

Subject: Conduit across State Road 53, El Morro National Monument

On May 3, 4 and 5 the Civil Engineer of this office supervised the installation of a 6-inch conduit across State Road 53 in preparation for the proposed pipeline from Ashcroft well to the Headquarters Area.

This conduit is 6-inch "Orangeburg" sewer pipe, is set from Station 18+51 to Station 19+16, has a cover over each end, is entirely covered with soil and has a 2X4 marker at each end. Elevation of ground level or bottom of conduit at Station 18+51 is 7184.02 feet and the elevation at Station 19+16 of the ground level or bottom of the conduit is 7184.47 feet.

We have acquired a permit to cross from the State Highway Department and will proceed immediately with plans and specifications for reaming and developing of the Ashcroft well.

Jerome C. Miller
Regional Chief of Operations

In duplicate

Copy to: Director (2)
Supt., El Morro

WRG

Region Three
Santa Fe, New Mexico

L-54
El Morro

May 9. 1961
Appraisal report routed to Price 5/15/61

AIR MAIL

Memorandum

To: Director

From: Regional Director

Subject: Acquisition of Ashcroft Well and 79.12 Acres, Tract No. 3, Rulon A. and Ivy M. Ashcroft, Husband and Wife, El Morro National Monument, and Report of Testing of Subject Well from Ground Water Branch, USGS

Attached is a copy of the report of the well test submitted by the Ground Water Branch, USGS, dated April 27, 1961. This report summarizes the testing of the Ashcroft well done on April 18 and 19, and supervised by S. W. West of the USGS, and Civil Engineer Fields of this office. Reference is made in conjunction with this report to Assistant Director Price's memorandum of May 2 concerning the acquisition of the well and land. There are certain questions posed in this memorandum, some of which are answered in the attached report, some were answered in the field report submitted by Civil Engineer Fields, on April 27, a copy of which was forwarded to your office, and additional answers were given in a memorandum from the Acting Regional Director to the Chief of the Western Office of Design and Construction written on April 28, a copy of which was forwarded to your office.

A summation of the data contained in this report indicates that it is desirable to exercise the option with Mr. Ashcroft and purchase this well and land (the land itself is within the proposed boundary of El Morro National Monument). We feel that this purchase option contract should be approved as quickly as possible. WODC indicates that they feel this well is satisfactory and they are proceeding with the design of the pumphouse, pump, pipeline, etc.

Following are answers to some of the questions posed by your May 2 memorandum:

1. Both Mr. West, USGS, and Mr. Fields of this office feel that the Ashcroft well is as good or better than

the Pettit well. The well probably produces water from the same aquifer and in the present undeveloped state the water cleared at a little less than 15 gpm production rate whereas the Pettit well never cleared. Mr. West feels that it would be possible to produce 20 to 25 gpm with proper development without a sand filtration facility.

2. The well was not tested at a higher rate than 15 gpm because information received from WODC indicated that 15 gpm would be sufficient for all future water use at El Morro.

3. We have already obtained a pipeline right-of-way across state road 53. Copies of this permission-to-cross will be forwarded by separate memorandum.

Based on all available knowledge we feel that permission should be granted to us to exercise the option and purchase the Ashcroft well and land as rapidly as possible and we request this approval by telegram.

For your information copies of memoranda dated April 14 and May 5 from WODC to this office are attached.

Thomas J. Allen
Regional Director

In duplicate

Attachments

Copy to: Chief, WODC (2) with attachments
Supt., El Morro with attachments

04-27-1961: letter to regional chief of lands regarding test of ashcroft well (9.14.6.111), el morro national monument

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Ground Water Branch
P.O. Box 4217
Albuquerque, New Mexico
April 27, 1961

IN REPLY REFER TO:
RECEIVED
NPS REGION THREE OFFICE
MAY 1 1961

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To : Regional Chief of Lands,
National Park Service
P.O. Box 1728
Santa Fe, New Mexico

From : District Engineer, Ground Water Branch
U.S. Geological Survey
Albuquerque, New Mexico

Subject: Test of Ashcroft well (9.14.6.111), El Morro National Monument, New Mexico.

This memorandum summarizes the testing of the Ashcroft well in the NW¼ NW¼ NW¼ sec. 6, T. 9 N., R. 14 W., Valencia County, New Mexico, and presents conclusions based on the test. The well was tested April 18 and 19, 1961.

S. W. West, in company with Bill Fields of your office, observed the test pumping, measured the pumping rates, and measured the water level in the well during and following two 10-hour periods of pumping. The discharge was measured with a 5-gallon can and a stopwatch; the water level during pumping was measured with a single conductor electric line, and was checked occasionally by steel-tape measurements. The water level following the periods of pumping was measured with a steel tape.

The first period of pumping was from 8:09 AM to 6:05 PM April 18. The pre-pumping water level was 148.48 feet below the top of the temporary 6-inch casing, which was 1.9 feet above the top of the 8-inch soil casing. The initial pumping rate was 14 gpm, and the water was very turbid. The suspended matter included clay, silt, and very fine sand. The volume of suspended matter was not measured, as the necessary equipment was not available. The pumping rate was reduced in steps to 6 gpm by 9:18 AM. This rate was maintained until the pump was stopped. The water was clear by midafternoon, and it remained clear, except for a negligible amonnt of very fine sand. The temperature of the water was 56° F. The depth to water was 155.0 feet at the end of the period of pumping. The apparent drawdown was 6.5 feet and the specific capacity was 0.92 gpm per foot of drawdown. By 7:48 AM April 19, the water level had recovered to 149.17 feet.

The second period of pumping was from 7:57 AM to 5:57 PM. The initial pumping rate was 6 gpm; the water was clear and nearly sand free. The pumping rate was increased by steps to 14.3 gpm by 1:04 PM and was maintained at about 14 gpm until the test ended. Each time the rate was increased, the water was slightly turbid for a short time. The water was clear and nearly sand free most of the afternoon. The depth to water was 158.60 feet at the

L54 Clmo

end of the test. The apparent drawdown was 9.43 feet and the specific capacity was 1.48 gpm per foot of drawdown.

The apparent improvement in the specific capacity of the well from the first test to the second was probably caused by development of the well by pumping. According to reports of local residents, the well was not developed properly when it was drilled.

The results of the test indicate that the Ashcroft well is capable of yielding at least 15 gpm of water with a low content of sand. The well probably could be improved somewhat by reaming, gravel packing, and developing.

Mr. Cowley, the contractor, said that the casing was binding in the lower part of the well. It is possible that the hole is smaller near the bottom, owing to the wear on the outside of the bit during drilling. However, the difficulty in lowering the casing may have been caused by a column of loose sediments in the lower part of the well. The well was only 186.5 feet deep at the end of the first test, in comparison to an original depth of 205 feet. This is approximately the depth before the first test began. A larger diameter hole would facilitate the placement of gravel in the aquifer, so reaming (up to 12 inches in diameter) would be desirable.

A gravel pack would improve the performance of the well by physically limiting the movement of sand toward the well and by providing larger pores than those in the aquifer through which the water could move in the vicinity of the well. The larger pores would permit a given quantity of water to move through the gravel pack at a lower velocity than it would have in the aquifer, thus reducing the sediment-carrying capacity of the water as it approaches the well.

Adequate development will be critical to having a good well. After the casing and gravel pack have been placed, the well could be developed by surging with a surge block and bailing out the sediments that would be pulled into the well. Ample gravel should be available to displace the sediments that are removed from the aquifer. It is impossible to determine in advance how much time will be needed for surging and bailing . As soon as the sediments cease to come into the well the development operations should be stopped. Perhaps 36 to 72 hours would be required for adequate development.

The well could be further developed after a pump is installed. A good procedure for pumping would be a slow rate at first with a series of step increases to the maximum amount that will be needed, or that can be obtained from the well, as the water clears at each rate of pumping.

We hope that this information will be useful in your planning. If you have questions that we might answer, please feel free to call on us.

Sincerely yours,

William E. Hale

William E. Hale
District Engineer

SWW/mwm

04-14-1961: memorandum to regional director regarding proposed water line

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

April 14, 1961

IN REPLY REFER TO:
D5039

RECEIVED
NPS REGION THREE OFFICE
APR 17 1961

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Memorandum (AIR MAIL)

To: Regional Director, Region Three

From: Supervisory Engineer, WODC

Subject: Proposed Water Line, El Morro National Monument

In reference to your memorandum of April 11 on above subject.

We estimate that ultimate maximum water consumption at El Morro will be in the vicinity of 4800 gallons per day. This is about 3 1/3 gallons per minute based on a 24-hour day.

If we had positive assurance that the well could produce 3.5 gpm perennially, we should buy it without hesitation. However, since the testing contractor can give us the well's yield for the current season, only, we need to be cautious and insist on a minimum sustained yield rate of 10 gpm.

Our only alternative would be to test the well several times during the year; that is, between now and next October, before we buy it. This would be the most conservative procedure.

Furthermore, it appears likely that single-phase power will not be adequate to operate a plant delivering more than 5 gpm but this is something that we have not had time to calculate to date. We would need to work out full details of the plant design in order to ascertain maximum capacity available with single-phase power. If only single-phase is available, 3-phase can be obtained by Add-a-phase at extra cost. However, if it could be ascertained that the well can produce 3.5 gpm continuously from spring through fall, we could get by for the next few years, although it would be touch-and-go when the area is fully developed, as 3.5 gpm would require 24-hour a day pumping.

P.E. Smith
Supervisory Engineer

In duplicate

Copy to: Supt.,El Morro (AIR MAIL)

RECEIVED
NPS REGION THREE OFFICE
MAY 8 1961

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

IN REPLY REFER TO:
L54

May 5, 1961

Memorandum

To: Regional Director, Region Three

From: Supervisory Engineer, WODC

Subject: Water Supply System, El Morro

Reference is made to the memorandum of April 28 signed by Mr. Carpenter and to the telephone conversation of May 1 between Messrs. J.C. Miller and Koehler of your office and Marley of WODC.

We will proceed with preparation of plans and specifications for the pumping system and supply line as soon as possible. Since Project Supervisor Novak is in the field at present, there may be some delay, but we hope to be able to have plans out to you by the early part of June. (Incidentally, we find that we do have the profile information obtained by Bill Fields in March. With this, we should be able to proceed with little difficulty).

Meanwhile we hope your office will be successful in getting the necessary reaming, casing and gravel packing of the well bore accomplished separately since that is a specialized type of work which would probably be subcontracted anyway if included in the pipeline contract.

We have made some fairly careful design studies which confirm that a two-inch pumpline will be adequate. The four-inch conduit you have proposed for installation beneath the roadway of Highway 53 will also be adequate. We assume your office will take necessary action to get the conduit installed.

Our studies were based on the following:

Pumping rate - - - - - - 10 gpm
Max. water level (reservoir) - - - - - - - 7389
Elev. of pump setting (estimated 175 ft. below surface - - - 6987
Static head - - - - - - - 402 feet
Headloss in 6,400 ft. of 2-in. steel pipe - - - - - 31 feet
Headloss in 6-in. distribution main - - - - (negligible)
Total dynamic head (@ 10 gpm) - - - - - - 433 feet

For these conditions we can use a Reda submersible-type pump, Model 25A18E which operates with a 2-horsepower, single-phase motor.

L54 Hand

We also intend to include in this project a distribution line to serve the picnic area. However, in order to stay out of trouble fund-wise, we would appreciate receiving from your office a statement indicating what funds remain available for the work now contemplated.

P.E. Smith
Supervisory Engineer

In duplicate

Copy to: Supt.,El Morro

W O D C
MAY - 3 '61
CHF
ADM
PERS
P & P
ARCH
ENG
L.A.
SPEC
CONT
SFTY
ACTION TAKEN - DATE
None

L54-OBL

MAY 2 - 1961

Memorandum

To: Regional Director, Region Three

From: Assistant Director

Subject: Acquisition of Ashcroft Well and 79.12 Acres, Tract No. 3 - Rulon A. and Ivy M. Ashcroft, Husband and Wife, El Morro

Before considering acceptance of the Option Contract 14-10-0100 for the subject tract, which Mr. Carpenter forwarded on April 24, we need your assurance that the Ashcroft well is an acceptable source of water to the engineers who will design the water system. We do not believe that this can be determined until WODC has an opportunity to review the data obtained in the pump test of April 17, but we believe that the USGS might supply such data and conclusions in an interim memorandum rather than wait for clearance of a formal report.

We note that the Eckert appraisal of $19,000 included $4,000 for land and $15,000 for the well "if as good as the Pettit well". The Pettit well had a tested yield of 23 gpm and WODC suggested by memorandum of September 18, 1959, that it could design a satisfactory installation to produce 15 gpm with economically justifiable sand settlement and filtration facilities.

Mr. Carpenter's memorandum suggests that the Ashcroft well has been found to be unusable without an additional cost of reaming from 8 inch to 12 inch diameter to straighten it, and will have only a yield of between 10 gpm and 15 gpm, although there is somewhat less sediment to remove. The option price of $18,000 is only $1,000 less than the appraised value based on more water and an assumed straighter bore.

We shall be pleased to consider your suggestions for a reasonably enhanced land value, because it is an inholding. However, it is essential that the purchase with water right acquisition funds be based on the value of the well for water supply purposes. You should take such measures as are possible and proper, to assure pipeline right-of-way across the new road.

Please let us have the results of the engineering analysis of the USGS findings on the Ashcroft well as soon as possible, since the option will expire July 15 if not accepted prior to that date.

(SGD) JACKSON E. PRICE

Assistant Director

Copy to: Superintendent, El Morro
Chief, WODC (2)

04-28-1961: memorandum to chief regarding development of well design specifications and contrast for installation of pipeline and

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Region Three
Santa Fe, New Mexico

APR 28 1961

IN REPLY REFER TO:
L-54
El Morro

Memorandum

To: Chief, Western Office of Design and Construction

From: Acting Regional Director

Subject: Development of Well Design Specifications and Contract for Installation of Pipeline and Pump House, Ashcroft Well, El Morro National Monument

A production test run on the Ashcroft well located in the northwest corner of Section 6, T. 9 N., R. 14 W., NMPM at El Morro National Monument was apparently successful. This test was run by Cowley Drilling Company of St. Johns, Arizona on April 18 and 19 under the supervision of Geologist Sam West, U.S.G.S., and Civil Engineer Fields of this office. The results indicate that with proper development and gravel packing this well will be sufficient for all future needs at El Morro and we have requested Washington office approval to purchase the well and adjoining land.

Please proceed with the design and specifications, covering the installation of the supply line from the well to the water system at Headquarters and for the design of the pump house and pump installation at the well.

In addition we suggest that you include in this same contract provisions for reaming the present 6" bore to 12 inches, gravel packing and development in order that this entire project can be included in one bid and completed at the same time.

Following is some pertinent information which may be of assistance to you in your design and including recommendations made jointly by Geologist West and Civil Engineer Fields:

1. The well as it was drilled is 205 feet deep. The water was found at a depth of 200 feet in an aquifer made up of very fine particles of soil. This aquifer is apparently five feet deep and lies between a very dense formation of malpais or basalt and a red burned sandstone formation. This malpais is not of the general type in that it is much more dense than most and apparently is not water bearing although the driller's report on this well

28 K

indicates that a seep was encountered at a depth of 150 feet. This seep was of sufficient quantity to aid in drilling with a rotary rig.

2. After about twenty hours of pumping, the water still stands at a depth of 149.6 feet but sand was pulled into the casing and the depth of the well upon completion of the pump test was 188.5 feet.

3. The water is of a very good chemical quality, containing only 266 p.p.m. total hardness. The primary problem in the utilization of this water will be keeping the fine silt and sand particles from being pumped into the supply line.

4. Although representative samples in this case would be hard to obtain because we could only obtain them while the silt was being pumped, tests on this fine silt or sand in the aquifer indicate that approximately 19% by volume passes through a #200 screen.

5. As a result of the production test we have purchased the casing installed for that test and have left it in the well. It is 6" I.D. steel casing and reaches to a depth of 198 feet with two feet protruding above ground level at the well.

Recommendations.

1. In drawing up the specifications we think the first step should be to ream the well to a twelve-inch diameter so that sufficient gravel packing can be done. Based on drillers' reports obtained from that area we think that the cost of moving a rig of sufficient size to ream this hole in and out would be $1,000 and that the reaming cost would be $16 per hour with a strong possibility that it would take from 130 to 150 hours to ream this well to a depth of 205 feet. An item will have to be included to withdraw the casing from the hole and install 205 to 207 feet of permanent casing after the hole has been reamed. This will allow the perforated casing to rest on the bottom.

2. Silt and sand in the aquifer are of the type which would discourage the use of a well screen. Probably the gravel pack and perforated casing will be sufficient.

3. Gravel used in packing should probably be no larger than "pea" gravel and should be packed all the way within five feet of the surface so that as the well is developed

the gravel will have a tendency to fill the void caused by the pumping out of the sand and silt.

4. There should be an item in this contract to surge and bail for 20 to 24 hours after the casing has been installed and then a pumping of the well in order to develop it should be included for a period of 24 to 48 hours additional.

At present the state is in the process of paving State Road 56 in the El Morro area. We assume that the supply line from the pump to the Headquarters area will be 2" line and since the state desires that we trench across the road and make installation within the next three weeks we are anticipating the placing of a 4" pipe across the highway right-of-way. When the pipeline is installed a 2" pipe can be shoved through the 4" pipe underneath the road and will not require disturbance of the new pavement. If you anticipate a larger supply line than can be inserted in a 4" pipe would you notify us immediately?

If you need any assistance from this office please do not hesitate to call on us.

James M. Carpenter
Acting Regional Director

In duplicate

Copy to: Director (2)
Supt., El Morro

04-27-1961: memorandum to acting regional chief of operations regarding field trip to el morro national monument to test ashcroft

WRC/ly
Cowley

RECEIVED
NATIONAL PARK SERVICE
WASHINGTON OFFICE
MAY 1 10 11 AM '61

Region Three
Santa Fe, New Mexico

April 27, 1961

L-54
El Morro

Memorandum

To: Acting Regional Chief of Operations

From: Civil Engineer

Subject: Field Trip to El Morro National Monument to Test Ashcroft Well

On April 17 I departed from Santa Fe at 7:45 a.m. en route to El Morro National Monument to supervise a production test on the Ashcroft Well. En route I made a short stop at the U.S.G.S. office, Ground Water Branch, in Albuquerque to consult with Mr. William Hale and Sam West about their part of the test. I borrowed a 500-foot tape and a 500-foot electric probe from Mr. West in order that I might make some measurements prior to his arrival at the test site.

I arrived at El Morro at 1:15 p.m. and the driller, Mr. Graham Cowley, had already arrived with his rig and equipment. I first inspected and measured all of the casing and found it to be new and in good condition. There was one piece of 6" I.D. perforated casing, 18 feet long, 4 pieces of 6" I.D. solid casing, 28 feet long, two at 29 feet, and one at 12 feet, for a total of 200 feet. The rig for installing the casing was a 1½ ton GMC truck mounted with a 30-foot cable boom and pulley rig which was held in place by cables attached to steel pins in the ground. Mounted on the truck were the gasoline engine used to power the boom and cable and an acetylene welding torch and tank. On the back of a 3/4 ton pickup truck was mounted a 10 kw. generator which was used to operate the electric pump.

I then measured the depth to the water with the electric probe and got the reading of 152.3' and I sounded the bottom of the well with the steel tape and got a depth of 198' to the bottom of the well. Shortly after 2:00 p.m. Mr. Cowley started installing the casing. The casing was welded at the seams as it was installed. At about 40' above the bottom of the well the casing became difficult to drive. Undoubtedly the driller of this well had not "dressed" his drilling tools and the hard malpais wore the diameter of the bit down so that by the time it reaches bottom the well is only a little over 7" in diameter. At 5:10 p.m. we had 198' of casing in the hole and 2' protruding

above the ground. It was obvious that we were still in very soft formation and that it might be beneficial if we could drive 5 to 7 more feet of casing in the hole, so we made a trip to Ramah to see if we could buy 7' of additional casing. However, our trip was unsuccessful as the driller in Ramah had nothing larger than 4" diameter pipe. At 6:10 p.m. they started setting the pump. This pump was a 1½ horsepower, 230 volt single phase, 10 amp. submersible pump manufactured by Clayton Mark and Company, and it was new. It was decided that we would set the pump at about 170 to 180' down for our first test. A 2" feeder pipe was attached to the pump, the pump was set at a depth of 175'. This feeder pipe was used as the outflow pipe and extended about 25' from the hole into a ditch. I left the well site at 6:30 p.m., drove to Grants and arrived there at 7:25 p.m.

The following morning, April 18, I left Grants at 6:30 a.m. and arrived at the well site at 7:25 a.m. Mr. Sam West of the U.S.G.S. had already arrived and we measured the depth to the water with the probe and got 144'. We checked this with the steel tape and got a reading of 148.5. We corrected the probe to agree with the steel tape and at 8:00 a.m. we started the pump. At that depth we were pumping between 90 and 100 pounds of pressure to get 12 to 15 gallons per minute. Our first measurement at 8:06 a.m. indicated that we were pumping 12 gallons per minute. At 8:13 a.m. the water became very muddy, and it appeared that we had a well of the same type as the Siemens well. At 8:17 a.m. our drawdown was to 175' and we started pumping air so we decreased the outflow pump back to 10 gallons per minute. At 8:44 a.m. we were still pumping mud and silt so we cut the rate of flow to 8 gallons per minute. At 9:18 a.m. the same situation existed so we cut the rate to 6 gallons per minute.

Mr. West and I agreed that if we had to cut the flow of the pump below 6 gallons a minute then it would not be beneficial to consider the purchase of this well. So we left the flow at 6 gallons per minute, the drawdown steadied by 9:40 a.m. to approximately 155' and the water started clearing. By 2:42 p.m. the drawdown was still at 155' and the water was crystal clear. We took a temperature reading of the water and a tape measurement at 4:23 p.m. This indicated the water had drawn to 155.04' and was at a temperature of 56° F. At that time the water was definitely crystal clear with no particles of sediment contained in the samples. At 6:05 p.m. we turned the pump off and immediately began recovery readings. The first recovery reading indicated a very good recovery rate in that it had recovered most of its head loss in three minutes. We continued taking recovery readings till 9:05 p.m. and at 9:25 p.m. I left for Grants, arriving there at 10:15 p.m.

The following morning I left Grants at 7:00 a.m., arriving at the well site at 7:55 a.m. and we measured the water depth immediately. This reading was 149.17'. We then turned the pump on and it would not run because of the sand sediment which had collected in the impellers of the pump. The boom hoist was attached to the pump and it was lifted and dropped several times against the casing and it started at 8:02 a.m. We decided since the water had cleared while pumping at a rate of 6 gallons per minute that we would increase this rate of flow and see if we could get it to clear at a higher rate. We increased the flow to 11 gallons per minute. Although the water was slightly muddy it began clearing immediately and by 10:05 a.m. was crystal clear, with a drawdown to 155.89'. We continued pumping at this rate, measuring drawdown until 1:00 p.m. It was then decided that we would try pumping at a higher rate. At 1:04 p.m. we increased the rate of flow to 15 gallons per minute. Although the water got slightly dirty for a short time it cleared rapidly and by 1:23 p.m. was reasonably clear. The drawdown at this rate by 1:52 p.m. was down 158.40 feet and was holding steady. The water was crystal clear at that time.

We continued at this rate, checking drawdown until 5:56 p.m. when we shut the pump off. We took a sounding to the bottom of the well at that time and got a reading of 188.5 and immediately began our recovery readings. The same situation existed after pumping at 15 gallons per minute as had at 6 gallons per minute in that most of the head of the well was recovering in a relatively few minutes. We took drawdown readings that evening until 10:15 p.m. and I departed for Ramah at 10:45 p.m. to spend the night as I wanted to be at the well site much earlier the following morning. On April 20 I left Ramah at 5:45 a.m. and arrived at the well site at 6:10 a.m. and took recovery readings. We had decided the night before that we would like recovery readings for a 24-hour period. Mr. West returned to Albuquerque and I remained at the well site in order to take these recovery readings. I took periodic checks the rest of the day until 5:50 p.m. I left El Morro at 6:15 p.m., drove to Grants and arrived there at 7:15 p.m.

The following morning on April 21 I left Grants at 8:10 a.m. and arrived in Albuquerque at 10;05 a.m. and proceeded to the U.S.G.S. office. Mr. West had already prepared the drawdown recovery curves and we added the information which I had taken after he left. We discussed the possibilities of the well and the figures which we had obtained at some great length. At 12:45 p.m. I left Albuquerque, arriving in Santa Fe at 2:00 p.m. that afternoon.

Following are some recommendations which are the result of the test, of my thinking, and Mr. West's recommendations:

1. The well is a very good one. It will pump clear water at 15 gpm if developed properly and undoubtedly if necessary would pump more than that. Therefore I recommend that we purchase the land and well site.

2. Prior to the installation of the pump house, pump, and pipeline there needs to be work done on the well:

   a. Ream the bore to 12" in diameter.

   b. Surge and bail the well for a period of 20 to 24 hours.

   c. Gravel pack with as much small sized gravel as can be packed into the hole.

   d. After gravel packing then the well should be pumped at a rate of 10 to 15 gpm for at least 24 to 48 hours to properly develop it.

(SIGNED)
William E. Fields
Civil Engineer

Copy to: Director (2)
Chief, WODC (2)
Supt., El Morro

Approved for distribution:

(SIGNED) APR 27 1961

Acting Regional Director — Date

04-25-1961: letter to regional chief regarding pump test, el morro national monument

WR Copy

Regional Chief of Operations April 25, 1961

Regional Chief of Lands

Pump Test, El Morro National Monument

On Thursday morning April 20, Civil Engineer Fields telephoned me to report on the pump test. He reports that he is staying at El Morro until 6:00 P.M. today to complete the recovery of the well. He plans to stay in Albuquerque overnight and should be in Santa Fe by noon tomorrow.

Mr. Fields reports they started pumping at a rate of 14 gpm. This produced mud in approximately 10 minutes.

He and Mr. West then reduced the rate per minute to 6 gpm and in a reasonable time the water cleared and held clear at the 6 gpm.

Later they ran a test at 15 gpm for 5 hours and still were able to produce clear water.

The pump was set at horizon 170 feet. In the first test at 14 gpm they had drawdown to the pump level and produced some air. After further developing and pumping at rateof 15 gpm the drawdown was only a little over 9 feet. The temperature of the water is 56°.

Mr. Fields reports the well is 8-inches in diameter at the top but tapers at the bottom and then they encountered difficulty in getting the pipe in with a 7 1/2 inch shoe at the bottom. Mr. Fields reports that the well will have to be reamed before gravel packing can be done with the present well and a 6-inch casing is a geological survey recommendation, if we ream the well to 12-inch diameter in order to do a better gravel packing job.

The road at El Morro (State Route No. 53) immediately in front of the monument and near the Ashcroft well, is going to be paved within the next 20 or 30 days. A representative of the State Road Commission has asked that if we plan to put a pipe under the road, which we will have to do, that this work be done before the next 20 days.

(SIGNED)

John E. Kell
Regional Chief of Lands

Copy to: Director (2)
Chief, WODC (2)
Superintendent El Morro

Approved for distribution:

(SIGNED)
(SIGNED)

APR 26 1961

Regional Director Date:

A Copy

Region Three
Santa Fe, New Mexico

L-54
Ashcroft

APR 24 1961

Memorandum

To: Director

From: Acting Regional Director

Subject: Acquisition of Ashcroft Well and 79.12 Acres, Tract No. 3
Rulon A. and Ivy M. Ashcroft, husband and wife,
El Morro National Monument.

In response to our memorandum of March 3 Mr. Price wired that we were authorized to negotiate with Mr. R. A. Ashcroft for a license to test the well and an option to purchase at a price not to exceed $20,000.

As the result of this authorization we obtained the combination instrument from Mr. and Mrs. Ashcroft on March 15, 1961. The test provisions of the instrument provided for a written record of the pump test to be furnished to Mr. Ashcroft and a consideration of $25 which has been paid.

The well was tested during the week of April 17 and Civil Engineer Fields of this office and Geologist Sam West of the U. S. G. S., Albuquerque, supervised the test. A complete report of the test will be provided by Mr. Fields and Mr. West as soon as they can be prepared. The net results of the tests indicate that there is a sufficient quantity of water for our needs and we recommend that the option provisions of the instrument be exercised.

In this connection we have attached the original, two signed and one conformed copy of the instrument. The option is for a four months period starting from March 15, 1961. While the tests indicate a sufficient quantity of water (10 to 15 gpm) on a short term test, it was also discovered that the well was not of true bore the entire 205 foot depth and it is the recommendation of the U. S. Geological survey that the well be reamed to 12-inch diameter and gravel packed. This recommendation is made since the sand produced, while not as much as the Pettit well, is of the same general character and so fine that it does not seem practical to try to use a standard manufactured screen at the bottom of the well.

An important factor in the Ashcroft location is that the Service also acquires 79.12 acres of land that automatically becomes a part of El Morro National Monument when acquired. In this connection we have attached a sketch map of Tract No. 3 showing the location of the property and well.

Since the bore was uncased all contractors interviewed, prior to bidding, were reluctant to place pump equipment in the uncased bore due to the possibility of loss of equipment in the well. The contract was awarded in such a manner that the casing can be left in the bore pending our decision to purchase. It is the general consensus of opinion of those in this office that we should purchase the pipe now in the hole and we think it can be salvaged and re-used after the well is reamed to the diameter recommended.

The details of how the second portion of the contract will be handled will be worked out between this office and WODC. When Civil Engineer Fields was supervising the pump test he learned that the road past El Morro and to Ramah, New Mexico, is scheduled for paving within the next 20 to 30 days. The State Road representatives want us to place our pipe sleeve, to carry the water line, under the road within the next twenty days. This will require a form and application but can be worked out.

The Ashcroft basic patent has the "canals and ditches" reservation. Our contract provides, under (7) page 4, provided that upon notice to the seller of acceptance of the option our Service can retain and use the well and construct the pipeline. Probably all we will need to do immediately is the placing of the pipe sleeve under the road. The well can be reamed and gravel packed while the pipeline from the well to the headquarters area is being constructed.

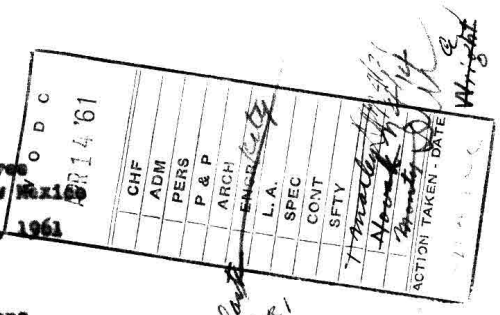
Therefore, we request that the option be approved and that all copies of correspondence relating to the acquisition or approval, especially the Superintendent's copy, be mailed to this office for distribution.

James M. Carpenter
Acting Regional Director

In duplicate

Attachments

Copy to: Chief, WODC w/o attachments




Region Three
Santa Fe, New Mexico

April 12, 1961

L-54
ElMo

To: Regional Chief of Operations

From: Civil Engineer

Subject: Trip to El Morro to stake out and run elevations on water lines from Siemens well (now Petit) well and Ashcroft well

I departed from Santa Fe at 8:15 a.m., March 13, accompanied by cartographic draftsmen Lawrence Sando and Clyde Arquero en route to El Morro National Monument. The purpose of this trip was to stake and run elevations from two wells, which we are contemplating purchasing, to the existing water system in the Headquarters Area. These wells are called Siemens (now Petit) and Ashcroft wells for purposes of identification.

We arrived at the Monument at 1:45 p.m. and after contacting the Acting Superintendent proceeded to the Ashcroft well and began our survey. I had previously surveyed these lines but I had only established angle points, not stations, and I had used stadia to measure distance. This survey was done with chain and instrument, setting station markers at every station and hubs with tacks at all angle points. Then elevation profile was run with a level and relative topography was taken along both lines.

At 5:00 p.m. Regional Chief of Lands John Kell came by from the Santa Fe office en route to a conference with Mr. Ashcroft. He and I "walked out" the Ashcroft line from where it entered our property to the end of the line. This was done to establish the best possible route which could be established without tearing up the landscape. It was decided to survey two alternates at the end of the survey because of the possibility of losing two large trees in the Headquarters Area. We left El Morro at 5:30 p.m. and arrived at Ramah, New Mexico at 5:50 p.m.

The following morning we arrived at El Morro at 7:35 a.m. and continued with the staking of the Ashcroft line. We finished this at 3:30 p.m. and spent the rest of the day establishing elevation bench marks. We left El Morro at 6:15 p.m. and arrived at Ramah at 6:35 p.m.

The next morning (Wednesday, March 15) we started on the centerline staking of the Siemens (now Petit) line. We arrived at the Monument

at 7:50 a.m. At 11:30 that morning Mr. Kell came by with some further instructions from the Washington Office. He was en route to another appointment with Mr. Ashcroft, and he left just prior to 12:00 noon. We finished staking the line to the water tank and left El Morro at 6:15 p.m., arriving in Ramah at 6:35 p.m.

The following morning (March 16) we arrived at El Morro at 8:10 a.m. in a heavy snowstorm. It snowed intermittently throughout the rest of the day but we were able to make ties to two NPS brasscaps and to establish a third alternate route for the pipeline from the Ashcroft well. We also ran profile on the Ashcroft well line. Because of the cold weather and because the rooms we had in Ramah were cold we decided to spend the night in Grants so we left El Morro at 4: 30 p.m. and arrived at Grants at 5:35 p.m.

On Friday, March 17, we arrived at the Monument at 8:10 a.m. We ran profile on the Siemens (now Petit) well and got some additional topography on both lines. We finished just before noon, left El Morro at 12:30 p.m. and arrived back in Santa Fe at 4:45 p.m.

Relative merits of each line. Of the two lines, the easiest to construct would be the Ashcroft line. The line is less than 6400 feet as compared to over 7600 feet for the Siemens (now Petit) line. With the exception of three or four small outcrops of malpais the entire Ashcroft line will be fairly easy to excavate. The soil is soft and loamy with considerable blow sand particles in the top eighteen inches. The line is staked so that there will be no large trees disturbed and very few small ones, whereas the Siemens (now Petit) line will go through about 1600 feet of sandstone, some of which will have to be blasted. In the last 1600 feet there are several large trees which will have to be removed. If the Siemens well is used there will also have to be a right-of-way purchased across 1320 feet of Indian Allotment. If the well on the Ashcroft property proves in the test that it is as good as the Siemens well, then I recommend that the Ashcroft line be constructed.

ONEP

William E. Fields
Civil Engineer

Copy to: Director (2)
Chief, WODC (2)
Supt., El Morro

Approved for Distribution:

APR 12 1961

_____ Date _____
Regional Director

L-1425
a/r L-54
Ashcroft

Region Three
Santa Fe, New Mexico
March 17, 1961




Memorandum

To: Regional Chief of Operations

From: Regional Chief of Lands

Subject: Land Option, Ashcroft Property, Water Line Traverse, Ashcroft and Pettit Wells to Headquarters Area, El Morro National Monument

On Monday, February 13, I left my headquarters in Santa Fe enroute to El Morro National Monument where I met with Civil Engineer Fields regarding the proposed water line traverse and grade from both Ashcroft and Pettit Wells.

Mr. Fields, with the assistance of Clyde Arquero and Lawrence Sando, had established a line from the Ashcroft well to a point well within the boundaries of El Morro National Monument. In company with Mr. Fields we walked the proposed pipeline route and it in general parallels the north Monument boundary fence some 7 1/2 to 15 feet south of the fence, an adequate distance so that a trenching machine could do the work without interference from the fence. The line as tentatively staked on the ground also misses all of the trees, turns southward on an easy curve and in general follows the existing telephone line parallel and east of the line as now existing. The route walked, and as Mr. Fields will stake on the ground, will be across the arroyo immediately back of the headquarters area without damaging or cutting more than one or two unimportant juniper trees. At the arroyo it will probably be advisable, subject to WODC concurrence, to bridge the arroyo with a structure and insulated pipeline rather than go underground, which would leave an undesirable water pocket. These factors of course can be determined at some later date.

At the headquarters we selected two alternate routes with the terminus at a fire plug established by WODC last summer, roughly 30 feet west and approximately the same distance north of the north wall of the present garage and workshop used by Superintendent McNeil.

21

After marking this tentative route on the ground I telephoned you the following morning as I remembered there was the possibility of building expansion northward from the existing front line of the garage. The route tentatively selected would go underneath the proposed building extension which, in my opinion, it should not do if we can select a more feasible route.

After discussing this with you by telephone I saw Mr. Fields on Wednesday, March 15, and suggested that he run a third alternate crossing the arroyo to the west, perhaps in the general vicinity of the existing foot bridge and determine if it was possible to bring the line in from that direction without damaging a large number of trees.

Most of Tuesday, March 14, was spent with Mr. and Mrs. Ashcroft at their Trading Post some 9 miles north of Crownpoint, New Mexico. The conference was interrupted frequently by Navajos needing to be waited on at the Trading Post. I made Mr. Ashcroft an offer which he did not accept or reject and I left one copy of the License to Test the Well and Option Agreement with him for review and consultation with his wife that night. Mr. Ashcroft met me in Grants at one o'clock on Wednesday, March 15, and at that time the option was executed basically on the same terms discussed the previous day, March 14. Mr. Ashcroft did insist, however, on reducing the option term from the six months I had suggested to four months. I granted this concession since it appeared that I could fail to obtain an option if I failed to grant the two months concession Mr. Ashcroft requested.

In the negotiations I explained to Mr. Ashcroft the necessity for leaving the casing in the well after the well has been tested and I also explained to him that the exercising of the option provision of the contract will be dependent on the production shown by the test to be made under the contract. The bids for testing the well, as you know, were opened in this office, March 15, and I am advised by Mr. Bone that Cowley Brothers of St. Johns, Arizona, are apparently the low bidder.

From the notes Mr. Fields has obtained thus far there will be only some 360 odd feet plus or minus difference between the lines from the Ashcroft and Pettit wells. The elevation or lift including the depth of the well to the existing Park Service storage tank will be approximately the same regardless of the route selected.

In view of the time element of four months recited in the Option and the time required for testing the Ashcroft well to determine its production it would be my suggestion, in view of Mr. Dunn's memorandum of March 9, that Mr. Fields be requested to complete this survey before going to do the road suvey at Coronado National Monument, if possible.

JOHN E. KELL

John E. Kell
Regional Chief of Lands

Copy to: Director (2)
Chief, WODC (2)
Superintendent El Morro National Monument

Approved for Distribution:

(SIGNED) MAR 20 1961

Regional Director Date:

El Morro WRCoff

March 9, 1961

L54-OBL

Memorandum

To: Regional Director, Region Three

From: Chief, Water Resources Section

Subject: Proposed Acquisition of Ashcroft or Siemens (now Pettit) Well, El Morro

In reply to your memorandum of March 3 Mr. Price wired that you were authorized to negotiate with Mr. Ashcroft for a license or permit to pump test his well with an optional purchase price of not to exceed $20,000. By memorandum of February 9, Mr. Miller submitted the Eckert appraisals of the Ashcroft property and the alternative Pettit well and access of January 9, with a request for authority to negotiate for purchase of the Ashcroft property. I had just drafted a reply to Mr. Miller's memorandum to suggest the need for the pump test when your request arrived.

As a proposed acquisition for a water supply I am personally more concerned with the lack of engineering justification than I am with an independent consideration of a purchase price. We do, apparently, have to arrive at an option price to prevent inflation due to data obtained during the pump test. However, I regret that a relatively arbitrary option ceiling was suggested without considering how that price and the alternative price of the Pettit well would affect the total respective costs of the respective water systems if both sources prove equally satisfactory.

The attached table has been compiled from correspondence and reports we have received during the past year and a half. Some of the missing data will be obtained during the test of the Ashcroft well. Some other listed and other unlisted data should be supplied by an engineer, and some of the appraisal figures should be broken down to permit better comparison of parallel values and the allocation according to benefits. I think that the decision as to which source to purchase should then be based on which source, if either, will provide the best adequate supply and which will provide the most economical long-time supply if both are adequate and satisfactory. This will require estimates of the construction, maintenance, and operating costs of both systems, including the purchase of the well and access in each construction cost. I believe that Mr. Fields and WODC should complete their past work along these lines as soon as the rest of the required data is obtained.

I have the following observations to offer as a result of my study:

1. While Mr. Kell supplied some data on the tests of the Pettit and four Federal test wells, and some of the data is in the general U.S.G.S. report of December 1960, we do not appear to have received a formal report and recommendations on the tests by U.S.G.S. If not already completed, it should now be deferred until the test of the Ashcroft well can be included, but Mr. Fields and WODC should have the information as soon as possible.

2. Mr. Eckert suggests that acquisition of the Pettit well should be predicated on the vendor's agreement as restrictions on other wells in the N½ of the section, but no recommended action is offered to assure that no conflicting wells are drilled too close to the Ashcroft well on the adjacent land in the next sections to the north. I think the restrictions on other wells on the Pettit property could be made more acceptable to the vendor, and more specific as to objectives recommended by the U.S.G.S. It is probably beyond the control of the U.S. and vendor to control well spacing to the north of the Ashcroft well, and that fact should be considered in connection with the selection of that well.

3. In the memorandum of September 18, 1959, Mr. P. E. Smith suggested that the design for the use of the Pettit well should provide for sand filters and pumping at 15 gpm as a result of the sand load obtained when pumping at about 23 gpm. An important, but unanswered question is whether 15 gpm is an adequate Monument supply, probably pumping only 8 or 10 hours per day to provide up to 9,000 gallons per day, or whether that pump rate was limited to reduce sedimentation and whether the U.S.G.S. considered that the pump test showed the sanding could be controlled in that manner.

4. Mr. Eckert fixed the $15,000 value for the Pettit 10 inch by 231 ft. well with 6" casing, a windmill, right of access, and restrictions on the location and use of other wells in within at least 1,000 feet. The net value of the cased well with a yield of 23 gpm, with sand, is not given. He also values the Ashcroft property at $19,000, of which $4,000 is land value. The remaining $15,000 is his value of an 8 inch by 205 ft. well without casing, with no control over competing wells within a few feet to the north, with no apparent value for a right-of-way if the land were not acquired, and the requirement that the yield shall only be equal in quantity and quality to that from the Pettit well. There is a suggested value for 5.2 feet less pump lifts, and there appears to be some added value for better accessability. The unexplained, apparent difference in net value of the well, if cased and yielding 23 gpm, may not be important for purchase, but some of the answers will permit better estimates of the comparative costs of the alternative water supplies.

5. I have been asked here if I considered the suggested water right values reasonable. The U.S.G.S. report indicates that water is so scarce in the vicinity that its value should be based on the cost of production rather than comparison with the price of wells or water rights in other parts of the county. As suggested, the appraisals do not give the net values of the wells or water, but they are in the neighborhood of $250,000 to $300,000 per second foot if the quantity of 23 gpm is used. This is a high value, but not unreasonable. The total cost for the small quantity is not great in either case. The main thing is to obtain the most adequate, satisfactory supply, delivered to the reservoir in the developed area of the Monument, at the most economical cost. The appraisal suggests that there may have been some inflation of the well values, due to the publicity given to the Park Service activity during the past 18 months, but the designing engineers will have to determine how significant that is in the cost of long time water deliveries to the Monument.

SIGNED

A. van V. Dunn
Chief, Water Resources Section

In triplicate

Attachment

Mr. P. Miller, w/c attachment
Mr. Dunn, w/c attachment

AvVDunn:lct

| | Ashcroft | Pettit |
|---|---|---|
| Proposed Acquisition in Monument | All | None |
| Well Depth | 205 ft. | 231 ft. |
| Static water level-not necessarily same date (U.S.G.S. report of December 1960) | 150 ft. | 155.2 ft. |
| Ground Surface Elevation (U.S.G.S. report) | ? | 7160 |
| Length of Pump Test | None | 12 hour |
| Measured yield-pump (U.S.G.S. report) | ? | 23 gpm |
| Reported yield-bailing (U.S.G.S. report) | 38 gpm | -- |
| Drawdown (U.S.G.S. report) | Unknown | 34 ft. |
| Bore | 8 inch | 10 inch |
| Casing | None | 6 inch |
| Sand pumped | Unknown | Yes |
| Pipe length to Monument development | 6500 ft. | 6900 ft. |
| Access and maintenance (Fields 10/27/60) | Preferred | -- |
| Operation in Winter (" " " ) | -- | Preferred |
| Does vendor control 100' radius | No* | Yes |
| *Land status north of well, T 10 N, not supplied. | | |
| Suggested steady pump operation (P.E. Smith-WODC-9/18/59) | | 15 gpm |
| Suggested 10 hour yield (" " " ) | | 9,000 gal. |
| Total Appraised Value - Eckert 1/9/60 | $19,000 | $15,000 |
| Land Value in Monument- " " | $ 4,000 | 0 |
| Net cost of Water Supply and Access ** | $15,000 | $15,000 |

**While Ashcroft well must be cased, U.S.G.S. suggests Pettit casing may need replacement.

02-09-1961: memorandum to director regarding appraisal for ashcroft property and pettit property

WR Copy 2/14/61

Region Three
Santa Fe, New Mexico

L-54

FEB 9 1961

Copy of Appraisal Report in USGS file under draft

Memorandum

To: Director

From: Assistant Regional Director

Subject: Appraisal for Ashcroft Property, ~~and~~ Pettit, Property
El Morro National Monument

On November 28, 1960, we engaged Mr. Martin Eckert, Albuquerque, New Mexico, to make an appraisal of the Ashcroft and Pettit properties, El Morro National Monument. The field work was completed in December and Mr. Eckert submitted his appraisal report near the end of January. There were, however, minor corrections making it necessary to return the report to Mr. Eckert. The original and one copy is attached.

Mr. Eckert has combined both appraisals in one report but he has given separate values for the individual properties. It is suggested that Mr. Dunn review the report and authorize us to proceed to negotiate for the best water supply obtainable.

It is our recommendation that Mr. Kell attempt to acquire the Ashcroft property first. The Ashcroft tract, as you know, when acquired automatically becomes a part of the El Morro National Monument and it is believed that the Ashcroft property can be acquired for approximately $20,000 and we recommend we be authorized to negotiate on that basis.

If we fail to acquire the Ashcroft property we would then need to negotiate for a tract surrounding the Pettit Well and the necessary right-of-way across the easterly half of Section 1, T. 9 N., R. 15 W. It is our opinion that this tract of about one (1) acre and the right-of-way will cost approximately $12,000. We are asking authority for both tracts since we need the water supply as soon as it can be obtained. We are preparing a contract to test the Ashcroft

Well and a request for authority is of course based on the assumption that the tests of the Ashcroft Well will show an adequate water supply..

Mr. Dunn will remember that there is money programmed in our current Work Order 3-WR-61 for the acquisition and testing of the Ashcroft Well. We have prepared a copy of this correspondence for the Superintendent but are withholding mailing his copy until we have first had an opportunity to discuss the option with the vendors. It is requested that any correspondence relating to price of the proposed acquisition be sent to this office in duplicate without distribution direct to El Morro.

(SIGNED)

George W. Miller
Assistant Regional Director

In duplicate

Attachment

Copy to: Superintendent El Morro w/attachment

11-00-1960: memorandum to regional director regarding potential water supply, siemens and ashcroft well

L54-OBL

NOV 1 1960

Memorandum

To: Regional Director, Region Three

From: Assistant Director

Subject: Potential Water Supply, Siemens and Ashcroft Well, El Morro National Monument

In your memorandum of October 25 you request authority to obtain a tentative option to purchase the Ashcroft well site and permission from Mr. Ashcroft to test his well. These are both essential parts of the water resources study which has been in progress for several years. Mr. Dunn approved your first revision of 3-WR-61 on October 20, as you now know, which authorizes the pump test and appraisal.

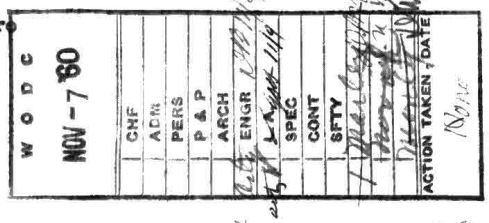
You are authorized to obtain a permit or license to make the pump test, with conditional option to purchase the well tract, in such form as the Field Solicitor considers desirable. You suggest the same general form of license and option which was used at Gran Quivira and in connection with the test of the Siemens' well, at El Morro. Our only suggestion is that the option should not bind the Government to pay a price in excess of the value which may be determined by the subsequent pump test. The Field Solicitor should be consulted on these suggestions.

Since this water resources study is becoming involved, we are sure you will want to coordinate the USGS and WODC technical studies with your land and water right activities.

(SGD) JACKSON E. PRICE

Assistant Director

Copy to: Superintendent, El Morro
Chief, WODC (2)



10-25-1960: memorandum to director regarding potential water supply, siemens and ashcroft well

W/ copies with reply to L-1425

W.K. Cole 29

Region Three
Santa Fe, New Mexico

L-54
~~X-L-1425~~

OCT 25 1960

D. E. Lee

~~Price~~
DCRM

Memorandum

To: Director

From: Regional Director

Subject: Potential Water Supply, Siemens and Ashcroft Well, El Morro National Monument

Attached are copies of Mr. Kell's report covering interviews with Mr. Gordon Pettit and Rulon Ashcroft, owners of the land and potential water supply at El Morro National Monument.

The revised work order 3-WR-61 (first revision) includes funds for appraisal of both properties and testing the Ashcroft Well. We also ear-marked funds for purchase of a water supply at El Morro which as Mr. Dunn will remember was removed from our first work order 3-WR-61 and retained at the Washington Office level since as Mr. Dunn points out, authority for obtaining options has not been delegated to the field.

When we tested the Siemens Well in Section 1, T. 9 N., R. 15 W., in July 1959, we had an instrument which Mr. and Mrs. Siemens signed which was both a license to test and an option to purchase. It was in effect two instruments in one and as you are aware, the option provisions were never exercised because the USGS report proposed test drilling indicated we should be able to find an adequate water supply on our own Section 5.

We are now ready to test the Ashcroft Well and have it appraised. It is estimated that the cost of appraisal will be in the neighborhood of $800. It is also estimated, based on information available at the present time, that the testing of the Ashcroft Well will probably cost $900-1,200. We think it is questionable economically to spend this amount of money without first having some assurance of acquiring the Ashcroft property after the well is tested. We would recommend that you grant authority for us to use an instrument similar to that used at Gran Quivira or the Siemen's test even though the option portion was never exercised. Such an instrument would establish the price for the property in the event the well produced a sufficient quantity of water for our needs without excessive sand. It would at the same time bind Mr. and Mrs. Ashcroft to a fixed price in the event the pump test was satisfactory.

ELMD

We would not obtain an instrument which could not be supported by the appraisal and we would not ask your office to approve the option until the test had been completed. Such an instrument as we propose would, however, prevent Mr. Ashcroft from disposing of his property to a third party during the period of testing or shortly thereafter.

Your early authorization to obtain such an instrument is requested.

(SIGNED)

Thomas J. Allen
Regional Director

In duplicate ✓

Attachments

Copy to: Superintendent, El Morro
WODC (2)

10-24-1960: memorandum to regional chief of operations regarding potential water supply, 'siemens' or ashcroft well

Region Three
Santa Fe, New Mexico

L-1425

OCT 24 1960

Memorandum

To: Regional Chief of Operations

From: Regional Chief of Lands

Subject: Potential Water Supply, "Siemens" or Ashcroft Well, El Morro

On Monday, October 10, I drove to El Morro National Monument where, by previous arrangement, Superintendent McNeil and I met with Mr. Gordon Pettit, owner of the Siemens property and the well located in Section 1, T. 9 N., R. 15 W.

Mr. Pettit freely admits that he purchased the Siemens property as an "investment." He explained that he has visited and camped in the vicinity of El Morro for several years and he appears to be enthusiastic about the southwest. He arrived at El Morro in one of the original Thunderbirds with two bedrolls tied on the back. He did not disclose his source of income but lives near San Diego and is currently building a shopping center in or near San Diego.

Mr. Pettit thinks there is a definite need for a concession at El Morro. He has in mind a building, pueblo style, in Section 5 north of the road at the junction point of State Route 53 and the Monument entrance road. He would, I believe, make the Service a very attractive offer for water from Section 1, providing we could grant or guarantee a concession building and contract. I think Mr. Pettit would even supply the building if encouraged to do so. He has in mind Paul Davis at Ramah to operate the concession, although he admits Mr. Davis is not enthusiastic about the proposal.

I explained to Mr. Pettit as best I could that it would be extremely difficult, if not impossible, to tie the two proposals together. First I explained the Service had no plans for a concession at El Morro since apparently adequate accommodations could be provided outside the area. I suggested a similar investment in Ramah, but Mr. Pettit definitely vetoed that since he is

convinced a new State Route 53 will eventually be built from Grants to St. Johns, Arizona, and in Mr. Pettit's opinion this route will by-pass Ramah.

We were never able to arrive at a price for the Siemens well although Mr. Pettit indicated he was sympathetic with the Service's need for a water supply and would be willing to negotiate provided he could find additional water along the northerly portion of Section 1. He also explained that he did not want to be in "competition" with Mr. Ashcroft or anyone else in the vicinity who might have available water. I obtained his permission to appraise the property, select a tentative pipeline route from the existing well to our storage tank, and explained the cost of the well and the route of the pipeline from the property to the Headquarters Area as compared with the length of line from the Ashcroft property would largely influence our final decision. Mr. Pettit is well aware of this and that we must spend our funds as economically as possible, and he is willing to consider any reasonable proposal after the property has been appraised. He would like to sell us a large portion of Section 1 in addition to the well, but I think I satisfactorily explained that we had no need or intention of expanding El Morro westward.

The following day on Tuesday, October 11, I met with Mr. Rulon A. Ashcroft regarding his property and well which is in the N½NW¼ of Section 6, T. 9 N., R. 14 W. Mr. Ashcroft's well is still uncased and untested other than the bail test made when the well was drilled. The bail test was reported to be 38 g.p.m. based on a bailer that held 19 gallons and two round trips per minute. I expressed doubt to Mr. Ashcroft that the bailing was actually accomplished that fast since Mr. Cowley bailing test well No. 4 appeared to be an excellent well driller and he was never able to make a round trip with the bailer in less than 42 seconds. The Ashcroft well is reported to be 205 feet deep, 8 inches in diameter, and we were bailing from test well No. 4 from a depth of 210 feet, which presumably would provide similar bailing conditions to those of the Ashcroft well.

Mr. Ashcroft has granted permission to test the well, have the property appraised, and he, too, understands that our Service must obtain water at the most economical price possible. The Ashcroft property, if acquired for a water supply, would, of course, automatically become a part of El Morro National Monument

when acquired. The pipeline from the Ashcroft well to the Headquarters Area will necessarily need to go in front of the rock and at a distance far enough away from the area used by visitors to be acceptable from a landscape standpoint. It is my opinion the pipeline distance from the Ashcroft well to the Headquarters Area will be slightly shorter than the route from the Siemens well. However, the additional cost of land exclusive of the well to acquire the Ashcroft property may offset the advantage of a shorter pipeline.

As soon as the property has been appraised and the Ashcroft well tested, we will be in a position to negotiate with Mr. Ashcroft or Mr. Pettit for a water supply.

JOHN E. KELL

John E. Kell
Regional Chief of Lands

Copy to: Director (2)
Chief, WODC (2)
Supt., El Morro

Approved for distribution

(SIGNED)

OCT 24 1960

Date:

Regional Director

10-27-1960: memorandum to regional chief of operations regarding trip to el morro to survey possible water line routes from the si

WK 26/4

Region Three
Santa Fe, New Mexico

L-54

OCT 27 1960

Memorandum

To: Regional Chief of Operations

From: Civil Engineer

Subject: Trip to El Morro to Survey Possible Water Line Routes From The Siemens and Ashcroft Wells.

I left Santa Fe at 8:30 a.m., October 18, enroute to El Morro National Monument. My purpose for making the trip was to survey in possible routes for pipe lines from both the Siemens Well and Ashcroft Well to the headquarters area. Shortly after leaving Santa Fe, I ran into considerable rain and fog and stayed in bad weather until I got to Grants.

I arrived at El Morro National Monument at 1:15 p.m. and immediately started walking out the Ashcroft line. Since this seemed to be relatively simple, I then walked the Siemens line out to our boundary line. I contacted Superintendent McNeil at 4:30 p.m. and discussed the problem with him. Because he is very short of personnel, it was decided that I could barrow his maintenance man for one day and during that time I could do the phases of the work where two men would be necessary. I went to Ramah at 7:30 that evening and spent the night there. The following morning I left there at 8:10 and arrived at the Monument at 8:30 a.m. and with Maintenance-Man Marion Lampson I proceeded to the Siemens Well and measured the distances from the well to the water tank. That afternoon we did the same from the Ashcroft Well.

Because of the cold room at Ramah, I decided to stay in Grants that night, and I left El Morro at 6:30 p.m. arriving in Grants at 7:45 p.m. The following morning I arrived at the Monument at 7:45 and spent that day turning the angles with the use of "stacked" range poles and flagging, and took topographic notes of both lines. I left El Morro at 5:45 p.m. and arrived in Grants at 6:50 p.m. where I spent the night.

It would be difficult to say which of the two routes would be better, however, if the Ashcroft Well can be purchased at a reasonable price, it appears from this preliminary study that it might have the more advantages. First of all, it would be about 400' shorter. (Siemens line is 6900' - Ashcroft line is 6500') Secondly, there would be no cliffs

or high hills to go through and probably very little rock. The Ashcroft Well is located close to the main highway which is State Route 53, whereas the Siemens Well is over a quarter of a mile from the highway and maintenance on the line and well would be simpler at the Ashcroft Well. Along the Siemens route, there would be over a quarter of a mile of sandstone to dig through as well as a 25-30' cliff which would have to be scaled with the line.

However, the Siemens Well would have the advantage of better circulation especially during the winter when water use is less than 1,000 gallons per day. The 6" pipe from the tank to the fire hydrant will hold 3,500 gallons of water and if water is pushed from below, the water in the tank will not be circulated and used.

As neither of these wells can be placed into the system before next year sometime and because the pool is very low for this season of the year, the Superintendent is faced with hauling water all of this winter. In order to get water into the storage tank, they will need a pump which can be attached to the fire hydrant at the lower end of the system. This pump will have to pump against 85-90 p.s.i. of pressure. To pump 20 g.p.m. or 1,200 g.p.h. will require a 1 HP motor.

I left Grants at 7:45 a.m. and arrived in Santa Fe at 11:15 a.m.

A map showing the location of these proposed lines will be distributed as soon as it is completed.

(SIGNED)

**William R. Fields**
**Civil Engineer**

Copy to: Director (2)
WODC (2)
Superintendent, El Morro

APPROVED FOR DISTRIBUTION BY:
(SIGNED)

OCT 27 1960

_____ Date: _____
George W. Miller, Acting Regional Director

WR Copy

Region Three
Santa Fe, New Mexico

L-54

Memorandum SEP 30 1960

To: Regional Chief of Operations

From: Civil Engineer

Subject: Trip to El Morro National Monument to Supervise Drilling of Well

On Monday, September 26 at 3:10 p.m., I left Santa Fe enroute to El Morro National Monument to supervise the completion of the water well known as Test Hole No. 4. I arrived there at 7:30 p.m. and immediately looked up the driller, Mr. Ed Cowley.

He had drilled that day until 5:30 p.m. and was at a depth of 280' and still in the "red bed". My instructions were to allow him to drill to 300' and if we were still in this formation without any additional water to abandon the well.

I spent the night in Ramah and returned to the well site at 6:30 a.m. the following morning. The driller had started drilling at 5:30 a.m. He stated that during the night there had been 10' of cave in, but by the time I arrived the depth was again at 280'. The drilling continued in the "red bed" formation and at 10:55 a.m., after bailing the "slush" out of the hole, we measured the depth at 302' so I stopped the drilling.

Prior to my departure from Santa Fe, it had been decided that the 6" casing would be left in the hole and perforated at the water bearing strata. I was to get a price for this work from Mr. Graham Cowley in St. Johns, Arizona. However, when I called Mr. Cowley, he was in Phoenix and had left no forwarding number. I then called the Regional Office and was instructed to stand-by for final word on disposition of the well at 3:00 p.m. Meanwhile, Superintendent McNeil and I visited the well on Obie Wirthen's property which lies 1 1/2 miles due south of the southern Monument boundary.

This well is 2.5 miles by road (speedometer reading) from the present visitors center and is in the $N^2$ Section 18, T. 9 N., R. 14 W., N.M.P.M. It has a windmill over it but it is not attached. It presently pumps from a 2 1/2" pipe with a sucker-rod inserted using a Jensen jack-pump and is powered by a 220 volt, Fairbanks Morse, 1/3 HP motor.

Superintendent McNeil had the information that this is a 6" well, 251' deep, 243' to the water bearing sand and 190' to the static level of the water with 20' of 6" casing concreted at the top - the rest is open hole. This rig, if operated at full power, would be capable of delivering 7 g.p.m. but the stroke on the pump has been shortened so that it probably pumps about 2-3 g.p.m. To utilize this well would necessitate at least 2 miles of pipe line and a large sandstone ridge would need to be crossed which is 150-200' in height above the well elevation.

Present Supply

We then visited the "Bond" well from where the Monument now hauls its water. We went by the "short" route and returned by the long route. The short route measures 5.5 miles by speedometer as compared to 8 miles by the long route. However, whereas the 8 miles is over fairly decent dirt roads where 30-40 m.p.h. speeds are possible, the 5.5 mile route is all over two-runner wagon roads where 15-20 m.p.h. are the maximum. In addition, there are three gates to open by the short route. It is very easy for me to see why the long route has been used by the driver of the water truck.

The well is equipped with a Jensen jack-pump powered with a 1/2 HP motor and has a 4" casing. Mr. Bond, owner of the well, says the stroke of the pump is set to deliver about 3 g.p.m. This pump has been operating 24 hours a day for the last four months. From the pump the water is delivered to a 2000 gallon storage tank from which a 2" line and 2" hose comes off at the bottom. The height of the water in the tank is the only head which feeds this outlet therefore if the water in the tank were low, then the pressure and subsequent discharge from the hose would be low. We returned to the Monument at 2:55 p.m.

The phone was out of order at the Monument, and I was unable to reach the Regional Office until 4:25 p.m. Upon completing my call, I found that it has been decided to pull all of the casing, insert a 10' piece of 6" casing in the top of the hole, leaving 2' above ground and concrete around the side of this pipe, and then weld a cap on the top of the casing and leave it.

I tried at intermittent times from then until 11:00 p.m. to contact one of the Cowley Brothers but Graham Cowley had not returned from Phoenix and neither Ed or Hugh Cowley were available.

At 9:00 p.m. Superintendent McNeil and I talked to Mr. Vance Bond at the El Morro Post Office about the inevitable winter water hauling, and we got a verbal agreement from Mr. Bond which will allow us to haul water from his new well which is equipped with a 4000 gallon tank. This will enable us to haul water from one mile away and with the hose which we will use, it will take only 1 1/2 hours to fill our 1000 gallon tank. This outlet is right at the El Morro Post Office and is on a road which will be open most of the time. Mr. Bond indicated that the $2.00 price per 1000 gallon which we have been paying will remain the same.

Now that the new water system is in, some thought must be given to a method of putting this water into the storage tank. This could be done by installing a pump and hose at one of the fireplugs (method already used by the contractor on the water line) and pumping the water to the tank. The pump would have to be powered by a motor of sufficient size to pump against 80 p.s.i of pressure. This motor size would depend on the size of the pump. For instance, a one HP motor would be required to pump 20 g.p.m. against this head.

I stayed at Ramah overnight and reported to the Monument at 7:30 a.m., September 28. I tried to place a call to Mr. Cowley but because of telephone difficulties did not reach them until about 10:30 a.m. I finally contacted Hugh Cowley and gave him the instructions on how to cap the well. (Mr. Graham Cowley was still in Phoenix.)

I left El Morro at 11:00 a.m. and arrived in Albuquerque at 1:35 p.m. I ate lunch and then went to New Mexico Tank and Culvert Company and picked up the two parshall flumes which we had ordered made up to use in water studies. I left Albuquerque at 2:55 p.m. and arrived in Santa Fe at 4:05 p.m., September 28.

(SIGNED)
William E. Fields
Civil Engineer

Copy to: Superintendent, El Morro
Director (2)
WODC (2)

APPROVED FOR DISTRIBUTION BY:

(SIGNED)

SEP 30 1960

Jerome C. Miller, Acting Regional Director DATE:

09-30-1960: memorandum to regional chief of operations from regional chief regarding drilling of water well, contract no. 14-10-03

W R Coffey

Region Three
Santa Fe, New Mexico

Oct 5 8 35 AM '60

SEP 30 1960

L-54

Memorandum

To: Regional Chief of Operations

From: Regional Chief of Lands

Subject: Drilling of Water Well, Contract No. 14-10-0333-637, Test Site No. 4, El Morro National Monument

In connection with the subject contract, I returned from Petrified Forest National Monument by way of El Morro National Monument on September 23, arriving at El Morro National Monument at 2:05 p.m. In company with Superintendent McNeil, we went to the well site and found that the driller, Mr. Ed Cowley, had reached a depth of 180'. The driller had elected to drill an 8" hole since, as he explained, it was easier to drill an 8" hole and keep it straight and ream it later than to attempt the 12" hole awarded in the contract. The driller reported he had been in malpias all of the way and at the time of our arrival he was out of water to drill with and had abandoned drilling operations in order to obtain an additional tank of water.

He returned to El Morro the following morning and by the time I arrived at 8:55 a.m., the driller had penetrated the malpias formation and was bailing. He gave his log as 188' of malpias and the remainder red bed and the depth of the well at 210 feet. The red bed was extremely fluid, very red, and the water bailed out of the well contained a large amount of very fine red silt. The driller attempted to drill deeper into the red bed and reached a depth of approximately 215'. The sides of the hole in the red bed formation were extremely unstable and continued to collapse as the bailing operation was carried on. We took measurements of the depth of the well and continued to bail for a period of more than one hour. During this period, the driller estimated he had lost 8-10' of hole through sluffing or collapse of the side wall. The quantity of water produced was intermittently measured in a 50 gallon steel barrel and a 5 gallon pail and quantities varied from one to three gallons per minute. I inquired of the driller if he could drill deeper as recommended by Mr. West, and he advised he could but it would require the use of a 6" casing and carry the casing down with the drilling.

I returned to Gallup that night and consulted Mr. West by telephone. It was Mr. West's opinion based on the information from the Davis Brothers' Well that we should attempt to penetrate the red bed and Mr. West estimated we should encounter the Wingate Formation at a depth of about 242-250'. I gave this information to the driller on September 21,

and it was necessary for him to return to St. Johns, Arizona to obtain the necessary 6" casing. I left El Morro about noon and stopped at the USGS office in Albuquerque, and discussed the procedure with Mr. West in his office. Mr. West was of the opinion that it should be possible to obtain an additional one to three gallons per minute from the Wingate Formation at the same horizon where water was encountered in the Davis Brothers' Well.

I spent Thursday, September 22, in Santa Fe and returned to El Morro on September 23. The driller, for personal reasons, did not return to the well site until about 9:30 a.m., September 24. Immediately upon return, I recommended a re-check of the water level and additional bailing. The water level was measured first by use of lowering the bit into the hole and measuring the cable and the bit as the tool was withdrawn. This measurement (made with a stick 5 feet long) indicated a water level of 173'. We then checked this level with the sand line and bailer and obtained the static water level of 176'. This is approximately a two foot difference than the measurement taken by Mr. West during the time Mr. Coffey drilled the 4 1/2" hole, but in my opinion was the result of the difference in the relationship of the drill platform and the ground level.

At my request, we again started bailing to determine if the well could be bailed dry. This bailing test was started at 9:30 a.m. and was discontinued at 10:15 a.m. The time for the round trip with the bailer varied from 46-59 seconds, timed with a stop watch. On the first few trips we were bailing at an estimated rate of 20 gallons per minute removing the accumulated water. Continuous timing of 10 bailer trips by stop watch revealed that 10 trips were completed in 10 minutes and 20 seconds. The bottom of the hole was extremely muddy and sticky and the bailer deposited a considerable amount of thin mud in the slush pit. Water caught and measured in a 5 gallon bucket and remeasured into a one gallon can indicated production of 3+ gallons per minute. (Slightly less than 3 1/2) We allowed the well to recover for 30 minutes and again measured the static water level at 176' on the sand line and bailer. On the completion of the bailing tests the driller ran approximately 236' of 6" casing (screw type) into the well. He then drilled and bailed allowing the casing to follow the tool until he reached the point where the upper water had been completely shut off and it was necessary to use water for drilling.

Operations were resumed the following day after again consulting Geologist West by telephone Sunday morning, September 25 and reporting the progress to him. It was Mr. West's opinion that if we did not encounter a change in formation before a depth of 300' had been reached, it would probably be uneconomical to explore deeper.

After the casing was stabilized and the upper source of water cut off, the driller used an under-reamer placing this tool on the drill stem at 9:30 a.m. The under-reamer produced an 8" hole and because of the

continued red bed formation and the slowness and progress with the under-reamer, it was removed at 2:30 p.m. at a depth of about 235'. At this point, there had been no change in the formation except the cuttings and the material bailed from the well had changed from orange red to a more purple color. This material was extremely sticky, balled up on the bottom of the bit and left pieces projecting on the side of the uncased bore, making it difficult to get the bailer to the bottom of the hole to remove the cuttings. Drilling operations were suspended for the day at 6:15 p.m. and I returned to Santa Fe.

I made arrangements for Civil Engineer Fields to return to El Morro National Monument to supervise the remainder of the drilling to the 300' level as recommended.

During most of Saturday, September 24, Graham Cowley, Business Manager of Cowley Brothers' Drilling Company was at the well site. He was extremely pessimistic that even if sufficient quantity of water had been encountered below the malpias that sufficient gravel packing could be done to secure a supply of clear water. Mr. Cowley reported that he has had experience with several wells on the Navajo reservation drilled to similar formation. Some of these wells after a period of 18 years when the pumping rate is increased still produce "red water". On Sunday afternoon, Mr. Bond who owns the store and Post Office at El Morro visited the drilling site, and he explained that he had drilled a well in the NW¼ of Section 4 to a depth of more than 400' and was unable to get below the red bed at that depth.

It is my opinion that even if Test Site No. 4 was cased and gravel packed at the 178-200' level, we would never be able to obtain a sufficient quantity of water for our future needs, and I feel very strongly that we could not justify the expenditure of the necessary funds for a pipeline and trenching without a greater supply of water available.

It appears now that our alternate course of action is to appraise existing known sources of water Ashcroft, Siemens, or both and purchase the necessary land and water to insure the Service of the best available source in the vicinity. This will be done as rapidly as possible, and I have an appointment to meet Mr. Pettit, owner of the Siemens property at Ramah on Monday, October 10.

(SIGNED)

John E. Kell
Regional Chief of Lands

Copy to: Director (2) ✓
WODC (2)
Superintendent, El Morro

(SIGNED)

Approved for distribution _____ Date _____
Jerome C. Miller, Acting Regional Director

09-00-1960: letter to cowley brothers regarding a depth of 302 feet had been reached by 10:55 a. m. on september 27 and no addi

El Morro WR copy

Region Three
Santa Fe, New Mexico

D5039

SEP 28 1960

Cowley Brothers
St. Johns, Arizona

Gentlemen:

We understand from a telephone report by our representative at El Morro National Monument supervising the drilling of the water well under your Contract No. 14-10-0333-637 that a depth of 302 feet had been reached by 10:55 a.m. on September 27 and no additional water has been encountered at the lower depth as expected.

Since suitable and sufficient water has not been encountered in bore No. 4 the Government is exercising its option and abandoning the hole.

Preparatory to closing out your contract and compensating you for the work you have performed to date the following actions or additional work should be performed by you:

1. By your own choice of methods you drilled an 8" bore to the 215 foot depth and continued with a 6" bore to the 302 foot depth. In the government's interest we should not be expected to pay the price for drilling the 12" bore specified in your Contract Bid Schedule, therefore, it is requested that you quote a price for the 8" bore and the 6" bore.

2. It is requested that 10 feet of the 6" casing and projecting two feet above the ground level installed by you be left in the bore. For this you will be compensated in accordance with Item No. 5 of your Contract Bid Schedule which includes the installation of a temporary cap and sealing the upper 10' of the bore.

As soon as you have complied with this request a change order will be issued covering the change in the diameter of the bore and the final payment processed compensating you for the work performed under the contract.

Attached is a Certificate of Release in five copies. (SIGNED) Please complete and return four copies to this office.

Sincerely yours,

Ray G. Martinez
Regional Procurement &
Property Management Officer

Copy to: Director
WODC-2
Supt., El Morro
Regional Chief of Lands Kell

Attachments-5

09-07-1960: memorandum to district engineer regarding drilling of a water well

WR Copy

Region Three
Santa Fe, New Mexico

L-54

Memorandum SEP 7 1960

To: District Engineer, Ground Water Branch,
U. S. Geological Survey
Albuquerque, New Mexico

From: Regional Director
National Park Service
P. O. Box 1728, Santa Fe, New Mexico

Subject: Drilling of a Water Well, El Morro National Monument

We have Mr. West's report of August 30 addressed to the Regional Chief of Lands reviewing the 5 test wells drilled to date at El Morro National Monument. We have also, as Mr. Kell reported to Mr. West by telephone, discussed the matter with represenatives of our Western Office of Design and Construction. Based upon Mr. West's recommendations, we have decided to drill the large diameter well at the site of test hole No. 4 only a short distance north and not more than 10-15 feet east of test hole No. 4. Mr. Cowley will drill as close to the existing 4 1/2" hole as possible.

When the driller, Cowley Brothers, St. John's, Arizona reaches water, we will need Mr. West's assistance in order to be certain that we follow every possible means to develop the greatest quantity possible at this horizon. We also plan to follow Mr. West's recommendation and drill 50-100 feet into the Wingate Sandstone. We will need Mr. West's recommendation at some later date regarding the mechanics of casing off the Red Bed formation, if as he anticipated, this will be required.

A represenative from this office will plan to be at El Morro during the drilling and we can discuss the matter in person prior to that time.

Thomas J. Allen
Regional Director

Copy to: Director (2)
WODC (2)
Superintendent (1)

09-06-1960: memorandum to regional director from regional chief of lands regarding test well drilling and water supply

L-54

Region Three
Santa Fe, New Mexico
SEP 6 1960

Memorandum

To: Regional Director
Through: Regional Chief of Operations

From: Regional Chief of Lands

Subject: Test Well Drilling and Water Supply, El Morro National Monument

My report of August 25 to the Regional Chief of Operations reviewed test drilling at El Morro National Monument and a copy of my report with print of NM-EM-7106 was transmitted to the Western Office of Design and Construction. There were drafting errors on this print and new prints of 7106-A are attached.

We have received Geologist Sam Wests' report of August 30 in which Mr. West believes that a larger diameter well at the site of test hole No. 4 completed with the sand and gravel packed and adequately developed by surging should yield from 3 to 6 g.p.m. of water from the alluvium. In addition, Mr. West thinks that 1 to 3 g.p.m. might also be obtained by drilling the well 50 to 100 feet into the Wingate sandstone or a total depth of 250 to 300 feet.

Based upon this information Jerry Miller and I telephoned Supervisory Engineer P. E. Smith in San Francisco and talked with Mr. Smith and Mr. Marley. We explained to them the amount of water expected to be drilled and discussed the probable costs of the completed well and pipeline. It is expected that the route of the pipeline from the well will encounter rock, perhaps as much as 50 per cent of the entire route. However, as I explained in my memorandum of August 25 we also can expect to encounter rock if the Ashcroft well was used as a source of supply. After considering all factors from the information now available and all sites (test hole No. 4, Ashcroft well and Siemens well) it was agreed that we should drill the water well at the site of test hole No. 4 in accordance with the recommendation of the U. S. Geological Survey.

The Western Office of Design and Construction will start preparation of plans for a water line leading from the well to the Headquarters Area and the agreed-upon route would be along the shoulder of the existing road from State Route No. 53 to the Headquarters Area.

This route will create the smallest amount of disturbance and at the same time should provide the greatest amount of protection with the smallest amount of trenching by taking advantage of the road shoulder.

In the event the well drilled at site No. 4 when it is properly developed does not yield sufficient quantity, it is planned to pull the 4 1/4 inch I. D. casing from the Davis Brothers well and replace it with a 6 or 8 inch casing. The Davis Brothers well will provide an additional 3 g.p.m. if needed.

JOHN E. KELL

John E. Kell
Regional Chief of Lands

Copy to: Director (2) ✓
Chief, WODC (2)
Supt., El Morro

Approved for distribution:

(SIGNED) Date:
Thomas J. Allen, Regional Director

09-01-1960: memo: test wells, el morro from chief water resources; a van v dunn.

L94-OBL

September 1, 1960

Memorandum

To: Regional Director, Region Three

From: Chief, Water Resources Section

Subject: Test Wells, El Morro

Copies of the memoranda of August 6 from Messrs. Kell and Fields and August 17 from Mr. Kell to the Regional Chief of Operations have arrivedwhile I was away from the office during most of August. We have not yet received the report on test well No. 5, but note that the tests under Contract 14-10-0333-637 have probably been terminated with the drilling of Well 5. The first four wells have certainly been discouraging.

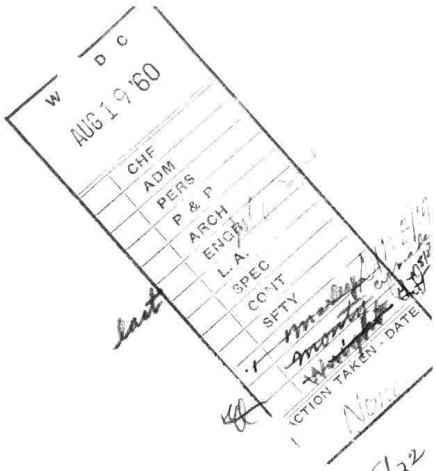
From Mr. West's memorandum of April 12 it appears that we should have further recommendations from USGS before deciding what to do next. There is apparently more water at the Siemens and Ashcroft well sites, but Mr. West should consider whether further test would be desirable between them and the Monument. If we are to purchase a well site outside the Monument we should purchase the best one, both as to quantity of water, and the combined cost of location determination, pump lift, and water system cost.

SIGNED
A. van V. Dunn
Chief, Water Resources Section

Copy to: Superintendent, El Morro
W. E. Hale, District Engineer, USGS, Ground Water Division,
P. O. Box 4072, Albuquerque, New Mexico
Chief, Ground Water Branch, USGS
Mr. P. Miller
Mr. Dunn

AvVDunn:lct

08-17-1960: memo; test well no 4; william coffey driller; el morro national monument.




Region Three
Santa Fe, New Mexico

L-54

August 17, 1960

Memorandum

To: Regional Chief of Operations

From: Regional Chief of Lands

Subject: Test Well No. 4, William Coffey Driller, El Morro National Monument

In connection with the test well drilling at El Morro, Change Order No. 2, Contract No. 14-10-0333-637, I left Santa Fe on August 8, stayed overnight at Grants, New Mexico, and arrived at El Morro National Monument at 8:15 a.m. the morning of August 9.

This site for test well No. 4 was selected jointly by Geologist Sam West, U. S. Geological Survey; Civil Engineer Fields; and Mr. Coffey, subcontractor for Cowley Brothers. The well was started at approximately 1:00 p.m. on Monday, August 8, and at the time I arrived the depth was approximately 90 feet. Mr. Coffey, the driller, started work at 9:35 a.m. August 9 and completed the drilling approximately 3:30 p.m. It rained intermittently during the afternoon but the rain had practically stopped by the time drilling was completed at 4:45 p.m. Mr. Coffey started pulling the drill stems and indicated that he had encountered mud and water at a depth of 178 feet. He had lost circulation at approximately 40 feet and no cuttings were recovered beyond that point. When the drill stems were pulled the last five sections (approximately 80 feet) were covered with mud. Mr. Coffey rigged his bailing equipment after 5:00 p.m. and attempted to bail the well. Because of the fractures encountered during the drilling operations from 40 to 150 feet, the drill bit had apparently drifted and the bailer, approximately 15 feet long, would not go beyond a depth of approximately 60 feet. Because it was impossible to do any bailing without reaming of the hole, operations were discontinued at about 5:40 p.m. I returned to Grants to telephone Mr. West and reported the conditions encountered.

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Wednesday, August 10, a different type collar was placed on the drill stem but this proved to be too large to pass far enough into the drilled hole to enable the driller to ream the well, and it was necessary to take the first drill stem to Ramah to have additional material welded to it. Reaming was resumed at 1:00 p.m. At 3:10 p.m. all six bolts in the clutch of the drilling rig sheared and it was necessary to repair the clutch and no further work was accomplished on August 10. Reaming was resumed on August 11 and by noon the entire depth had been reamed. Bailing was resumed at 12:00 noon and approximately 17 bailers of mud and water were removed from the well. At 12:25 p.m. the bailer stuck at the bottom of the hole and the drill stems were replaced in order to free the obstruction. Bailing resumed at 1:35 p.m.

Geologist Sam West was present during the bail test and he measured the water level prior to the bailing operation. The water stood at 178 feet prior to the bailing operation and was at this approximate level when bailing was resumed. With the equipment used by Mr. Coffey the bailer could be removed at an average of 30 seconds per trip. After bailing was resumed in the afternoon, we made six trips with the bailer averaging approximately a gallon and a half per trip. Then we ran a measured test and produced five gallons of water in one and a half minutes. The water level was again measured and found to be 178 feet.

According to Mr. Coffey's log the formations in test well No. 4 were as follows:

0 to 188 feet - malpais
Lost circulation at 40 feet
Fractures in malpais 40 feet to 150 feet
Encountered mud and water at 178 feet
188 to 193 feet - red bed

The red bed is extremely fine material and carries a small amount (perhaps one half to one per cent) of gravel. There is no sand in test hole No. 4 which was present in the Siemens well, also present in the Ashcroft well and in the well north of the Bond Trading Post. From discussing the well with Geologist West we are assured of at least three gallons per minute from test hole No. 4, and it may be possible if a water well is drilled at this site to produce more than three gallons per minute if the well is properly gravel packed and developed.

Test site No. 4 is located approximately 700 feet west of the northeast corner of Section 5, T. 9 N., R. 14 W. It is approximately 41 feet south of the north boundary fence. Test site No. 5 was located about 650 feet west of test site No. 4 and this site will be drilled Monday or Tuesday, August 15 or 16. A site west of test site No. 4 was selected since there have been several unsatisfactory wells tried in the northwest corner of Section 4 near the El Morro store and trading post. Mr. Bond, who owns this property, drilled one well which he bailed for several days and it produced thin mud but never produced water. It was for this reason that we decided to go west rather than east for test hole No. 5.

It is believed that with the water reported to be existing in the Davis Brothers well plus the amount obtained from the bail test in test hole No. 4 that two wells, if no better source is found, would be sufficient for Monument needs. If test hole No. 5 produces more water than test hole No. 4, it, of course, would be the logical place to drill the final well. On Friday morning, August 12, I rediscussed the possibility of an adequate water supply with Mr. West and Mr. Hale in the U. S. Geological Survey office in Albuquerque. One suggestion Mr. Hale made was the possibility of drilling north of test sites 4 and 5 on Section 32, T. 10 N., R. 14 W. The other alternate source, providing it is determined that the Davis Brothers well and test hole No. 4 are not sufficient for our needs, would be the Ashcroft well in the N½NW¼ of Section 6. This well is eight inches in diameter, 205 feet deep, produces sand, and has never been cased. It reportedly produces 38 g.p.m. by bail test.

Assisting Mr. Coffey with the bail test on the afternoon of August 11 was Mr. Carter who drilled a deep well approximately 1,600 feet deep some three miles east of El Morro. The well north of the El Morro Trading Post was drilled on Mr. Carter's property. He reported they encountered a lot of water but also a lot of sand. They unsuccessfully attempted to eliminate the sand through gravel packing. This system proved unsuccessful and Mr. Carter reports he ended up by placing gravel directly into the casing at the bottom of the well. This restricted the pumping of sand but also greatly reduced the flow of water. Mr. Carter reports he has six feet of water in the well and the pump cylinder is set three feet above the gravel and three feet below the water surface. Slow pumping produces an adequate amount of water for the El Morro Trading Post and stock watering purposes on the Carter property. If the Ashcroft property were to be acquired

we could expect to encounter the same sand problem previously encountered by others in this vicinity. It is my recommendation that we discontinue test drilling at least under this contract as soon as test hole No. 5 is completed.

JOHN E. KELL

John E. Kell
Regional Chief of Lands

Copy to: Director (2)
Chief, WODC (2)
Supt., El Morro

Approved for distribution

(SIGNED)

Date AUG 17 1960

Jerome C. Miller, Acting Regional Director

08-05-1960: memo: drilling of test wells, water supply, el morro national monument; from regional chief of land and civil engineer.

L-54

Region Three
Santa Fe, New Mexico

AUG 5 - 1960

Memorandum

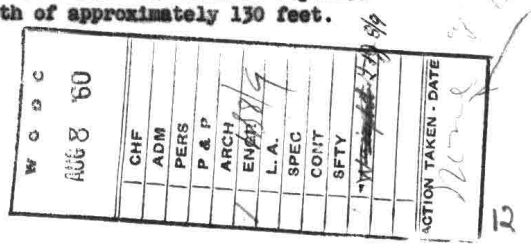
To: Regional Chief of Operations

From: Regional Chief of Lands and Civil Engineer

Subject: Drilling of Test Wells, Water Supply, El Morro National Monument

On Tuesday, July 12, in company with Superintendent Irving McNeil and Geologist Sam West we located a site for a test well at El Morro. This site, recommended by Mr. West, was north of the State road traversing Section 5 and west of the power line leading to the Headquarters area. A subsequent survey made by Civil Engineer Fields shows the well to be located in the NE¼NW¼NW¼ of Section 5.

The driller supposed to arrive on July 12 was unable to start drilling as promised because of completion of a prior contract and did not actually move to the well site and start drilling until Thursday, July 21. Upon being advised that the driller, Coffey Drilling Company, Gallup, had moved to the site, I left Santa Fe on the afternoon of July 21, stayed overnight at Grants, and arrived at the well site Friday morning, July 22, before the driller arrived. The drilling had started on July 21 and during the first day had drilled to a depth of about 130 feet. The drilling equipment used was a Portadrill, manufactured by Winter-Wiess Co., Denver, Colorado. This is a rotary rig, wagon type, capable of drilling up to a 7 1/2 inch hole, The bit used for the test wells at El Morro produced a 4 1/2 inch hole. In operation of the rig a hollow splined "Kelly", with a flexible air hose connected to the top or head, passes through a geared head which in turn gives rotation to the 15 foot drill stem. Compressed air is fed through the "Kelly" and drill stem or stems and cuttings are returned up the hole around the outside of the drill stem where they are caught in a box or hopper for sampling. In the event a break or cavity is encountered it generally happens that "circulation" is lost and no cuttings or samples are returned to the surface. At the first test hole there were cavities in the malpais formation and circulation was lost at a depth of about 90 feet and some cuttings were not returned. The driller reported the bottom of the malpais at a depth of approximately 130 feet.



At the time I arrived at the site he was in the "red bed", a point in this locality usually indicative of no water. Because more than one lava flow is known to have occurred in this vicinity, we recommended drilling deeper in the hopes that a second malpais formation would be encountered. We began to get some recirculation at a depth of approximately 150 feet. This formation brought to the surface in the form of dust still appeared to be produced from the red bed. Upon drilling deeper we encountered much better circulation and the cuttings brought to the surface were adequate for sampling. After analysing the samples Mr. West was of the opinion we had entered the Wingate formation and we abandoned test hole No. 1 at a depth of 166 feet. A more detailed report of the geology and the test drilling will be furnished by Mr. West, but it is discouraging to note that the Wingate formation about four or five miles northwest of the test site is the mesa forming formation at that locality.

After abandoning test hole No. 1 Mr. West, Mr. Coffey and I located a second test hole to the east of test hole No. 1 which when tied to a section corner by Mr. Fields turns out to be in the NE$^4$NE$^4$NW$^4$ of section 5. As soon as this hole was located, we returned to the drill rig and Mr. Coffey proceeded to pull the bit and drill stems. Because of sloughing or caving in the hole, (at about 90 feet) recovery of the drill stems was extremely difficult and each 15 foot section of stem had to be "rotated out." This procedure took almost three hours. The mast of the drill rig is raised and lowered by two hydraulic cylinders on each side of the mast. In lowering the mast there was apparently air trapped in the hydraulic cylinder and a gasket blew at the bottom of the hydraulic cylinder causing the mast to fall. This required replacement of bolts, a gasket, and hydraulic fluid and the second test hole was not started until Monday, July 25.

I arrived at the test site Tuesday morning, July 26, and at that time Mr. Coffey had drilled to a depth of approximately 75 feet and was still in the malpais formation. He resumed drilling on July 26 at approximately 9:50 A. M. The first 15 foot section was completed at 10:40 A. M. and subsequent sections at 11:25 A. M., 12:35 P. M. and 1:10 P. M. In test hole No. 2 the bottom of the malpais was encountered at 122 feet and we decided to abandon this hole at a depth of 136 feet since we were again in the red bed.

There were three holes authorized in the first contract and in an attempt to shorten the pipeline distance from well to storage tank we located a third hole in the SE$^4$SW$^4$SW$^4$ of Section 5. This location appeared to be in a narrow part of the valley where it was hoped we would intercept a secondary drainage formation. Both of the previous holes had only about one foot of alluvium before the

malpais was encountered. In test hole No. 3 there was approximately 15 feet of clay over the malpais formation. We drilled into the malpais formation approximately 15 feet and discontinued work at 6:00 P. M. July 26. Because of commitments in the Regional Office, I returned to Albuquerque that night, called at the Corps of Engineers and Assistant U. S. Attorney's Office in Albuquerque the morning of July 27, and returned to Santa Fe at 12:20 P. M. to meet with Superintendent Fagergren on land acquisition matters that afternoon. Civil Engineer Fields went to El Morro on July 27 and supervised the remainder or the test drilling. The remainder of this report has been prepared by Mr. Fields.

On July 27, I left Santa Fe at 9:45 A. M. enroute to El Morro National Monument to relieve Regional Chief of Lands Kell as supervisor of the well drilling project at El Morro National Monument.

I arrived at El Morro at 2:15 P. M. that afternoon and proceeded at once to the test hole site. This particular test hole was the third hole being drilled under contract No. 14-10-0333-637 let to Cowley Drilling Co. of Albuquerque and sublet to William Coffey Drilling Co. of Gallup. At the time I arrived they were at 140 feet and they had gone through the malpais and were in a red material which was a sandstone and clay mixture. At 3:35 P. M. they hit something soft at 148 feet depth which could not be drilled through using the air method, and the driller stated that in order to drill deeper he would have to switch to the water circulation method. The Monument water truck had just returned from the water point with 1,000 gallons of water. It was decided that for a 12 to 15 hour period the water supply for the Monument could be switched to the pool (used as stand-by, emergency source during this season of the year) and some of the water from the tank could be used as water for drilling. This was done and the hole was drilled to 165 feet using this method. At about 158 feet a real soft material was encountered. The type of material was unknown because the water pumped into the hole did not return and no samples could be obtained. Mr. Sam West, the U.S.G.S. representative, and the driller Mr. William Coffey both agreed that it was possible that the strata at this point (between 158 feet to 165 feet) could be a water bearing formation. In order to find out if this were true, additional water would have to be obtained and drilling continued with the water circulation method to a hard layer, then the hole bailed to ascertain if this were a water bearing aquifer or only a soft material of some type.

The following morning arrangements were made to bring a 1,000 gallon water tank from Gallup and water was hauled from Ramah. At 1:45 P. M. drilling was resumed and at 3:00 P. M. the hole was 185 feet deep in a very hard material. The driller then rigged up his bailer and by 4:15 P. M. a bail test was run using a 6 gallon bailer. In 4 minutes

40 seconds there were 9 bailers of water and mud pulled from the hole. The last two bailers full were mud the consistency of cement mortar. Mr. West deduced that the water which was bailed was the water which had been introduced into the hole by drilling, and that this hole should be abandoned.

Mr. Kell had indicated that should this hole be dry there would be a change order written which would grant the authority to drill at least three more holes; therefore, Mr. West, Mr. Coffey and myself spent until 6:45 P. M. locating two more drill sites. Mr. West thinks that we should try to drill as far north on our property as possible to try to find the old channel which runs east-west and is the channel where most of the producing wells in the area are drilled. One new location was spotted near the fence and 666 feet west of the northeast corner of Section 5. The other was located near the fence and 1,893 feet west of the northeast corner of Section 5. Mr. West states that the decision on where to drill the last hole will have to wait until these two are drilled.

During the day of July 29, I spent locating by survey the three dry holes for future reference. A sketch map is included with this report to show these locations.

I departed from El Morro at 3:15 P. M. and arrived in Santa Fe at 7:55 P. M. July 29.

(SIGNED)

John E. Kell
Regional Chief of Lands

(SIGN...)

William E. Fields
Civil Engineer

Copy to: Director (2)
Chief, WODC (2)
Supt., El Morro

Approved for distribution

AUG 5 - 1960

(SIGNED) Date:

George W. Miller, Acting Regional Director

07-06-1960: memo: test well and water resource studies, el morro; from assistant regional director; m&p funds.

L-54

Region Three
Santa Fe, New Mexico

JUL 6 1960

Memorandum

To: Director

From: Assistant Regional Director

Subject: Test Well and Water Resources Studies (M&P), El Morro

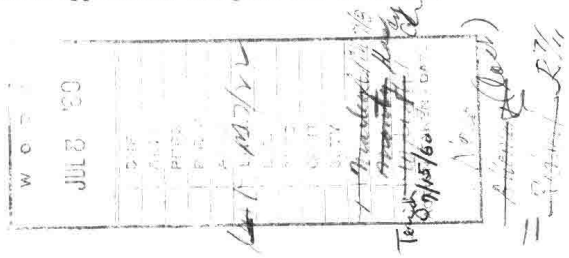
Mr. Dunn's memorandum of June 13, second page, second paragraph, questions the advisability of using additional M&P funds to reimburse the U. S. Geological Survey for assistance at El Morro. This question was raised because of our proposal to purchase the Siemens or Ashcroft wells.

A contract for drilling a water well at El Morro has been awarded. We are negotiating with the contractor to drill small diameter test wells prior to drilling the actual water well. These test wells will be at favorable locations on Section 5, and the test sites will be located by the U. S. Geological Survey. It is expected each well will be through the malpais formation expected to be 200' to 250' deep. The anticipated cost will be about $3.50 to $4.00 per foot. The cost of the test wells and bailing or test pumping is covered in the current, undated work order.

Mr. Kell has arranged for Mr. West of Mr. Hale's office in Albuquerque to assist in selection of the sites and to make analysis and further recommendations if water is encountered. The cost of supervision by the U. S. Geological Survey should, in Mr. Kell's opinion, come from the M&P account.

If we are in error and this work is a proper charge against the construction account, we should be advised by Mr. Dunn.

If it should happen that none of the three small diameter test wells on our own property produce water in sufficient quantity for El Morro, we will then be faced with appraisals and purchase of either Siemens or Ashcroft's well.



Mr. Siemens has sold his property subject to the National Park Service option. If we do not have the property appraised and option approved before August 15, 1960, that source is lost since the new owner will not extend the option.

(SIGNED)

George W. Miller
Assistant Regional Director

In duplicate

Copy to: Supt., El Morro
Chief, WODC (2)

06-24-1959: memo: pump test, well on siemen's property, el morro; from chief, water resources section.

UR copy L54-OBL

June 24, 1959

Memorandum

To: Regional Director, Region Three

From: Chief, Water Resources Section

Subject: Pump Test, Well on Siemens' Property, El Morro

We have received two memoranda of June 9 from Mr. Bill, on the above subject, during my absence from the office from June 9 to 19, inclusive. I also discussed the matter with Mr. Kell, by phone, on June 23.

The chemical analysis of the well water has been referred to Mr. F. Miller.

Mr. Bill's memorandum concerning the pump test was apparently written before the composer received my air mail memorandum of June 5. Mr. Kell advised, on the phone, that the financial matter had been clarified, and bids for the pump test were to be opened later this week.

I believe that we should start an alien water right assembly, and file the chemical analysis, written permission for the pump test, and records of the pump test therein. We are distributing folders for that purpose, which can be converted to dockets, if that becomes proper.

Mr. Kell asked, on the phone, whether an option could be obtained for the Siemens property after the pump test. I advised that some acquisition funds would probably be available in 1960, but that there would not be as much of a reserve as during the past few years.

As you know, authority for purchase has not been delegated. Before we approve the negotiation of any such purchase, we should have the following:

1. Results of the pump test.

2. Decision by you, Superintendent and WODC, that the source will be suitable. We note that the well is slightly more than a mile from place of proposed use, with intervening

mountains or hills. The well is also more than half a mile from Monument boundary, but all pipeline right-of-way would apparently be across Mr. Siemens' land.

3. Appraisal of land, right-of-way, well, and other improvements needed for the water system.

4. Option.

We can authorize appraisal and option as soon as advised that there is complete agreement that the well is the proper source of supply. While purchase would probably be possible in 1960, final decision cannot be made until the cost is determined, and we complete our initial allocation of 1960 funds during July.

SIGNED
A. van V. Dunn
Chief, Water Resources Section

Attachment

Copy to: Superintendent, El Morro, w/c attachment
Chief, WODC (2), w/c attachment
Mr. P. Miller
Finance Officer
Mr. Dunn

AvVDunn:lct

L-54

Region Three
Santa Fe, New Mexico

JUN 9 - 1959

Memorandum

To: Director

From: Assistant Regional Director

Subject: Request for M & P Funds, Account 0140 (143.2), El Morro

Mr. Dunn's memorandum of May 29 in reply to Acting Regional Chief of Operations Miller's memorandum of May 21 has been received.

It is noted that apparently there may not be funds to finance Item 3, making a production test of the Siemens well approximately one mile west of El Morro National Monument.

In this connection we have attached a copy of my letter to Mr. Siemens. It seems advisable to obtain Mr. Siemens' permission to make the test and run the necessary traverse line in the event funds become available. Mr. Kell thinks it may be possible to readjust the program under 143.2 funds available in this office and make the necessary test prior to June 30. We will keep Mr. Dunn advised of the developments as soon as we have heard from Mr. Siemens.

Harthon L. Bill
Assistant Regional Director

In duplicate w/attachment

Copy to: WODC (2) w/attachment
Supt., El Morro w/attachment

L-54

Region Three
Santa Fe, New Mexico

JUN 9 - 1959

Robert L. Siemens
656 Sargent Street
Grants, New Mexico

Dear Mr. Siemens:

Please accept our apologies for not writing to you sooner, but as Mr. Kell and Mr. Fields explained to you at your home when they were enroute to Lake Mead on April 25, before we are in a position to negotiate, we must, of course, have the necessary funds and have more information regarding the production of the well.

As soon as Mr. Kell returned from Lake Mead, we wrote to our Director's Office in Washington asking them for the necessary funds to make a test of your well which would give us information regarding yield and recovery. At the present time there does not seem to be a way to finance this test. There is, however, a possibility that some money will be available for this purpose between now and June 30.

Therefore, we would like your permission to make the test and at the same time run a traverse line across your property from the well to our proposed storage tank near the headquarters area at El Morro.

I am sure you can understand that before we can make any offers or negotiate we must have a comparison between costs of drilling a deep well and the length of pipeline and trenching from your existing well to the point of use.

This permission should be granted with the understanding that the work would be done by a contractor with the proper equipment, and it would be the contractor's responsibility to replace your equipment in the same manner and condition as it is found, and he, of course, would be responsible for breakage or damage.

If we could have this permission from you, we would do the work before June 30, providing funds were available, or soon after July 1, if the funds should not become available before that time.

Sincerely yours,

(SIGNED)

Harthon L. Bill
Assistant Regional Director

Copy to: Director (2)
WODC (2)
Supt., El Morro

04-20-1960: memo: availability of ground water at el morro (project mm-71) by geologist sam west; from regional chief of lands; n

L-54

Region Three
Santa Fe, New Mexico

APR 20 1960

Memorandum

To: District Engineer, U. S. Geological Survey, P. O. Box 4217, Albuquerque, New Mexico

From: Regional Chief of Lands, National Park Service, P. O. Box 1728, Santa Fe, New Mexico

Subject: Availability of Ground Water at El Morro National Monument (Project MM-71) by Geologist Sam West, El Morro

This will acknowledge receipt of Mr. West's memorandum to me of April 12 regarding availability of ground water at El Morro National Monument.

As rapidly as the contract can be prepared we will arrange for test drilling to be completed before June 30, if possible. As the drilling progresses and if water is encountered, we would like for Mr. West to be available for advice presuming the quantity of water is insufficient for our needs and also presuming that one or more test wells will be required.

It is not anticipated that Mr. West needs to be present during the entire drilling since a representative of our Service can report the formations encountered and the progress made. We would expect to reimburse your office for this service and would like to have an estimate of the approximate costs in order that the necessary funds can be earmarked.

(SIGNED)

John E. Kell
Regional Chief of Lands

Copy to: Director (2) w/copy report
Chief, WODC (2) w/copy report
Supt., El Morro w/copy report

04-12-1960: memo: availability of ground water at el morro national monument (project nm-71); from district engineer, us geologic

Ground Water Branch
P. O. Box 4217
Albuquerque, N. Mex.
April 12, 1960

Memorandum

To: Regional Chief of Lands, National Park Service,
P. O. Box 1728, Santa Fe, New Mexico

From: District Engineer, U. S. Geological Survey,
Ground Water Branch, P. O. Box 4217, Albuquerque, New Mexico

Subject: Availability of ground water at El Morro National Monument (Project NM-71)

The following comments on the availability of ground water at El Morro National Monument are submitted for your consideration, pending completion of the Geological Survey report on the area, as suggested in your memorandum of April 1. The availability of ground water in the vicinity of El Morro was studied by S. W. West in the summer of 1959. A well on the Robert Siemens place (NE¼NW¼ sec. 1, T. 9 N., R. 15 W.) was tested by pumping, information on other wells was obtained, and the geologic and physiographic features of the area were studied.

El Morro is just off the southwest flank of the Zuni Mountains, where the older geologic formations, ranging in age from Pennsylvanian (?) to Late Cretaceous, have been sharply tilted and, locally, faulted. The formations have been deeply eroded, since they were tilted and faulted. In Quaternary time the valleys were partly filled with alluvium, which has been buried by eruptions of volcanic ash and basalt.

The San Andres limestone of Permian age, the oldest and deepest of the formations considered as a potential aquifer, yields large supplies of potable water to wells in the vicinity of Bluewater, Grants, and San Rafael about 20 to 30 miles northeast of El Morro. It lies at a depth of 2,000 to 2,500 feet below land surface at El Morro. Water from a deep source on the Carter ranch, about 3 miles east of El Morro National Monument, was impotable. The source of the impotable water is not certain; presumably it is the San Andres limestone or the Sonsela sandstone bed in the overlying Chinle formation.

The Sonsela sandstone bed yields potable water to wells at Zuni, about 30 miles west of El Morro, and to a few shallow wells 5 to 6 miles northeast of El Morro. The impotable water yielded by the Carter well indicates that the Sonsela would not yield potable water at El Morro. The Sonsela is the only aquifer of note in the Chinle formation, which is about 1,600 feet thick.

The Wingate sandstone of Late Triassic age, which was reported by Clay T. Smith of the New Mexico Institute of Mining and Technology, to be about 270 feet thick at El Morro, overlies the Chinle formation. The Wingate yields 1 to 5 gpm (gallons per minute) of water to wells in the El Morro area.

The Zuni sandstone of Late Jurassic age, which also is about 270 feet thick overlies the Wingate sandstone. The Zuni yields 1 to 3 gpm of water to wells in the vicinity of El Morro.

The Dakota sandstone of Late Cretaceous age, which overlies the Zuni sandstone, yields small supplies of potable water to wells a few miles south of El Morro, but it is above the zone of saturation in the vicinity of El Morro.

The alluvium and volcanic ash of Quaternary age in the valleys in the vicinity of El Morro yield as much as 25 gpm of potable water to wells. The Siemens well, in the NE¼NW¼ sec. 1, T. 9 N., R. 15 W., was pumped at an average rate of 25 gpm for 12 hours. The drawdown was 34 feet. However, the well was improperly constructed for that yield, and a large amount of silt and sand was pumped with the water. The "Davis well", in the NE¼NW¼ sec. 5, T. 9 N., R. 14 W. on monument land, which also taps the alluvium, had a much smaller yield when tested. The records of the test indicate that the pumping rate was not consistent. The drawdown during the test was not measured. Also, the well may not have been properly cleaned before testing. The apparent yield of this well was 1 gpm. Other wells that tap the alluvium a few miles southwest, west, and northwest of El Morro yield as much as 25 gpm of potable water to wells.

The data indicate that only the alluvium and volcanic ash in buried valleys in the vicinity of El Morro are capable of yielding as much as 25 gpm of potable water to wells. Such a buried valley trends westward across, or just north of, the northern part of the monument land in section 5 and swings southwestward by the Siemens well. The low area

between the monument headquarters and the picnic grounds probably contains a buried valley that was tributary to the one to the north. Because of its nearness to the main valley, the altitude of the buried valley floor between the headquarters and the picnic ground should be only a few feet higher than the one to the north.

The possibility of obtaining an adequate supply of potable water by drilling on monument land warrents test drilling. A convenient location would be near the junction of the roads to the headquarters and the picnic grounds (in the SE¼NW¼ sec. 5). The physical environment at this location, coupled with its convenience, would make it a reasonable site for the first test well.

Should the first test well indicate favorable conditions, a second test well nearby would be desirable to learn more about the extent of the aquifer. Should the first test well indicate unfavorable conditions, a second test well adjacent to the north boundary of the NE¼NW¼ sec. 5 is suggested. This site is less convenient for a water supply, but the chances of success may be better than at the other site.

A well at either of the sites should be drilled to a depth of 225 to 300 feet. Any time during drilling that an inflow of water is indicated, drilling should be suspended temporarily and the well should be tested for yield by bailing.

The alluvium at both sites probably consists of very fine sand and silt. A gravel pack and screen likely will be necessary for production of sand-free water. The test wells could be designed strictly for obtaining information on geologic and general hydrologic conditions, in which case a gravel pack and screen would not be necessary, or they could be designed for production, in which case provision for the gravel pack and screen should be a part of the initial plans. In either event, the casing to be left in the well should be at least 6 inches in diameter.

We hope that this information is adequate for your needs in planning a program of test drilling at El Morro National Monument. If not, please feel free to contact us.

Sincerely,

Sam W. West
Geologist

SWW/bc

for: W. E. Hale
District Engineer, GW

cc: Branch Area Chief,
Denver, Colorado

C
O
P
Y

L-54

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Ground Water Branch
P. O. Box 4217
Albuquerque, N. Mex.
April 12, 1960

Memorandum

To: Regional Chief of Lands, National Park Service,
P. O. Box 1728, Santa Fe, New Mexico

From: District Engineer, U. S. Geological Survey,
Ground Water Branch, P. O. Box 4217, Albuquerque, New Mexico

Subject: Availability of ground water at El Morro National Monument (Project NM-71)

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9

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The possibility of obtaining an adequate supply of potable water by drilling on monument land warrants test drilling. A convenient location would be near the junction of the roads to the headquarters and the picnic grounds (in the SE$^4$NW$^4$ sec. 5). The physical environment at this location, coupled with its convenience, would make it a reasonable site for the first test well.

Should the first test well indicate favorable conditions, a second test well nearby would be desirable to learn more about the extent of the aquifer. Should the first test well indicate unfavorable conditions, a second test well adjacent to the north boundary of the NE$^4$NW$^4$ sec. 5 is suggested. This site is less convenient for a water supply, but the chances of success may be better than at the other site.

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We hope that this information is adequate for your needs in planning a program of test drilling at El Morro National Monument. If not, please feel free to contact us.

Sincerely,
/s/ Sam W. West

Sam W. West
Geologist

SWW/bc

for: W. E. Hale
District Engineer, GW

cc: Branch Area Chief,
Denver, Colorado

03-11-1960: memo: suggested acquisition of ashcroft property, tract 3, el morro; from assistant director.

L1425-OBL

MAR 11 1960

Memorandum

To: Regional Director, Region Three

From: Assistant Director

Subject: Suggested Acquisition of Ashcroft Property, Tract 3, El Morro

We have received Mr. Miller's memorandum of February 25, on this subject, which requests our comments concerning the order of procedure in the water resources investigation, land appraisals, test well drilling, and preparation of a water system design and cost estimate. We also have your memorandum of the same date with Mr. Kell's first revision of Work Order 4-WR-60 which includes increases to provide $1,200 for the appraisal of the Ashcroft and Siemens' properties, $6,000 for the test well, and $175 for related Regional Office travel.

We feel that you and your staff, by your more detailed on-the-ground knowledge, can better decide whether Mr. Miller's suggested procedure should be followed. Our suggestion is that Mr. West of the Geological Survey should advise, by memorandum, if the report is not ready, whether water of one of the two test wells would be expected to be equal to the quantity and quality of water which has been found in the Ashcroft or Siemens well, and the probable depths of the test wells. It would then appear advisable to make preliminary estimates of the comparative costs of the four water systems from the various well sites, including costs of land and rights-of-way, and pump tests, where applicable.

If the two test wells cost in the neighborhood of $6,000, and Messrs. Ashcroft and Siemens will expect $12,000 to $15,000 for their property, and the related pipelines would be longer, we doubt the propriety of appraising their properties unless the test bores fail. Your reference to estimates used for the work order suggests that the matter may need further study before you decide whether appraisals or test wells should be first, or whether both are needed.

The work order is the subject of a separate memorandum, but Mr. Dunn is approving it with revisions to authorize the necessary portions of the work, and the total monetary ceiling, subject to your decision from this memorandum.

Aesistant Director

Copy to: Superintendent, El Morro
Chief, WODC (2)
Mrs. P. Miller
Mr. Dunn

AvVDunn:lct 3-8-60

03-07-1960: letter to mr martin eckert, first national bank of albuquerque for property appraisal at el morro.

El Morro

L-1425
Barnes

Region Three
Santa Fe, New Mexico

1960 MAR 10 AM 9 22

MAR 7 - 1960

Mr. Martin W. Eckert
First National Bank Building
Albuquerque, New Mexico

Dear Mr. Eckert:

The National Park Service is interested in having several pieces of property appraised at El Morro National Monument, on State Route 53, south and west of Grants, New Mexico. The property is located in T. 9 N., R. 14 and 15 W. The matter of appraisals was discussed with you by Mr. Kell, of this office, during the first part of February. In this connection, we have attached a black-line print of a sketch map, NM-NM-7103, which shows the location of the properties we would like to have appraised. We have, also, attached a draft of a contract showing the type we would use in connection with the appraisal. We would like to have your estimate of the cost of making appraisals as follows:

Robert L. Siemens Well - Section 1, T. 9 N., R. 15 W.

This property interest is in the nature of a perpetual easement whereby our Service would acquire an existing well located as shown on the sketch map, with the right to maintain the well in perpetuity, with the right for ingress and egress, and a right of way for a pipe line across the $E^{\frac{1}{2}}NW^{\frac{1}{4}}$ and the $E^{\frac{1}{2}}$ of Section 1, T. 9 N., R. 15 W., N.M.P.M. A draft of the type of easement and property interests being acquired can be supplied for your more detailed information.

Ashcroft Property - Tract No. 3, $N^{\frac{1}{2}}NW^{\frac{1}{4}}$, Section 6, T. 9 N., R 14 W.

This property consists of Lot 1 and the $NE^{\frac{1}{4}}NW^{\frac{1}{4}}$ of Section 6, 79.12 acres. A well, reported to be 205 feet deep, has been drilled in the $NW^{\frac{1}{4}}NW^{\frac{1}{4}}NW^{\frac{1}{4}}$ of the property, roughly 50 feet from the north and west property lines. The remainder of the property is unimproved. State Route 53 traverses the property; there is also a R.E.A. power line parallel and adjacent to the north boundary. The well is reported to yield 38 g.p.m. No tests have been made by you. Appraisal report should be based on a reported production subject to tests to be made at some later date.

Barnes Property - Tract No. 4, $S^{\frac{1}{2}}SE^{\frac{1}{4}}$, Section 6, T. 9 N., R. 14 W.

This property, so far as we know, has no water potential and is being acquired, not for any potential water supply, only as an addition for El Morro National Monument. The value should be based on land value exclusive of water.

Rice Property - Tract No. 2, $N^{\frac{1}{2}}NE^{\frac{1}{4}}$, Section 6, T. 9 N., R. 14 W.

This property is reported to have a well approximately 200 feet deep; productivity and quantity of the water is unknown but reported to be between 200 and 400 gallons per day. Our Service is interested in acquiring this property for it's land value rather than a potential water source. However, the report should include the value of the well.

The U. S. Geological Survey is in the process of making a ground water study in the vicinity and has information on several wells and dry holes that have been drilled in the general vicinity. This information could be made available for your use in making the appraisal.

At the present time, we have authority from the owners to appraise all properties except the Rice tract. We may, or may not, obtain permission to have this tract appraised. In your estimate we would like to have lump sum costs for appraising each of the four tracts.

We would, also, like the quotation to be made in such a manner that we could delete appraisal of the Rice tract, providing we are unable to obtain permission to have it appraised. The appraisal "should, also, be made on the assumption that the field work for all four properties could be made at the same time." Mr. Siemens lives in Grants; Mr. Rice, at Cubero; Mr. Barnes, approximately 12 miles west of Grants; and Mr. Ashcroft lives in a trailer at Ramah. Your estimate should consider separate appraisal reports for each tract and an original and three copies will be needed for each property appraised.

If there is any additional information you wish regarding the properties, before submitting your estimate, we will be glad to supply what additional information we have.

Sincerely yours,

George W. Miller
Assistant Regional Director

Attachments

Copy to: Director (2)
Supt., El Morro

02-29-1960: memo: suggested acquisition of ashcroft property, tract 3, el morro; from regional director.

L-1425 Ashcroft
Siemens
Barnes

Region Three
Santa Fe, New Mexico

FEB 29 1960

Personal

Memorandum

To: Superintendent, El Morro

From: Regional Director

Subject: Suggested Acquisition of Ashcroft Property, Tract 3, El Morro

Attached is your copy of our memorandum to the Director dated February 25. This is in reply to Mr. Dunn's memorandum of February 2 of which you have received a copy.

As you know, we wish to do everything possible to acquire the necessary land and water for El Morro National Monument. It is the opinion of those in this office that we should have the property appraised in order to be able to negotiate when the proper time arrives.

Before we finally determine the best course of action to follow, it may be necessary to drill test wells on our own property based on the recommendation of the U. S. Geological Survey. This does not mean that we have abandoned the idea of acquiring the Ashcroft property with the well. What we are trying to do is to make the necessary moves in advance, so that we can follow the best course of action as rapidly as possible. We anticipate that the quality of the water from the Ashcroft well will be satisfactory, and we hope it will be possible to acquire the Ashcroft tract soon. We are attempting to obtain a firm quotation for having the property appraised, and the cost of the appraisal will be greatly reduced if we can have three or four tracts appraised at the same time. As soon as we have firm figures for the appraisal, we will advise the Washington Office and request the necessary funds.

We request that you consider all of the information regarding potential sources of water as confidential. If Mr. Ashcroft should inquire directly about the transaction, you may tell him the water is being analyzed by the U. S. Geological Survey, in Albuquerque; and we will advise you as soon as we have the report.

Thomas J. Allen
Regional Director

Attachment

Copy to: Director (2)
WODC (2)

ELMO

02-25-1960: memo: suggested acquisition of ashcroft property, tract 3, el morro; from regional director regarding appraisals.

L-1425 Ashcroft
~~L-1425 Siemens~~
L-1425 Barnes

1960 FEB 25 AM 8:23

Region Three
Santa Fe, New Mexico

FEB 25 1960

Memorandum

To: Director

From: Assistant Regional Director

Subject: Suggested Acquisition of Ashcroft Property, Tract 3, El Morro

This will acknowledge Mr. Dunn's memorandum of February 2 regarding appraisals and possible acquisition of the Ashcroft property at El Morro. We have noted that funds can be provided for the needed appraisal. However, as yet, there has been no firm decision on the cost of the two or more appraisals.

We do not think the situation at El Morro is "out of hand" as yet. We are, however, reasonably certain Mr. Ashcroft drilled the well expecting to provide a potential source of water for the park and at the same time increase the value of his land. This is supported by the fact that the well has not yet been cased and he, of course, advised us almost immediately after the well was drilled. If he is successful in selling his property to the Service, he has realized his goal. If he does not sell to the Service, he has a choice of constructing buildings on the property and further increasing its value and eventually be assured of a sale either to the Service or some other party. It is almost certain that Mr. Ashcroft knows his property is within the authorized boundaries.

Mr. Dunn may remember Mr. Kell's reluctance to disclose information about the Siemens well and the reminder that Ramah is a small community with big ears. It is only logical that everyone in that community knows we are hunting for water.

It is agreed that we should have comparative costs of the two presently known alternate sources. These are the Siemens well tested but not yet appraised and the recently drilled well on the Ashcroft property. We should also consider the possibility of drilling two test wells on our own Section 5.

Mr. West of the U. S. Geological Survey has not completed the El Morro Ground Water Study Report. He has made certain verbal recommendations to Mr. Kell. There are two potential sites recommended for test wells. One is the NW¼NW¼NW¼ of Section 5; the other is near the junction of the Monument entrance road and the road leading to the picnic area. The site indicated by Mr. West would be north of the picnic area road and east of the Monument entrance road in the wye formed by the junction.

Any approach we take will involve certain calculated monetary risks. The risk of two dry holes on our property should be weighed against the advantages in cost of acquisition and pipeline distance if we find water as compared to the increase costs of the Ashcroft property if we fail to find water and have two dry holes.

It is the recommendation of this office we proceed as follows:

1. Have the Siemens, Ashcroft, Barnes and Rice properties appraised.

    a. Ashcroft and Siemens are potential water sources. Barnes is an "opportunity purchase" and the Rice property should be acquired if possible. An appraisal is a prerequisite to negotiations, and we cannot afford to wait to drill test wells and then have the property appraised.

2. Drill two test holes eight inches in diameter on our own property in locations recommended by the U. S. Geological Survey.

    a. The test holes should be eight inches since we expect to encounter lava and a small diameter hole cannot be successfully reamed in this formation. In addition the driller cannot get enough weight, using a small diameter tool, to effectively drill the malpais formation if it is encountered. Mr. Reynolds, driller of the Ashcroft well, has advised Mr. Kell the drilling of a small diameter test hole will cost about the same amount as the eight inch hole because of the formations expected to be encountered during drilling.

3. Ask WODC to make comparative costs of Ashcroft versus Siemens well if our proposed two test wells are dry holes.

a. The analysis or comparative costs would include pump lift, pipeline route, head, and depth of trench required. A route on the north side of the rock will undoubtedly need to be deeper than the longer route to the south from the Siemens well.

When we have taken these steps we will then have values to help us determine if we pay Ashcroft's price or Siemens' price if our test wells are dry.

If we find water on our property, the Ashcroft price may possibly come down. If we don't find water, it will most certainly go up.

We think the appraisals should come first and are a necessary part of the exploration and search for water. If all of the properties could be appraised at one time, it is logical to expect a much better price than if individual appraisals are made.

Superintendent McNeil has delivered a sample of water from the Ashcroft well to U. S. Geological Survey, Albuquerque, for analysis. In our opinion, if the quality is satisfactory, we can assume the quantity will be sufficient and the appraiser could make his report based on a known quality and a reported quantity. The well should eventually be tested for productivity, but we do not think that is mandatory before an appraisal.

[SIGNED]

George W. Miller
Assistant Regional Director

In duplicate

Copy to: Supt., El Morro
Chief, WODC (2)

02-09-1960: memo: test of water, ashcroft well, el morro; from regional chief of lands, national park service.

W K Lefey

L-54
Ashcroft

Region Three
Santa Fe, New Mexico

February 9, 1960

Memorandum

To: William E. Hale, District Engineer, U. S. Geological Survey, Ground Water Branch, P. O. Box 4072, Albuquerque, New Mexico

From: Regional Chief of Lands, National Park Service, P. O. Box 1728, Santa Fe, New Mexico

Subject: Test of Water, Ashcroft Well, El Morro National Monument

On Saturday, February 6, Superintendent Irving McNeil, El Morro National Monument, telephoned me and advised that Mr. Ashcroft had obtained samples of water from his well located in the NW¼NW¼NW¼ of Section 6, Township 9 North, Range 14 West, El Morro National Monument. I am not certain the date the sample was obtained, but I think it was Saturday, February 6.

Mr. Ashcroft expects to bring the sample to Albuquerque for an analysis, and I have given him your name and telephone number and suggested that he leave the sample with you. It is my understanding from a telephone conversation with Mr. Kay Stow several months ago the cost of an analysis will be approximately $40.

This can be handled in either of two ways: You may add it to the cost of your El Morro study, or you may submit Form 1081 to this office for the cost of the analysis.

Superintendent McNeil reports the sample was taken at 11:00 a.m. The temperature at the surface of the ground was 36 degrees. Three samples of water were taken from the well and these samples were reported to be 49, 51 and 53 degrees as they came from the well.

Since the hole was not cased, Superintendent McNeil reports that there was a certain amount of foreign material knocked into the well during the collection of the sample. It is my understanding that this was material that floated on the surface and was removed. If in your opinion the samples, when they are received in your office, are unfit for analysis, we will make an attempt to obtain better samples.

(SIGNED)

John E. Kell
Regional Chief of Lands

Copy to: Director (2)
Supt., El Morro
Chief, WODC (2)

02-02-1960: memo: suggested acquisition of ashcroft property, tract 3, 79.12 acres, el morro; from chief, water resources section;

WR copy

L1425-GBL

February 2, 1960

Memorandum

To: Regional Director, Region Three

From: Chief, Water Resources Section

Subject: Suggested Acquisition of Ashcroft Property, Tract 3, 79.12 Acres, El Morro

It is not yet necessary to consider deferring the acquisition of the UPCo. property at Bryce Canyon to provide funds for the acquisition of the lands and wells of Messrs. Siemens or Ashcroft at El Morro, as suggested in the memorandum of January 21 from Mr. Miller. There appear to be more than adequate water funds for necessary purchases in both areas. We can also provide funds for the desirable appraisals.

We hope that the situation at El Morro is not getting out of control. The correspondence suggests that Mr. Ashcroft may have drilled his well for the sole purpose of proving the availability of water and enhancing land values, after finding that this Service was sufficiently interested to pump test the more remote Siemens well. He has provided an additional test well and record of value for the USGS in its water resources investigation, but perhaps at more cost, to be included in any land purchase, that the Park Service would have had to incur.

The next step should probably be to obtain the USGS report before considering appraisals of those lands with wells, or lands which the USGS may consider to include sites for more favorable wells. WORC should also provide comparative costs of the alternative water systems using those wells or well sites, including the estimated costs of any further recommended test wells, and the selling prices the land owners already seem to have offered. These estimates and the water resources reports should then be adequate to permit more intelligent determination of which properties, if any, should be appraised. These are only my ideas of the order of procedure, and there may be reasons for some change in the order.

Mr. Miller's memorandum reminds me that we have had no recent report on developments at Bryce. What are the status of well drilling, pump tests, and related preparation of application and supporting map for the water right? Also, what are the status of protests of the UPCo. applications for the wells on its land, NPS plans to acquire and use that supplemental supply?

SIGNED

A. van V. Dunn
Chief, Water Resources Section

Copy to: Superintendent, El Morro
Chief, WORC

Copy to: Mr. R. Miller
Lands
Mr. Dunn

AvVDunn:lct

01-26-1960: memo: initiation of alien water right no 2 folder for ashcroft well, el morro.

WR Copy
WRD

L54-OBL

January 26, 1960

Memorandum

To: Regional Director, Region Three

From: Acting Chief, Water Resources Section

Subject: Initiation of Alien Water Right No. 2 folder For Ashcroft Well, El Morro National Monument

The Washington Office copy of the attached empty folders contain a copy of Mr. Kell's memorandum of December 29, 1959, to District Engineer, USGS, Albuquerque, subject - Ashcroft Well, NW¼ NW¼ NW¼ Sec. 6, T 9 N, R 14 W, complete with attachments. Mr. Kell's memorandum is included because it discusses well features and future proposals. It is assumed that the Regional Office can supply the contents for each field copy if they have not already been so supplied.

SIGNED

Gordon W. Robertson
Acting Chief, Water Resources Section

Attachment

Copy to: Superintendent, El Morro, w/identical attachment
Chief, WODC, w/identical attachment
Mr. Dunn

GWRobertson:lct

01-21-1960: memo: acquisition of ashcroft property, tract no 3, 79.12 acres, el morro; mr kell's field report of a meeting with mr as

W R Copy

L-1425
Ashcroft

Region Three
Santa Fe, New Mexico

1960 JAN [illegible] AM 9 41

JAN 21 1960

Memorandum

To: Director

From: Assistant Regional Director

Subject: Acquisition of Ashcroft Property, Tract No. 3, 79.12 Acres, El Morro

Attached is a copy of Mr. Kell's field report of January 15 covering a meeting with Mr. R. A. Ashcroft on January 9.

The Ashcroft property is within the area authorized for acquisition by the Act of June 14, 1950 (64 Stat. 211) and under the terms of this Act, when the land is acquired, it automatically becomes a part of El Morro National Monument.

As shown in Mr. Kell's report, the well at present is not cased. According to the driller, a 6-inch casing could be set or, perhaps, a maximum 7½-inch O.D. pipe could be used.

In considering the acquisition, the cost of the casing and setting and the cost of trenching (probably a shorter line but deeper than required from the Siemons well) should all be considered.

There are favorable factors over the Siemons well in that the Service would be acquiring an 80-acre addition to the Monument.

We realize that the U. S. Geological Survey report now under preparation may suggest a test well on our own Section 5. However, we think the cost of a test well would equal the cost of casing the Ashcroft well.

It is our recommendation we be authorized to have both the Siemons well and the Ashcroft property appraised, and we would recommend appraisal of the Barnes property (S½SE¼, Section 6) at the same time.

ELMO

01-21-1960: memo: acquisition of ashcroft property, tract no 3, 79.12 acres, el morro; mr kell's field report of a meeting with mr as

Mr. Kell has been unable to interest a qualified appraiser to do the work during the severe winter weather. However, we think Mr. Ashcroft would be willing to wait a reasonable time if he could be assured we actually intend to have the property appraised.

We would like Mr. Dunn's reaction to using the $25,000 earmarked for the acquisition of the Utah Parks property (Bryce Canyon) for the acquisition of the Ashcroft property providing the appraisal report will support Mr. Ashcroft's asking price in order that the property can be acquired before June 30 if possible.

SIGNED

George W. Miller
Assistant Regional Director

In duplicate

Attachment

Copy to: Chief, WODC (2) w/attachment
Supt., El Morro w/attachment

01-15-1960: memo: proposed acquisition, ashcroft property; meeting at ashcroft ranch.

L-1425

Region Three
Santa Fe, New Mexico

January 15, 1960

Memorandum

To: Regional Director
Through: Regional Chief of Operations

From: Regional Chief of Lands

Subject: Proposed Acquisition, Ashcroft Property (Rulon A. Ashcroft and Ivy R. Ashcroft, husband and wife)
Tract No. 3, 79.12 Acres, El Morro

On Saturday, January 9, I met Mr. R. A. Ashcroft at Ramah, New Mexico to outline the procedures for land acquisition and to determine if the property could be acquired. This action was prompted by Mr. Ashcroft's letter of December 10, 1959 advising that he had drilled a well on the property and inquiring if our Service was interested in purchasing it.

Mr. Ashcroft owns the NE¼NW¼ of Section 6, Township 9 North, Range 16 West, El Morro, containing 79.12 acres. The property is traversed east and west with New Mexico State Route No. 53. This road is paved from Grants to a point roughly 20 miles east of the Ashcroft property and the pavement extends all the way southward from Gallup and eastward to Ramah and a short distance out of Ramah to the McKinley County line. The distance from El Morro to Ramah is approximately 11 miles. The property also has a REA power line located a few feet inside and parallel to the north boundary of the Ashcroft property and the North boundary of Section 6. There is an Indian Service telephone line that probably crosses a portion of the south part of the Ashcroft 80-acre tract. The well was drilled on December 5 to a total depth of 205 feet. According to the driller's report 0 to 5 feet was top soil, 5 to 200 feet lava and 200 to 205 feet sand. The well was drilled with an eight-inch bit and no casing has been set. According to the reports the yield was 38 g.p.m. Quality or temperature of the water is not presently available. The information regarding the well was supplied by Mr. Ashcroft on December 28 by completing a questionnaire attached to Acting Regional Director Miller's letter to Mr. Ashcroft dated December 15.

The morning was spent with Mr. and Mrs. Ashcroft at their trailer home in Ramah. I explained our requirements regarding appraisals, options, title evidence and the review which would be required by the Attorney General. I also pointed out to Mr. and Mrs. Ashcroft what expense they would be expected to pay if we should agree on terms and an option could be obtained. I also attempted to obtain from Mr. Ashcroft an idea of his asking price of his property including the well.

Saturday afternoon we drove to the well site expecting to obtain a sample of the water so that it could be tested and an analysis made by the U. S. Geological Survey at Albuquerque. The well has not been cased. When the driller completed the bail test, a bucket was turned upside down over the drilled hole and mud and cuttings placed over the bucket. On Saturday, January 9, there was approximately six inches of snow on the ground and the mass of mud surrounding the bucket was frozen to a point where we were unable to remove the earth or bucket.

A water sample will need to be obtained at some later date. It is probably a safe assumption to guess that the quality of the water will be the same as the Siemens well located in Section 1, Township 9 North, Range 15 West and another existing well located on the north side of the road probably in Section 35 or 36, Township 10 North, Range 15 West. This assumption is made based on discussions with Mr. West of the Geological Survey last summer coupled with the depth where water was encountered in the Ashcroft well.

When it was discovered that it was impossible to obtain a sample of water from the well, we drove to a well site north of the El Morro Trading Post where Roy Reynolds Drilling Company, 2701 Second Street, N.W., Albuquerque, is drilling a well for the El Morro Trading Post. This well is reported to be on Mr. Carter's land and is probably located in Section 33, Township 10 North, Range 14 West. In talking with Mr. Reynolds who drilled the Ashcroft well, he advised there were no cinders encountered during the drilling. A small amount of water, enough to continue drilling, was encountered at an elevation of 165 feet. No measurement of this flow was recorded except the driller reports that it was sufficient for drilling. Mr. Reynolds advised that they encountered water immediately on penetration of the bottom of the malpais and they "drilled only a few feet into the sand." From the slush pit of the Ashcroft well it appears that the sand might be courser than that pumped out of the Siemens well. It could also be that this appearance was due to malpais cuttings mixed with the sand.

Upon inquiry of Mr. Reynolds, he also drilled or was present during the Siemens drilling, he thinks the sand from the Ashcroft well is a different kind than that encountered at the Siemens well. Also from the slush pit I picked up cuttings which appeared to be clay. This, I think, is what they refer to as the "red bed." Mr. Ashcroft advised me they went through the sand to the red bed. Mr. Reynolds reports they went "only a few feet" into the sand. The clay-like material was soft putty like and when rolled to a ball became hard almost immediately.

Mr. Reynolds informed me that the well was tested by bailing for a period of three hours. His bailer holds 19 gallons and he bailed at the rate of approximately two trips per minute. So far as Mr. Reynolds could tell there was no noticeable drawdown during the three-hour period. He did, however, state that his "lines were wet and it was impossible to tell exactly the amount of drawdown." The well is reported to stand at an elevation of 150 feet from the surface.

I was never able to get a firm price from Mr. Ashcroft for the property including the well. During the discussions he did say that he would not dispose of the property for $15,000. He advised that he has had an offer from a man in Farmington which he admits is not cash. This offer is in the amount of $25,000, terms $5,000 down and the balance $5,000 per year for a four-year period. This party is interested in building a trading post or motel on the property and would even join Mr. Ashcroft in a business venture.

The well is located north of the road (State Route 53) in the extreme northwest corner of the property. A paced distance in the snow indicates it is approximately 45 feet east and the same distance south of the northwest corner of Section 6. There is an adequate size area surrounding the well and adjacent to the road for a business site. While the driller reports five feet of top soil before the malpais was encountered, it can be expected that a pipeline route to the Headquarters Area at El Morro will certainly encounter some malpais formation. A pipeline coming around the north side of the rock would probably need to be at a depth of four to five feet to prevent freezing.

The Ashcroft property (N½NW¼) is within the boundaries authorized for acquisition by the Act of June 14, 1930 (46 Stat. 211). From a land value exclusive of business site value, a rancher would probably consider the land to be worth $7.50 to $12 an acre. However, the business site and location within the Monument coupled with the

fact that this is a small tract of 80 acres would increase the per acre value. According to the documentary stamps on the deed, Mr. Ashcroft paid approximately $5,000 for the property or $62 per acre several years ago. Since that time power has been made available and the road has been realigned and improved. The land value at present day prices would probably be $150 to $200 per acre. It would be my recommendation that we have the Ashcroft property appraised and also have the Siemens well and easement appraised at the same time. This is necessary since we have a moral obligation with Mr. Siemens to either accept his option or else release him from the instrument which he has signed. I will attempt to obtain the services of a qualified appraiser and request the necessary work order from the Washington office.

John E. Kell
Regional Chief of Lands

Copy to: Director (2)
Supt., El Morro
Chief, WODC (2)

Approved for distribution:

(Signature)

JAN 19 1960
Date:

Thomas J. Allen, Regional Director

12-29-1959: memo: ashcroft well from regional chief of lands, national park service.

C
O
P
Y

L-1425
Ashcroft

Region Three
Santa Fe, New Mexico

December 29, 1959

Memorandum

To: District Engineer, U. S. Geological Survey,
P. O. Box 4072, Albuquerque, New Mexico

From: Regional Chief of Lands, National Park Service
P. O. Box 1728, Santa Fe, New Mexico

Subject: Ashcroft Well, $NW^4NW^4NW^4$, Section 6, Township 9 North, Range 14 West, El Morro

On December 15 I telephoned you and talked with both you and Mr. West regarding the El Morro report and the "new well" reported by Mr. Ashcroft and sent him a map of El Morro and a questionaire to fill out. His undated reply was mailed from Ramah December 24 and a copy is attached for your information. From the information supplied by Mr. Ashcroft the total depth of the well is 205 feet and they drilled five feet into sand. According to Mr. Ashcroft's undated letter the water stands at 150 feet from the top.

I have suggested to Mr. Ashcroft that I meet him at Ramah the weekend of January 9-10 since he has indicated the weekend is most convenient to him. It would appear to us from the information received, if we decide to use this well and if we can acquire it for a reasonable price, we should probably plug the bottom of the well since there is a reported five feet of sand and because of our experience in testing the Siemens well.

We would like to have any comments Mr. West cares to make before my proposed trip to El Morro.

John E. Kell
Regional Chief of Lands

Attachments

Copy to: Director (2)
WODC (2)
Supt, El Morro (personal attention)

JEK:ef:mm

COPY

4

12-16-1959: memo: proposed acquisition, ashcroft property, tract no 3, 79.12 acres, el morro;

L-1425
Ashcroft

Region Three
Santa Fe, New Mexico

RECEIVED DEC 21 AM 10 05

DEC 16 1959

FOR OFFICIAL USE ONLY

Memorandum

To: Superintendent, El Morro

From: Acting Regional Director

Subject: Proposed Acquisition, Ashcroft Property, Tract No. 3, 79.12 Acres, El Morro National Monument

Attached for your information is a typed copy of a longhand letter received from Mr. R. A. Ashcroft, dated December 10. We have attached a copy of our reply to Mr. Ashcroft expressing an interest in acquiring his property.

Since the Ashcroft property is inside the area authorized for acquisition, we would like to acquire it even without the well. We have asked for additional information and as soon as we have this we will meet with Mr. Ashcroft and try to work out the details for acquisition.

In as much as Ramah is a small community we would prefer you keep this information confidential, at least until we determine if the Ashcroft property can be acquired. As you know, we still have an option with Mr. Siemens which must be exercised before August 15, 1960.

At the present time we have not yet received the ground water report under preparation by Mr. West of the U. S. Geological Survey. Until all of the various possible sources have been studied, we prefer that you do not discuss the water situation. If you receive any inquiries regarding our proposed water supply, it is perfectly all right to state that "we are waiting for a complete report from the U. S. Geological Survey."

We ask you to exercise this caution since Mr. Siemens telephoned Mr. Kell recently inquiring if our Service has reached any decision.

SIGNED
Jerome C. Miller
Acting Regional Director

Copy to: Director (2)
WODC (2)

12-15-1959: letter to mr r a ashcroft; from region three, santa fe; regarding location of well.

WR 4/7

L-1429
Ashcroft

RECEIVED
Oil Conservation Commission
Santa Fe, New Mexico

1959 DEC 21 AM 10 05

Region Three
Santa Fe, New Mexico

DEC 15 1959

El Morro

Mr. R. A. Ashcroft
P. O. Box 107
Ramah, New Mexico

Dear Sir:

We have your letter of December 10 advising you have recently drilled a well on your property and would be willing to negotiate for the property or water.

According to our records, your land is the $N^{\frac{1}{2}}NW^{\frac{1}{4}}$ of Section 6, Township 9 N., Range 14 W. and consists of Lot 1 and the $NE^{\frac{1}{4}}NW^{\frac{1}{4}}$, a total of 79.12 acres. It is our understanding that this is the piece on which you have recently drilled a well.

We have enclosed letter-size prints of our property and the location of your property in the NE corner of Section 6. It would be appreciated if you could mark one of the prints and return it to us showing the approximate location of the well.

If you can supply it, we need more information regarding the depth and size of the well as shown on the attached sheet.

Before we can negotiate for your property our regulations require that we have the property appraised. The appraisal costs would be borne by us and we would hire some reputable man to make the appraisal and after this has been done we could then negotiate for the property.

However, before we hire an appraiser we need more information and at your convenience we would like to send a representative of this office to Ramah to talk to you.

We are definately interested in acquiring the land and hope the quantity and quality of the water will be enough for our use at the Headquarters Area at El Morro.

Sincerely yours,

(SIGNED)

Jerome C. Miller
Acting Regional Director

ELMD

Enclosures

Copy to: Director (2) w/copy incoming
Supt., El Morro w/copy incoming

WODC (2) w/copy incoming

12-15-1959: letter to mr r a ashcroft; from region three, santa fe; regarding location of well, cont, form for location.

1. Location of well (as close as possible, marked on attached sketch)

2. Total depth of well _____

3. Formations encountered in drilling (depth of each formation encountered)

   A. 0 to _____Feet_____

   B _____to_____Feet_____

   C _____to_____Feet_____

4. Diameter of well _____

   Size of casing _____

   Amount of perforation in feet_____

5. Production in gallons per minute _____

   By pump test _____
   or
   Bail test _____

   Length of test_____hours

6. Name of driller_____

   Date drilled_____

12-10-1959: letter to regional director, national park service; from r a ashcroft regarding recent well drilling.

L-1425
Ashcroft

Ramah, New Mexico
12-10-59

Regional Director
National Park Service
Santa Fe, New Mexico

Dear Sir:

I have recently drilled a well on some property I have that joins the El Morro Nat'l Monument on the north side and I have plenty water. I would be interested in negotiating with you on this property or the water.

Yours,

R. A. Ashcroft
Box 107
Ramah, New Mexico

C O P Y

C O P Y

09-18-1959: memo: siemens well near el morro; from supervisory engineer wodc; to regional director, region three.

Air Copy

RECEIVED SEP 22 AM 8:12 September 18, 1959

Memorandum

To: Regional Director, Region Three

From: Supervisory Engineer, WODC

Subject: Siemens Well Near El Morro National Monument

Reference is made to the report of August 6 by Regional Chief of Lands concerning the pump test of the subject well and also Acting Regional Chief of Operations Miller's memorandum to this office of August 20.

The pump test demonstrated the ability of the well to furnish sufficient water for the Monument's use at future anticipated demands. Even though considerable sand and mud was pumped from the well during the test, we believe that consideration should be given to providing settlement and filtration of this water rather than disregarding it entirely and seeking a new source. Calculation and drawdown curbs have been plotted from the test results and it appears possible that the well could furnish a steady 15 gpm supply which could require comparatively little settling and filtration. It is entirely possible that with continued pumping at a low rate, the water might clear up entirely.

We suggest that the USGS be requested to study and comment on the above suggestion in their report.

(Sgd.) P. E. Smith

P. E. Smith
Supervisory Engineer

In duplicate

Copy to: Chief of D&C
Chief, Water Resources Section
Supt., El Morro
Proj. Supv. Novak

09-24-1959: memo:siemens well section 1, township 9 n range 15 w, el morro; regarding results of pump test.

L-54

Region Three
Santa Fe, New Mexico

September 24, 1959

Memorandum

To: District Engineer, U. S. Geological Survey, Ground Water Branch, P. O. Box 4072, Albuquerque, New Mexico

From: Regional Chief of Lands

Subject: Siemens Well Section 1, Township 9 N. Range 15 W., El Morro

On September 18 we received a memorandum from Supervisory Engineer, P. E. Smith, Western Office of Design and Construction regarding the Siemens well. This was in reply to a report covering the results of the pump test. My report explained that as a result of the test Mr. West was making a more detailed study of the entire area.

The Western Office of Design and Construction has made calculations and drawdown curves from the information contained in my report.

Their results indicate the well could furnish a steady 1½ g.p.m supply. One solution, which Mr. West and I discussed in the field and which has also been considered by representatives of Western Office of Design and Construction, is the use of the Siemens well with a settling and filtration system. If Mr. West has not progressed too far with his report, we would like to have the report include some reference to this possibility. Naturally our Service would not expect Mr. West to make any cost analysis but only the approach of whether, in his opinion, the use of the Siemens well through a settling and filtration plant would be practical.

John E. Kell
Regional Chief of Lands

Copy to: Chief of D&C
Director (2)
Supt., El Morro
Proj. Supv. Novak

09-02-1959: memo: ground water study, including pump test of siemen's well, el morro, nm.

w/ Copy @ 9

L54-OBL

September 2, 1959

Memorandum

To: Regional Director, Region Three

From: Chief, Water Resources Section

Subject: Ground Water Study, including Pump Test of Siemen's Well, El Morro National Monument, New Mexico

This relates to only the pump test and ground water study which were part of the subject of your memorandum of August 21.

Our memorandum of June 30 to Dr. John C. Reed, Staff Coordinator, USGS requested the ground water study at El Morro at an approximate cost of $800 during this year. The scope and exact cost were to be arranged by you and Mr. Hale. By phone and teletype on July 17, it was arranged that Mr. Conover of USGS would authorize Mr. Hale to have a representative supervise and analyze a pump test of the Siemens Well.

Mr. Kell's report of August 6, which you forwarded on August 21, indicates that the pump test was made on July 23, with Mr. Sam West of Mr. Hale's office participating. The well was pumped at from 9 to 27.25 gpm, including sand and mud after the first half hour. The well appears to have been about 20 feet shallower than claimed by Mr. Siemens at the beginning of the test, and to have filled to another foot of depth during the 12 hour test, not counting suspended mud at the end of the test. Mr. West is apparently still analyzing the test, and no further investigation and cost had been recommended at the time you wrote.

Messrs. Thomasson and Bieber, USGS, and I worked out the 1960 F.Y. program on August 10, based on those field reports our respective offices had received on the program presented to Dr. Reed on June 30. Mr. Hale's report covered the Carlsbad Caverns (Rattlesnake Springs) work, but nothing on work at El Morro. Accordingly, I agreed to reserve $800 for the El Morro work, but we have not actually programmed funds for either the work which Mr. West has been doing, or further investigations and reports which appear to be needed.

We should have confirmation of the complete program and cost for the year as soon as possible, and perhaps an interim statement of the USGS costs already incurred in connection with the pump test. The complete program cost should be supplied if it is to exceed $800, in order that we may determine what unallotted funds are still available for other work, as explained in my memorandum of August 14.

SIGNED

A. van V. Dunn
Chief, Water Resources Section

Copy to: Chief, Ground Water Branch, Geological Survey
Mr. Thomasson, Geological Survey
Mr. W. E. Hale, Geological Survey, Albuquerque
Superintendent, El Morro
Chief, WODC
Mr. Dunn

AvVDunn:lct

08-28-1959: memo: pump test appraisal, siemens well (and related water resources investigations), el morro.

WR corres

L54-CEL

August 28, 1959

Memorandum

To: Regional Director, Region Three

From: Chief, Water Resources Section

Subject: Pump Test Appraisal, Siemens Well (and Related Water Resources Investigations), El Morro

This is one of two replies to your memorandum of August 21, to permit different distribution of copies.

My notes on the telephone discussions with Mr. Kell on June 23 and 30 were destroyed after susbsequent confirming memoranda by Mr. Kell or me, but I remember distinctly that Mr. Kell did not give Mr. Siemen's option price, and stated that he did not wish to give the price at the time. The copy of the license to test a well and option to purchase, which you have forwarded, omits the price, and any indication that it has been signed by Robert L. and Shirley Jones Siemens, or the date of signatures.

It seems to me that the license must have been signed with the option price included before the pump test was started. In that case we should have a complete copy, for official use only.

A. van V. Dunn
Chief, Water Resources Section

Copy to: Mr. Siler, w/c license
Mr. Dunn, w/c license

AvVDunn:lct

00-00-0000: license to test a water well and option to purchase.

# LICENSE TO TEST A WATER WELL AND OPTION TO PURCHASE

The undersigned grantors, Robert L. Siemens and Shirley Jones Siemens, husband and wife, in consideration of the sum of $10.00 and a written report of the production pump test, do hereby grant to the United States of America and its assigns permission, authority and license to make a pump test showing the productivity of a water well on real property owned by the undersigned grantors and described as follows:

A well located in the $E^{\frac{1}{2}}$ of the $NW^{\frac{1}{4}}$ of Section 1, Township 9 North, Range 15 West, Valencia County, New Mexico.

It is understood that the grantee, United States of America, may in order to determine the true productivity of the above-described well make such tests acting through a contractor, as may be necessary. The United States of America acting through a contractor is granted the right to remove the existing windmill derrick, pipe, pump and other equipment in order to make the necessary tests.

It is further understood and agreed that the United States of America, acting through its contractor, will replace and restore all of the equipment to an operating condition after the tests have been completed.

This license shall be for a period of six months from the date of this instrument.

## OPTION PROVISIONS

As further consideration for the payment of the sum aforesaid, there is hereby given to the United States of America and its assigns the right, power, and option, at any time prior to August 15, 1960 to purchase the following described property interests:

1. The existing well located in the $E^{\frac{1}{2}}$ of the $NW^{\frac{1}{4}}$ of Section 1, Township 9 North, Range 15 West, New Mexico Principal Meridian, including the casing but not including the windmill and existing pump; together with a permanent easement to maintain and operate the said well, to deepen it and to enlarge the casing as may be necessary to provide a supply of water for El Morro National Monument.

2. A permanent easement for a water pipe line from the above-mentioned well, crossing a portion of the $E^{\frac{1}{2}}NW^{\frac{1}{4}}$, and the $E^{\frac{1}{2}}$ of the above described Section 1. Said pipe line shall be in a general Easterly direction leading toward the Headquarters Area of El Morro National Monument; together with the right of ingress and egress for the purpose of laying, maintaining and replacing said line. It is contemplated that said pipe line shall be buried below freezing, and the exact course of the pipe line across Section 1 to the Headquarters Area shall be determined by a field survey.

3. A permanent easement for a power line to supply power for pumping at the site of the existing well, to follow the existing REA power line as now located, or a new route to be determined at the option of the United States after a field survey.

4. A permanent easement for an access road from the public highway between Grants and Ramah, known as State Route No. 53. The point of Departure from the existing public road and the route to the well will be approximately the same as the graded road now in existence and will be mutually determined by a representative of the National Park Service and the vendors.

5. A permanent easement to fence and maintain an area 210' x 210' in square form, surrounding the well, containing approximately 1.0123 acres of land more or less. In addition the United States shall have the right to construct and maintain a pumphouse, store pipe or other equipment inside the fenced area that may be needed for the care, operation and maintenance of the well.

6. A covenant running with the land under which the vendors will bind themselves, their heirs and assigns, not to drill or permit the drilling of any other water well in the $N^{\frac{1}{2}}$ of Section 1, Township 9 North, Range 15 West, New Mexico Principal Meridian. Except a water well, for domestic and stock watering purposes, may be drilled in the North 330 feet of the above described Section 1.

The price at which the above described property interests will be sold to the United States shall be $_____

The vendors represent that, at the date of this instrument, they are the owners in fee simple of the following described lands:

All of Section 1, Township 9 North, Range 15 West, N.M.P.M. They further represent that the title to said lands is clear, free and unencumbered, except:

1. A telephone line, probably Indian Service, traverses a portion of Section 1.

2. A portion of Section 1 is covered by an agreement under the Soil Bank Act of 1956.

3. A right-of-way for New Mexico Highway, State Route No. 53 crosses a portion of the $N^{\frac{1}{2}}$ of Section 1.

4. A right-of-way easement for an R.E.A. Power Line (Continental Divide Electric Co-operative) extends from the North boundary of Section 1 through a portion of the $E^{\frac{1}{2}}NW^{\frac{1}{4}}$ of Section 1.

5. A United States Department of Agriculture, Farmers Home Administration, Water Facilities Mortgage, originally for $1,900, Dated March 14, 1950 and Recorded March 15, 1950 Vol. 83, Page 191 of the Records of Valencia County.

6. U. S. D. A., Farmers Home Administration, Water Facilities Mortgage, originally for $1,000. Dated June 22, 1950 and Recorded June 27, 1950 in Vol. 83, Page 371 of the Records of Valencia County.

The vendors cannot have any rights-of-way or easements for items 1, 2, 3, or 4 listed above released.

The vendors agree to have a partial release, or full payment, of the balance due on the above described mortgages in order to have the full right, power, and authority to convey to the United States of America a good title to the property interests covered by this option.

In case the vendors are unable to show and establish title to the above-described lands satisfactory to the United States Government, then and in that event, the vendors agree that the United States may in its discretion institute condemnation proceedings for the acquisition of the property interests covered by this option and that the price above set forth is agreed to by the vendors as to the value of the interests to be acquired under said condemnation proceedings.

When requested by the proper representative of the United States, at any time after the exercise of this option in the manner hereinafter specified, the vendors will promptly at their own expense furnish an abstract of title which will later be extended to include any instrument subsequently required to be recorded by the United States in connection with the title to said lands to show unencumbered fee simple title, or a title certificate, and will also record the deed or conveyance and/or other necessary papers made pursuant to this instrument; provided, that if the vendors fail to provide a proper abstract of title or title certificate

within sixty (60) days after such request then the United States may procure the same at the expense of the vendors and deduct the cost thereof from the purchase price hereinabove set forth.

During the period covered by this option, the vendors grant to the officers and to the accredited agents of the United States, at all proper times, unrestricted right or privilege to survey or enter said lands for all proper and lawful purposes in connection with the negotiations for the acquisition thereof.

When the United States of America, acting through the Secretary of the Interior or other authorized representative, shall have approved and signed this option for the purchase of the property interests as herein provided then, in that event, this instrument shall constitute a contract of bargain and sale between the parties hereto.

No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom. Nothing in this paragraph, however, shall invalidate this contract if made with a corporation for its general benefit.

The vendors or sellers represent that they ☐ have, ☐ have not, employed or retained a company or person (other than a full-time employee) to solicit or secure this contract and agree to furnish information relating thereto as requested by the contracting officer.

_____
Robert L. Siemens

_____
Shirley Jones Siemens

State of New Mexico )
) s.s.
County of Valencia )

The foregoing instrument was acknowledged before me this _____ day of _____, 1959, by Robert L. Siemens and Shirley Jones Siemens, husband and wife.

_____
Notary Public

My commission expires: _____

Approved: _____
(Date)

_____
Director, National Park Service

L-54

Region Three
Santa Fe, New Mexico

AUG 1 1958

Memorandum

To: Director

From: Regional Director

Subject: Pump Test Appraisal, Siemens Well (and Related Water Resources Investigations), El Morro

Mr. Dunn's memorandum of August 4 in reply to our memorandum of July 24 arrived on August 7.

In this connection there is attached a copy of Mr. Kell's field report of August 6. Attached to the report is a tabulation showing the production of the well and the measurements taken by Mr. Kell during the test.

When we made the request for the $850 for the appraisal, we did not anticipate the well was sanded up and would not produce clear water. Since Mr. Dunn did not make an allocation of the $850 requested and since we have not reached an agreement, pending the completion of a report and recommendations by the U. S. Geological Survey, we are suspending any further negotiations with Mr. Erickson and have advised him accordingly.

For Mr. Dunn's information there is attached a typed copy of the license to test the well and option to purchase. The price in the option has purposely been omitted. Mr. Kell believes Mr. Dunn may have forgotten the asking price by Mr. Siemens which was given to Mr. Dunn by telephone from Albuquerque on June 29.

The reason that Mr. Kell did not care to supply the asking price by Mr. Siemens is that as yet no appraisal has been made and no authority or funds for an appraisal has been authorized. Mr. Kell does not want all offices to know the option price until we have decided if we are to have the Siemens' well appraised.

El Morro and the surrounding vicinity of Ramah are typical small town communities where strangers in town immediately bring speculation by the local residents regarding their business. In the negotiations between Mr. Siemens and Mr. Kell, Mr. Siemens mentioned that several people, both in Grants and Ramah, had inquired regarding the negotiations for the sale of the well to our Service. Mr. Siemens would prefer to keep the option price confidential until such time as our Service decides to accept or reject the option.

In attempting to fulfill Mr. Siemens' request, the option price has not been included in any correspondence. It was, however, given to Supervisory Engineer, P. E. Smith, and Mr. Dunn for their confidential information.

Hugh M. Miller
Regional Director

In duplicate

Attachments

Copy to: Chief, WCDC (2) w/no attachments
Supt., El Morro w/copy report but no option

08-11-1959: letter to mr siemens from region three, santa fe, nm; accompanying copy of test.

L-54

Region Three
Santa Fe, New Mexico

Mr. Robert L. Siemens
Box 521
Grants, New Mexico

AUG 11 1959

Dear Mr. Siemens:

In accordance with the license to test your well near El Morro National Monument, Mr. Kell reports that in addition to ten dollars you were to receive a written copy of the pump test.

There is attached a copy of the test prepared by Mr. Kell showing the time, measurement in seconds, and the computed gallons per minute.

The pump test was discontinued after twelve hours at 9:35 p.m. since the water failed to clear up and it was the geologist's belief that additional pumping could continue for many hours or, perhaps, days and still not produce clear water.

We are furnishing copies of this information to our Western Office of Design and Construction, and it will not be possible to give you any definite information regarding our plans for purchase of your well until we have a complete report from the U. S. Geological Survey.

Mr. Kell made a final inspection of the well and windmill at 3:00 p.m. on the afternoon of July 24. All equipment had been replaced and the windmill was in operation. At 3:00 p.m. there was no overflow from the pipe into the small metal tank.

We will advise you as soon as we have any definite information, but it will probably be two or three months before our studies are completed.

(SIGNED)
Hugh M. Miller
Regional Director

Copy to: Director (2)
Chief, WODC (2)
Superintendent, El Morro

07-06-1959: memo from regional chief of lands; proposed acquisition, siemens well, el morro.

L-54

Region Three
Santa Fe, New Mexico

July 6, 1959

Memorandum

To: Regional Director

Through: Regional Chief of Operations

From: Regional Chief of Lands

Subject: Proposed Acquisition, Siemens' Well, El Morro National Monument

On June 29 I drove to Grants, New Mexico and met with Mr. Robert L. Siemens, 656 East Sargent, to discuss the purchase of a water well located on his land and in the $E^2$ of the $NW^4$ of Section 1, Township 9 North, Range 15 West, about one mile west of El Morro National Monument.

Enroute to Grants, I stopped at Albuquerque and negotiated a contract with T. P. Pump & Pipe Company, 3826 Fourth Street, N. W., to test the well to determine productivity, drawdown and recovery. The testing will be completed by July 24.

According to Mr. Siemens the well is 231 feet deep, and he reports the well is a ten-inch hole, cased with six-inch used welded steel casing. He says the well was drilled in 1950 by the Turner Drilling Company, Albuquerque, New Mexico.

Mr. Siemens did not have a log of the well, but he says the driller was in malpais most of the way. Water was encountered at 213 feet, and they drilled through eighteen feet of cinders until they hit a formation known locally as "red bed." When water was encountered, water rose in the bore and Mr. Siemens "thinks" the water stands at about ninety feet from the surface. The bottom eighteen feet of the casing is reported to be perforated. No production test has ever been made other than the bail test made when the well was drilled, reported to be at 25 g.p.m.

During the negotiations with Mr. Siemens, Monday June 29, we were unable to agree on a price, and his asking price was $10,000 more than I think the well and property interests are worth.

Because of the high asking price, coupled with the fact Mr. Siemens works at the Anaconda Company near Grants and was not available for negotiations until after 3:30 p.m., I drove to Albuquerque on the morning of June 30 to consult the U. S. Geological Survey and to obtain other information regarding the property interests.

In Albuquerque, I discussed the El Morro water situation with Messrs. Hale and West of the U. S. Geological Survey. I also telephoned Mr. Dunn in the Washington Office and Supervisory Engineer P. E. Smith of Western Office of Design and Construction. This was in line with Mr. Dunn's memorandum of June 24, transmitting the Alien Water Right Docket, that we should be in agreement that the Siemens' well, if adequate, would be satisfactory.

It was Mr. Dunn's belief we should have a well test and appraisal completed before the option to purchase was signed. In all normal land acquisition cases I would agree with this procedure and sequence; however, in this case, an intelligent appraisal report cannot be prepared until the well is tested and the productivity and recovery rate is known.

It will be next to impossible to keep the well test information confidential or from Mr. Siemens, and since water, rather than land, is the interest being acquired, I reasoned we should not test the well until we had a "License to Test the Well and Option to Purchase" signed by Mr. and Mrs. Siemens.

Mr. Siemens has followed the drilling of the Carter well and other dry holes in the vicinity of El Morro. The Carter well was drilled to a reported depth of 1,640 feet and encountered water. Mr. Siemens had an analysis of the Carter well made. His report shows Total Solids to be 9,250; Fixed Residue 7,355; Total Hardness 1,059; $SO_3$ 688 (Sulfate $SO_4$); Chloride 4,326. These are all in parts per million. According to Mr. Hale, the maximum amounts of $SO_4$ and Chloride should be about 250 p.p.m.

In discussing the well and water situation with Mr. West and Mr. Hale, both men are inclined to agree that a known source of good quality water in the El Morro region is a valuable asset. Mr. West points out that the Carter well is in a geological formation similar to that found near our Headquarters Area. He has experience (in Idaho) where excellent wells were drilled in a malpais formation similar in nature to the formation surrounding the Siemens well.

It is also known that high salt concentration frequently occur in the vicinity of cinder cones similar to those near Flag Crater and the cones to the east of El Morro. In addition, there are known salt beds south and east of El Morro. The poor quality of water in the Carter well and the lack of any water near the El Morro Trading Post (two wells both dry holes have reportedly been drilled) has caused Mr. West to question the advisability of drilling a deep well on the Monument near the present Headquarters Area, since we could encounter the same formation encountered in the Carter well.

Following the discussions with Mr. Hale and Mr. West, I returned to Grants and again met with Mr. Siemens. We eventually reached an agreement at a price which is high, but one which I feel I can support.

Because of the changes in the option provisions of the instrument, it was necessary to retype the "License to Test a Well and Option to Purchase." It took more than two hours to type the instrument and one page had to be retyped. It was about 9:30 p.m. before the option was signed.

The "License to Test the Well" was negotiated for $10.00, and a written copy of the well test. Mr. Siemens asked for the report to use in case our Service decides it does not wish to purchase the well. The fee of $10.00 for the license to test the well has been paid.

The price of the property interest has purposely been omitted from this report and will be disclosed after the appraisal report has been received.

(SIGNED)

John E. Kell
Regional Chief of Lands

Copy to: Director (2)
Chief, WODC (2)
Superintendent, El Morro National Monument

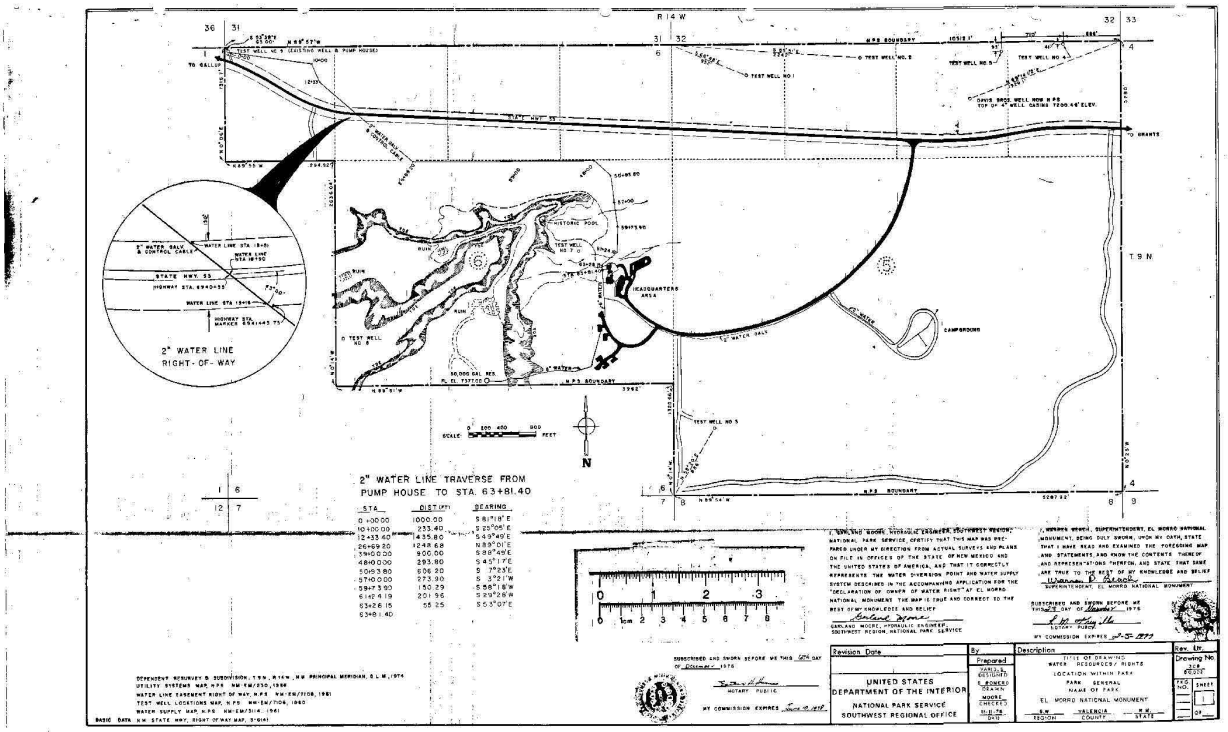
JUL - 7 1959

Approved for Distribution:

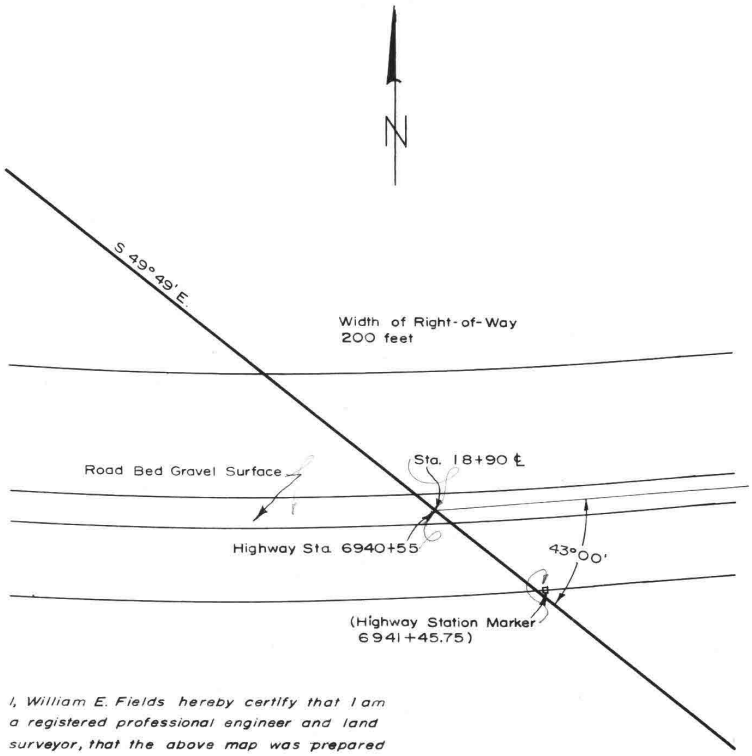
Date:

Regional Director

00-00-0000: pipeline location map



05-02-1951: map by william e fields proposed crossing of sr53 by 2 inch water line.




*I, William E. Fields hereby certify that I am a registered professional engineer and land surveyor, that the above map was prepared from field note of an actual survey made by me and that the same is true and correct to the best of my knowledge and belief.*

William E. Fields

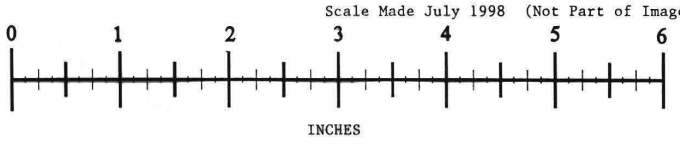
*William E. Fields*
*P.E. & L.S. No. 1403*
*May 2, 1961*

SKETCH SHOWING PROPOSED CROSSING OF S.R. 53 BY 2" WATER LINE TO BE INSTALLED BY NATIONAL PARK SERVICE TO EL MORRO NATIONAL MONUMENT.

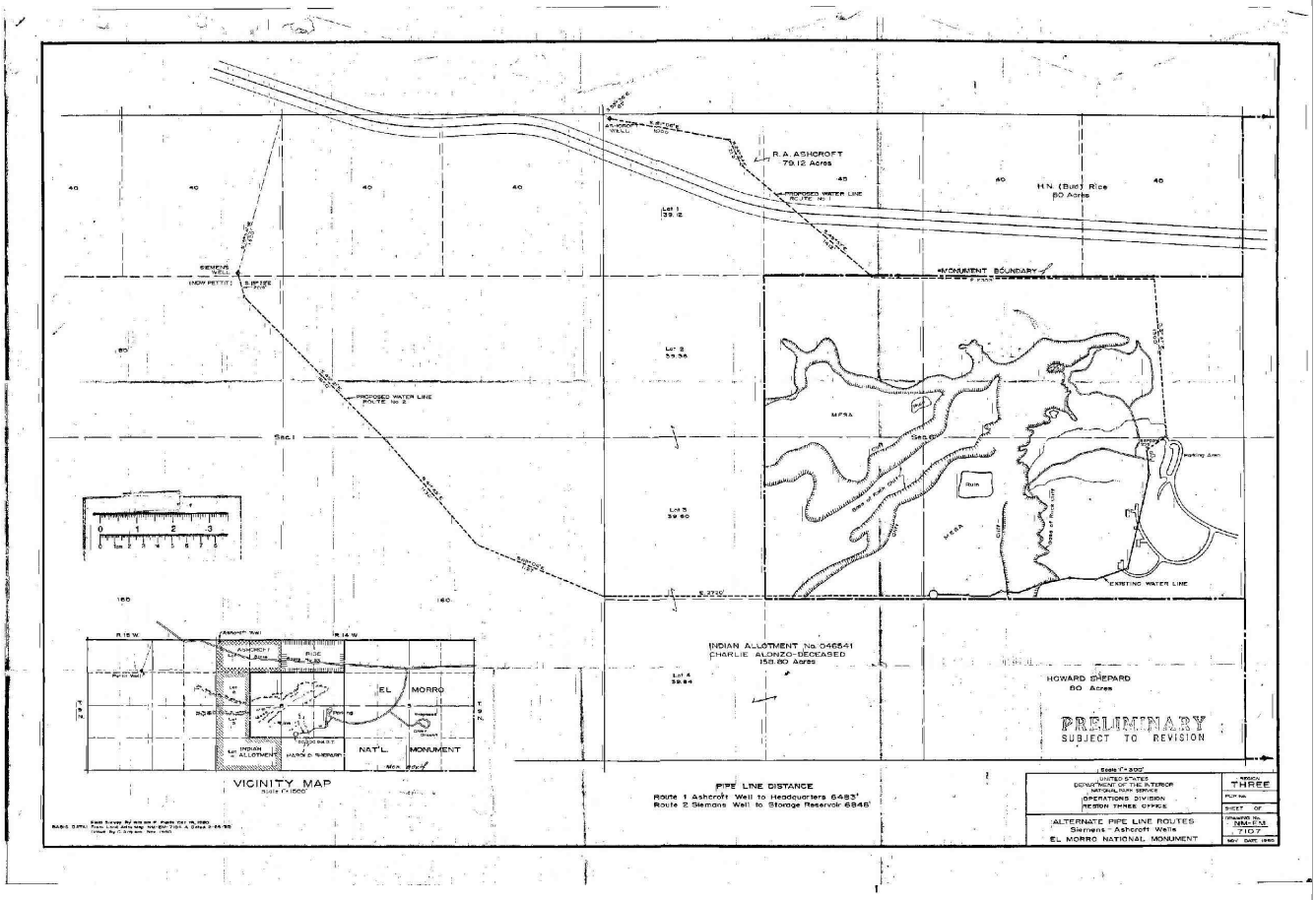
NM-EM-7108

*By C. Arquero*

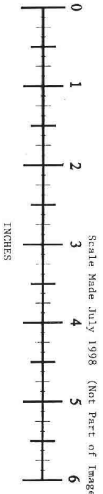
Scale Made July 1998 (Not Part of Image)

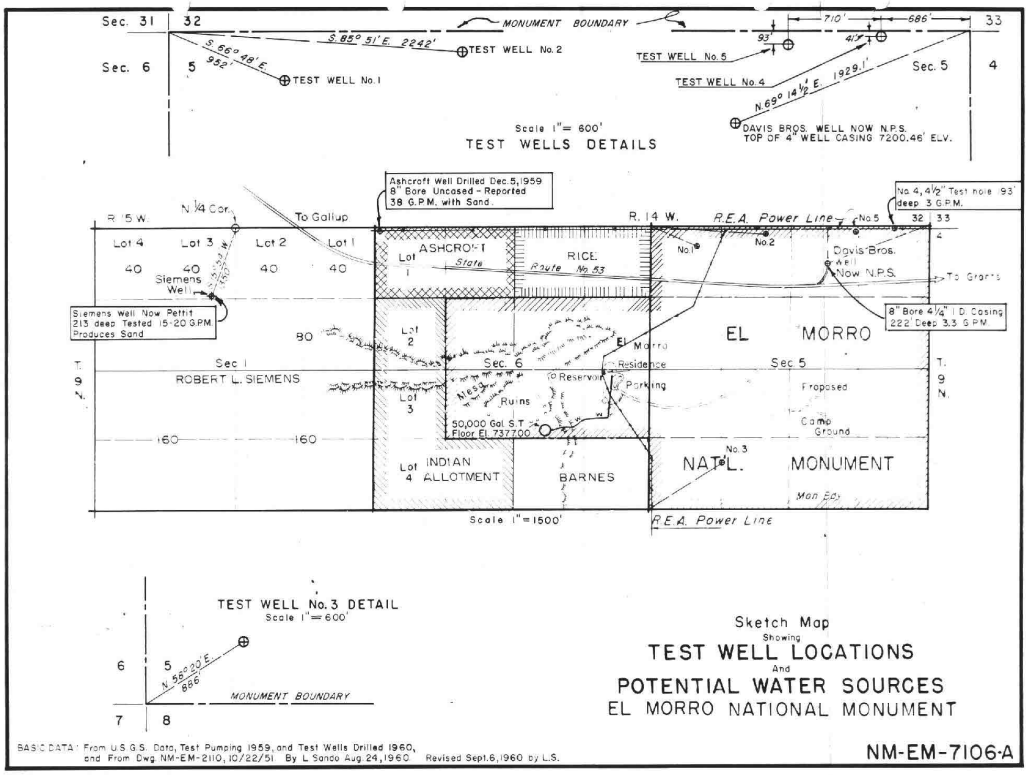


00-00-0000: map of alternate pipeline routes

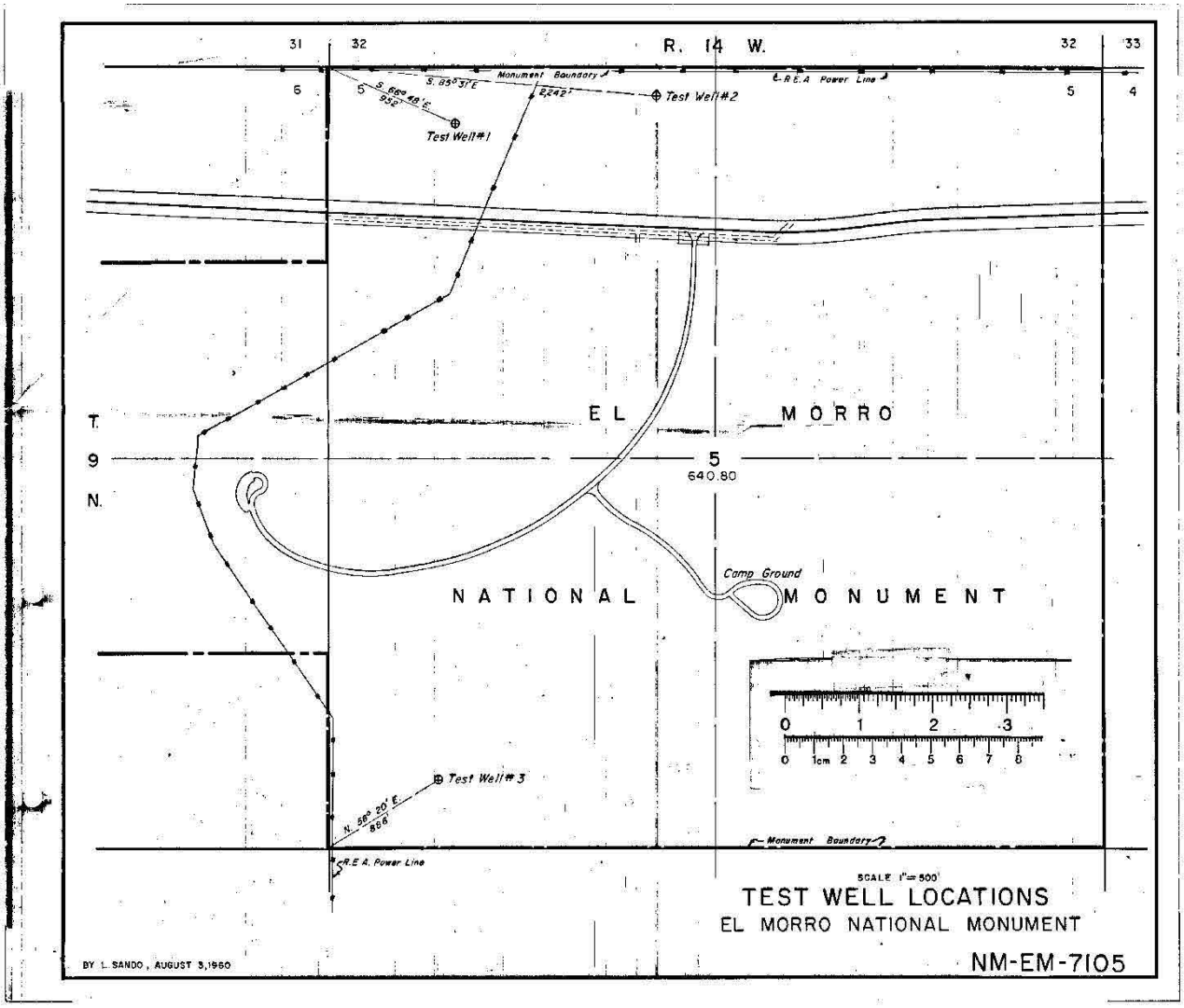


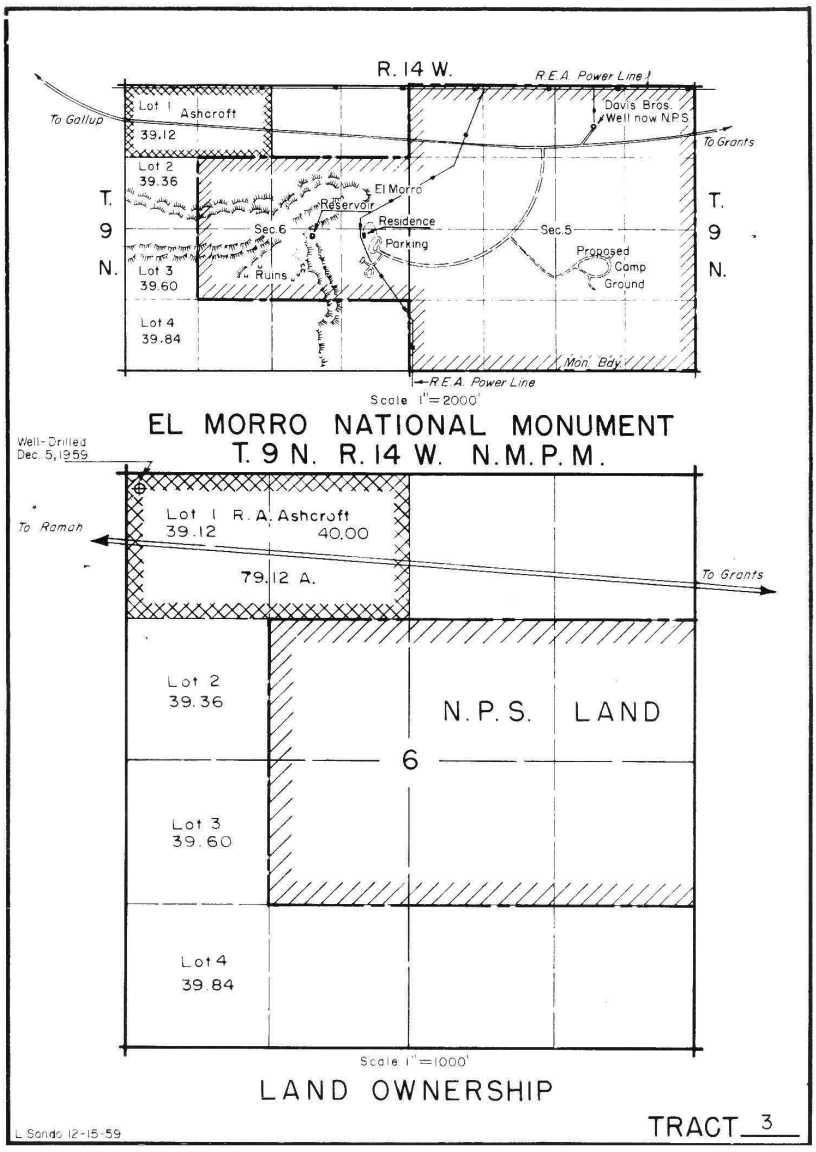
05-02-1951: map of test well details; el morro.

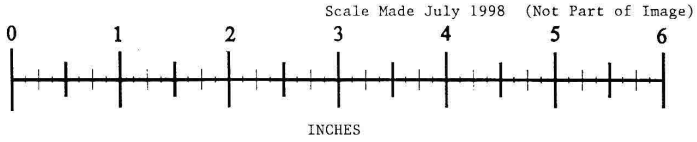


08-30-1980: map of test well locations






Docket Information

Number of Documents in Docket 171

Documents Dated from 5/2/1951 to 4/17/1996

Docket Compiled: 3/10/2011